

SOCIALIST PLANNING

THIRD EDITION

MICHAEL ELLMAN

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to transition economics, University of Amsterdam*



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Preface to Third Edition

The first edition of this book appeared in 1979. It reflected the world of Brezhnev and Mao. It attempted to sum up what was known at that time. It was widely used throughout the world. It was reprinted several times and there were translations into Dutch, Portuguese (in Brazil), Italian, Japanese, Spanish (in Mexico) and Chinese. The second edition appeared in 1989 and reflected the era of economic reform. This third edition appears at a time when socialist planning has become a historical phenomenon, about which we know much more, and about which we can draw better-informed conclusions. I have attempted to sum up the relevant literature of which I am aware, and provide a broad overview of the subject. For reasons of space it has not been possible to provide an extensive discussion of a number of important issues, such as planning education, medical care, urban development and the environment. However, these subjects are mentioned in the text, and some information about them is provided. Each chapter concludes with a list of suggestions for further reading which is intended as a guide for those who wish to delve deeper into the subject of that chapter. This new edition reflects a lifetime of thinking and writing about the topic. I hope it will be useful for a wide circle of readers.

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Abbreviations and glossary

BAM	Baikal–Amur railway
CC	Central Committee (of a Communist Party)
CMEA	Council for Mutual Economic Assistance (sometimes known as Comecon)
CPC	Communist Party of China
CPSU	Communist Party of the Soviet Union
EEC	European Economic Community (precursor of the European Union or EU)
FDI	foreign direct investment
FRG	Federal Republic of Germany
FSU	Former Soviet Union
GDR	German Democratic Republic
GLF	Great Leap Forward
Gosplan	<i>Gosudarsvennaya Planovaya Komissiya</i> (State Planning Commission)
GPCR	Great Proletarian Cultural Revolution
Gulag	<i>Glavnoe upravlenie lagerei</i> (Soviet forced labour system)
NEP	New Economic Policy (the economic system existing in the USSR in 1921–8)
perestroika	policies of Gorbachev (literally: rebuilding or reorganisation)
PRC	People's Republic of China
TVE	township and village enterprise
TVM	township and village mine
USSR	Union of Soviet Socialist Republics

Important dates

- 1921 Gosplan established in Russia
- 1922 USSR formed
- 1926–30 Turksib railway built
- 1927–32 Dneprostroi dam built
- 1928–32 First Five-Year Plan in USSR
- 1929 The breakthrough
- 1929–34 Magnitogorsk steel plant built
- 1930–4 Collectivisation of agriculture in USSR
- 1931 USSR produces its first tanks
- 1931–3 White Sea – Baltic Canal built
- 1931–4 Famine in USSR (peak in 1933)
- 1933 USA establishes National Planning Board
- 1933 Mexico's ruling party adopts Six-Year Plan
- 1936–40 Four-Year Plan in Poland
- 1936–40 Four-Year Plan in Germany
- 1937–8 Mass state terror in USSR
- 1939 USA establishes National Resources Planning Board
- 1941–5 Soviet–German war
- 1943 US National Resources Planning Board abolished
- 1945 Netherlands creates Central Planning Office, with Tinbergen as first Director
- 1945–9 Soviet control established over Eastern Europe
- 1946 French planning agency (*Commissariat Général du plan*) established
- 1947 Last famine in USSR
- 1947–51 Five-Year Plan in Argentina
- 1949 CMEA established
- 1949 First USSR atomic bomb test
- 1949 People's Republic of China (PRC) established
- 1950–3 Korean War
- 1950–2 Mass state terror in China

- 1951–6 First Five-Year Plan in India
- 1952 State Planning Commission established in China
- 1953 Death of Stalin
- 1953 Uprising in GDR suppressed by Soviet troops and GDR police
- 1953 China introduces state monopoly of grain purchases
- 1953–4 Strikes, demonstrations and uprisings in the Gulag
- 1953 First Soviet hydrogen bomb test
- 1953–7 First Five-Year Plan in China
- 1955–7 Collectivisation of agriculture in China
- 1955–60 First Five-Year Plan in Pakistan
- 1956 Stalin criticised at Twentieth Congress of CPSU
- 1956 Unrest in Poland leads to replacement of previous leadership by Gomulka, decollectivisation of collectivised part of Polish agriculture, and recognition of role of Catholic Church
- 1956 Uprising in Hungary. New Hungarian government overthrown by Soviet troops
- 1958 Great Leap Forward in China
- 1958–62 Famine in China (peak in 1960)
- 1959 Lushan Conference. Peng Dehuai criticises Great Leap Forward
- 1960 USSR withdraws economic experts from China
- 1961 Economic Planning Board established in South Korea
- 1962 Strikes and demonstrations in Novocherkassk (USSR) suppressed by army
- 1962–6 First Five-Year Plan in South Korea
- 1964 First Chinese atom bomb test
- 1965 UK adopts indicative National Plan for economic development
- 1966–8 Cultural Revolution in China
- 1967 First Chinese hydrogen bomb test
- 1968 Czechoslovak ‘Socialism with a human face’ ended by Soviet military intervention
- 1969 Sino-Soviet border clashes
- 1976 Death of Mao Zedong
- 1978 Vietnam joins CMEA
- 1978 Chinese economic reform initiated
- 1979–93 China grows out of the plan
- 1979 Sino-Vietnamese border war
- 1979–84 Decollectivisation of agriculture in China

- 1980 The PRC replaces Taiwan as the Chinese member of the IMF and World Bank
- 1980 Emergence in Poland of independent trade union Solidarity
- 1981 Jaruzelski declares martial law in Poland
- 1981–9 Deng Xiaoping Chairman of the Central Military Commission
- 1985 Gorbachev comes to power in USSR
- 1988–9 Upsurge of inflation in China
- 1989 Vietnam implements radical financial stabilisation and price liberalisation policies
- 1989 Turning point in Eastern Europe
- 1989–90 End of Berlin Wall and of Communist rule in East Germany, Poland, Czechoslovakia, Hungary, Bulgaria and Romania
- 1990 German reunification
- 1990 Shock therapy in Poland
- 1991 (April) USSR Gosplan transformed into Ministry of Economics and Forecasting
- 1991 CMEA dissolved
- 1991 (December) USSR dissolved
- 1992 Abortive attempt at shock therapy in Russia
- 1992 Deng Xiaoping's southern tour
- 1992 Fourteenth Congress of Chinese Communist Party states that the goal of China's economic reforms is a 'socialist market economy'
- 1992–6 Last Five-Year Plan in South Korea¹
- 1994 South Korean Economic Planning Board merged with Ministry of Finance
- 1995 Vietnam joins ASEAN
- 1998 Financial crisis in Russia. Debt default, currency depreciation, increased inflation and bank collapses
- 2001 China joins the WTO
- 2001 Japanese Economic Planning Agency merged into Ministry of Trade, Economy and Industry
- 2001–5 Last Five-Year Plan in China
- 2003 China's State Development Planning Commission replaced by State Development and Reform Commission

¹ A new president, who came to power in 1992, discarded the Seventh Five-Year Plan (1992–6) and replaced it by the New Economy Five-Year Plan for 1993–7.

2004 Estonia, Czech Republic, Hungary, Poland, Latvia, Lithuania,
Slovakia and Slovenia join EU

2006 French planning agency (*Commissariat Général du plan*)
abolished

2007 Bulgaria and Romania join EU

2012 Russia joins the WTO

1 *The rise and fall of socialist planning*

Introduction

In February 1921 Russia established a State General Planning Commission to work out and implement a unified economic plan for the national economy. For seventy years this commission, known as Gosplan for short, played a significant, but varying, role in Russian and Soviet economic life. Under the influence of the Soviet example, planning organisations spread throughout the world, to state-socialist countries, to OECD countries such as the USA, France, the Netherlands and Japan, and also to developing countries such as India. In April 1991, deeply discredited by the poor performance of the Soviet economy and the ideological developments of 1985–90, Gosplan was transformed into a Ministry of Economics and Forecasting with substantially different tasks. Hence, socialist planning came to an end in the USSR, even prior to the end of the USSR itself. This radical transformation was not confined to the USSR or Eastern Europe. Two years later, in March 1993, China amended article 15 of its constitution to replace the description of its economic system as a ‘planned economy’ with the term ‘socialist market economy’. The term ‘planned economy’ was seen as discredited and inappropriate and was replaced by a term which incorporated the once rejected ‘market economy’. This chapter gives an overview of these dramatic developments and their causes.

The classics

Marx devoted most of his life to the analysis of capitalism and was notoriously opposed to attempts to design utopias. Nevertheless, from his scattered observations about socialism, and from those of his close

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comrade Engels (for example, in *Anti-Dühring* and *Karl Marx*) his followers drew the idea that in a socialist economy the market mechanism would be replaced by economic planning. That the market economy was inherently inefficient, and fundamentally unsuited to coordinate large-scale industrial production, came to be widely believed. Similarly, the notion of the superiority of planning, which would enable society as a whole to coordinate production *ex ante*, became widespread in the international Marxist movement. These ideas became an integral part of the Marxist critique of capitalism and the Marxist conception of socialism. They were elaborated in the works of the late nineteenth-century German Social Democrats and were regarded as axiomatic by the Russian Bolsheviks.

Russian discussion during the civil and national wars (1918–20)

Having come to power committed to replacing the market by planning, the Bolsheviks rapidly realised that they had no concrete ideas of how to do this. As Lenin (1965: 296–7) observed in his report at a session of the All-Russian Central Executive Committee of 29 April 1918:

We know about socialism, but knowledge of organisation on a scale of millions, knowledge of the organisation and distribution of goods, etc., – this we do not have. The old Bolshevik leaders did not teach us this ... there has not been anything about it yet in Bolshevik pamphlets, and nothing is said about it in Menshevik pamphlets either.

In December 1918 the second All-Russian Congress of Councils of the National Economy advocated the construction and implementation of a single economic plan for 1919 but this remained a purely paper aspiration. Similarly, the second Party programme, adopted at its Eighth Congress in March 1919, aimed at ‘the maximum centralisation of production ... simultaneously striving to establish a unified economic plan’. In their famous commentary on this programme, *The ABC of Communism* first published in Petersburg in 1920, Bukharin and Preobrazhensky (1969: 114–15, 118), two leading Bolshevik intellectuals and politicians, explained what lay behind this formulation.

They explained that under communism:

society will be transformed into a huge working organization for cooperative production. There will then be neither disintegration of production nor

anarchy of production. In such a social order, production will be organized. No longer will one enterprise compete with another; the factories, workshops, mines and other productive institutions will all be subdivisions, as it were, of one vast people's workshop, which will embrace the entire national economy of production. It is obvious that so comprehensive an organization presupposes a general plan of production. If all the factories and workshops together with the whole of agricultural production are combined to form an immense cooperative enterprise, it is obvious that everything must be precisely calculated. We must know in advance how much labour to assign to the various branches of industry; what products are required and how much of each it is necessary to produce; how and where machines must be provided. These and similar details must be thought out beforehand, with approximate accuracy at least; and the work must be guided in uniformity with our calculations. This is how the organization of communist production will be effected. Without a general plan, without a general directive system, and without careful calculation and book-keeping, there can be no organization. But in the communist social order, there is such a plan.

In response to the question of how it would be possible to combine planning with the withering away of the state, they explained that:

the main direction will be entrusted to various kinds of book-keeping offices or statistical bureaux. There, from day to day, account will be kept of production and all its needs; there also it will be decided whither workers must be sent, whence they must be taken, and how much work there is to be done. And inasmuch as, from childhood onwards, all will have been accustomed to social labour, and since all will understand that this work is necessary and that life goes easier when everything is done according to a pre-arranged plan and when the social order is like a well-oiled machine, all will work in accordance with the indications of these statistical bureaux. There will be no need for special ministers of State, for police and prisons, for laws and decrees – nothing of the sort. Just as in an orchestra all the performers watch the conductor's baton and act accordingly, so here all will consult the statistical reports and will direct their work accordingly.

How to combine these long-term aims with the concrete reality of short-term economic policy gave rise to a lively discussion in Bolshevik circles in 1920–1.

The global economy

The division between advanced and backward countries has been a major feature of the world economy since West European military technology

overtook and surpassed that of all other parts of the world in the sixteenth century (Cipolla 1965). This division widened still more after the Industrial Revolution. The advanced countries were in Western Europe and subsequently in certain overseas territories which they colonised. The backward countries comprised the rest of the world. Historically speaking, this division is very recent. When Marco Polo visited China, he was most impressed by Chinese civilisation, which manifestly compared extremely favourably with that of Western Europe. It seems that in the fifth to fifteenth centuries per capita incomes were higher in China than in Europe (Maddison 1998). Europe then was a backward part of the world and China the advanced part. However, within a historically very short period the Europeans used their newly acquired military superiority to conquer the whole American continent, Australia, New Zealand, most of Africa and much of Asia. China probably only escaped colonisation because of rivalries between the potential conquerors.

This predatory behaviour by the advanced countries aroused intense anxiety in the surviving independent countries, the leaders of which realised that if they were to retain their independence it was necessary for them to catch up with the advanced countries. This fact was keenly appreciated by Japan's rulers after the Meiji Restoration and by Russia's rulers during Witte's tenure of office. It was also appreciated in nineteenth-century China by perceptive officials such as Feng Guifen (Schell and Delury 2013: chapter 3) and the reformers who inspired and attempted to implement the Hundred Days' Reform of 1898 (Schell and Delury 2013: chapter 4).

This historical background is absolutely indispensable for understanding the purpose and functioning of socialist planning as it actually existed. It originated in a backward country, and its major purpose was to propel the countries which adopted it into the ranks of the advanced countries. This explains the emphasis these countries placed on overtaking and surpassing the advanced countries.

The fact that the countries which adopted socialist planning were mainly backward countries (with some exceptions, such as the GDR and the Czech lands) is not an accident but has a definite theoretical explanation. As Kornai pointed out (1992: chapter 15), socialist planning was a result of Marxist–Leninist parties coming to power. That these parties came to power in backward countries is strange from the standpoint of classical Marxism. According to classical Marxism, i.e. the Marxism of the Second International (which differed in some

respects from the earlier views of Marx and Engels themselves), the socialist revolution is the result of the contradictions of capitalist society. Hence, those people and political parties who wished to organise socialist revolutions in pre-capitalist societies simply showed their ignorance of the laws of motion of society discovered by Marx. This view was made explicit in Plekhanov's famous polemic with the Narodniks (or populists) in the 1880s. Nevertheless, the Bolsheviks, and all subsequent Communists, ultimately came in practice to accept a different view, which seems to have been the view of Marx and Engels themselves (van Ree 2013). Classic formulations were given by Marx in 1850 and repeated by Lenin in 1905.¹ It is the view that Communists should strive for power and build socialism even in countries which were not yet developed capitalist countries, i.e. the theory of the 'permanent revolution'.² The significance of this theory, as explained by its chief Russian theorist (Trotsky 1930: 15, italics added), is that it

demonstrated that the democratic tasks of backward bourgeois nations in our epoch lead to the dictatorship of the proletariat, and that the dictatorship of the proletariat places socialist tasks on the agenda. This was the central idea of the theory. If the traditional view was that the road to proletarian dictatorship ran through a lengthy democratic period, the doctrine of permanent revolution asserted that *for the backward countries the road to democracy leads through the dictatorship of the proletariat*.

This analysis makes it clear that Communist dictatorship is only relevant for backward countries and quite irrelevant for the advanced countries. It also explains why the Euro-Communist parties, which operated in advanced countries, abandoned the aspiration to establish dictatorships of the proletariat years before perestroika. Since they operated in advanced countries which already had democracy, policies advocated for pre-democratic backward countries were absolutely irrelevant.

¹ The classic texts are: the *Address of the Central Committee to the Communist League* (1850); *Two tactics of Social-Democracy in the democratic revolution* (July 1905); and *Social-Democracy's attitude to the peasant movement* (September 1905).

² This differed from Marx and Engels's theory of permanent revolution in that in the Bolshevik interpretation the workers take the initiative in the bourgeois revolution, whereas in the vision of Marx and Engels the workers seize power after the democratic petty bourgeoisie has come to power.

The fact that the state-socialist countries were backward countries desperate to catch up partly explains why it is that, instead of executing the legacy of Marx, i.e. of constructing an egalitarian, non-market society with a truly human organisation of the labour process and an end to the division of labour and the exploitation of man by man, they were actually mainly concerned with executing the legacy of Peter the Great, the Meiji Restoration and Feng Guifen. This mainly meant the accelerated import of foreign technology in order to preserve national independence and catch up with the advanced countries. As Lenin put it in 1918 (in '*Left wing' childishness and the petty-bourgeois mentality* – English translation Lenin 1965: 340):

our task is to study the state capitalism of the Germans, to spare *no effort* in copying it and not to shrink from adopting *dictatorial* methods to hasten the copying of it. Our task is to hasten this copying even more than Peter hastened the copying of Western culture by barbarian Russia, and did not refrain from using barbarous methods in fighting barbarism.

There were three reasons why socialist planning was not adopted by the advanced countries. First, in those countries capitalism led to a huge and historically unprecedented increase in real wages, a development not foreseen by Marx or the Communist parties. Secondly, the advanced countries were not backward countries struggling to catch up. Thirdly, the experience of socialist planning – although it had some important achievements to its credit – did not demonstrate a clear superiority over capitalism. Indeed, in some respects it demonstrated a clear inferiority with respect to capitalism. This book analyses this in some specific areas (such as agriculture and consumption) and considers why this was the case.

That Soviet economic policy was largely concerned with catching up, for military reasons, was clearly explained by Stalin at the very beginning of socialist planning. In a famous speech delivered in 1931 and reprinted in his (1955b: 40–1) he explained the imperative need to press on with rapid industrialisation regardless of the obstacles:

It is sometimes asked whether it is not possible to slow down the tempo somewhat, to put a check on the movement. No, comrades, it is not possible! The tempo must not be reduced! On the contrary, we must increase it as much as is within our powers and possibilities. This is dictated to us by our obligations to the workers and peasants of the USSR. This is dictated to us by our obligations to the working class of the whole world.

To slacken the tempo would mean falling behind. And those who fall behind get beaten. But we do not want to be beaten. No, we refuse to be beaten! One feature of the history of old Russia was the continual beatings she suffered because of her backwardness. She was beaten by the Mongol khans. She was beaten by the Turkish beys. She was beaten by the Swedish feudal lords. She was beaten by the Polish and Lithuanian gentry. She was beaten by the British and French capitalists. She was beaten by the Japanese barons. All beat her – because of her backwardness, because of her military backwardness, cultural backwardness, political backwardness, industrial backwardness, agricultural backwardness. They beat her because to do so was profitable and could be done with impunity. You remember the words of the pre-revolutionary poet: ‘You are poor and abundant, mighty and impotent, Mother Russia.’ Those gentlemen were quite familiar with the verses of the old poet. They beat her, saying: ‘You are abundant’, so one can enrich oneself at your expense. They beat her, saying: ‘You are poor and impotent’, so you can be beaten and plundered with impunity. Such is the law of the exploiters – to beat the backward and weak. It is the jungle law of capitalism. You are backward; you are weak – therefore you are wrong; hence you can be beaten and enslaved. You are mighty – therefore you are right, hence we must be wary of you.

That is why we must no longer lag behind.

In the past we had no fatherland, nor could we have had one. But now that we have overthrown capitalism and power is in our hands, in the hands of the people, we have a fatherland, and we will uphold its independence. Do you want our socialist fatherland to be beaten and to lose its independence? If you do not want this, you must put an end to its backwardness in the shortest possible time and develop a genuine Bolshevik tempo in building up its socialist economy. There is no other way. That is why Lenin said on the eve of the October Revolution: ‘Either perish, or overtake and outstrip the advanced capitalist countries.’

We are fifty or a hundred years behind the advanced countries. We must make good this distance in ten years. Either we do it, or we shall go under.³

This orientation of socialist planning to the building up of military might is one of the reasons why the USSR, unlike Japan, failed to catch up with the leading capitalist countries in the civilian sector of

³ The need for rapid growth to preserve national independence was also very important in motivating China’s high growth rates. Deng Xiaoping once observed (Vogel 2011: 673): ‘Those who are backward get beaten . . . We’ve been poor for thousands of years, but we won’t be poor again. If we don’t emphasise science, technology and education we will be beaten again.’ (This is a historically inaccurate echo of Stalin. Actually, for a long period China was relatively rich and powerful.)

the economy. Military programmes were a burden on the economy. Failure to take full advantage of the opportunities offered by the world market had adverse effects on economic growth and the quality of production. Stalin's stress on the need to build up the USSR's defence capacity was very prudent and entirely justified under the circumstances of the 1930s. However, his summary of Russian history was very one-sided. It ignored Russia's conquest of Poland, the Caucasus and Central Asia, and its annexation of the whole of northern Eurasia.

Planning in the NEP (New Economic Policy) period (1921–8)

Gosplan was established by a decree of the Council of People's Commissars of February 1921. It began work in April 1921 with a staff of thirty-four, most of them non-Party technicians and scientists, under the chairmanship of an Old Bolshevik. It grew rapidly, and by the middle of 1924 had a staff of 527. It was not the only planning organ. Just a month after it was created, another decree of the Council of People's Commissars set up planning commissions in a number of the People's Commissariats (i.e. ministries). For example, the decree established two planning commissions in the People's Commissariat for Agriculture, one for working out a general plan for agriculture and forestry and for coordinating the work of the commissariat with other commissariats, the other for working out a raw material plan. Similarly, it created three planning commissions in the Supreme Council of the National Economy, one in the People's Commissariat for Supply, etc. In 1923–5 republican gosplans were set up too. Since the USSR was such a huge country, the relationship between sectoral and regional planning remained a difficult one throughout the whole history of socialist planning.

During the New Economic Policy, Gosplan was mainly engaged in giving advice on economic policy, and struggling against both market forces and other bureaucratic organisations. In particular, it struggled to have its control figures (which subsequently became the basis for the annual plans) accepted as the basis for current economic policy in place of the annual budget drawn up by the People's Commissariat for Finance. Similarly, it struggled to have its five-year plan accepted as the basis for medium-term economic policy instead of the five-year plan drawn up by the Supreme Council of the National Economy. It also undertook a variety of economic calculations.

The economic calculations and economic models which underlay the concrete figures of Gosplan and other Soviet institutions in the 1920s played a pioneering role in international economic thought. For example, the economic balances calculated and published in the USSR in the 1920s played an important role in the history of the input–output method. Input–output was developed by Leontief, a Russian economist working in the USA who was well aware of the relevant earlier Soviet work. The latter was undertaken in, and published by, the Central Statistical Administration.

Gosplan was continuously involved in bureaucratic struggles with other organisations engaged in the economic policy process, such as the People's Commissariat for Finance, the Central Statistical Administration and the Supreme Council of the National Economy. Gosplan only became the dominant planning body in 1932, when the Supreme Council of the National Economy was split up into a number of industrial commissariats. An area in which Gosplan has a good claim to priority is that of growth models. Feldman (1928) was a remarkable pioneering study which was published in Russian at the end of the NEP period, long before Western economics became interested in the theory of economic growth. It influenced early Indian planning, was analysed by Domar (1957), and translated into English in Spulber (1964). Feldman's model was developed as a basis for long-term planning, and was originally a report to a Gosplan committee. It should be noted, however, that the concrete numerical work of Feldman and of the head of the committee to which he reported was much too optimistic. It treated as feasible entirely unrealisable goals. The attempt to realise them had disastrous effects on the economy.

It was in the 1920s that the view developed that planning should have four essential elements: the annual plans (originally control figures); the five-year plans; the ten-, fifteen- or twenty-year general or perspective plan; and the plans for concrete investment projects which made up the backbone of the other plans.

The first control figures were those for 1925–6, published in 1925. Gosplan's annual control figures gradually grew in importance at the expense of the annual budget. This reflected the conscious choice made by the Bolsheviks in favour of industrial expansion at the expense of financial stability. As Dzerzhinsky (1926), candidate member of the Politburo, People's Commissar for Internal Affairs and chairman of the Supreme Council for the National Economy, explained in February 1926:

Therefore, when it is said that because of the shortage of resources we should halt our investment projects, or reduce them to a certain level, then I assert that I, as chairman of the Supreme Council of the National Economy, will struggle against such an opinion to the end because it is fundamentally incorrect.

The results of this attitude, combined with state price control, were rising prices on the non-state market, increasing shortages of all goods and the grain crisis of the late 1920s. The latter resulted not from a *physical* shortage of grain but from an *economic* shortage resulting from prices which were unattractive to the producers and made feeding grain to animals more lucrative, and the limited availability of goods offered in return by the government. Hence, it can be seen that Gosplan and its annual control figures played an important role in undermining the NEP and in the events leading up to the collectivisation of agriculture and Stalinism. Accordingly, a decisive role in overcoming the legacy of Stalinism in Central and Eastern Europe was the abolition of the planning offices and restoring the key role of the annual budget and monetary equilibrium.

After long discussions of alternative proposals, Gosplan's three-volume work of more than 1,700 pages, *The Five-Year Plan of National Economic Construction of the USSR*, was approved in its optimum variant by the Fifteenth Party Conference in April 1929 and was published in May 1929. It subsequently had an enormous influence throughout the world.

Although numerous attempts were made in the USSR to construct a general or perspective plan for ten, fifteen, or twenty years, they never came to anything. They simply led to the publication of documents which speedily became irrelevant. After a short time, it became obvious that the main current problems were not those considered in the plan. On at least one occasion (the 1976–90 plan) the work was simply abandoned, and no document even published, as actual economic events evolved in a way quite unforeseen by those who had been working on the plan.

The prelude to socialist planning, 1929–33

Formally the First Five-Year Plan covered the period 1928–32. By the time it was adopted, however, 1928 and part of 1929 were already over. Economic policy in 1929–30 was dominated by the bitter struggle between the state and the peasantry, and in 1931–3 the country suffered

from a deep economic crisis including a major famine which caused millions of deaths. Although the ambitious goals outlined in the First Five-Year Plan played an important role in generating the crisis, the pricing and agrarian policies and theories of the Bolsheviks, the bad harvests of 1931–2 and Stalin's reliance on force and repression were the key elements in precipitating this catastrophe. Dominated by crisis, 1929–33 were formative years, in which it is impossible to speak of a viable economic system. It was really only from about 1934 that one can speak of a stable economic system.

Socialist planning, 1934–91

In the 1930s it became a trivial orthodoxy of the international Communist movement, and came to be widely believed outside it, that the economic system realised in the USSR was a rational and equitable form of economic organisation, and represented a higher mode of production than capitalism. This idea was based on a comparison between the economic growth realised in the USSR (about which exaggerated figures were published in the USSR and widely disseminated throughout the world) and the Great Depression in the capitalist world with its falling output, unemployment, bank failures and declining commodity prices. Both in the USSR and in the international Communist movement, the actual practice of Soviet planning came to be identified with that socialist planning about which Marx and Engels had thrown out their pregnant hints. Hence, when they came to power elsewhere, Communist parties naturally adopted – or in some cases had imposed on them – the Soviet model of economic planning. Accordingly, after World War II the Soviet model was adopted throughout the state-socialist world, first in Eastern Europe in 1949–53, then in China in 1953–7, and then in countries such as Vietnam and Cuba. There were naturally some differences between countries in their application of the model. For example, in Poland agriculture was never predominantly collectivised. Nevertheless, some important features of the model were common to all these countries. Moreover, aspects of the model (e.g. national economic plans, the stress on state ownership of the means of production, the restrictions on the operation of the price mechanism and a negative attitude to private enterprise) were widely copied throughout the world.

The main features of this economic system are analysed in Chapter 2.

The critique of socialist planning

The socialist planning system had a number of important achievements to its credit. It introduced mass production into Soviet industry. It greatly increased the output of a number of key industrial sectors, such as oil and steel. It produced the huge number of weapons necessary to emerge victorious from World War II. It provided full employment. It produced the world's first earth satellite. It invested heavily in human capital. Its educational system (except in the social sciences) was good by international standards, and produced large numbers of qualified people. During the 1950s the USSR enjoyed a golden age with growth rates much in excess of those in the USA or UK. However, socialist planning also had a number of problems. These included: shortages of consumer goods; inability to take full advantage of the world market for goods, capital and people; slow home-grown technical progress; and living standards that lagged behind those in capitalist countries. In addition, the high growth rates of the 1950s gradually declined.

The notion of socialist planning as a rational economic system, far superior to the anarchy of production under capitalism, was criticised by numerous economists. This criticism concerned the following points:

(a) Growth rates

Beginning with Colin Clark (1939) and continuing with Bergson (1953, 1961) and his school, academics criticised the published Soviet growth rates. They pointed out that using base-year prices to calculate growth under conditions of rapid structural change biases measured growth upwards (the 'Gerschenkron effect'). They drew attention to the hidden inflation which led some price increases to be measured as output increases. In addition, they stressed the pressure at all levels to report output and its growth even if there was no output, or, if there was, that it had not grown. They also drew attention to the political pressure to publish 'good' (i.e. high) figures.

(b) Enterprise behaviour

Study of the actual behaviour of Soviet managers (e.g. Berliner 1957) showed that the behaviour of Soviet firms was far from the selfless plan fulfilment imagined by some writers on planning. Soviet enterprise managers hoarded labour and materials to minimise the effect of supply failures. They utilised fixers to obtain

supplies in a system in which they were rationed and perpetually in short supply. They underreported their capacity (so as to obtain easy plans) and overreported their output (so as to obtain favourable evaluations from their superiors).

(c) Plan and outcome

Detailed comparison of plans and outcomes (Zaleski 1980) demonstrated that there was a great gulf between plans and outcomes, so that the very term 'planned economy' was illusory.

(d) Rules of thumb

Although there was a lot of talk about scientific methods of planning, close study of the system showed that extensive use was made of rules of thumb (what Nelson and Winter (1982) refer to as 'routines'). One important rule of thumb in the 1930s was, when importing technology choose either US or German models, if possible the former. Gregory (2004: 124) has drawn attention to others. These were: 'Heavy industry is more important than light industry. Defence orders are more important than civilian orders. Orders should be filled from domestic production, not imports. Services are unimportant and can be neglected.'

(e) Shortages

Shortages were widespread and a big nuisance for both individuals and enterprises. As Kornai (1980) pointed out, they were not accidental but systemic.

(f) Innovation

Innovation was slow. What innovation there was derived largely from the import of technology or competition with the capitalist world. Domestic innovation was weak.

Increased knowledge of the actual performance of socialist planning led in the 1970s and 1980s to the development of new terms to describe what had previously been (and still were in United Nations publications) referred to as the 'centrally planned economies'. Various authors used such terms as 'centrally managed', 'centralised pluralism', 'decentralised monolithism', the 'bureaucratic economy', the 'administrative economy', the 'shortage economy', or the 'command economy' to describe the system. In the USSR in the late 1980s the system was normally referred to as the 'administrative-command' economy. The late-Soviet author Naishul', seeking to adopt a behaviourist perspective, and to stress the role of bargaining and of initiative from below in the system, referred to it

as a 'bureaucratic market'. What was fundamental to this system was not the plan but: the role of administrative hierarchies at all levels of decision making; the absence of control over decision making by the population, either through the political or economic process; the social order in which it was embedded; its economic problems in the fields of technical progress and the provision of private goods; and its successes in the fields of full employment, conservative modernisation (Brus and Kowalik 1983) and economic growth in certain periods in certain countries.

The end of socialist planning in 1991 did not come out of the blue. It had been preceded both by a marked decline in economic performance and by a sharp ideological critique. Already in July 1989, the Soviet economist Bim, writing in the theoretical journal of the Communist Party, argued in favour of abolishing five-year plans since they were only suitable under 'conditions of a totalitarian social system'.

Socialist planning and a war economy

Bolshevik thinking about socialist planning began in a war situation (World War I and the subsequent civil and national wars) and under the influence of the German World War I war economy. Stalin stressed the importance of building up defence capacity. Subsequently, the famous Polish economist Oskar Lange described the traditional model of socialist planning as a '*sui generis* war economy' and the British economists Ely Devons and Alec Nove drew attention to the close relationship between the traditional model of socialist planning and the British war economy during World War II. This raises the interesting question, why do capitalist countries adopt a variant of socialist planning in wartime, when maximum efficiency is required, if experience of this system in the countries which adopted it as their permanent economic system is negative? The answer seems to be as follows.

First, a war economy allows the state to concentrate resources on the single goal of winning the war.⁴ In a war economy it may well normally happen that the resources available for civilian production and consumption will not be allocated where they would produce the greatest

⁴ In *The road to serfdom*, which is mainly concerned with criticising socialist planning, but which was written during World War II, Hayek (1944: 206) recognised that under conditions of war (and other temporary disasters) it may be necessary to subordinate everything to the single goal of winning the war (or overcoming the temporary disasters).

production of civilian goods and the greatest volume of consumer satisfaction. However, the state does not care much about that, and the population is prepared to put up with it, since their survival depends on the output of guns, not butter. On the other hand, under peacetime conditions in democratic countries, the population would not tolerate the government devoting the nation's resources to 'pyramids of sacrifice' (Berger 1974) while their living standards were being squeezed.

Secondly, the waste generated by socialist planning is offset by the additional resources obtained by the transition from a demand-constrained to a supply-constrained economy. Although in the long run, a supply-constrained economy generates characteristic forms of waste (Kornai 1980), in the short run, it allows additional output, and war reduces some of the negative effects (e.g. on labour morale). Socialist planning was not so much a system for allocating *given* resources as a system for *mobilising* resources. The importance of this was shown in Russia in the 1990s when the end of socialist planning led to unutilised reserves of production capacity and labour and allowed substantial potential investment resources to flee the country (capital flight).

Thirdly, the goal of winning the war is a powerful motivating force which can reduce coordination and motivation problems.

Fourthly, there is an important distributional aspect. A war economy allows the state to transfer to war purposes the normally large share of output devoted to luxury consumption under peacetime conditions. Furthermore, during a war the bargaining position of labour is strengthened. For the workers, a war economy may be beneficial because of its redistributive and anti-poverty aspects. A war economy may actually lead to an improvement in the living standards of that section of the population that was in poverty under the previous demand-constrained system. This was the case in the UK and the USA in World War II. As Rockoff (1998: 92) has explained:

when historians write about the prosperity of the war years they are focusing to some extent on the lower part of the distribution of income. Poor people from the south and from pockets of rural poverty in the Midwest, 'hoosiers', were drawn to war production centres in the Midwest, the south and the Pacific coast by high real wages. It is true that these workers often had to endure crowded living conditions and to work long hours at a pace to which they were not accustomed, so that the improvement in their economic welfare was not as great as the increase in their measured consumption. But such costs

must have been offset at least in part by the hope that these conditions were temporary and that at long last they had escaped from a life of grinding rural poverty.

The people in the lower part of the income distribution benefit both from the increase in employment and from redistribution from capitalist consumption to workers' consumption. Conversely, the transition from socialist planning to capitalism in Central and Eastern Europe was associated with an increase in inequality and poverty. Since under peacetime conditions the higher income groups normally have a disproportionate political influence, the distributional factor is an important reason why in general only in wartime do capitalist economies use socialist planning methods.

Hence, under some conditions, there are economic and social benefits from this type of organisation. For example, the UK has a very Soviet system for medical care, the National Health Service. This is a tax-funded, predominantly non-market, state-controlled system for the provision of medical care. Despite its Soviet features (such as queues, rationing and centralised regulation), it is popular with the public because of its distributional aspect – it provides the entire population with medical care which is free to the user.⁵

Reform of socialist planning

Discussion about reform of socialist planning goes back to the dawn of the 'planned' economy. Implementation of reform began in Yugoslavia in 1950, followed by: Poland in 1956; Hungary from 1968; China from 1978; and the USSR from 1986. These reforms reflected dissatisfaction with the results of socialist planning in such key fields as agriculture, personal consumption, foreign trade, technical progress and economic growth. In particular, the steadily declining rate of economic growth in the USSR, the homeland of the traditional model, from 1958 onwards, suggests that the model was probably not viable in the long run in a dynamic international capitalist environment (even if its death was accelerated by the unintended consequences of perestroika).

In some cases, the reforms simply made things worse. The classic example is the USSR, where perestroika led to an economic catastrophe.

⁵ Another reason why it is popular is fiscal illusion – the illusion that something is free when it is paid for out of taxes rather than by the users.

In other cases, such as Yugoslavia, Hungary and China, the reforms, together with changes in economic policy and/or favourable factors in the economic environment, led to considerable economic improvements (e.g. an increase in living standards). Even in those countries where the situation after the reforms were introduced was better than before, there was still widespread dissatisfaction with the economic system. For example, in Hungary in the 1970s and 1980s there was widespread dissatisfaction with the steady increase in the gap between Hungarian and Austrian living standards. In China there was widespread dissatisfaction with corruption, oppression and environmental deterioration. Similarly, policy makers in Hungary in the 1970s and 1980s were envious of the economic achievements of Western Europe, and in China were conscious both of the lag behind the advanced countries and the need for further economic reforms. Hence, reformed socialist planning, like the traditional model, failed to meet the aspiration of the elite for a superior economic system to that of capitalism, and of the mass of the population for an attractive economic model.

From reform to system change

System change became possible when the Communist Party either lost power or changed its views completely and itself introduced a capitalist system. In Eastern Europe and the Former Soviet Union (FSU) politicians came to power committed to liberal democracy, predominantly private ownership, full integration into the world market, and the abolition of the bureaucratic allocation of resources. This happened in Central Europe in 1989 and in Russia and some of the other former Soviet republics in 1991.

System change in Eastern Europe and the FSU turned out to be a painful process marked by inflation, unemployment, inequality, criminalisation and state collapse (in some countries). Nevertheless, it brought some concrete benefits (full shops, freedom of all kinds – from religious to travel). By the middle of the second decade of the twenty-first century, the gains already achieved, and the hope for more, seemed likely to draw all the former East European and Baltic state-socialist countries in due course, although at varying speeds, along the road to an OECD-type economic system, or to misuse a Chinese term, to capitalism with national characteristics. Eight of them joined the EU in 2004, and two more joined in 2007. As for the FSU (less the Baltic countries), the end point of its

systemic change process varied between countries. Central Asia and the south Caucasus gradually became parts of the developing world. Its largest country, Russia, experienced a very difficult transformation process but its huge natural resources, in particular oil and natural gas, rescued the economy at the beginning of the twenty-first century from the depression, impoverishment and primitivisation characteristic of the Yeltsin period.

However, not all countries that rejected socialist planning made a complete system-switch. Some of them (e.g. China and Vietnam) retained the political dictatorship and developed an economic system which combined a largely market economy and strategic integration into the world economy with a dominant state role in the economy. By the middle of the second decade of the twenty-first century this model had been successful in generating remarkable economic growth and transforming China into the workshop of the world.

The international impact of socialist planning

The Soviet model of economic planning had an enormous impact throughout the world. It led to the adoption of national models of economic planning in many countries. Already before 1939 this had influenced economic institutions and policy in capitalist countries such as the USA, Germany, Japan and Mexico. After World War II, economic planning spread to countries such as the Netherlands and France, where it acquired national characteristics, and differed sharply from Soviet-type planning. After the collapse of the colonial empires it spread to many developing countries. Experience with economic planning in all these countries has been varied. In some countries economic planning has been abolished, or is by now vestigial, and has little impact on economic policy. In others, it has found a useful niche within the policy process. In the developing world, the high hopes once associated with economic planning were generally disappointed (Streeten and Lipton 1968, Faber and Seers 1972). On the other hand, for a long time, planning in South Korea seemed to be more successful. In the former state-socialist world, economic planning has been ended in the former USSR and the former Eastern Europe. In China the State Development Planning Commission ceased to exist in 2003, and was replaced by the State Development and Reform Commission. China's Tenth Five-Year Plan (2001–5) was its last and was followed by the Eleventh Five-Year

Guidelines or Programme.⁶ These terminological changes reflected the discrediting of ‘planning’ and the wish to disassociate policy from it.

Capitalist triumphalism

The collapse of state socialism in 1989–91 gave rise to what has been termed ‘capitalist triumphalism’ (Wiles 1992) or ‘liberal optimism’ (Chavance 1994: 182–4). This exalted in the collapse of an inefficient economic system, advocated a rapid transition to the rival system; and praised that system’s properties. This mood lasted just ten years, from 1989 to 1998. It was undermined both by the chaos in Russia in the 1990s (Sapir 1996) and the deep economic and social problems in other so-called ‘transition’ countries such as Ukraine, Belarus, Romania, Bulgaria and Albania, and also by the world economic crisis of 1997–8. It was further undermined by the world economic crisis of 2008 onwards. These world economic crises demonstrated: the volatility of financial markets; the way financial markets oscillate between euphoria and panic; the risks of banking fragility; the dangers to national economies of capital surges; the costs of the demand-constrained system (e.g. unemployment); and the socio-economic costs of capitalist depressions (e.g. in Indonesia in 1998–9 and Greece in 2008–). These events demonstrated that, although Marx and Engels had been wrong to assume that the replacement of the market by planning would lead to an attractive economic and social system, they had been right to think that an unregulated market economy was socially undesirable.

Conclusion

The seventy years 1921–91 marked the rise and fall of socialist planning. The latter, in its traditional Soviet-type form, turned out to be an unattractive system which was not viable in the long run in a dynamic international capitalist environment. The idea of national economic planning has been deeply discredited. The collapse of the state-socialist system in Eastern Europe and the USSR gave rise to a mood of capitalist triumphalism, which lasted only ten years, and was undermined by the difficulties of ‘transition’, the behaviour of the world capital

⁶ These ‘Guidelines’ or ‘Programme’ are often informally referred to as a ‘Plan’ although this is no longer the official terminology.

market, the inequality and unemployment in the capitalist countries, and the depressions in some of them. In China and Vietnam a crucial aspect of socialist planning – the political dictatorship – was retained after socialist planning as a whole was jettisoned, and this (combined with major policy and systemic changes) enabled them to experience rapid economic growth. Marx and Engels were right to argue that an unregulated market economy was socially undesirable, but wrong to assume that the replacement of the market by planning would lead to an attractive economic and social system. Stalin was right to stress the need for backward countries to catch up, but he and his followers were wrong in thinking that the system he created would enable the countries which adopted it to catch up with the advanced countries in the civilian sector.

SUGGESTIONS FOR FURTHER READING

Marxist and anti-Marxist views on planning

- F. Engels, *Anti-Dühring* (Moscow, 1947; Peking, 1976; first published in German, 1878).
 N. Bukharin and E. Preobrazhensky, *The ABC of Communism* (London, 1969; first published in Russian, Petersburg, 1920).
 J. Stalin, *Economic problems of socialism in the USSR* (Moscow, 1952).
 M. Dobb, *Argument on socialism* (London, 1966).
 F. Hayek, *The road to serfdom*, 1st edn (London, 1944).

Globalisation and its effects

- T. H. van Laue, *Sergei Witte and the industrialization of Russia* (New York, 1963).
 T. H. van Laue, *Why Lenin? Why Stalin?* (Philadelphia, 1964).
 O. Schell and J. Delury, *Wealth and power* (London, 2013).

Socialist planning in practice

- R. W. Davies, M. Harrison and S. G. Wheatcroft (eds.), *The economic transformation of the Soviet Union, 1913–1945* (Cambridge, 1994).
 J. Kornai, *Overcentralization in economic administration* (Oxford, 1959).
 P. Gregory (ed.), *Behind the façade of Stalin's command economy* (Stanford, CA, 2001).
 P. Gregory, *The political economy of Stalinism* (Cambridge, 2004).
 J. Kornai, *The socialist system* (Oxford, 1992).

R. W. Davies and O. Khlevnyuk, 'Gosplan', in E. A. Rees (ed.), *Decision-making in the Stalinist command economy* (Basingstoke, 1997), pp. 32–66.

M. Ellman, 'The political economy of Stalinism in the light of the archival revolution', *Journal of Institutional Economics* 4(1) (2008), 95–125.

War economies

E. Devons, *Planning in practice: Essays in aircraft planning in wartime* (Cambridge, 1950).

H. G. Vatter, *The US economy in World War II* (New York, 1985).

Economic planning in developing countries

P. Streeten and M. Lipton (eds.), *The crisis of Indian planning* (London, 1968).

M. Faber and D. Seers (eds.), *The crisis in planning* (London, 1972).

Transition

World Bank, *Making transition work for everyone* (Washington, DC, 2000).

J. Beyer, J. Wielgoths and H. Wiesenthal, *Successful transitions* (Baden-Baden, 2001).

E. Vogel, *Deng Xiaoping and the transformation of China* (Cambridge, MA, 2011).

S. Clarke, *The development of capitalism in Russia* (London, 2007).

2 | *The traditional model*

Characteristics of the traditional model

According to the Polish economist Brus (1972: chapter 3), an early and justly famous analyst of the traditional model, its main features were as follows:

1. Centralised decision making. Practically all decisions (except for individual choice in the fields of consumption and employment) were concentrated at the national level.
2. The hierarchical nature of plans and the vertical links between different parts of the economic apparatus. This meant that the whole economy was organised as a complex mono-hierarchical system in which higher organs gave orders to lower ones which disaggregated them and passed them on to their inferiors.
3. The imperative nature of the plans. This meant that the plans took the form of instructions, binding on the lower organs, rather than, say, forecasts which the enterprises were free to accept or reject as a basis for their decision making (as in indicative planning).
4. The predominance of economic planning and calculation in physical terms. The central role in the system was played by the physical allocation of commodities and the attempts by the planners to ensure that these physical allocations were consistent (i.e. that the planned allocation of each commodity was not incompatible with its planned production).
5. The passive role of money within the state sector. As a result of physical allocation, money played a subordinate role. For example, to obtain wanted commodities, it was far more important to have an allocation certificate than to have money (which could often be obtained automatically for plan purposes).

In a well-known paper, the US economist Grossman (1963) picked out the following key features of the traditional model:

1. Individual firms produced and employed resources mainly as a result of instructions from higher bodies (this corresponds to Brus's third characteristic).
2. The hierarchical nature of the economy (this corresponds to Brus's second characteristic).
3. The authoritarian political system in which it was embodied.
4. The bulk of the planning work was concerned with ensuring the consistency of the plans.
5. The planning was primarily physical planning (this and the previous feature together correspond to Brus's fourth characteristic).

In his classic work *The socialist system* (1992) the Hungarian economist Kornai treated the traditional model as a coherent system in which the main lines of causality ran as follows (with each feature determining the subsequent one):

1. Undivided power of the Marxist–Leninist party and the dominance of its ideology;
2. Dominant position of state and quasi-state ownership;
3. Predominance of bureaucratic coordination;
4. Plan bargaining, quantity drive, paternalism, soft budget constraint, weak responsiveness to prices;
5. Forced growth, shortage economy, labour shortage and unemployment on the job.

Conceptualising a complex historical reality as an (institutional) model is inevitably influenced by the author's theoretical background, empirical knowledge and classification used. The present author regards the main features of the traditional model as:

1. state ownership of the means of production;
2. political dictatorship;
3. a mono-hierarchical system;
4. imperative planning;
5. a subordinate role for money, profit, prices and banks.

Consider each in turn.

State ownership of the means of production

In the traditional model, the dominant form of ownership is state ownership. The state owns the land and all other natural resources and all

the enterprises and their productive assets. Collective ownership (e.g. the property of collective farms) also exists, but plays a subsidiary role, and is expected to be temporary. In due course, it is expected to be transformed into the higher form of state ownership. Private property in the means of production (e.g. animals and tools used on the private plots of collective farmers) also persists on a small scale in some sectors, but is frequently subject to official campaigns directed against it (e.g. during the Cultural Revolution in China). The only fully accepted kind of private property is that in consumption goods, but even here the state sector receives priority. Those who use state-owned consumption goods (e.g. housing) normally receive greater benefits from them (because of their higher quality) than those who rely on privately owned consumption goods.

State ownership of the means of production is justified on three grounds: first, that it is necessary for national economic planning; secondly, that it is the highest form of social ownership of the means of production; thirdly, that it enables consumption goods to be allocated in accordance with the deserts principle.

State ownership of the means of production allows the state to allocate resources to key national economic tasks. For example, the state can minimise the resources devoted to financial and other 'non-productive' services,¹ and allocate massive resources to heavy industry, scientific research, education and regional development. In this way, it can accelerate growth, and attempt to create the conditions for overtaking and surpassing the capitalist world. From a Marxist-Leninist point of view, the frittering away of resources in capitalist countries (e.g. in activities such as advertising, trading in financial assets, lengthy and expensive legal proceedings, etc.) and their failure to mobilise many of the resources available (unemployment, low participation rates, unused

¹ In the traditional model national income accounting took the form of MPS (material product system) rather than SNA (system of national accounts) accounting. The major difference between the two is that the former only includes material production and excludes 'non-productive' services such as medical care, education and (usually) passenger transport. This difference in methodology was one of the reasons why the national income statistics of countries with the traditional model were non-comparable with the national income statistics of countries not applying the model. It was also one of the reasons why the transition from the traditional model to capitalism was associated with a substantial change in the system of national income accounting.

production capacity) contrast adversely with the high mobilisation of resources in the traditional model.

The class struggle which, according to Marxists is one of the fundamental contradictions of capitalism, is ultimately based, according to Marxism, on the division of society between the owners of the means of production and the proletarians who do not own the means of production, and have to sell their labour power to the capitalists. In order to overcome this contradiction, Marxists advocate the socialisation of the means of production. In the traditional model, socialisation is identified primarily with state ownership. As the (1977 or Brezhnev) Constitution of the USSR put it (articles 10 and 11), 'The foundation of the economic system of the USSR is socialist ownership of the means of production in the form of state property (belonging to all the people) and collective farm-and-cooperative property . . . State property, i.e. the common property of the Soviet people, is the principal form of socialist property.'

With state ownership of the means of production and of their products, the state is able to allocate consumer goods in accordance with the contribution that individuals have made to building up the new society. As the widow of the top economic policy maker and administrator in Poland in 1949–56 explained (Toranska 1987: 28) in answer to a question about the exceptionally early retirement permitted for a number of formerly prominent Party leaders:

It was all according to the law. There are legal provisions for such privileges for activists. After all, socialism is built on the principle of equality before the law, not total equality for everyone. And the law clearly states that those who have rendered services to the Polish People's Republic have certain privileges. They used to be certified by special ID cards, those have gone out of use now but the custom has been retained. A very appropriate rule.

Asked about the numerous villas enjoyed by Bierut (the Polish leader up to 1956), she replied:

Well, was he supposed to stifle in three rooms? Everyone has to have appropriate living conditions guaranteed according to his rank and burden of responsibility. The time of total equality may come, but not until communism; under socialism you can't have a minister earning and living like a shopkeeper, mainly because then no one would want to be a minister. In socialism everyone should be given not an equal share, but a share according to his deserts.

*Political dictatorship*²

The political system in which the traditional model is embedded is a dictatorship, that is, a system in which the ruling group impose their will on society, and deal with opposition (real and imaginary) by repression (i.e. arrest, deportation, imprisonment, execution). This dictatorship was originally known as the 'dictatorship of the proletariat'. This formula expressed the idea that it was a dictatorship of the proletariat, by the proletariat, for the proletariat. Although the formula 'dictatorship of the proletariat' was abandoned in the USSR under Khrushchev, along with the Stalinist terror which it had been used to legitimate, it was retained elsewhere. For example, in China it is still orthodox. A 'people's democratic dictatorship' is the officially favoured description of the political system in China, but in essence this is the same as the 'dictatorship of the proletariat'.³

Since, naturally, the proletariat as a whole cannot exercise a dictatorship, it must be exercised by some representative body. In the traditional doctrine, that body is the Communist Party. As the Chinese Constitution puts it, 'Under the leadership of the Communist Party of China and the guidance of Marxism-Leninism and Mao Zedong Thought, the Chinese people of all nationalities will continue to adhere to the people's democratic dictatorship and follow the socialist road ...'

The dictatorship has important economic consequences. For one thing, it makes disasters more likely. Because feedback is suppressed by censorship and repression, it is much easier than would otherwise be the case to pursue policies which have disastrous consequences, such as the collectivisation of agriculture. Even when these policies lead to famine, the extent of the famine can be hidden by censorship and control over the movement of people. The leadership has an interest in hiding the extent of the famine so as not to undermine the image of the Glittering Future towards which the Party is supposedly leading society.

² The necessity of dictatorship for socialist planning was pointed out by Hayek (1944: 70).

³ According to the Preamble to the Constitution of the People's Republic of China: 'The people's democratic dictatorship led by the working class and based on the alliance of workers and peasants, which is in essence the dictatorship of the proletariat, has been consolidated and developed.'

It is not an accident that the worst famines of the twentieth century were in China and the USSR (see Chapter 6).

More generally, by simultaneously politicising all decisions and eliminating feedback mechanisms, the dictatorship generates specific forms of waste. These are basically of two types. There is waste resulting directly from counterproductive central policies, and waste resulting from unintended (by the leadership) responses by local officials and the population at large to central policies. Examples of the former range from the economic crisis of 1931–3 in the USSR, the economic crisis of 1958–62 in China, and the economic crisis of 1979–80 in Poland, to the decline in labour productivity in Cuba in the 1960s and the poverty and unemployment in Vietnam in the 1970s and 1980s.

An example of the second kind of waste, that resulting from the unintended response of local officials and the population at large to central policies, is provided by the reaction to the ‘non-labour incomes’ campaign of 1986 in the USSR under Gorbachev. As a result of this, the food and housing situations in a number of Soviet cities worsened. Some local officials began preventing the delivery of food products grown on private plots to the market in order to prevent the earning of ‘non-labour incomes’. At the same time, people became afraid to let out spare rooms in their flats in case local officials treated the rent as ‘non-labour income’. At a time when the national leaders were making great efforts to improve the food and housing situations, the unintended responses to their own policies were making them worse!

The dictatorship was reflected in socialist planning thought in the important principle of ‘partymindedness’. The principle of ‘partymindedness’ meant that the plan was a concrete expression of Party policy. It had to look at all problems from a Party point of view. This principle was of great importance in all the state-socialist countries. The partymindedness of planning was ensured, *inter alia*, by Party control over appointments and promotions. The State Planning Commission (Gosplan in the USSR) itself was under the supervision of the Department of Planning and Finance Organs of the Party’s Central Committee (CC). Other departments of the CC (e.g. the Department of Heavy Industry, the Department of Defence Industry, the Department of Agriculture, etc.) supervised particular branches of the economy, controlling, in particular, appointments and policy. Party

control over appointments in the economic apparatus was simply one example of the *nomenklatura* system (Voslensky 1984) at work.⁴

The principle of partymindedness was also very important for published economic statistics. This led to distortions both of omission and of commission. The former led to the non-publication of sensitive data. The latter led to the publication of false data. Some examples of distortion by omission are as follows. In 1969–85 the Soviet statistical handbooks omitted data on prices on the collective farm markets (which previously had been regularly published). The intention, presumably, was to hide the significant degree of inflation which the USSR experienced in the Brezhnev period. Similarly, the publication of Soviet infant mortality statistics stopped in 1974, and resumed again only in 1986. The reason, clearly, was that Soviet infant mortality in the late Brezhnev period was rising and that to have acknowledged this in published official statistics would have violated the principle of partymindedness.

As for distortions in published data, these have been described by the prominent Soviet statistician and Director of the Research Institute of the Soviet statistical office (TsSU/Goskomstat) in 1979–89, Eydelman (1998: 76). He has described how published statistics were ‘improved’ prior to publication. He has also summarised the results of the recalculation of the official growth statistics begun at Goskomstat at the end of the perestroika period.

The reevaluation for 1961–1990 revealed the official overstatement of the growth rates of gross social product by over 1.7 times, national income by 2.1 times, and industrial production by more than 2 times, of which machine-building and metalworking were overstated by 3.2 times.⁵ In our estimations the annual average growth rate of the gross social product and national income, respectively, decreased from 4.4% and 3.4% during the period

⁴ The *nomenklatura* was both the list of appointments in the gift of a particular Party committee and the persons qualified to fill them. By ‘*nomenklatura* system’ is meant the system in which all significant posts were filled by the appropriate Party committee from persons on the list of the appropriate Party committee, regardless of whether or not the post concerned was formally appointive or elective. The *nomenklatura* system was one of the most important ways in which the Party implemented the dictatorship.

⁵ [Original footnote] ‘The growth of national income was more exaggerated than that of gross social product due to the systemic underestimation of the growth of material cost, so as to show a declining material intensity of production. Our calculations revealed that the growth of material cost actually outpaced that of gross social product.’

1961–1975 to 1.6% and 1.1% in 1976–1990. By contrast, the TsSU estimate for gross social product in 1976–90 was 3.1% and for the national income it was more than double our estimate. Since the population increased by 13.9% in 1975–1990, the per capita growth rate in that period was under 1% p.a.

This statistical falsification was intended to mislead outsiders. However, it ended up by misleading the Soviet leadership itself, and supported the complacency of the late Brezhnev and Chernenko periods. As Eydelman (1998: 76) pointed out:

By overstating the rates of economic growth, especially in the 1980s, official statistics gave the leadership a relatively favourable picture of socio-economic development. The conclusion the leadership drew from these reports was that the Soviet economy was developing (albeit with shortcomings), and in certain branches was even developing well. No warnings of the imminent collapse of the Soviet economy ever made their way into the reports presented to the authorities.

A mono-hierarchical system

The result of combining state ownership of the means of production with political dictatorship was to create a ‘mono-hierarchical’ system. This term describes an economy in which the various economic hierarchies (industrial, labour, financial, supply, banking, internal and external trade, investment, agricultural, technical progress, national, regional and local) are ultimately all responsible to the Party leadership. The central economic bodies may be numerous and disunited, the local bodies numerous and at odds with each other and with the central bodies, but ultimately authority flowed from the centre to the periphery, in accordance with the principle of ‘democratic centralism’.

The mono-hierarchical nature of the traditional model meant that vertical relations of hierarchy and subordination dominated horizontal relations of contract and exchange. Hence there was (normally) an absence of competition and a dominant role was played by the fulfilment of evaluation criteria imposed from above, rather than criteria of usefulness and value for money insisted on by customers.

Imperative planning

Planning in the traditional model primarily took the form of orders, binding on the recipients, as in any army or civil service. Characterising

planning in the traditional model, Stalin long ago observed that 'our plans are not forecasts but instructions'. Whereas in some models planning takes on an 'indicative' form, or is merely political or external (e.g. to impress aid givers), in the traditional state-socialist model it took the form of instructions binding on the participants in the economy. The characteristic feature of the 'planned economy' in the traditional model was that economic activity proceeded in accordance with instructions from above. This identified planning with the bureaucratic allocation of resources.

In the traditional model, the plans are largely long lists of output targets. They are operationalised by two procedures: listing the corresponding investment projects to be completed, continued or initiated; and 'breaking down' the plan to individual enterprises (via intermediate organisations such as the ministries). 'Breaking down' the plan means disaggregating the plan to link national targets with the productive activity of individual enterprises. These lists and the 'broken-down' production targets become instructions binding on the relevant bodies. (In accordance with the important 'address principle', in the traditional model to each plan target there corresponds an organisation or address responsible for carrying it out. This ensures the imperative character of the plans.)

A subordinate role for money, profit, prices and banks

The role of money in the Soviet economy was limited by the fact that many consumer goods (housing, public transport, education, medical care) were basically allocated (or heavily subsidised) rather than sold at market prices. (Rents, fares and charges for medicines did exist, but they were relatively insignificant.) Because of this, and because of the fact that producer goods were rationed, money in the traditional model was not a universal medium of exchange. There were many things it could not buy. Furthermore, the role of money as a store of value was undermined by inflation and periodic (partial) confiscation, as in the Soviet monetary reform of 1947. In addition, in principle there was a sharp division between bank money, used in transactions between enterprises in accordance with the plan, and cash money, used to pay wages and usable for the purchase of consumer goods.

Most planning work was concerned with calculating material balances, that is balance sheets in physical units of particular goods, in order to try and ensure a balance between the need and availability of those

goods (Levine 1960; Ellman 1973: chapter 1). There were material balances for the production and distribution plans, labour balances for the labour plan, fuel–energy balances for the plans of the energy sector, and financial balances for the financial plan. A major innovation in Soviet planning in the 1960s involved the introduction into planning work of a new type of integrated balances, input–output.

Nevertheless, money did play a significant role in the traditional model. One of the functions of money in the traditional model was to enable the banking system and financial agencies to check/audit the behaviour of the enterprises (known in the USSR as ‘control by the rouble’). Furthermore, although the plans were formulated primarily in physical terms, as tonnes of this or cubic metres of that, the allocation of financial resources was very important and frequently discussed at the highest level (Gregory and Harrison 2005). This resulted from the need to aggregate and make comparable the output of a very large number of concrete goods. Money was also useful for enterprises, and they sought it both by attempting to raise prices and by attempting to obtain subsidies and grants from the higher bodies (e.g. the relevant ministry) and the financial system.

Neither the state nor enterprise managers were primarily motivated by profit-seeking. As Stalin explained to the first US workers delegation (1927) ‘the extraction of profit is neither an aim nor a motive force in our socialist industry’. Reverting to this question after two decades of experience of the traditional model, he stated in *Economic problems of socialism in the USSR* (1952) that in a socialist planned economy profitability must be considered ‘not from the standpoint of individual plants or industries, and not over a period of one year, but from the standpoint of the entire national economy and over a period of, say, ten or fifteen years’. By analogy with the ‘short-termism’ that is said to characterise financial markets, this might be called ‘long-termism’. Hence, in the traditional model there were many ‘planned loss’ enterprises. These were enterprises which were expected by the plan to make losses in the plan period. These losses were automatically covered by the state budget and had no adverse economic effects on the enterprises concerned.

Prices in the traditional model were quite inappropriate as guides to the efficient allocation of resources, and were (generally) not used as such. This resulted from the state determination of all prices at infrequent intervals; the fact that enterprise activities were supposed to be determined by the plan they received from above; the rationing of producer

goods; and the fact that prices were fixed on a cost-plus basis. Prices were mainly important in aggregating diverse goods.

The banking system was expected to authorise payments necessary for the fulfilment of inter-enterprise contracts in accordance with the plan; check that these payments were indeed necessary for plan fulfilment; and use the savings of citizens in the state savings bank to help finance the state budget. In the traditional model there was no bank financing for individuals, nor (in principle) for unplanned enterprise activities, nor was there trading in domestic financial assets. The Minister of Finance was a significant, but subordinate, figure in the economic and political hierarchy.

According to Marxist–Leninist doctrine, the survival of money and financial flows in a socialist planned economy was something of an anomaly which would in due course disappear. Stalin assumed that in the higher phase of communism, when collective ownership would have disappeared and state ownership would have become universal, goods would circulate on the basis of direct product exchange (i.e. physical exchange without the intermediation of money).

Waste and unplanned activity in the traditional model

There is an extensive literature, with important contributions by Liberman (1950), Berliner (1957), Kornai (1959), Bergson (1964), Grossman (1977) and Xue Muqiao (1981 and 1986), which describes and explains the waste and unplanned activity in the traditional model. Perhaps the main issues dealt with in this literature are: the dictatorship over needs; the difficulties with innovation; the long construction and running-in periods; the instability of the plans; and the second and third economies.

The dictatorship over needs

Experience showed that, instead of the traditional model ensuring the fulfilment of social needs, it often prevented the satisfaction of social needs. The resulting situation was described by Fehér, Heller and Markus (1983) as a ‘dictatorship over needs’. This situation resulted from a number of factors.

(1) Bureaucratisation

Both empirical and theoretical analysis emphasised the role of bureaucratisation under socialism. On the basis of the experience of War

Communism, Kritsman (1924: 143) argued that ‘*The basic distortion of the internal relations of the proletarian-natural economic system was its bureaucratism.*’ On the basis of his experiences in the USSR in the early 1930s trying to help in the building of socialism, the US engineer Witkin (1991: 133) considered that: ‘The country moves ponderously forward, much slower than is commonly believed, with incredible waste and human suffering.’ He ascribed the main responsibility for this state of affairs to the bureaucratic methods of Soviet officialdom. Similarly, in the course of his well-known theoretical analysis of the economics of socialism, Lange (1937: 127–8) stated that ‘The real danger of socialism is that of a bureaucratisation of economic life, and not the impossibility of coping with the problem of allocation of resources.’

In the traditional model, bureaucratic considerations (risk aversion, plan fulfilment, bounded rationality, subservience to superiors) take precedence over economic considerations (costs, markets). Hence cost control, technical progress and customers suffer. As the German author Bahro (1978: 222) argued, ‘The essential obstacle to economic dynamism [in the traditional model] consists in the fact that right down to the factory director and head of department, the laws of bureaucratic behaviour time and time again take precedence over economic rationality, which in *this* connection, at least, would be the higher criterion.’

(2) Adverse effects on personal consumption

A very important feature of the traditional model was its adverse effect on personal consumption. Aspects of this were:

- Widespread shortages and queues. The long time devoted to shopping, the intermittent supply of basic consumer goods and the long waiting lists for durables such as housing and cars were notorious features of the traditional model;
- A very limited assortment of goods and services, with many imported goods and some very important services, such as repairs to housing and consumer durables, being almost unavailable in the legal economy;
- Poor quality and availability of food products;
- Poor quality of manufactured consumer goods;
- Slow introduction of new consumer goods.

These topics are discussed further in Chapter 8.

(3) Production for plan rather than for use

In a system of imperative planning, the main job of the enterprises is to carry out orders from above. It is for this that they are judged. Whether or not the output meets the wishes of consumers is a matter of indifference for the enterprises.⁶ Hence, under the traditional model there was often a substantial gulf between the volume of output and its usefulness. The discrepancy between the impressive production figures and the meagre volume of consumer satisfaction derived from them had become a very sore point in the USSR in the perestroika period. As Abalkin (1987: 14), the Director of the Institute of Economics of the USSR Academy of Sciences, very sensibly observed:

According to the data for 1985 we produced 788 million pairs of shoes and the USA, West Germany, England and France taken together, 700 million pairs. Moreover, their population is one and a half times that of the USSR. We do not need so many shoes. Furthermore, the kind of shoes that many enterprises are currently producing we also do not need. There is no need to plan the output of shoes. Let the enterprises produce those shoes, which the consumers need, and which they order via the wholesale trade.

The fact that state control over the economy can cause a divergence between what is produced and what is actually needed is not a modern discovery. It was already well known two thousand years ago. It was, for example, discussed in the famous *Discourses on salt and iron*⁷ which record a debate in the first century BC in China on the state monopolies of salt and iron. In this debate popular representatives pointed out that the state monopoly of iron led to a situation in which, instead of producing iron tools suitable for the situation in particular places, only standard tools were produced. These were often not suitable for farming needs. They argued for the abolition of the state monopoly so as to ensure the provision of suitable tools at reasonable prices.

(4) Wasteful criteria

The fact that the traditional model was one of predominantly physical planning meant that the assessment of the work done by enterprises

⁶ In the defence sector alone the situation was different because of the presence in enterprises of military representatives with the authority to refuse to accept products that did not meet the specifications of the armed forces. For more information about this, see Chapter 4.

⁷ The English translation is *Discourses on salt and iron* (Leiden, 1931), trans. E. M. Gale. The argument in the text can be found on p. 33.

often depended on their meeting physical output targets, e.g. output measured in tonnes. These assessment criteria often stimulated waste (Nove 1958). For example, a Chinese textile enterprise, for which quality, defined as the absence of imperfections, was an important target, achieved this very efficiently by cutting out all imperfections so that every length of cloth was dotted with holes (Donnithorne 1967: 160)! Waste was also generated when aggregated criteria in prices were used, e.g. gross output. For example, the central planners, concerned with maximising output, often ignored the cost of output and its usefulness. Although the USSR overtook the USA in the production of a number of important intermediate goods (e.g. in 1990 the production of steel in the USSR was 77 per cent greater than in the USA), they were often produced less efficiently and the volume of final products derived from them was often lower than in the USA. In some of the experiments which preceded the Kosygin reform it was found (Khanin 1967a) that instructing clothing factories to produce according to the requirements of shops led to a fall in the growth rate. This did not signify that the experiments were a failure. It simply resulted from the fact that, when given a choice, the shops ordered a wider assortment of clothes than the planners would have ordered. As a result production runs were shorter and there was less 'output' (measured in constant prices rather than in units measuring consumer satisfaction).

The ministries were primarily concerned with plan fulfilment and hence sometimes ignored proposals which would have raised national economic efficiency but which might have jeopardised a ministry's plan, such as the construction of specialised enterprises to provide low-cost components for enterprises belonging to several ministries (Selyunin 1968). The enterprises were primarily concerned with securing a low plan for the production of goods with which they were familiar. They had little incentive to pay attention to the needs of customers, to innovate or to ensure the most efficient use of the resources which they had. Xue Muqiao (1981: 198) explained, for example, that in China:

Many enterprises produced large amounts of sub-standard products because they devoted exclusive attention to quantity and neglected quality. In the last two decades, the quality of many products has not improved but worsened. Although the targets for output and output value were overfulfilled, great losses were caused to the state and the people. For instance, the quality of tractors was so poor that they often lay idle after the peasants spent much of

their savings to buy them. The cost of farm production rose, while agricultural labour productivity remained the same.

(5) Slack plans

A notorious feature of the traditional model was the tendency by enterprises to strive for a slack plan, i.e. a plan which provided for the production of less output than possible and/or the use of more inputs than was necessary. Socialism was supposed to have eliminated the contradiction between the productive forces and the productive relations which Marxists consider to be the reason for the inevitable downfall of capitalism. The fact is, however, that under state socialism too there was a conflict between the socio-economic system and the development of production. This was regarded as undesirable by Soviet policy makers and various measures were implemented which were intended to end this practice. For example, a major feature of the Kosygin reform of 1966–9 was a new incentive system designed to motivate enterprises to aim at taut plans. The Kosygin reform failed in this respect because of the prevalence of administrative uncertainty, the system of incentives for managerial personnel, and the risk-averting behaviour of Soviet managers.

(6) Rationing of producer goods

The waste which resulted from the rationing of producer goods was already familiar to observers of War Communism. Kritsman (1924: 102–3) argued that both capitalism and the bureaucratic economy are inefficient, but that their inefficiency takes different forms. Whereas under capitalism there are difficulties with sales and the accumulation of stocks with producers, under the bureaucratic economy there are difficulties with supply and the accumulation of stocks with users.

No surpluses can accumulate with the producers, since the product is not superfluous in an absolute sense; as a matter of fact, if such a surplus is formed, it will be immediately allocated when the first demand for it is announced. The multitude of independent allocating organisations, however, unavoidably causes situations in which, for example, an organ demanding paraffin lamps gets all the necessary lamp chimneys (100 per cent) from one economic organisation, but only 60% of the holders from another, 50% of the wicks from a third one, and only 20% of the burners from a fourth. In this case $\frac{4}{5}$ of the lamp chimneys, $\frac{2}{3}$ of the holders and $\frac{3}{5}$ of the wicks will prove to be superfluous and lie wasted. A month later, the burners, so much

needed by the first user, will lie unused with another organ needing paraffin lamps. Similar cases are unavoidable with fuels, raw materials, and various complementary materials.

This type of waste persisted throughout the whole history of the traditional model, in all the countries in which it was introduced. For example, a Soviet estimate (*Khozyaistvennaya* 1968: 36) suggested that in the mid 1960s 25 per cent of all working time in the USSR was being lost through difficulties with the supply system.

The effects of the rationing of producer and consumer goods are considered further in Chapter 8.

(7) The residual principle

An important aspect of the traditional model was the 'leading links principle'. This meant that, at any given moment, the efforts of the planners, and the allocation of material and human resources, were directed to certain priority sectors, the leading links. Precisely which sectors were the leading links naturally varied over time. In the USSR in the 1930s the leading links were iron and steel, heavy engineering, power generation, and tank and aircraft production; in the 1940s armaments; in the 1950s nuclear weapons, intercontinental ballistic missiles (ICBMs), steel, coal, oil and housing; in the 1960s ICBMs, chemicals and natural gas; and in the 1970s and 1980s ICBMs, oil and natural gas, agriculture and electronics.

The mirror image of the leading links principle was the residual principle. This meant that non-priority sectors had to take what was left after the leading links had received what they required. The residual principle tended to have a harmful effect on services crucial for the well-being of the population, such as medical care, housing and retail trade.

(8) Misallocating prices

In the traditional model, prices are determined by state organs on a cost-plus basis, and are fixed for lengthy periods. Prices are important not as guides for enterprise decision making but as a means of aggregating physical data and for financial control. This system is a logical part of the traditional model, but is not conducive to the efficient allocation of resources, technical progress and quick reaction to changing circumstances. It encourages the use of expensive inputs to produce those goods with which the enterprises are familiar. It discourages cost

reduction, innovation, adaptation to new developments and the satisfaction of consumer needs. There is an extensive literature giving examples of this and analysing their causes (Nove 1968: chapters 4 and 8; Bergson 1964: chapters 4 and 8; Zielinski 1967; Berliner 1976: part II).

The prices of consumer goods are normally fixed in a way that contributes to the frequent state of widespread shortages which lowers real incomes below the level which would be technically attainable (see Chapter 8).

Difficulties with innovation

It is well known that the state-socialist countries experienced rapid technical progress over long periods of time. They showed rates of increase of labour productivity and changes in assortment that compare not unfavourably with those of the leading industrial economy of the nineteenth century (the UK) and of the twentieth century (the USA). On the other hand, this required high rates of investment; was not unique in the post-World-War-II world; and did not prevent economic stagnation in the CMEA (and, in some CMEA member states, economic crisis) in the early 1980s. Furthermore, they tended to copy, rather than originate, new technology, and in the 1960s, 1970s and 1980s had great trouble in modernising the product-mix of existing plants, and more generally, in reducing the technology gap between themselves and the leading capitalist countries. According to a classic study (Amann *et al.* 1977), despite the great emphasis placed in Soviet planning on technical progress, the technological gap between the USSR and the leading capitalist countries in the mid 1970s was substantial and had not diminished in the previous fifteen to twenty years. By the mid 1980s, the slowdown in Soviet growth, combined with the rapid technical progress in the West, had led to the problem of reducing the technology gap being replaced by the problem of preventing the technology gap widening.

Factors hindering innovation included the hostility of the authorities to unrestricted intercourse with the capitalist world and especially to the free movement of people; the state monopoly of foreign trade; the absence of foreign direct investment (FDI); the risk-averting behaviour generated by the system; the centralisation of initiatives; the emphasis on economies of scale even where this conflicts with rapid changes in assortment; the separation of research from development; the stress on

Table 2.1 *Time taken to construct thermal electric power stations completed in the USSR in 1959–62*

Period of construction (years)	No. of thermal stations
5–7	8
8–10	8
11–13	8
14–15	2

Source: Krasovsky (1967: 52).

cutting costs of the producers of equipment rather than on service to customers; and the emphasis at all levels of the economic hierarchy on quantitative plan fulfilment (Berliner 1976).

Long construction and running-in periods

A well-known and much-discussed aspect of the investment process in countries with the traditional model was that the construction and running-in periods of new plants tended to be excessive, relative both to planned periods and also relative to international experience. An example is set out in Table 2.1. Other examples are given in Chapter 5.

These lengthy construction periods are one of the results of the system of investment planning (see Chapter 5).

Instability of the plans

A characteristic feature of the plans which had a severe adverse effect on the work of enterprises, was their instability (Smekhov 1968; Xue Muqiao 1981: 18). The operational (quarterly and annual) plans of enterprises were often altered repeatedly, during the course of the ‘planned’ period, sometimes even retrospectively. The instability of the plans was a permanent feature of the ‘planned’ economies. A feature of the Brezhnev era in the USSR was the end-year reduction in plan indicators so as to reconcile actual plan underfulfilment with formal plan fulfilment.

The second economy

By the ‘second economy’ is usually understood that part of the economy resulting from private production and/or (re)distribution. Attempts

were sometimes made to abolish it (e.g. the USSR in 1918–21 and 1930; China in 1958–9 and the Cultural Revolution; and Kampuchea in the late 1970s). The results of such attempts were always very adverse for popular welfare, and were always ultimately abandoned. Even when parts of this sector (e.g. the private plots of collective farmers) were legalised, other parts often remained criminalised. The extent of criminalisation varied over time and between countries. The long-run tendency was to reduce the area of criminalisation. The second economy provided goods, services and income for the population which the state sector was unable, or unwilling, to provide.

The third economy

By the ‘third economy’ is understood transactions between state enterprises which were unplanned, but which were entered into in order to achieve the goals of the plan. Such transactions arose because it was often impossible to fulfil an enterprise plan with the planned (or actually available) inputs. This sector was extensive in all countries with the traditional model. It was normally tolerated by the authorities (indeed an important role in it was often played by local Party officials) since otherwise the economy could scarcely have functioned.

Causes of waste and unplanned activity in the traditional model

The fact that there were fundamental theoretical reasons why it would be impossible to realise the Marxist model of socialism on a national economic level was pointed out long before the Bolsheviks came to power, for example by Pierson (1902). A similar early critique was Barone (1908). Subsequently, this argument was widely repeated. Well-known criticisms after the Bolshevik seizure of power are those of Mises (1920) and Hayek (1935, 1937, 1945, 1988). In the present author’s opinion, the three fundamental factors which explain why the Marxist aspiration for a non-market planned national economy cannot be realised efficiently are partial ignorance, inadequate techniques for data processing and complexity (Ellman 1978).⁸ Not taking these three

⁸ The arguments about partial ignorance and inadequate techniques for data processing can be found (in a different terminology) already in Hayek (1935: 207–12). For a Soviet exposition of the view that the differences

factors into account generates a theory of rational social decision making which is profoundly flawed, and whose weaknesses are the underlying reason for the ultimate failure of socialist planning.

Partial ignorance

If (as in some models) the central authorities had perfect knowledge of the situation throughout the economy (and also adequate techniques for processing it and transmitting the results), then they would have been able to calculate efficient plans and issue them to the periphery. In fact, the central authorities were partially ignorant of the situation throughout the economy, and this was a major factor causing the unexpected and undesirable (from a Marxist–Leninist point of view) negative phenomena discussed above, such as the dictatorship over needs, bureaucratisation, production for plan rather than use, wasteful criteria, slack plans, the residual principle, the instability of the plans, the second and third economies, and so on.

The partial ignorance of the planners was of two types: first, ignorance which was created by the planning process; secondly, ignorance which was unavoidable. The first type of ignorance had three causes: subordinates may transmit inaccurate information; the process of transmitting information may destroy some of it; and the addressees of information may not receive it. Consider each in turn:

- (a) *Subordinates transmit inaccurate information.* It is well known that in any bureaucracy (Downs 1967: 77) ‘Each official tends to distort the information he passes upwards to his superiors in the hierarchy. Specifically, all types of officials tend to exaggerate data that reflect favourably on themselves and to minimise those that reveal their own shortcomings.’ This explains such phenomena as the exaggeration of agricultural output figures in the USSR, which Khrushchev and Gorbachev criticised, and in China during the Great Leap Forward. It also explains the exaggeration of input requirements and the underestimation of output possibilities that was a normal part of the process of planning and counterplanning by which the plans were drawn up.

between actually existing planning and the Marxist–Leninist theory of planning were due to the theoretical defects of the latter, see Khanin (1967b).

- (b) *The process of transmitting information destroys some of it.* An example of how the process of transmitting data may destroy some of it is provided by the aggregation problem. During the process of planning there was aggregation by commodities, enterprises and time periods. All three introduced errors. Aggregation errors can be reduced by following suitable aggregation criteria, or by enlarging the detail of the plan, but are unlikely ever to be eliminated.
- (c) *The addressees of information may not receive it.* Another example of how socialist planning can create ignorance is provided by what the cognitive theorists of decision making refer to as 'the assumption of a single outcome calculation'. This refers to the fact that the decision-making process often 'does not match the uncertain structure of the environment in which events might take a number of alternative courses. Rather, it imposes an image and works to preserve that image.' Hence: 'Pertinent information may enter the decision-making process or it may be screened out, depending on how it relates to the existing pattern of belief . . . That information which is threatening to established belief patterns is not expected to be processed in a fashion wholly dominated by the reality principle' (Steinbruner 1974: 123).

The classic example of course is Stalin's surprise at the German invasion of 1941, despite the advance information transmitted by Sorge and others, resulting from his screening out of information that threatened an established belief pattern. Similarly, the Polish Party leader Gomulka was surprised at the outcome of his policy of self-sufficiency in grain, despite warnings by economists such as Kalecki of its likely adverse effects (Feiwel 1975: chapter 19).

Not only may decision makers screen out accurate information, but they may also suppress its sources. For example, the reaction of the Polish leadership to the discussion of the Five-Year Plan for 1966–70 was not only to ignore the suggestions made (whose correctness was shown by subsequent events) but also to take 'exceptionally violent action' (Brus 1973: 107) against the leading discussant (Kalecki). Similarly, one of the causes of the problems of Soviet agricultural policy between the wars was the screening out of accurate information about, for example, the size of harvests and of marketed output, and of the importance of proper crop rotation, and the suppression of the leading specialists in agricultural statistics and agronomy. More generally, the screening out of information

provided by specialists (and sometimes their suppression) because the political leadership distrusted the specialists, regarding them as 'not our people' and politically unreliable, was often a source of avoidable ignorance in the state-socialist countries. It was one of the wastes resulting from the dictatorship.

Once accurate information was screened out and its purveyors suppressed, reliance was often placed on people who were in fact not competent in the area concerned. As the Hungarian economist Jánosy (1970) noted, the Stalin era was characterised not only by suspicion of specialists but also by confidence in non-specialists.⁹ For example, in working out investment plans, reliance was often placed on engineers not competent in the area concerned, let alone in calculating and evaluating costs. As a result some extraordinarily expensive projects were designed and executed.

Moreover, once accurate information has been screened out, and its sources suppressed, an entirely fanciful picture of reality may play a major role in the perception of decision makers. This is especially easy if there is a strict pre-publication censorship of all publications, and only material supporting the illusions of decision makers can be published. For example, it is well known that at the end of Stalin's life his policies were having a very negative effect on agriculture in the USSR and throughout Eastern Europe. One reason for this was that, as Khrushchev (1956: 29) pointed out in his report to the Twentieth Congress of the Soviet Communist Party 'On the personality cult and its consequences', Stalin's perception of the agricultural situation largely derived from films which portrayed a quite illusory picture of rural prosperity. 'Many films so pictured collective farm life that the tables were bending from the weight of turkeys and geese. Evidently, Stalin thought that it was actually so.'

A major feature of developments in the CMEA countries after the death of Stalin was a reduction in the ignorance of decision makers. The publication of statistical data was substantially increased. New, policy-related disciplines such as mathematical economics, sociology and demography grew up. Serious discussions were held on policy questions.

Nevertheless, the partial ignorance of the decision makers, which they themselves had created, still played a major role in developments.

⁹ The classic example of this in the USSR was the suppression of genetics in the Stalin period and the reliance instead on the quack Lysenko for advice about agriculture.

In the USSR, the distortions in economic statistics played an important part in the collapse of the whole system by giving the leadership a much too optimistic view of actual economic developments (Eydelman 1998; Khanin 1998). Similarly, a former colonel of Soviet military intelligence blamed the Soviet defeat in the Cold War on the absence in the USSR of independent research institutes studying strategic security and economic issues (Ellman and Kontorovich 1998: 45). In their absence, the decisions which were made failed to reflect a good understanding of the actual situation.

Some ignorance is just unavoidable. The nature of economic life is such that the economy is continually being affected by events that were not foreseen when the plan was being drawn up. This is particularly obvious with respect to harvest outcomes, innovations (either technical or managerial/organisational), international affairs and demographic factors. This ignorance about the future can be reduced, for example, by establishing institutes for research into the international economic situation or demography, but it can never be eliminated.

Not only were the central decision makers unavoidably partially ignorant, but also the attempts to concentrate all relevant decision making in their hands were costly. They were costly in two ways. First, large numbers of people and a considerable amount of specialised equipment were required. Secondly, the erroneous view that social rationality can be attained by calculating a central plan which is then faithfully executed may reduce the responsiveness of the country to new information and hence generate waste. The former Soviet mathematician Lerner (1975: 214) argued that:

A distinguishing feature of a system with centralized control is a high degree of *rigidity* of the structure, because adaptation, to both random changes and changes caused by the evolution of the system and of the environment, does not take place in the individual parts of the system but only in the central control point. Centralized control permits stabilization of a system over a long period, suppressing both fluctuations and evolutionary changes in the individual parts of the system without reconstructing them. However, in the final analysis, this may be damaging to the system because contradictions between the unchanged structure of a system with changes associated with evolution increase to global dimensions and may require such a radical and sharp reconstruction as would be impossible within the framework of the given structure and would lead to its disintegration.

Twenty-four years after the original publication of the book from which this passage comes, the disintegration it had foreseen took place – corroborating its author's theoretical arguments against centralised control as an efficient long-term control mechanism for large complex systems.

The assumption that all relevant data have already been processed at the centre, and that the duty of all subordinates is to carry out the plan, may simply result in wasteful and socially irrational responses to the changing situation because subordinates are barred from socially rational responses and the centre lacks the information.¹⁰

It is because of partial ignorance that feedback mechanisms are so important in economic control. They enable the economy to respond smoothly in the event of unforeseen disturbances. Examples of what happens in the event of inadequate feedback mechanisms are the notorious shortages and queues for consumer goods which characterised the state-socialist economies. These partly resulted from the absence of the two feedback mechanisms, flexible prices and flexible quantities, which balance supply and demand under capitalism.

Inadequate techniques for data processing

The inadequacy of the techniques available to process such data as were available was the main reason for the instability of the plans and one of the reasons for the long construction periods. The planning techniques used for socialist planning (material balances and input–output) were such that the current plans were always inconsistent (Ellman 1973: chapter 1). As the inconsistencies came to light during the planned period, it was necessary to alter the plans so as to allow the economy to function.

Attempts were made to overcome this problem by improving the planning techniques. It sometimes happened, however, that major innovations in planning techniques, about which high hopes were held, simply failed to achieve the objectives of those who introduced them. For example, during the 1960s, input–output was widely introduced in

¹⁰ As Crozier (1964: 190) has observed, the result of the decision-making process which characterises bureaucracies is that the 'People who make the decisions cannot have direct first-hand knowledge of the problems they are called upon to solve. On the other hand, the field officers who know these problems can never have the power necessary to adjust, to experiment and to innovate.'

planning in the European state-socialist countries. It was the first mathematical technique to be introduced in socialist planning, and high hopes were held by many about the benefits that would flow from using it. It was widely expected that it would eliminate the problem of inconsistent plans because the use of input–output would enable consistent plans to be calculated. In fact, however, this turned out to be erroneous. Input–output, like material balances, was quite unable to resolve the problem of drawing up consistent plans for all the centrally planned commodities (Ellman 1973: chapter 1). This did not mean that the new technique was useless. On the contrary, it turned out to be very useful for the calculation of pre-plan variants and as a source of information. The problem it had been introduced to solve, however, remained unresolved.

Not only may new techniques fail to solve the problems that they were introduced to solve, but experiments with them may simply underline the losses caused by the use of administrative methods. A well-known example was provided by the use of linear programming in the USSR in the 1960s to calculate minimum-cost transport schemes. As Belkin and Birman observed in an article in *Izvestiya* of 4 December 1964:

This is not a complicated task. Many articles and books have been written and not a few dissertations defended, but almost no freight is shipped by the optimal schemes. Why? Simply because the transport organisations are given plans based on [maximising] ton kilometres. One can establish computer centres, and conceive superb algorithms, but nothing will come of it as long as the transport organizations reckon plan fulfilment in ton kilometres.

Complexity

Complexity is used here to describe the fact that decision making is dispersed over numerous individuals and organisations. The dispersal of decision making is a normal and necessary reaction to the difficulties of collecting and processing in one spot all the data necessary for rational decision making. It creates, however, numerous problems.

One of the reasons for the inconsistency of the current plans, which in turn is a major cause of their instability, was precisely that the planning of production and supply for the entire national economy was regarded as too complicated for any one organisation and accordingly was split up among many organisations. This created numerous coordination problems (Ellman 1973: 24–5).

Similarly, numerous problems were created by the fact that, in the traditional Soviet model, planning (the compilation of plans and checking up on their fulfilment) was split between two organisations: Gosplan (the State Planning Committee) and TsSU (the Central Statistical Administration). For example, the introduction of input–output into Soviet planning in the 1960s was hindered by the fact that the two organisations used different commodity classifications.

The dispersal of decision making over various organisations ensures that it will be affected by what Downs (1967: 216) termed the Law of Interorganisational Conflict. This states that *every large organisation is in partial conflict with every other social agent it deals with*.

The traditional Marxist–Leninist theory of planning assumes that all the decision makers in an economy form a ‘team’, that is, a group of persons working together, who have identical goals. In fact, the decision makers form a ‘coalition’, that is, a group of persons working together who have some, but not all, goals in common.¹¹ It is because decision makers form a coalition and not a team that incentives, both negative and positive, moral and material, play an important motivating role in ensuring the necessary output of work.

The fact that decision making is dispersed among a coalition, whose members are not allowed, in many cases, to charge for their output, is one of the causes of bureaucratisation. The reason for this is that it brings into operation what Downs (1967: 188) termed the Law of Non-Money Pricing. This states that *organisations that cannot charge money for their services must develop non-monetary costs to impose on their clients as a means of rationing their outputs*. Hence, much of the irritating behaviour of bureaucrats often represents a means of rationing their limited resources so that they will be available to those truly anxious to use them. It is precisely because non-market organisations tend to breed bureaucratisation that, throughout the whole history of socialist planning, efforts were repeatedly made – with a singular lack of success – to combat bureaucracy.

The importance of the dispersal of decision making in ensuring that even a state-owned non-market economy would not necessarily be socially rational was familiar already to acute observers of War Communism. Shortly after its end, Kritsman (1924: 98–9) observed that:

¹¹ This issue is discussed further in Chapter 10.

If we consider the economy as a whole . . . we come to the conclusion that, in our proletarian-natural economy, exploitation and the market were overcome without overcoming the anarchy of economic life . . . As is well known, commodity production is anarchic economy. It would, however, be incorrect to conclude from this that a non-commodity economy, that is a natural economy, is necessarily a non-anarchical, that is a planned, economy . . . For an economy to be anarchic it is necessary and sufficient for there to be a multiplicity of independent economic subjects.

With the advantage of almost a century of extra experience, we can add to Kritsman's observation the twin points that: the dispersal of decision making is inevitable and permanent (because of partial ignorance and inadequate techniques for data processing); and that an economy with dispersal of decision making may be, but is not necessarily, socially irrational.

Is the traditional model a planned economy?

The actual course of economic development in countries with the traditional model often differed sharply from that which was planned. This is shown both by the phenomena discussed earlier in this chapter and also by a number of macroeconomic developments. For example, neither the Polish depression of 1979–82 nor the Soviet stagnation of 1979–82 were consciously planned. Furthermore, the plans were often only available late, and frequently altered. Hence the question arises: in what sense were the economies of countries with the traditional model 'planned'?

This question has been examined on both a historical and theoretical level. On the historical level, after a very detailed analysis of the actual practice of Soviet planning in the Stalin period, Zaleski (1980: 484) concluded that: 'The priority of management over planning has been the dominant feature of the Soviet economy since Stalin's time. Since management is highly centralised, this feature is characteristic of the whole model. Therefore it is more nearly correct to call the economy "centrally managed" rather than "centrally planned".'

On the theoretical level, a number of authors argued that 'planning', as it existed in the traditional model, was not 'planning' in the Marxist sense. This was an argument which united New Left (Ticktin 1973; Bettelheim 1986) and New Right (Roberts 1971). It was not planning in the Marxist sense because it was not socially rational (as shown earlier in this chapter, it was actually rather wasteful); the 'anarchy of

production' had not been abolished (as shown by the existence of the second and third economies); the actual course of development often diverged from the plans; and money and commodities were not eliminated. The relationship between plan and outcome naturally differed between sectors, (the weather and the world market being notoriously 'unplannable') over time, and between countries. The fact that there was often a substantial gulf between what was planned and what actually happened is easy to understand from the perspective of systems theory. The plan was only one of the factors (and often not a very important one) determining outcomes. Other important factors which helped to determine the outcome were the behaviour of the entities in the system (e.g. ministries, enterprises and households) and the economic environment. Hence, from the standpoint of systems theory, there was no reason to expect economic life to be determined solely by the plan.

The difference between plan and outcome also directs attention to planning not as a means of attaining certain objectives, but as a rationality ritual in the sociological or anthropological sense. As a rationality ritual it had two aspects, giving significance to human life and legitimising the ruling group. It did the first by conveying the illusion that the waste we thought we 'observed' in countries with the traditional model was actually part of a rational system. It did the second by ascribing to the priests (planners, economists and other technicians) and the rulers they served, the function of bringing order out of chaos, of leading society to the Glittering Future.¹²

Conclusion

The main features of the traditional model were state ownership of the means of production; political dictatorship; a mono-hierarchical

¹² Because of this, the leaders of countries with economic plans felt able to demand sacrifices from their peoples while the great national goals were being realised. This was explained by Hitler in his confidential memo of August 1936 (<http://germanhistorydocs.ghi-dc.org>; accessed 22 August 2013) that led to the creation of the German Four-Year Plan. The goal was to prepare the German economy for war: 'only the performance of these [war-preparation] tasks in the form of a Several-Years Plan . . . will make it possible for the first time to demand sacrifices from the German people in the economic sphere and the sphere of foodstuffs'. The reason for this was that the plan would have demonstrated that the leaders had decided to 'tackle the problems in this [i.e. economic] sphere too with unprecedented and resolute action and do not merely discuss them, that they solve them and do not merely record them!'

system; imperative planning; and a subordinate role for money, profit, prices and banks. The model exhibited widespread waste, inefficiency and ‘anarchy’. The fundamental reason for the waste, inefficiency and ‘anarchic’ aspects of the traditional model was theoretical: namely, the omission from the traditional Marxist–Leninist theory of planning of some essential aspects of reality. They were partial ignorance, inadequate techniques for data processing, and complexity. Hence the economies of countries with the traditional model were not ‘planned’ in the Marxist sense of a socially rational economic system. Nor were they ‘planned’ in the technocratic sense that the plan alone determined the outcome. An important function of planning was to serve as a rationality ritual.

SUGGESTIONS FOR FURTHER READING

The traditional model

- O. Sanchez-Sibony, ‘Depression Stalinism: The Great Break reconsidered’, *Kritika* 15(1) (2014), 23–49.
- M. Lewin, ‘The disappearance of planning in the plan’, *Slavic Review* 32(2) (1973), 271–87.
- E. Zaleski, *Planning for economic growth in the Soviet Union 1918–32* (Chapel Hill, NC, 1971).
- G. Grossman, ‘Notes for a theory of the command economy’, *Soviet Studies* 15(2) (1963), 101–23.
- H. Kuromiya, *Stalin’s industrial revolution: Politics and workers* (Cambridge, 1988).
- A. Donnithorne, ‘China’s cellular economy: Some economic trends since the Cultural Revolution’, *China Quarterly* 52 (1972), 605–19.
- E. Maskin, Y. Qian and C. Xu, ‘Incentives, information and organizational form’, *Review of Economic Studies* 67(2) (2000), 359–78.

Waste, inefficiency and ‘anarchy’ in the traditional model

- J. Kornai, *Overcentralization in economic administration* (London, 1959).
- A. Nove, ‘The problem of “success indicators” in Soviet industry’, *Economica* 25(97) (1958), 1–13.
- F. Fehér, A. Heller and G. Markus, *Dictatorship over needs* (Oxford, 1983).
- W. Brus and T. Kowalik, ‘Socialism and development’, *Cambridge Journal of Economics* 7(3/4) (1983), 243–55.

- G. Grossman, 'The "second economy" of the USSR', in V. Tanzi (ed.), *The underground economy in the United States and abroad* (Lexington, MA, 1982), pp. 245–70.
- P. Nolan, 'The Chinese economy, 1949–1978' in P. Nolan and D. Fureng (eds.), *The Chinese economy and its future* (Cambridge, 1990), pp. 3–13.

Causes of the waste, inefficiency and 'anarchy' in the traditional model

- F. Hayek, 'Economics and knowledge', *Economica* 4(13) (1937), 33–54.
- F. Hayek, 'The use of knowledge in society', *American Economic Review* 35(4) (1945), 519–30.
- R. P. Mack, *Planning on uncertainty* (New York, 1971).
- H. R. van Gunsteren, *The quest for control* (London, 1976).
- H. Simon, *Administrative behavior*, 3rd edn (New York, 1976).
- M. Crozier, *The bureaucratic phenomenon* (Chicago, 1964).
- J. Kornai, 'Planning and direct bureaucratic control', chapter 7 in J. Kornai, *The socialist system* (Oxford, 1992).
- A. Downs, *Inside bureaucracy* (Boston, 1967).

Is the traditional model a planned economy?

- J. H. Wilhelm, 'The Soviet Union has an administered, not a planned, economy', *Soviet Studies* 37(1) (1985), 118–30.
- H. H. Ticktin, 'Towards a political economy of the USSR', *Critique* 1 (1973), 20–41.
- P. C. Roberts, *Alienation and the Soviet economy* (Albuquerque, 1971).
- D. Filtzer, *The hazards of urban life in late Stalinist Russia* (Cambridge, 2010).
- P. Rutland, *The myth of the plan* (London, 1985).

3 | *The reform process*

Introduction

The problems of the traditional model were well known for decades. In the USSR, reforms were advocated from the early 1930s (initially publicly, and later in confidential memos to the top leaders). However, the case for reform was rejected because in the opinion of the leadership the problems were outweighed by the big advantage of the traditional model. This was that it enabled resources to be concentrated on key investment projects. Actually implemented policies to overcome the problems began much later, and took on different forms in different countries. The Maoists argued that the way to do this was by internal political struggle, decentralisation to local political authorities and self-sufficiency. In the GDR, reliance was placed in the 1970s and 1980s on the reorganisation of industry into vertically integrated combines run by technocrats and with a considerable say in the plan compilation process. In the USSR under Brezhnev, stress was laid on the automation of planning and management, improved planning of technical progress, the reorganisation of industrial management, and, in the heyday of detente, import of technology, including turn-key factories. By the late 1980s, however, the predominant reaction to the problems of the traditional model was that of economic reform. By 'economic reform' was understood a major institutional change that replaced the traditional model of a socialist economy by an alternative model of a socialist economy that combined centralised state decision making with a market mechanism.

The need for economic reform was argued for many years by politicians, such as Ordzhonikidze (a Politburo member and at the time the USSR's top industrialist), and economists, such as Brus (Poland), Kornai (Hungary), Xue Muqiao (China) and Nemchinov, Petrakov, Zaslavskaya, Popov and others (USSR). They argued that the experience with the traditional model showed the need to make the transition to a new model which would combine centralised state decision making with

the market mechanism, or, as it was sometimes put, to create a planned economy with a built-in market mechanism. According to the reformers, the market should be seen not as the negation of planning but as an instrument that could be used to achieve efficiently some of the goals of the plan. The reformers hoped to combine the advantages of socialism (abolition of exploitation, socialisation of the major economic decisions, full employment, price stability, social security, an equitable income distribution, and economic growth) with the advantages of the market (abolition of shortages and queues, efficient use of intermediate products, innovation and rapid technical progress, and attention to personal consumption). More generally, the reformers hoped to combine the informational, incentive and feedback functions of the market with overall control by the centre. Not only did these arguments generate a lively economic literature, but in certain periods in certain countries they were very controversial politically. The censorship, dismissal from appointments and menial jobs were among the instruments used to suppress the reformers.

The implementation of economic reform began in Yugoslavia in 1950–1, was discussed in Poland and Hungary in the mid 1950s, temporarily introduced in Czechoslovakia in 1967–9, introduced in Hungary in 1968, in China from 1978, and attempted in the USSR in 1966–9 and from 1988. By the late 1980s, the once controversial arguments of the reformers had been partly accepted by the authorities in countries accounting for virtually all the population of the state-socialist world.

In the late perestroika period (1988–91), the Soviet leadership ended the dictatorship, one of the key features of the traditional model. As a result of this, a process of transformation of the economic system into a variant of the previously rejected capitalist system began in Central Europe (Poland, Hungary and Czechoslovakia) in 1989 and spread to the former USSR in 1992. In countries which retained the dictatorship, such as China and Vietnam, the traditional model was transformed into what can be termed developmental-state capitalism with state-socialist features (see Appendix).

Some cases

Yugoslavia

The traditional model of socialist planning was introduced in Yugoslavia in 1946–50. Its introduction (and also the economic

blockade by the Cominform¹ which began to take effect in 1949–50) led to a big increase in investment, particularly in industry; an increase in industrial output, especially of producer goods; a poor performance by agriculture; a modest increase in national income; and a sharp fall in real wages and per capita consumption.

The poor results of the traditional model, combined with the need to seek internal social support for a polity under threat from hostile external forces, and to differentiate the Yugoslav economic system from the traditional model prevailing in the Cominform countries, led to radical institutional changes in 1950–1. The scope of central planning was greatly reduced (being mainly confined to investment); a system of workers' self-management was introduced; and the forced collectivisation of agriculture came to an end (see Chapter 6). This more decentralised model functioned in approximately 1952–65.

These reforms were quite successful in raising living standards and increasing the legitimacy of the authorities. Nevertheless, this new model experienced both systemic and conjunctural problems. On the systemic level, investment, foreign trade, inflation and employment all gave rise to considerable difficulties. For example, spokesmen for the more developed republics argued that national investment planning meant that they were being made to subsidise less-developed regions, and that this was undesirable, leading to higher costs and lower returns than would otherwise be the case. Under Yugoslav conditions of significant differences, and often hostility, between republics, transferring authority from the centre to the republics had the effect of defusing tension between the national and local power elites. On the conjunctural level, the Five-Year Plan for 1961–5 was unsuccessful. It was abandoned in 1962 in response to the recession of 1961–2. The upswing of 1964 ended in massive inflation and a large balance of payments deficit. The reaction by the leadership to this combination of systemic and conjunctural problems was to implement a new round of economic reforms (often referred to as 'the 1965 reform'). This reform was implemented in 1964–7, and chiefly affected investment and foreign trade, the chief areas of central control retained in the decentralised model.

¹ The Cominform (in full: Communist Information Bureau) was created in 1947 and dissolved in 1956. It was a partial successor to the Comintern (in full: Communist International) which had been dissolved in 1943, as an organisation which united, and through which the USSR controlled, the international Communist movement.

From 1965 to the early 1970s, Yugoslavia purported to have a largely market economy with only sporadic federal intervention. Referring to the situation in 1970, one well-informed observer (Granick 1975: 468) wrote that: 'The Yugoslav economy is run along Adam Smith lines to a degree which is quite unusual for Europe as a whole.' Other writers, however, suggested that the role of non-market regulation in this period was substantial. It soon became obvious that the post-1965 system too was unable to generate socially rational outcomes. Emigration in search of work abroad grew. Unemployment, inflation and the balance of payments deficit all remained high. Subsequent comparative studies of microeconomic efficiency (Sapir 1980) and macroeconomic stability (Burkett 1983) in the periods before and after the 1965 reform are unfavourable to the latter period. Flaherty (1982: 141) concluded that: 'Reform, reacting to the experience of the 1950s, consistently underestimated the risks of decentralisation and liberalisation, moving from one non-viable strategy to another.'

The combination of political (nationalist movements in Croatia and Kosovo), conjunctural (inflation and balance of payments deficits) and systemic problems gave rise to a further round of institutional changes leading to the adoption of what, following Burkett (1986), may be termed the bargaining model. This model was introduced by constitutional amendments in 1971 and consolidated by the adoption of a new constitution in 1974. The most important feature of this constitution was the far-reaching power granted to the six republics (Serbia, Croatia, Slovenia, Bosnia-Herzegovina, Macedonia and Montenegro) and two autonomous provinces (Kosovo and Vojvodina). As far as the economy was concerned, the most important results of the adoption of the new model were twofold.

First, there was the fragmentation of the national market into eight sub-markets, each with its own taxes, foreign exchange system, investment policy and regulations of all kinds. At a time when the EEC was integrating the economies of its member states, and the CMEA was attempting to implement its programme of economic integration (see Chapter 9), Yugoslavia adopted an economic system which promoted the economic disintegration of the country. The result was wasteful investments (each republic strove to develop a wide range of industry, regardless of likely costs of production), loss of economies of scale and potential gains from specialisation, and unnecessary costs (resulting from the need to meet the requirements of the various republics).

Secondly, there was the development of bargaining as the key factor in economic decision making. Bargaining, of course, existed long before the early 1970s. What was new about the period since 1971–4 was the importance it attained. In an institutional context in which central authority was so weakened, bargaining has emerged as the key mode of decision making. Since each of the eight republics/provinces had a veto right and could not be overruled, national decision making required a long and difficult process of consensus-forming/horse-trading. Naturally, this was viewed favourably by the political leadership in each republic/province, which was the main beneficiary from the system and its chief supporter. Bargaining, however, is a very inefficient decision-making system (Johansen 1979; van den Doel 1979: chapter 3).

In the late 1980s, the Yugoslav economy was characterised by a deep economic crisis with both conjunctural and systemic aspects. On the conjunctural level, the most important elements were: the foreign debt and onerous debt service ratio; the high inflation; falling real wages and real consumption; and unemployment. On the systemic level, the main issue was the viability of the bargaining model and, more generally, of all the institutions created in Yugoslavia since World War II. The depth of the crisis, the prolonged failure of the authorities to resolve it, and the international importance of the 'Yugoslav model', led to a wide discussion both in Yugoslavia and outside it as to the cause/s of the crisis.

Some writers ascribed the crisis to the system. For example, Sirc (1979: 242–6) treated the institutions of workers' self-management as being the chief cause. Similarly, Županov (1983) saw the roots of the crisis in the contradiction between the role of a firm in a market economy and institutions partly derived from Marx's notion of an 'association of direct producers'. Similarly, the implication of Burkett (1986) was that the problems were largely a result of the bargaining model, and could be cured either by a greater reliance on market forces or more centralisation.

Other writers laid more stress on the policies that were pursued and on the policy preparation process. For example, when analysing the reasons for the failure of the reform of 1965 to achieve the anticipated results in the field of foreign trade, Flaherty (1982: 142) concluded that: 'Planning and patience were the requirements for success, but reform tended to neglect both in favour of quick remedies from the imposition of the "discipline" of the market.' Similarly, Vacić (1986: 17) stressed that: 'An efficient apparatus for the formulation and implementation of

current economic policy is needed for timely decision making at the national level.'

Other authors laid the blame on the environment. At one time, official spokespeople blamed the unstable world economy (oil shocks, high real interest rates, low rates of growth of imports by trade partners, etc.). By the mid 1980s, this argument was no longer very convincing, for three reasons. First, Yugoslavia had received substantial advantages from the outside world (remittances from *Gastarbeiter*, loans from overseas lenders). Secondly, in precisely the same international environment, numerous countries had done much better than Yugoslavia. Thirdly, to the extent that Yugoslavia was vulnerable to external factors (e.g. high interest rates), this was largely a result of earlier policies by Yugoslavia itself (e.g. the substantial loans contracted in the 1970s). Unofficial thinkers in Yugoslavia itself tended to see the domestic political system as the root cause of the problems. At the Fourth Congress of Yugoslav Political Scientists held in Belgrade in June 1984, there was widespread agreement with the view that 'The basic cause, and therefore the main characteristic, of the crisis of Yugoslav society is the crisis in the ideological and political sphere; the economic crisis actually plays the smallest role' (Vacić 1986: 16–17).

A particularly important environmental problem for Yugoslavia was the conflicting interests and aspirations of the various nationalities which made up that country. This played a key role in the evolution of its economic and political system, and was a crucial background factor explaining the crisis. Bargaining may have been an inefficient decision-making system, but it was, at any rate, a non-dictatorial and non-military method of resolving objectively existing conflicts of interest.

One of the features of the Yugoslav experience which gave rise to a wide international interest was the institution of 'workers' self-management'. This was officially treated in Yugoslavia as the realisation of an important part of the Marxist legacy. It contributed, according to this interpretation, to overcoming alienation by replacing private ownership and the social division of labour with free associations of producers. At one time, this interpretation was also widely repeated outside Yugoslavia. Was this in fact the real significance of 'workers' self-management'? According to a classic study by Granick (1975), the main significance of self-management (i.e. the decentralisation of decision making) under Yugoslav conditions was that it contributed to

defusing nationality conflicts. It did this by reducing the role of political factors in decision making and enhancing that of 'purely economic' factors which it was more difficult to blame on the privileged position or ill will of a particular nationality. As far as the role of the workers is concerned, in Granick's interpretation, this was not so much to manage the factories (in fact, this was done by the managers) but to legitimise a market economy in a country ruled by a League of Communists with Marxism-Leninism as its official doctrine. Other writers suggested that 'workers' self-management' was a real economic phenomenon, whose effects, in some interpretations, were one of the causes of the crisis (e.g. because of the allegedly inflationary tendencies of 'workers' self-management'). The economic effects of 'workers' self-management' under Yugoslav conditions is an interesting and controversial topic which gave rise to extensive empirical work (e.g. Estrin 1984).

In 1989, to tackle the crisis and stabilise the economy, Yugoslavia adopted a standard stabilisation package. It proved impossible to implement this, largely because of conflicts between the federal government and the republics/provinces, and between the latter themselves. At its Fourteenth Congress in January 1990, the League of Communists of Yugoslavia (before 1952 the Communist Party of Yugoslavia) fragmented into republican parties which soon changed their names (into Socialist or Social Democratic). The country dissolved into civil war, the result of which was the dissolution of the former Yugoslavia and its replacement by a number of successor states. The Yugoslav Communists in their period in power entirely failed to create a stable and viable economic system, or to ensure the survival of the country.

Poland

Poland had a rich experience with discussions of economic reform and attempts to introduce economic reforms. The discussions were on a high theoretical level, and had an international impact. This was due to the outstanding contributions of a number of Polish economists (e.g. Lange, Brus and Kalecki), the relatively weak censorship, and the massive popular opposition to the Party and the traditional model.

The first national economic plan which reflected the traditional model was the Six-Year Plan (1950-5). It led to: a massive increase in investment, especially industrial investment; a massive increase in industrial output, especially of producer goods and weapons; a massive increase in

military expenditure; a big increase in national income and employment; a modest increase in agricultural output; and a significant decline in real wages in 1950–3 (prior to the more pro-consumption policies of 1954–5 initiated by the post-Stalin Soviet leadership).

The unsatisfactory outcome of the Six-Year Plan, combined with Khrushchev's report to the Twentieth Congress of the Soviet Communist Party 'On the personality cult and its consequences', the workers' revolt in Poznan (June 1956) and the disarray in the ruling elite (Bierut, the Polish leader in the Stalin period, died in March; Gomulka, who had been condemned for 'right-wing and nationalist deviation' in 1948, came to power in October), created in the autumn of 1956 excellent conditions for a sharp break with the traditional model. Three radical documents were quickly drafted, published for public discussion and then passed into law. They were: government regulation no. 704 (10 November 1956) providing the state industrial enterprises with substantial autonomy; the Workers' Council Act establishing workers' councils as the managing bodies of enterprises; and the Enterprise Fund Act establishing the principles and rules of profit sharing. The first two Acts were formally adopted by the Polish Parliament on 19 November 1956. In addition, the partial collectivisation of agriculture was ended, and an accommodation with the Catholic Church was arranged. In May 1957 the Economic Council (an official advisory body which had been established in 1956 and which included the leading academic economists) adopted a comprehensive reform blueprint. By this time, however, the wind had veered. As it turned out, the only two lasting results of the 'Polish October' were the partial decollectivisation of agriculture (i.e. the decollectivisation of that part of agriculture which had been collectivised) and the recognition of the Church. The economic reform was soon emasculated. (The Economic Council itself was disbanded in 1963 following a steady erosion of its role.)

The most controversial aspect of the reform was the position of the workers' councils. The reason for this was primarily political. It threatened a basic feature (a mono-hierarchical system) of the traditional model. If actually realised, it would have replaced the appointment of managers by Party officials and their responsibility to Party officials (the *nomenklatura* system) by autonomous firms independent of the Party-state apparatus. This would have greatly weakened the power of the Party-state apparatus and created an important social group independent

of it. Hence, in the medium run it might have threatened yet another of the main features of the traditional model, the political dictatorship.

After October 1956, the new Party leadership, which shared with its predecessors a commitment to the mono-hierarchical system and the political dictatorship, and whose social basis was formed of groups who benefited from them, quickly 'normalised' the non-agricultural economy. By 1958, the workers' councils had been fully incorporated into the Party-state apparatus. As for the documents on decentralised decision making, reducing the role of physical planning and increasing the role of market relations, they remained just documents. The reasons for this are controversial. Some writers (e.g. Nuti 1979: 257) stressed economic factors, and other writers (e.g. Brus 1985) stressed political factors. On the economic level, as Brus pointed out, in 1954–8 real wages grew rapidly, even without substantial non-agricultural reforms. This naturally undermined the perceived need for them. Furthermore, as Nuti pointed out, in 1958–9 there was an investment boom in Poland, the extent of which appeared to signal the problems of decentralisation, and the control of which appeared to require renewed centralisation. The political factors are quite clear. The Polish Party leadership, an unpopular minority group ruling a hostile country, was permanently afraid that liberalisation might get out of hand and threaten their power monopoly. As the once prominent Party leader J. Berman pointed out, when explaining why the Party was so cautious about liberalisation (Toranska 1987: 350):

One can ask whether we were right to use brakes in implementing it, to do it slowly and gradually, to phase through the process of liberalisation. But why did we do this? We did it because we were afraid, afraid of what broke out in 1956 and 1980 but could have broken out already in 1954. Poland is a Pandora's box.

In the early 1960s there was a widespread discussion throughout the CMEA about the limitations of the traditional system and the need for reforms. This found its echo in Poland in the form of limited changes announced in 1964–5. These were also partly a response to the low growth of real wages in the early 1960s. The changes were 'within-system' changes rather than a radical reform, and failed to have any significant impact.

The next attempt at reform came in the mid 1970s with the reorganisation of Polish industry into large firms (Nuti 1977). The first of the

new units appeared in 1973, but within a couple of years institutional reform had ceased to have any significance. Popular opposition had been bought off with large consumption increases, and local officials given a free hand to initiate grandiose investment projects (both paid for by foreign credits).

The legal recognition by the authorities in 1980–1 of the independent trade union ‘Solidarity’, combined with the rapidly deteriorating economic situation in 1979–82, once more placed economic reform on the political agenda. This despite the fact that the crisis had been primarily caused by the macroeconomic policy of the authorities rather than by the traditional model. An official Reform Commission reported in June 1981; its report was adopted by the Ninth Party Congress in July 1981 and served as a basis for laws passed in the autumn of 1981. These were supposed to come into force, to the extent that they did not contradict martial law regulations, from January 1982.

What effect did these measures have on the actual running of the economy? It rapidly became obvious that they had not led to a rational synthesis of central planning and market processes. Rather, there developed in Poland in the mid 1980s a system which has been described as one of ‘authorisations and bargaining’, where (Simatupang 1988: 295, footnote deleted):

the centre and enterprises are constantly negotiating over the scope of ‘government orders’ or ‘operational programmes’, material supplies, hard currency, employment, prices, taxes and amortizations, subsidies and investment. The results of the negotiating process are often specific to individual enterprises or industrial sectors. The role of vertical bargaining and individual norms prevented the emergence of a built-in market mechanism in the state industrial sector.

Although the traditional model was no longer fully functioning, the system which did exist in the mid 1980s was a hybrid which no one had ever advocated. Attempts by the authorities to implement economic reforms were hampered by popular opposition to the costs of a market system (hard work, income insecurity, price increases, unemployment), Poland’s massive foreign debts, the economic incompetence of the leadership, popular hostility to a military dictatorship which had presided over a very sharp fall in living standards, and the eternal fear of Polish Communists of going too far and hence cutting off the branch they were sitting on. For Jaruzelski, as for Berman: ‘Poland is a

Pandora's box.' The poor performance of the hybrid Polish model in terms of living standards and public services (such as medical care and housing) undermined public interest in and support for economic reforms as a means of overcoming the problems of 'real socialism'. By the mid 1980s, economic reform in Poland was being kept alive mainly by external forces, the IMF and Soviet perestroika. Among the Polish people, attention to purely personal and private matters, and lack of interest in public affairs, prevailed. After three decades of talk about economic reform, what some reformist Communist intellectuals had striven for in 1956 increasingly appeared unrealistic. The notion that, under Polish conditions, it was possible to combine the political dictatorship with extensive reliance on market mechanisms appeared very naïve.

An interesting and important issue raised by Polish experience concerned the relationship between economic reform and economic policy. Was too much attention given in Poland to economic reform and too little to economic policy? Already in 1957, Kalecki argued (*Trybuna Ludu*, 3 February) that the problems of the Six-Year Plan were not caused primarily by the model but by the excessive and inefficient investment programme and by the additional defence expenditure caused by the deteriorating international situation at the beginning of the 1950s. The traditional model, according to this line of reasoning, was not an independent *cause* of the problems but a *result* of the planners trying to finish key investment projects and obtain the resources necessary for rearmament in an environment of acute shortages of the necessary resources. Hence, the chief way to overcome the problems was to adopt more sensible policies, in particular to reduce the share of investment in the national income, to raise the efficiency of the investment process, and to reduce military expenditure. The view that too much attention was given in Poland to economic reform and not enough to policy was also argued by Chawluk (1974).

There is much to be said for this line of argument. The main social and political problem of the Six-Year Plan (the sharp fall in real wages in 1950–3) was overcome in 1954–8, not by reforming the economic mechanism but by changing economic policy (a more sensible policy in agriculture, a reduction of the shares of investment and defence in the national income, more attention to consumer interests). The crisis of 1970 (which forced the resignation of the then Party leader) was largely a result of policies which had been criticised by Kalecki already in 1964

(see Chapter 2: 43), but which had nevertheless been endorsed by the leadership. The deep economic crisis of 1979–82 was primarily a result of another policy failure, the inability of the authorities to preserve internal and external economic equilibrium in the 1970s. In the 1980s, when considerable official efforts were devoted to implementing the various stages of economic reform, the main economic needs of the country were successful policies to stimulate agriculture and exports.

Although there was much good sense in this argument, it should not be taken too far. There was a close relationship between the economic model and economic outcomes. In the three sectors particularly important for Poland in the 1980s, agriculture, consumption and foreign trade, it was notorious that the traditional model had severe adverse effects on economic outcomes (see Chapters 6, 8 and 9). It was difficult to conceive of successful agricultural and hard currency export promotion policies, and eliminating shortages of consumer goods, within the traditional model.

In 1989, under the influence of perestroika in the USSR, the dictatorship came to an end in Poland. A largely free election led to an anti-Communist majority in the Polish parliament which adopted a policy of rapid transition to capitalism, which was implemented from January 1990. Initially output fell sharply, and it took a decade to bring inflation below 10 per cent p.a. Furthermore, privatisation of the existing state-owned enterprises turned out to be a long and complex process. Nevertheless, by the beginning of the second decade of the twenty-first century this transformation seemed successful. Living standards had risen, output was growing, the economy had been restructured, the *de novo* private sector had grown quickly, and Poland entered the EU in 2004. The perpetual crises which marked socialist Poland had given way to steady economic success.

Hungary

Serious work on criticism of the traditional model and the design of an alternative began in the Institute of Economics of the Hungarian Academy of Sciences in 1953–5. A classic fruit of this research was Kornai (1959), the English translation of a thesis defended in 1956. This combined a critical description of the traditional model with ideas for reform. A detailed reform blueprint was prepared in 1957. The political atmosphere following the Soviet military intervention of 1956,

however, was not compatible with a radical economic reform. After the Kadar administration consolidated power, and the discussions throughout the CMEA had legitimised the idea of economic reform, a comprehensive economic reform was initiated in Hungary from the beginning of 1968 – the New Economic Mechanism (NEM). The ideas underlying it were not new, but the changed political climate now made it possible to implement them.

The essence of the NEM was the abandonment of imperative planning and physical planning. The central bodies continued to compile plans. However, instead of breaking them down into detailed physical targets binding on particular enterprises, they attempted to realise them by means of financial levers (e.g. prices and taxes) which in principle were uniform for an entire sector or for the whole national economy. Looked at from the standpoint of the enterprises, the essence of the NEM was that current production planning and the rationing of producer goods were swept away. Enterprises were in principle free to determine their own production programmes on the basis of orders from customers and to obtain the inputs they needed by freely negotiated purchases from suppliers. In making their decisions they were supposed to be guided by profitability, and by the financial parameters set by the centre.

In 1973–8 there was renewed stress on the use of administrative measures, followed by renewed waves of reform from 1979 onwards.

The main successes of the NEM were in agriculture and the private sector. In Hungary in the mid 1980s there was an abundance of food available, and the country was a net food exporter. This had been achieved mainly by providing the agricultural enterprises with much more autonomy than they had in the traditional model, and by encouraging the private sector (see Chapter 6). The private sector was encouraged not only in agriculture but also in the non-agricultural sector (notably in construction and services). It has been estimated that in Hungary in 1984, one-third of all working time was spent in the private sector, which accounted for 56 per cent of the output of new dwellings and the overwhelming majority of repair and maintenance services (Kornai 1986: 1707). (The private sector consisted mainly of the part-time activity of state-sector employees, genuine cooperatives and self-employment. Large-scale private enterprises remained illegal.)

As far as the state sector was concerned, although the traditional model had been abolished, it had not been replaced by a market

mechanism but by a mixture of bureaucratic and market processes. Bauer (1983) referred to this system as 'neither plan nor market'. It was not planning in the traditional sense, since breaking down the plan to individual enterprises and the rationing of producer goods had both been abolished. Neither was it a real market system. Competition was weak, and there was a monopolistic market structure. Prices, markets and profits were only of limited importance for state enterprises. They had to concern themselves at least as much with the views of their hierarchical superiors, with social and political expectations, with current official policy and with the constantly changing official regulators (e.g. prices, price-forming rules, charges for the use of natural resources, taxes, etc.).

Kornai (1986: 1715) described the reformed system in the following way: 'The Hungarian economy is a symbiosis of a state sector under indirect bureaucratic control and a nonstate sector, market oriented but operating under strong bureaucratic restrictions. Coexistence and conflict exist between the social sectors in many ways and all the time.'

In the late 1980s, the Hungarian economy exhibited a number of serious negative phenomena, both social and economic. On the social level, the chronic housing problem, the very long hours of work (resulting from the second and third jobs of state economy employees), alcoholism, morbidity and poverty were all serious problems. On the economic level, stagnant or declining real wages throughout the 1980s (at any rate if only state-sector income is considered), inflation, balance of payments deficits and growing foreign debts were all major problems. By 1987 the growing external debts were increasingly alarming economists and politicians, while the government's plans for tax changes (the introduction of personal income tax and value added tax) and actual and anticipated inflation and job insecurity were increasingly alarming the public.

Hungarian experience illustrated the importance of economic policy for popular welfare. In the mid 1980s, Hungary (unlike the other CMEA countries) shielded personal consumption from the worst effects of macroeconomic stagnation by drastically slashing investment (see Chapter 5). In the same period, it also protected personal consumption by running a current account deficit (like Poland in the 1970s). This led to a build-up of foreign debt. It was an example of buying social peace by mortgaging the future. It was the pro-consumer economic policy, plus the successful agricultural and private sectors, that most distinguished Hungary from the other CMEA countries in the mid 1980s.

In 1989, as a result of perestroika in the USSR, the dictatorship came to an end, and with it political support for the state-socialist system. Capitalism was gradually built, with help from the EU and IMF. After a sharp transformational recession,² output and living standards slowly recovered and in 2004 Hungary entered the EU. However, experience of capitalism undermined popular support for it. A public opinion poll in the autumn of 2009 (at the beginning of the world economic crisis) showed only a narrow margin of approval for the switch to capitalism (46 per cent approved and 42 per cent disapproved). Strikingly 72 per cent of respondents said that most people in Hungary were worse off than they had been under socialism, only 8 per cent said that most people were better off, and 16 per cent said that things were about the same.³

The GDR

Unlike Yugoslavia, Poland and Hungary, the arguments for economic reform had little lasting impact on the GDR. (The 'new economic system' of 1964–8 was terminated at the end of the decade in view of both the problems of implementing it and the new political situation created by the 1968 Czechoslovak attempt to create a 'socialism with a human face' and its destruction by Soviet military intervention.) Instead, the GDR concentrated on improving planning and streamlining industrial management. Efforts were made to improve the quality of planning by strengthening the role of the Five-Year Plans, and by involving the firms themselves more in the planning process. Industrial management was streamlined by a process of amalgamating enterprises into vertically integrated firms (combines) with capable managers.

In Marxist–Leninist planning theory, the basic plan was the Five-Year Plan. It is this which was supposed to shape the structure of the economy, focus the work of all persons in the economy and make substantial progress in achieving the objectives of the Party. Great efforts were made in the 1970s and 1980s throughout the CMEA to ensure that this was actually so. (Traditionally, the main operational plans had been the annual plans and those for even shorter periods such as quarters, months, ten days and twenty-four hours.) In the GDR, at

² This terminology was introduced by Kornai (1994).

³ PEW Global Attitudes Project – see <http://pewresearch.org/pubs/1554/hungary-economic-discontent-democracy-communism>, accessed 24 July 2012.

any rate, this seems to have been achieved (Boot 1982). Whereas in the 1950s, annual planning had predominated, from 1971–4 the Five-Year Plans became of much greater importance. In the latter period, the annual plans depended much less on actual performance in the previous year, and much more on the Five-Year Plan.

In the traditional model, the plans were worked out by a process of planning and counterplanning, i.e. of administrative iteration. The centre issued control figures, the periphery received the control figures, and, on their basis, submitted plan suggestions to the centre. In the light of these suggestions the centre issued revised control figures. Having received them, the periphery submitted revised suggestions, and so on. This process was sometimes referred to as ‘plan bargaining’.

Planning and counterplanning was not confined to an exchange of documents. A former Soviet planner described (Kushnirsky 1982: 66) how in the USSR in the final stages of compiling a draft plan:

Representative delegations from all ministries and republic gosplans begin the siege of Gosplan. Day after day, ministers and chairmen of republic gosplans, accompanied by their retinues, arrive at Gosplan with arguments, diagrams, calculations and tables with the sole purpose of obtaining more resources. Gosplan preserves a certain amount of resources for such situations, which of course is not enough to satisfy everyone.

An important feature of GDR planning was the crucial role played in this process of administrative iteration by the firms (combines) themselves. Aided by their informational advantage, their small number and their acknowledged capable managers, the firms used their strong position relative to the ministries to make a major input into the planning process (Granick 1975: 211; Boot 1983).

Enterprises in the GDR were grouped into combines. These were large (often vertically) integrated firms, headed by capable managers, and with important rights in the field of foreign trade. Combines such as Carl Zeiss Jena and Robotron were well known for their engineering capability and the quality of their products. A well-known US specialist in international management comparisons stated that his impressions of GDR top industrial management were (Granick 1975: 215) ‘quite favourable’. He was impressed by their apparent willingness both to assert and to delegate authority. He was also impressed by the willingness of the authorities to dismiss politically acceptable but technically inefficient managers and their attention to career planning for managers.

In the mid 1980s, the GDR was a stable welfare state with the highest living standards in the CMEA. Its macroeconomic performance was marked by steady growth and stable prices, at any rate as measured by official statistics. These statistics overstated its actual performance. Nevertheless, compared with the other CMEA countries, its achievements were real and impressive. Although some problems of the traditional model (e.g. widespread shortages) also existed in the GDR, the population was at any rate spared the sharp falls in living standards experienced by Poland and Romania, and the long hours, sharply rising prices and uncertainty about the future which characterised Hungary. (Compared with the FRG, on the other hand, the achievements of the GDR were much less impressive.)

What explained this combination of relative success with an absence of economic reform in the traditional sense of combining central planning with a built-in market mechanism? There appear to be three reasons. First, some aspects of the traditional model were in fact changed. The greater role of the Five-Year Plans, the greater role of the firms (combines) in the plan compilation process, and the authority of the firms (combines) in the economy were all new. If the GDR was not an example of economic reform, it was at any rate an example of a modified, rationalised and technocratic version of the traditional model. Secondly, the environment was especially favourable for the traditional model. This was a result of several factors. In the GDR the traditional model was planted in an old industrial region with substantial numbers of scientists, engineers and skilled workers. The population was already accustomed to industrial society. Hence, the model was able to inherit the traditions of scientific and technical expertise, skilled labour, hard work and the efficient operation of bureaucratic structures that had long existed in what had previously been central Germany. Moreover, the period of full Stalinism in the GDR was very short. In addition, the country had financial and trade links with West Germany which were of great benefit. For example, in the early 1980s, when it had a very difficult external debt situation, it obtained loans guaranteed by the West German authorities. Furthermore, its trade with the West benefited from 'intra-German' trade which in effect gave the GDR privileged access to the EEC market. Thirdly, the policies pursued in the GDR were reasonably sensible.

The 'paradoxical' (from the standpoint of liberal economics) fact that the GDR appeared to have done well compared with countries such as

Yugoslavia and Hungary gave rise to an interesting discussion about the appropriate criteria for assessing the relative performance of state-socialist economies. Kornai (1988), for example, argued that in assessing reform experiences one-sided attention had been given to conventional macroeconomic criteria at the expense of a criterion such as individual freedom. As far as the freedom of individuals to spend their money freely on the goods they really wanted, or the freedom of individuals who wanted to work for themselves, or set up a business, or work in a non-state enterprise was concerned, this, according to Kornai, was clearly much greater in Hungary than in the GDR. According to his values, this greater extent of individual freedom made the Hungarian economic system of the mid 1980s superior to the GDR system. The assessment of the state-socialist system in many countries, and the lessons to be learned from this, are considered in Chapter 10.

In 1989, as a result of perestroika in the USSR, the dictatorship in the GDR came to an end. This led first to a monetary union with the FRG, and then later in 1990 to the dissolution of the GDR and its integration as five new provinces in the FRG. The forty-five-year experiment in building Soviet-style socialism in the homeland of Marx and Engels had come to an end.

China

The traditional model was introduced in China in the 1950s. For example, the First Five-Year Plan (1953–7) was modelled on Soviet experience. This applied both to its strategy (emphasis on heavy industry) and to the principles underlying its method of implementation (e.g. one-man management). Similarly, the institutions characteristic of the traditional model, such as the organisation of agriculture in collective or state farms (see Chapter 6) and the state monopoly of foreign trade (see Chapter 9) were also introduced.

In the wake of the Twentieth Congress of the Soviet Communist Party and China's experience with the traditional model, the Chinese leadership recognised that policy changes would be necessary. For example, in Mao Zedong's 1956 speech *On the ten major relationships*, he argued, inter alia, that it was necessary for China to: pay greater attention to agriculture and light industry; not squeeze the peasants too hard; give greater power to local organs; make less use of repression; not slavishly copy the USSR; and admit weaknesses. Mao's views had considerable

impact on the level at which economic decisions were made. Maoist China was similar in many respects to a multidivisional corporation where the separate divisions (in China, for example, provinces) are fairly self-contained (Qian and Xu 1993a). Nevertheless, although Soviet economic policy was much criticised in Maoist China, many of the policies actually implemented in Maoist China – e.g. the high share of investment in the national income; the concentration of resources on heavy industry; the squeeze on rural consumption; and the suppression of private economic activity – were characteristic of the traditional model. Furthermore, the methods and procedures of economic planning remained similar to the traditional model until the major reforms of the mid 1980s. In addition, the Maoist variant of the traditional model was characterised by an even greater reliance on the use of administrative (bureaucratic) methods than was the case in the CMEA countries after 1956. This was particularly important in the fields of labour and consumer goods.

From 1956, the USSR had a fairly free urban labour market (although moving to cities such as Moscow was difficult, and not to work in the state or collective sector was in general illegal). Workers were free to resign, and enterprises competed for workers. In China, on the other hand, at least up to the mid 1980s, there was virtually no free labour market within the state sector, and most labour was allocated administratively. (Movement from the villages to the towns was prevented by the household registration system.) This system (which had certain resemblances to the Japanese system of life-long employment for male employees in the big-firm sector; to the direction of labour in the UK in World War II; and to the system prevailing in the USSR in 1940–56) had important consequences. It meant that material incentives were much less important for the efficient allocation of labour. The Chinese labour force was allocated to its place of work and the allocation was enforced by the rationing of consumer goods. It also meant that fear of dismissal could not be used to discipline the workers and to raise labour productivity. Furthermore, in the Maoist period, large numbers of people (e.g. school leavers) for whom there were no urban jobs, were directed to the countryside. These matters are considered further in Chapter 7.

Basic consumer goods (e.g. grain, cooking oil, pork, cloth) were rationed in China during the Maoist era. This facilitated both egalitarian distribution and control over population movement. The number of commodities covered by rationing, and the extent to which goods could

be obtained on the free market outside the rationing system, varied sharply over time and between places. In the Maoist period, rationing was extensive and the free market greatly restricted. In the initial reform period rationing continued, enabling urban families officially registered as such to benefit from food subsidies.

Economic reform emerged on the political agenda at the end of 1978 as a result of the coming to power of the victims of the Cultural Revolution; the poor results achieved by the Maoist variant of the traditional model, in particular in the fields of living standards and the modernisation of production; growing official consciousness of China's lag behind the advanced countries and the rapidly growing East Asian countries; and the poor results of Hua Guofeng's mini-Great Leap Forward in 1978.⁴ In 1978, living standards were low; real wages had not increased for two decades (indeed, according to official statistics, average real wages in 1977 were 17 per cent less than they had been twenty years earlier); and poverty was widespread. Furthermore, the technological gap between Chinese production and that of dynamic Asian countries, such as Japan, South Korea, Hong Kong, Taiwan and Singapore, was growing. Instead of overtaking the advanced capitalist countries, China was in danger of falling further behind them. The investment boom of 1978 turned out to be no panacea. It raised investment to a level in excess of the absorptive capacity of the economy and generated macroeconomic disequilibrium.

The most dramatic changes in the Chinese economic system which have been implemented up to the time of writing were in the fields of agriculture (see Chapter 6), external economic relations (see Chapter 9) and the private sector.

In agricultural policy, the main landmarks in the reform process were twofold. First, the Central Committee meeting of December 1978, which raised state procurement prices for agricultural products and initiated what turned out to be a process of decollectivisation in agriculture. Secondly, the Circular of the Central Committee of the Chinese Communist Party on rural work during 1984 (document no. 1, 1984), which endorsed the system of state tenancy which had emerged in the countryside.

⁴ This mini-Great Leap Forward was actually a revival of a plan drawn up in 1975 under the supervision and with the support of Deng Xiaoping (Naughton 1993: 499–500).

In external economic relations, the main developments were: opening the country to FDI; stimulating exports; decentralising the right to participate in foreign trade; and joining the international economic organisations. Opening the country to FDI was initially controversial politically and confined to limited areas, but turned out to be a great success. Firms, initially from the Chinese diaspora but soon followed by the rest of the world, were attracted to China by its (initial) low wages and other costs, export stimulation policies, high rate of growth and large (potential) market. Exports were stimulated by a wide array of policies. As the proposal (adopted in September 1985) of the Central Committee for the Seventh Five-Year Plan (1986–90) clearly stated (paragraphs 41 and 42):

The key to implementing the open-door policy with an increased use of foreign funds and imported technology is to increase foreign exchange earnings through exports. To accomplish this, which is of paramount importance in our modernisation programme, we must adopt strategies which meet the demands of the international market and correspond to China's domestic conditions ... Except for a few major commodities vital to the national economy and the people's everyday life, whenever there are conflicts between exports and domestic sales, priority should be given to the needs of exports.

The export stimulation policies were very successful, and by 2011 China had become the world's largest exporter. In the traditional model, the state monopoly of foreign trade was exercised by a small number (varying over time between ten and sixteen) of foreign trade corporations based in Beijing and responsible to national ministries. This insulated the domestic economy from the rest of the world. A feature of the reforms was the decentralisation of the right to participate in foreign trade. By 1990 there were more than 5,000 companies with international trade rights. China also participated in the international economic organisations. In 1980 China replaced Taiwan as the Chinese member of the IMF and the World Bank, and in 1986 it became a member of the Asian Development Bank. It became a member of the WTO in 2001.

Land in China belongs to the state, and state-owned companies, or companies in which the state has a significant interest, dominate the economy. Nevertheless, there has been a rapid growth of the private sector. This began with FDI, self-employment, enterprises with less than eight employees, and the privatisation of township and village enterprises

(TVEs), and then from the late 1990s domestic private firms boomed. The state retained the large firms but privatised many small ones. The role of entrepreneurs in what, since the Fourteenth Party Congress (1992), was officially termed a 'socialist market economy' was fully recognised. After the Sixteenth Congress (2002) entrepreneurs were formally eligible to become CCP members. At its Seventeenth Congress (2007) the constitution of the CCP was amended to include the formulation that the CCP 'unswervingly encourages, supports and guides the development of the non-public sector. It gives play to the basic role of market forces in allocating resources.' Hence, in 2007 a Property Law was passed giving equal status to public and private property.

Obviously, initial conditions in China differed from those in Eastern Europe and the USSR in a way which had an important impact on the course of economic reform. China had a huge population (more than a billion), most of which in 1978 was engaged in a very labour-intensive agriculture, and a very adverse land-labour ratio. In China at the beginning of reform, food was rationed, peasants tied to their villages and urban workers tied to their place of work. For decades capitalism and market relations had been denounced as incompatible with the state ideology. The prospects for a successful transition to a capitalist system seemed bleak. Despite the obvious difficulties of developing market relations under such conditions, it turned out that initial conditions in China also differed from those in Eastern Europe and the USSR in some ways which were positive for reform and economic growth. These positive initial conditions were *demographic*, *international* and *organisational*.

The *demographic* situation created the possibility of what Lewis (1954) described as 'economic development with unlimited supplies of labour'. This facilitated the rapid growth first of the collective sector (e.g. village and township enterprises – see Chapter 6) and then of the private sector. Nee and Oppen (2012: 161) noted that: 'An abundant, nearly limitless supply of young, healthy, and literate workers ready to shift out of agricultural production was a big factor fueling the rapid growth and competitive advantage of the private enterprise economy.'

The *international* situation had three positive aspects for China. First, there was a large entrepreneurial diaspora in Hong Kong, Taiwan and Southeast Asia that was prepared to invest in China under suitable conditions. Secondly, Japan adopted a positive attitude to China's reforms, which promised new export markets and a bulwark against the USSR, and provided soft loans and many useful exported goods.

This played a very important role in the 1980s. Thirdly, the USA also adopted a positive attitude to the reforms, initially for geopolitical and ideological reasons, and later for economic ones. Geopolitically, at a time of intense Cold War competition between the USA and USSR, a stronger China (which was very hostile to the USSR) was in the interests of the USA. Ideologically, the USA supported the ending of 'central planning' and the development of a market economy. Economically, in due course China became a very attractive source of cheap goods for the US market and much US manufacturing was outsourced to China.

An important *organisational* difference was that whereas the USSR and Eastern Europe were organised on unitary lines (the U-form organisation), China was organised on multidivisional lines (the M-form organisation). U-form organisations are organised on functional lines, M-form organisations on product, technology, or geographical lines.⁵ Whereas the Soviet economy was mainly administered by functional all-Union bodies (such as the industrial ministries), a large part of economic activity in China was administered by regional bodies (provinces, counties, municipalities etc.). Within the framework of national policy, these had substantial autonomy. This involved some loss of economies of scale, regional protectionism and wasteful duplication. However, it had the advantages (Qian and Xu 1993a) that it provided a favourable environment for regional experiments, stimulated competition to achieve good economic results, and encouraged the emergence in the 1980s of the non-state sector, in particular the township and village enterprises (see Chapter 6).

In addition to the specific *initial conditions*, there have been four important features of Chinese *economic policy* in the three decades of reform and transition to capitalism: first, its goal; secondly, its approach; thirdly, its method; fourthly, its instrument.

The *goal* of China's reforms has been to generate rapid economic growth (Pomfret 1997). This was necessary to reduce the gap between China and the advanced countries, and to generate income and employment growth. Its *approach* has had three characteristic features: first, to

⁵ The terminology 'U-form' and 'M-form' was introduced by Williamson (1975) building on Chandler's (1966) study of US corporations. The U-form was characteristic of corporations in the nineteenth and early twentieth centuries. M-form organisations emerged from the 1920s. The Kautsky-Lenin notion of an economy organised like one giant factory was an example of a U-form organisation.

avoid attempts to implement a comprehensive blueprint and instead, in the famous words of Chen Yun, ‘to cross the river by groping for stepping stones’; secondly, to have patience and to adopt a long-term perspective; and thirdly, to accommodate unplanned, spontaneous change that was positive from the point of view of economic growth, employment and tax revenue.⁶ The *method* has generally been to experiment with new ideas/institutions in part of the country and see how that works out. If it works out well, it is extended to the rest of the country. The *instrument* which has implemented policy has been a decentralised developmental state which has supervised the process and taken advantage of the domestic and international situation as much as possible.⁷

⁶ An example of this was Deng Xiaoping’s attitude, during the reform era, to the emergence of private firms. In the mid 1980s he urged toleration of newly emerging private firms. As he himself later recalled (Naughton 1993: 507): ‘During the early period of rural reform, there was the question of “Blockhead Melon-seeds” in Anhui [a successful private business that sold dried salted melon seeds, and greatly exceeded the stipulated size for household businesses]. At that time many people were uncomfortable – said this guy’s made a million – and advocated intervention. I said, don’t intervene, if you intervene people will say that policy has changed and the benefits would not be worth the costs.’

⁷ The application of the term ‘developmental state’ to China was criticised by Howell (2006). She correctly drew attention to the autonomy of provincial and local governments, which often pursue their own agendas, to the frequently predatory role of the state, and to the international constraints on state action. Even when the central bodies agree on a policy, it is difficult to impose it on the localities if it is against their interests. Obviously, factors other than state policy, such as the initial conditions mentioned above, and the emergence of a *de novo* entrepreneurial sector, have played a major role in China’s development. Consequently, Howell argued that a term originally introduced to describe Japan, South Korea and Taiwan was inapplicable to China. It is certainly the case that when defined as in Howell (2006: 283–91) China does not meet the requirements of a developmental state. However, the term ‘developmental state’ does make sense when applied to China if it is understood as the activity of Party and state officials, at central, provincial and local levels, to stimulate economic development, and their success in achieving this (by which they are usually assessed). Party and state officials in China play a role in economic development which is not only fundamentally different from that in the night watchman state or in the neoliberal utopia, but which has undoubtedly played a major role in the process of rapid development and systemic change that China has experienced in recent decades. Hence the term ‘developmental state’ is used in this book to describe China (and Vietnam) despite the fact that ‘the state’ in a continent-sized country with a huge population such as China is certainly not a unitary actor, elements of predation are widespread, policies and institutions have to be formulated and developed in the context of the global economy, and factors other than Party and state policies have played a large role in China’s rapid development.

The result has been a phenomenal success. For three decades growth has averaged about 10 per cent p.a. As a result, in 2010 China became the world's second largest economy, and in 2011 the world's largest exporter. The number of people living below the poverty line has declined by hundreds of millions. China is rapidly developing its R&D, higher education, large firms and external investment. It has upgraded its exports, and now exports many sophisticated products for use in advanced sectors of the economy. In 2013 its gold and foreign exchange reserves were about 4 trillion dollars. Extrapolation suggests that, within quite a short time, it will become the world's largest economy. Although it has many economic, social, political and environmental problems, it has become the workshop of the world and the envy of policy makers in many other countries.

USSR

The first attempt at economic reform in the USSR took place in 1965. It followed the poor economic performance of the early 1960s (in 1963, according to the CIA, Soviet GNP actually fell slightly); Khrushchev's criticism of Stalin's policies at the Twenty-second Party Congress (1961); a wide public discussion of the need for reform; and the fall of Khrushchev (1964). The new leaders hastened to announce new policies in agriculture and a reform of the urban sector. Although the reintroduction of the economic ministries was a lasting result of the reform announced by Kosygin in September 1965, the promised greater independence of enterprises and the gradual transition to wholesale trade remained just promises. In 1969, partly as a result of problems in implementing the reform (Kushnirsky 1982), and partly as a result of the close connection which the 1968 Czechoslovak events had shown existed between economic and political reforms, the marketisation aspect of the reforms was reversed. Looking back two decades later, Kontorovich (1988) argued that the Kosygin reform, which seemed quite rational from a Western standpoint, was actually – under Soviet conditions – counterproductive, and that its reversal was economically rational. The main reason for this was that it harmed the balancing of needs and availability for individual (groups of) commodities that was the core of traditional planning and essential for the smooth running of the system.

The next attempt at economic reform began in 1986 and was part of Gorbachev's *perestroika*. Initially, this was about improving the

working of the traditional system rather than challenging its main features. It aimed at overcoming the 'pre-crisis' situation (this was Gorbachev's own description) in which the USSR found itself in the mid 1980s. By a 'pre-crisis' situation, Gorbachev meant a situation which, if not resolved, would inevitably be followed by a real economic crisis, for example, the one which raged in Poland in 1980–2. This pre-crisis situation was characterised by economic stagnation, internal disequilibrium, an increasing lag in economic and technological development behind the developed capitalist countries, and widespread drunkenness, corruption, misuse of official positions and indifference to the public good. Unfortunately for its success, perestroika was launched at a time when the terms of trade were adverse. World oil prices fell from an average of about \$37 a barrel in 1980 to about \$14 a barrel in 1986. This was a fall of 62 per cent in nominal terms and more, allowing for inflation, in real terms. In 1986 the Soviet hard currency export price for oil averaged only 44 per cent of the 1985 level and it remained on a low level throughout the perestroika period. Hard currency export prices for natural gas also fell sharply, reaching only 38 per cent of the 1985 level in 1988. Since oil and natural gas were the main Soviet hard currency exports, the USSR in the perestroika period faced an acute foreign exchange crisis. It also faced a drastic worsening of the fiscal situation since the income from exporting oil and natural gas was a major contribution to the income of the state budget.

Gorbachev's policies combined economic policy changes, economic reform and political reform. Important policy changes were the acceleration policy adopted in 1985, and the fiscal, monetary, incomes and price policies pursued in 1985–91. The acceleration policy was intended to increase the rate of growth by modernising the engineering sector. It led to a sharp increase in investment in 1986–8. The rate of growth of fixed capital seems to have increased by about a third in 1986–8 compared with previous years. This had the usual effect of investment upswings in a supply-constrained economy. Construction periods lengthened, the stock of unfinished construction rose, shortages increased, consumption was squeezed and the balance of payments worsened.

Fiscal policy was very destabilising. In 1985–9 the budget deficit more than quintupled in money terms, and increased from about 2 per cent of GNP to about 9 per cent. The increased deficit reflected the extra expenditures on investment, and the loss of income resulting from reduced oil prices and reduced state alcohol sales (as a result of the

anti-alcohol campaign). The deficit was partly financed by issuing additional cash. In 1960–87 the issue of new money averaged 2.2 billion roubles per year. In 1988 it was 12 billion; in 1989 it was 18 billion; and in 1990 it was 27 billion. Between the end of 1985 and the end of 1990 the volume of cash in circulation grew by 93 per cent. Incomes rose quickly as a result of increased wages and social payments and the economic reforms. Money incomes of the population rose by only 4 per cent in 1986 and 1987, but by 9 per cent in 1988, 13 per cent in 1989, and 17 per cent in 1990. In 1991 in the Russian Republic they rose by 117 per cent. Prices in state trade were fixed by the state and traditionally held stable. Under conditions of rising incomes this naturally worsened shortages. Several times (1982, 1987), the authorities seriously considered raising retail prices, but rejected this for fear of the political consequences. In May 1990 the government proposed raising retail prices (which precipitated a run on the shops, and made the shortages worse), but the Supreme Soviet rejected this (the possibility of rejecting government policy resulted from the political reform).⁸ State retail prices were finally raised by about two-thirds in April 1991, which reduced shortages for a couple of months, but by the end of the year the USSR was suffering from acute shortageflation (a combination of shortages and open inflation). In retrospect, Gorbachev argued that his illusion in 1985 was the idea that radical reform would be possible with the inherited officials. For an economist, however, his illusion was the idea that radical reform was possible while ignoring the need for financial control (McKinnon 1993).

Another destabilising policy was the attack on the bureaucratic apparatus. An important feature of the early perestroika period was the vigorous attack on the central bureaucratic apparatus. The ministries and state committees of the All-Union government were seen as centres of conservatism and bureaucratic resistance to reform. Their staffs were reduced and they were repeatedly restructured. For example, in November 1985 the five ministries and one state committee which had previously administered agriculture were abolished and replaced by

⁸ The fact that political reform made it more difficult to implement economic policy was why Deng Xiaoping thought Gorbachev an idiot (Vogel 2011: 411). “My father,” Deng’s younger son, Deng Zhifang, told an American acquaintance, “thinks Gorbachev is an idiot.” Gorbachev, his father had explained, set out to change the political system first. That was a misguided policy because “he won’t have the power to fix the economic problems and the people will remove him.”

one body, the State Agro-Industrial Committee. In 1989 the latter in turn was abolished. When this happened, its responsibilities for supply were transferred to the State Committee of Supply, a new central body (the State Committee of Food and Procurement) which was created to deal with food and procurement questions; and the function of managing agriculture was removed from the All-Union authorities and transferred to the republics.

At the Twenty-eighth Party Congress (June–July 1990), 105 delegates circulated a statement about the needs of agriculture in the non-black-earth zone of the Russian Republic.⁹ Among other things, the statement criticised the endless administrative reorganisations affecting agriculture:

In recent years the agro-industrial complex has been continuously reorganised. This has destroyed the links and interrelationships between the different parts of the agro-industrial complex, led to the loss of many highly qualified specialists, and weakened technological, productive and state discipline.

This was the view of most of the agricultural delegates. At the section on agrarian policy of the Congress, practically all the speakers proposed re-establishing the Ministry of Agriculture. The resolution of the Congress on agricultural policy specifically called for the restoration of the Ministries of Agriculture and Agricultural Machinery, and the re-establishment of a supply and service system specifically for agriculture. These demands were not conceded (partly because that would have been an admission that Gorbachev's earlier reorganisations had been harmful, and partly because they came from people opposed to Gorbachev's partial decollectivisation policy). In January 1991, however, a new All-Union body, a commission headed by a First Deputy Chairman of the USSR Council of Ministers and including representatives of the republics, was set up to deal with the food situation. Just two months later, in March 1991, eight months after the Congress, and after a sharp deterioration in the agricultural and food situation, an All-Union Ministry of Agriculture and Food was created.

It is not surprising that, with these successive administrative reorganisations, agriculture did not fare very well. Under the conditions prevailing in the USSR in the 1980s, agriculture needed a stable and efficient central and local bureaucratic apparatus to provide it with material

⁹ The full text is in *Izvestiya TsK KPSS* 10 (1990), 65–7.

inputs and defend its interests. In a shortage economy¹⁰ of the Soviet type, in the absence of a special supply apparatus, farms simply would not receive the material inputs they needed. There was no smoothly functioning wholesale market offering an alternative source of supply – only a number of monopolistic factories prepared to barter inputs for food products. Instead of benefiting from a minimally competent and stable bureaucratic apparatus, agriculture suffered from a bureaucratic merry-go-round organised by the country's top political leadership. This was typical of the situation throughout the economy. Gorbachev (partially) removed the bureaucratic apparatus which had previously implemented policy, linked the centre with the periphery, and provided the management staff for the entire complex system.

Besides destabilising policies, perestroika included a radical economic reform. The main measures were: the law on individual economic activity (November 1986); the decree on joint ventures with foreigners (January 1987); the law 'On the State Enterprise' (June 1987); the law on cooperatives (May 1988); the permission for workers to lease their enterprises from the state (April 1989); the official advocacy of a substantial expansion of the family contract and lease contract systems in agriculture in 1987–8;¹¹ and the announcement of the government's reform strategy (May 1990). There were other reforms as well, e.g. the 1986 reform in construction. According to Politburo member N. N. Slyunkov (*Pravda*, 8 February 1990):

A big blow to the economy and to the consumer goods market was given by the so-called 'new mechanism in construction' introduced in 1986. This was a ruinous input-increasing mechanism. As a result of its operation incomplete construction financed by state investment increased in four years by sixty billion roubles. This was the whole of the increase in the national income of the country. Moreover, about twenty billion roubles in wages was paid out for this.

¹⁰ This term was introduced by Kornai (1980).

¹¹ A 'family contract' or 'family commitment' was an arrangement between a small group, usually one or two families, and an official organisation such as a collective or state farm. The group obtained the right, for a certain period, to use a certain patch of land or to look after a certain number of animals. In return, it committed itself to deliver an agreed quantity of products to the official organisation, either at regular intervals or at the end of the contract/commitment period. In a 'lease contract' the contract/commitment ran for a number of years.

All these measures, together with the political changes which Gorbachev also introduced, affected all five main features of the traditional model.

Probably the most harmful reform was the 1987 law on the state enterprise, which went into effect from 1 January 1988. This led to price increases, assortment changes, output reductions, excessive wage increases and a worsening of the reliability of the supply system (Ellman and Kontorovich 1992: 23–4).

The political changes in 1985–90 were very radical. They ended the dictatorship and led to substantial democratisation and a rapid flowering of civil society. Although the expansion of freedom which this led to had many positive aspects, the political changes had immediate adverse economic consequences and – combined with the economic chaos – led to the break-up of the USSR.

During 1985–90 the USSR ceased to have a state ideology. At the same time, massive publicity was given to the crimes of Stalinism, which had the effect of delegitimising the CPSU, Soviet socialism and the USSR itself. Even the CPSU distanced itself from Marxism–Leninism. These ideological changes were implemented to deprive conservative opponents of Gorbachev's economic programme of their ammunition, and enable him to push through the changes he wanted to introduce (e.g. partial decollectivisation of agriculture). They also had unforeseen and damaging destabilising effects on the economy. The writer whose articles in 1988–9 were the most extreme in denouncing the former official ideology subsequently wrote that (Tsipko 1998: 184):

If we had known the high price that the average Soviet citizen would have to pay for our vehement denunciation of the official ideology, we would probably have been more cautious in our assault on the Soviet past. However, at the time we believed that the main impediments to a normal life were the vestiges of Stalinism and the shackles of the official ideology.

One of the striking effects of the destruction of Marxism–Leninism was that it was partially replaced by religion and nationalism. In a multinational and multireligious state without any tradition of mutual tolerance, and in which religious allegiance, ethnic identity and political loyalties were closely linked, the destruction of Marxism–Leninism and the revival of religion and nationalism led to the weakening of the USSR as a unitary state. Replacing an ideology which was uniform throughout the country by ideologies which divided it on ethnic lines was a recipe for conflicts and possible disintegration – not just of the

traditional model but of the very state itself. The emergence of nationalism on to the political stage led to a wide variety of conflicts, and had serious economic costs (e.g. the loss of output in Armenia as a result of the blockade by Azerbaijan; the loss of output in Central Asia as a result of the out-migration by Russians afraid of what the future might bring; and the loss of output in the Baltic republics as a result of the struggle between them and the central government).

Another radical political reform, which had the effect of destabilising the economy, was the removal of the Party from the economy. By removing the Party from its role in the economy, Gorbachev removed an essential feature of the smooth running of the traditional model. In the traditional model, the Party committees at all levels played an essential role. They cut through the maze of conflicting bureaucratic bodies, and enforced the priorities of the centre. Once they withdrew from the economy, however, factories, cities, regions and republics were free to do what they thought best, regardless of the documents emanating from the centre. The prominent Russian economist Yasin (1998: 168) explained that it was this crucial political reform that made it impossible in the USSR to implement a Chinese-style gradual and controlled economic reform:

Party organs, standing above the law because they controlled the levers of power, were the last authority capable of maintaining the operation of the collapsing economic machinery. They could fire any director and appoint a new one, or instantly change the social status of any senior official, all of whom were Party members. This allowed them to control resources and to force any enterprise to produce required items at its own expense. Up till 1989, Party organs were literally flooded with letters and telegrams from enterprises requesting that they lean on an unreliable supplier or delinquent customer, help obtain more inputs, etc. The Party even complained that such entreaties distracted them from their primary duty – political work. Actually, this management function was the Party's most useful activity.

The Party's influence was especially strong in agriculture, where collective farms were officially not subordinate to a higher administrative agency. The Party organs organized planting and harvesting, imposed agricultural products procurement agreements, and constantly cajoled collective farms' chairmen and state farms' directors. The Party would try to fix all the leaks sprung by the economic system. When its influence began to wane, the impact on the economy was immediate, no matter what the effect of other reforms was. After this, any kind of Chinese-style gradual reform became impossible.

Furthermore, the process of political reform, by transferring much power to the Soviets and permitting the emergence of independent social organisations, had destabilising economic consequences – varying from the introduction of customs posts round republics, and depriving non-residents of certain cities of the possibility of shopping there, to the closing of ecologically harmful factories. It also led to the coming to power of anti-Communists in part of the country (Moscow, Leningrad, Russia, Baltic republics, Georgia). These anti-Communists were prepared to go ahead with reforms in their areas, regardless of their effects elsewhere, in what had been a unitary state.

This combination of adverse terms of trade, harmful economic policies, economic reform and radical political reform dramatically worsened the economic situation and led to a political crisis. The outcome was the dissolution of the USSR (December 1991). This led to an attempt to make a rapid transition to capitalism in Russia and some other former Soviet republics.

Lessons of reform

From economic reform to system change

In some countries, e.g. Hungary, when combined with appropriate economic policies, economic reform was quite successful in raising living standards. In other countries, e.g. the USSR, economic reform in an unfavourable environment, combined with destabilising economic policies and political reform, led to a drastic worsening of the economic situation and contributed to the dissolution of the country. The political changes introduced in the USSR under Gorbachev had the effect of ending the dictatorship in the USSR and Eastern Europe, one of the five key features of the traditional model. This created the possibility of going beyond economic reform within the state-socialist framework to a fundamental change in the economic and political system.

In a number of countries this was quite successful and these countries ‘returned to Europe’. In 2004 Poland, Hungary, the Czech Republic, Slovakia, Slovenia, Estonia, Latvia and Lithuania joined the European Union. Romania and Bulgaria joined in 2007. Although these countries had a variety of serious problems, e.g. unemployment, poverty, inequality and corruption, they had broken decisively with the former economic and political model.

In China the changes were less radical. In particular the dictatorship was retained. Nevertheless, the end of economic planning in the Stalinist sense, growth of the private sector and integration into the world economy can also be considered systemic changes.

Economic reform (in the sense of limited within-system changes) as an end point of change has been rejected everywhere.

Planning and the developmental state

Planning, in the traditional sense of a virtually all-embracing bureaucratic system of resource allocation, has been rejected everywhere. But that does not mean that the economy has been left to market forces. In the countries that have 'returned to Europe', the economy is regulated by numerous laws and regulations, influenced by fiscal, monetary and other policies (e.g. employment policies and innovation policies), and the state provides pensions and a variety of other social programmes. A substantial part of the national income is redistributed through the state budget via taxes and social programmes. In China, there has been a combination of a national developmental state (Chang 1999) with numerous regional developmental states, and this has played a key role in China's economic growth. Central and regional governments have used their discretion to stimulate the economy. Traditional planning has been abandoned, but what has not been abandoned is the leading role of the state in the economy and society.

Up till now, the Chinese developmental state has been very successful in stimulating growth. However, it has an important inherent problem. The same discretion that allows central and regional officials to stimulate growth also enables them to enrich themselves. Hence corruption is a major social problem. Given the role of the state in the economy, and the dictatorship, it would seem to be an unavoidable problem. It also has serious political consequences since it undermines the legitimacy of the Party and the whole socio-economic system. So China exhibits an important contradiction – the same developmental state largely responsible for economic growth at the same time undermines the legitimacy of the system. Whether the political system will remain as it is, evolve towards authoritarianism and/or a developmental state of the East Asian kind, or collapse, is uncertain. The collapse of the CPSU and USSR, and the chaos and socio-economic decline that followed, strengthened the dictatorship by showing the possible dangerous consequences of ending it.

Market socialism

Market socialism is the idea of combining the market mechanism with an economy based on publicly or collectively owned property. As an idea it originated in the defence of socialism by economists, such as Lange and Lerner, from the attacks of economists, such as von Mises, who argued (on the basis of the War Communism experience in the USSR) that rational economic calculation was impossible under socialism. Under socialism, he argued, there was no private property, and without private property there could be no rational prices. Market socialism, as a system actually working somewhere, was often identified with Yugoslavia after 1965 and Hungary under the New Economic Mechanism. However, the radical transformation in China has raised the question whether that country qualifies as 'market socialist' (Gabriele 2010).¹²

China today has labour and consumer goods markets, markets for producer goods and a capital market. It has many characteristics of a market economy such as an absence of shortages; competition; prices which fall as well as rise; an abundance of entrepreneurs; extensive private ownership; close links with the world market; and sharp wealth and income inequalities. To that extent it can be considered a market economy. On the other hand, the state owns or controls the majority of the large firms; owns all the land; owns and controls the education system; and uses regulatory, monetary and fiscal policy to steer the economy. It is clearly a hybrid system for which terms developed in past debates are not very relevant. In this book it will be termed 'developmental-state capitalism with state-socialist features'. The reasons for this terminology are explained in the Appendix to this chapter.

Demilitarisation

An important feature of the traditional model was the priority given to the military sector, which absorbed a large proportion of the available resources. Hence, an integral feature of successful reform was a successful demilitarisation process which redirected a large part of those resources to civilian purposes. In the USSR, the importance of the

¹² Qian and Xu (1993b) referred to it as 'decentralized market socialism' based on its ownership structure. However, in the twenty years that followed, the rapid growth of private ownership undermined the basis for this description.

conversion of military production facilities to civilian purposes was only realised in the late perestroika period and was scarcely implemented before the USSR collapsed. (It was only in the Yeltsin period that the Russian economy was demilitarised.) In China, conversion was an important part of economic policy in the reform period. Although it encountered many difficulties, on the whole it played a useful role in reorienting production to meet the needs of the population.

During the Maoist period there was a substantial militarisation of the Chinese economy. This can be seen from the data set out in Table 3.1. The table shows, subject to data limitations, that in every year in 1962–80 the proportion of large and medium industrial

Table 3.1 *Starting date of defence and non-defence large and medium industrial enterprises*

Year	Tier 1 ^a	Tier 2 ^b	Total started ^c	Tier 1 as % started
1950	12	18	194	6.2
1951	23	21	198	11.6
1952	13	37	274	4.7
1953	11	21	168	6.5
1954	5	11	174	2.9
1955	3	13	101	4.0
1956	20	43	421	4.8
1957	13	18	191	6.8
1958	42	94	696	6.0
1959	25	47	420	6.0
1960	22	32	244	9.0
1961	6	1	81	7.4
1962	17	12	114	14.9
1963	18	3	64	28.1
1964	17	7	103	16.5
1965	85	31	247	34.4
1966	95	36	339	28.0
1967	34	6	124	27.4
1968	25	10	98	25.5
1969	71	24	212	33.5
1970	162	28	472	34.3
1971	65	12	221	29.4
1972	32	9	163	19.6

Table 3.1 (*cont.*)

Year	Tier 1 ^a	Tier 2 ^b	Total started ^c	Tier 1 as % started
1973	19	7	132	14.4
1974	19	3	93	20.4
1975	34	5	113	30.1
1976	20	0	91	22.0
1977	14	4	73	19.2
1978	11	2	65	16.9
1979	14	4	93	15.1
1980	21	1	77	27.3
1981	5	0	78	6.4
1982	7	2	85	8.2
1983	5	2	63	7.9
1984	4	2	71	5.6
1985	1	1	73	1.4

^aTier 1 enterprises are core defence enterprises. The figures in this column show the number of them that began production in the year concerned.

^bTier 2 enterprises have some defence responsibilities. The figures in this column show the number of them that began production in the year concerned.

^cThis is the total number of large and medium industrial enterprises that began production in the year concerned.

Source: Bachman (2013: 447). Bachman stresses the limitations of the data, and hence the limited light this table throws on the defence-industrial sector.

enterprises in the core defence sector which began production was at least 14 per cent of the total number of large and medium industrial enterprises which began production. In most years in that period the proportion was much above that figure, being 30 per cent or more in four of them. On average in 1962–80 it was 24.1 per cent. This means that in 1962–80 approximately a quarter of all new large and medium industrial enterprises were defence-industry enterprises, a remarkably high figure. The table also shows the very sharp decline in the build-up in defence production-capacity in the reform period of the early 1980s. By 1985 the number of defence-industry enterprises entering production was only 5 per cent of what it was in the year of Mao's death.

Table 3.2 *Proportions of military and civilian production in Chinese defence industry enterprises, 1978–97 (%)*

Year	Military production	Civilian production
1978	92	8
1979	84	16
1980	78	22
1981	72	28
1982	66	34
1983	60	40
1984	54	46
1985	48	52
1986	38	62
1987	37	63
1988	28	72
1989	26	74
1990	26	74
1991	23	77
1992	20	80
1993	19	81
1994	15.5	84.5
1995	17	83
1996	15.5	84.5
1997	15.5	84.5

Source: Cheung (2009: 76). One apparent printing error corrected.

What is important is not only the number of defence–industry enterprises but what they actually produce. The increasing proportion of the output of the Chinese defence sector which comprised civilian goods during the reform period is set out in Table 3.2.

For many years after 1978, military modernisation was treated as the least urgent of the four modernisations,¹³ as Tables 3.1 and 3.2 indicate. This demilitarisation of the economy was an important contribution to

¹³ The ‘four modernisations’ were the modernisation of agriculture, industry, defence, and science and technology. They were first advocated by Zhou Enlai (in 1963 and 1975), and subsequently by Deng Xiaoping from 1978. Attention to these goals implied inattention to other goals, such as political mobilisation, class struggle and the transition to socialism/communism.

the reform process. It freed up resources which could be used for the civilian sector. However, with rapid economic growth and the completion of growing out of the plan, came an increase in the absolute amount of military spending. SIPRI (the Stockholm International Peace Research Institute) estimated that, in the first few years of the second decade of the twenty-first century, China's military expenditure was about 2 per cent of GDP. Since GDP was growing quickly, so was military expenditure in absolute terms. According to SIPRI, military expenditure in China in 2012 was 2 per cent of GDP, which was US \$249 billion at purchasing power parity. This was the second highest military expenditure in the world, much higher than countries such as Russia, the UK, France, or Japan, and 37 per cent of US military expenditure. It was relatively low as a proportion of GDP, or per capita, but relatively high in absolute terms if measured at purchasing power parity. If military expenditure stays at about 2 per cent of GDP, and GDP continues to grow rapidly, then China's military expenditure in absolute terms will also continue to grow rapidly. According to SIPRI, in 2003–12 China's military spending increased by 175 per cent, i.e. it almost tripled. However, the SIPRI estimates, which treat internal security spending as defence expenditure, are controversial, and their international comparability uncertain (Liff and Erickson 2013).

Conclusion

Economic reform was a response to the problems of the traditional model. First discussed in the USSR in the early 1930s, its implementation began in Yugoslavia in 1950–1, and subsequently spread to Poland, Hungary, China and the USSR. It was an attempt to combine some features of the traditional model with some aspects of the market mechanism. In some cases (Yugoslavia, Hungary, China), in some periods, it had favourable effects on living standards. In other cases (e.g. the GDR), with a favourable economic environment, it was unnecessary. In one very important case (the USSR) when tried under conditions of adverse terms of trade, and combined with destabilising economic policies and political reform, it led to an economic catastrophe and the break-up of the state. Successful economic reform in highly militarised states required a successful programme to reduce investment in the defence industry and convert military facilities to civilian uses.

Economic reform turned out to be not a destination but just a stage on the road to system change. In the new systems that developed, planning in the sense of the virtually all-embracing bureaucratic allocation of resources was abolished everywhere. However, this was not the end of the role of the state in the economy. This remained significant everywhere. The former CMEA and FSU countries that joined the EU combined extensive state regulation of the economy with budgetary redistribution that levied taxes and provided social benefits. Economic development in China was stimulated by its national and regional developmental states. The current economic system in that country can be described as developmental-state capitalism with state-socialist features. It combines a dominant role for the state and the dictatorship of the Communist Party with a large private sector and sharp inequalities, and a very extensive reliance on market forces.

Appendix: A note on terminology

1. The market economy

This is a widely used term to describe OECD countries. In these countries private ownership and markets for labour services, capital, land, and goods and services play a major part in the economy. The majority of the economically active population work in private-sector firms and buy their consumption goods in the market. However, the description ‘market economy’ for these countries is incomplete and one-sided. It ignores the role of state policy (fiscal, monetary, educational, technical progress, employment, redistributive, regulatory, etc.) in their economic life. It also ignores the importance of bureaucratic allocation within the state sector (e.g. education and defence) and of bureaucratic hierarchies within corporations. It also fails fully to incorporate the non-profit, cooperative and mutual sectors. In addition, in these economies certain potential market activities (e.g. the market for labourers, i.e. slaves, the production and use of drugs) are banned. In addition, efficient delivery of basic public services requires that judges, police, tax officials, military personnel, and local and central government officials have a public service ethos and do not sell their services to the highest bidder. Altruism also plays a role, e.g. for blood transfusion in those countries where this is unpaid and, under certain circumstances, for organ donation. Furthermore, an important role is played by

non-market ethics. Even in countries with fee-for-service medical systems, doctors are expected to offer the advice that is most in the interests of their patients rather than in their own commercial interest. Banks that sell profitable products to their clients that are not in the best interests of their clients may be fined billions for ignoring ethical (and legal) rules. Professors who give advice based on their own commercial interests, or who sell examination results or degree certificates, may be dismissed. Moreover, the economy is embedded in a society where non-market allocation, e.g. reciprocity, is very important. People are born into, and live most of their lives in, families/multi-person households. Relationships within families/multi-person households are those of reciprocity. Although there is a market for sexual services, most sexual services are provided on the basis of reciprocity, and this is generally considered more appropriate. (In some so-called market economies this market is even illegal.)

Hence, some term other than 'market economy' is needed to capture the complexity of the economic systems of OECD countries. A traditional one is 'capitalism'. This is widely used but has the disadvantage that it is often considered a pejorative term, and for those educated in the FSU and the former Eastern Europe it is difficult to escape from its negative connotations. However, it has the merit of not concentrating exclusively on the market and allowing for the wide variety of sectors, allocation mechanisms and motivations that characterise OECD countries. Hence, it will be used in this book. It is intended as a non-evaluative descriptive term for an OECD-type economy.

2. What term best describes the current economic system in China and Vietnam?

The economic system that has evolved in China and Vietnam is difficult to describe using traditional terms (Kornai and Qian 2009b). It does not seem to be socialist in the traditional state-socialist sense, because of its large role for private ownership, market relationships, profit-seeking and inequality. On the other hand, it is not a capitalist economy in the traditional understanding because of the dictatorship of the Communist Party, which survives from the traditional model of state socialism; the important role of state economic policies; and the importance of state-owned firms, which still control what Lenin termed the 'commanding heights' of the economy. There is considerable friction between the

purely capitalist and state sectors. Evidently this system is a hybrid, which incorporates elements of both state socialism and of capitalism.¹⁴

Two terms have come into use to describe this hybrid, 'state capitalism' and 'market socialism'. The first is a Leninist term which originally described the German war economy in World War I. It has the merit of stressing the combination of the important role of the state with the important role of private ownership and market relationships. It also accepts the judgement of the China specialist Naughton (2010: 440) that modern China 'can legitimately be considered a variant of "capitalism", because most of the agents, even when state-owned, are driven to maximise profit . . . [and] the system as a whole is firmly founded on a market economy system, and this is, of course, crucial to Chinese economic success'. The second was originally developed to describe a Lange-type Walrasian economic system with state ownership but market allocation. As such, it is obviously inappropriate since the countries concerned do not easily fit into the Walrasian model, have political elites, economic policies and economic institutions aiming at rapid development, have largely private ownership and substantial inequality, and the allocation of resources is heavily influenced by state policy and ownership. However, the term 'market socialism' has the merit of pointing out that these are largely market economies combined with the dictatorship of the Communist Party, an essential feature of state socialism, and a very important role for the state in the economy, with respect both to policy and to ownership and control.

It is tempting to describe these economies as 'developmental-state capitalist'. This is intended to distinguish them from the purely military-oriented nature of the German World War I economy and stress their goal of rapid development. It also aims to capture four essential elements. First, that these are relatively backward countries (although much less so than in the recent past) and their political elites are aiming at (and up till now have been successful in achieving) rapid economic development, industrialisation and modernisation. Secondly, that the state plays an essential role in their economic lives. Thirdly, that private ownership, market relationships and inequality are crucial aspects of

¹⁴ Kornai and Qian (2009a) argued that it is a market system, and the term 'socialist' to describe it is purely rhetorical. However, this ignores the role of the Communist Party, state policy and the state-owned enterprises. It also pays no attention to the level of development.

their economies. Fourthly, their integration into the global capitalist system. The main problem with this terminology is that it identifies these hybrid states with countries such as South Korea or Taiwan which have substantially different political systems.

Since they are obviously *sui generis*, it is sensible to find a *sui generis* term for them. One possibility, which is used in this book, is 'developmental-state capitalism with state-socialist features'. This is cumbersome (and hence sometimes abbreviated simply to 'capitalism') but has the merit of stressing the combination of a developmental state with Communist rule and state ownership (and/or control) of the commanding heights, and lays the emphasis on the 'developmental state' part of the description. It incorporates private ownership, market relationships and integration into the world capitalist system, and hence identifies the system as a variety of capitalism, since these are well-known features of earlier developmental states, such as those in Japan, South Korea, Taiwan and Singapore. It leaves open the question whether, at some future dates, they might evolve into developmental states without the 'state-socialist features', that is without Communist rule and state ownership (and/or control) of the commanding heights, or developed capitalist economies. It should be noted that 'state' in the term 'developmental-state capitalism with state-socialist features' includes both central and local state institutions.

SUGGESTIONS FOR FURTHER READING

Introduction

- W. Brus and K. Laski, *From Marx to the market* (Oxford, 1989).
 J. Kornai, *The socialist system* (Oxford, 1992), chapters 16–24.
 G. Koldko and W. McMahon, 'Stagflation and shortageflation: A comparative approach', *Kyklos* 40(2) (1987), 176–97.
 R. McKinnon, *The order of economic liberalization: Financial control in the transition to a market economy*, 2nd edn (Baltimore, 1983).

Cases

Yugoslavia

- H. Lydall, *Yugoslav socialism* (Oxford, 1984).
 L. Sirc, *The Yugoslav economy under self-management* (London, 1979).

- S. Estrin, *Self-management: Economic theory and Yugoslav practice* (Cambridge, 1984).
- A. Ber-Ner, and E. Neuberger, 'The feasibility of planned market systems: The Yugoslav visible hand and negotiated planning', *Journal of Comparative Economics* 14(4) (1990), 768–90.
- S. Estrin and L. Takla, *Reform in Yugoslavia: The retreat from self-management* (Washington, DC: World Bank, 1991).

Poland

- J. Drewnowski, 'The central planning office on trial', *Soviet Studies* 31(1) (1979), 23–42.
- J. G. Zielinski, *Economic reforms in Polish industry* (London, 1973).
- S. Gomulka and J. Rostowski, 'The reformed Polish economic system 1982–83', *Soviet Studies* 36(3) (1984), 386–405.
- W. Brus, 'The political economy of Polish reforms', *Praxis International* 5(2) (1985), 195–208.
- B. Simatupang, *The Polish economic crisis* (London, 1994).

Hungary

- P. Hare, H. Radice and N. Swain (eds.), *Hungary: A decade of economic reform* (London, 1981).
- T. Bauer, 'The Hungarian alternative to Soviet-type planning', *Journal of Comparative Economics* 7(3) (1983), 304–16.
- J. Kornai, 'The Hungarian reform process', *Journal of Economic Literature* 24(4) (1986), 1687–1737.

GDR

- G. Leptin and M. Melzer, *Economic reforms in East German industry* (London, 1978).
- P. Boot, 'Continuity and change in the planning system of the German Democratic Republic', *Soviet Studies* 35(3) (1983), 331–42.
- L. Lipschitz and D. McDonald (eds.), *German unification: Economic issues*, IMF Occasional Paper no. 75, December 1990.

China

- B. Naughton, *Growing out of the plan* (Cambridge, 1995).
- B. Naughton, 'Deng Xiaoping: The economist', *China Quarterly* 135 (1993), 491–514.
- C. Xu, 'The fundamental institutions of China's reforms and development', *Journal of Economic Literature* 49(4) (2011), 1076–1151.

- Qian, Y. and Xu, C. 'Why China's economic reforms differ: The M-form hierarchy and entry/expansion of the non-state sector', *Economics of Transition* 1(2) (1993), 135–70.
- Jinglian Wu, *Understanding and interpreting Chinese economic reform* (Mason, OH, 2005).
- P. Nolan, *China's rise, Russia's fall* (Cambridge, 1995).
- T-W. Ngo, 'Rent-seeking and economic governance in the structural nexus of corruption in China', *Crime, Law and Social Change* 49(1) (2008), 27–44.
- S. Tenev and R. Garnaut, *China's ownership transformation* (Washington, DC: World Bank, 2005).
- T. M. Cheung, 'The eclipse of the defence economy under Deng Xiaoping', chapter 3 in *Fortifying China: The struggle to build a modern defence economy* (Ithaca, NY, 2009).
- D. Bachman, 'China's defence industrial base in 1985', *China Quarterly* 214 (2013), 432–55.
- A. Liff and A. Erickson, 'Demystifying China's defence spending: Less mysterious in the aggregate', *China Quarterly* 216 (2013), 805–30.

USSR

- R. W. Davies, 'The socialist market: A debate in Soviet industry, 1932–33', *Slavic Review* 43(2) (1984), 201–23.
- R. W. Davies, 'Making economic policy', in P. Gregory (ed.), *Behind the façade of Stalin's command economy* (Stanford, CA, 2001), pp. 61–80.
- V. Kontorovich, 'Soviet economic reform', *New Palgrave Dictionary of Economics*, 2nd edn (New York, 2007). (Expanded version http://papers.ssrn.com/sol3/papers.cfm?abstract_id=913431)
- IMF/World Bank/OECD/EBRD, *A study of the Soviet economy*, 3 vols. (Paris, 1991).
- M. Ellman and V. Kontorovich (eds.), *The destruction of the Soviet economic system* (New York, 1998).

Vietnam

- A. J. Fforde and S. de Vylder, *From plan to market: The economic transition in Vietnam* (Boulder, CO, 1996).

4 | *Planning the defence–industry complex*

If a new war breaks out, it will be conducted in an exceptionally tense situation and require a much greater quantity of the most varied inputs for the armed forces than in previous wars. In order to be in a position to satisfy these requirements of the army and fleet, the economy must, already in peacetime, be fully prepared for the armed defence of the country from the aggressor.

General A. Lagovskii (1961: 256)

Background

The need to industrialise to overcome backwardness and to prepare for possible wars with industrialised opponents was not an original Bolshevik idea. It was also part of the reason for the industrialisation policy of Count Witte, Minister of Finance of the Russian Empire in 1892–1903, Chairman of the Committee of Ministers in 1903–5 and Prime Minister in 1905–6. It was also part of the motivation for the abortive modernisation efforts in late Qing (Manchu) China and the industrial policies of the KMT (Guomintang) government in 1932–7.

Despite thirty years of economic growth resulting from state support for railway building, an inflow of foreign capital and favourable world market prices for Russia's agrarian exports (especially grain), the Russian Empire collapsed because it was weaker than its external and internal enemies. It was unable to mobilise the resources to defeat Germany in World War I or to feed adequately during that war the civilian urban population and the millions of men it mobilised for the war. Its initial failure to mobilise sufficient industrial resources meant that its soldiers, especially in 1914–15, lacked the equipment to fight successfully an industrialised opponent (its later poor performance

seems to have been largely a result of poor military leadership). Its failure to mobilise sufficient financial resources led to rapid inflation. Its failure to adequately feed the civilian urban population and the army were major factors leading to the February Revolution. The demonstration of 8 March 1917 in St Petersburg which precipitated the February Revolution¹ was primarily a bread protest by factory workers and housewives. The failure of the army to restore order in St Petersburg partly reflected liberal and socialist anti-autocracy propaganda, but was partly a result of the poor food which the government provided for the army in the winter of 1916–17 – a fatal mistake which was the immediate cause of the collapse of the autocracy. The internal enemies of the Russian Empire then used the freedom they had acquired to destroy the state itself.

The main successor state of the Russian Empire was the USSR, established in 1922 and ruled – after prolonged wars against White officers, peasants, Cossacks, Ukrainian nationalists, Central Asian opponents, foreign invaders (Britain, France, Japan and the USA) and other successor states such as Poland, Finland and Georgia – by the Bolsheviks. Before World War II they believed that a second military intervention by hostile powers was inevitable and, after that war was won and up to 1956, they expected that a new world war would inevitably take place at some date in the future. Hence, it was necessary to prepare for these conflicts. In particular it was necessary to create the industrial basis to produce adequate quantities of modern weapons; to prevent a union of their external and internal enemies such as had destroyed the Russian Empire; and to postpone war by diplomacy. To destroy their perceived internal enemies they used repression. To look out for and prevent the disruption of the Soviet economy and Soviet society by their external enemies, they used counterintelligence. To neutralise their external enemies they used industrialisation. The resolution on the Five-Year Plan approved by the Fifteenth Party Congress (1927) stated that:

In view of a possible military attack by capitalist states against the proletarian state, the Five-Year Plan should devote maximum attention to the fastest

¹ The February Revolution (i.e. the end of the autocracy and the transition to a provisional parliamentary regime) took place in March 1917 according to the (Gregorian) calendar currently in use throughout the world but not then used in Russia.

possible development of those sectors of the economy in general, and of industry in particular, which play the main role in securing the country's defence and in providing economic stability in wartime.

Examples of successful diplomacy to postpone war are the agreements with Germany in August–September 1939, and the four-power agreement of May 1949 which ended the Berlin blockade. An example of unsuccessful diplomacy to postpone war is the Franco-Soviet pact of 1935. Stalin remained aware till the end of his life that defeat in war could mean the end of Soviet power; in crises took measures to defer the inevitable war; and adhered to the old maxim 'if you want peace prepare for war'.

For two millennia China was the dominant country in East Asia and a major player in the world economy (Frank 1998; Hobson 2004). However, in the nineteenth century China suffered humiliation by foreign countries which waged war on it (1839–42 and 1856–60) to force it to import opium, and looted its capital; annexed portions of its territory and dominated other portions; controlled its customs system and part of its railway system; and established extraterritorial rights for foreigners. In the twentieth century it was attacked by Japan which first of all established a puppet regime in the northeast of the country (Manchuria), and then waged a prolonged and bloody aggressive war (1937–45) on other parts of its territory. These catastrophes resulted from its military weakness.

The Chinese Communist Party won power by a civil war and was very conscious of the preceding period of national humiliation and the suffering resulting from the war with Japan, and hence the need for military strength to defend the country and re-establish its status in the world. Furthermore, shortly after it conquered China, it became engaged in a war in Korea with the USA. It also remained ambitious to take over Taiwan, to which its defeated civil-war opponents had retreated. As a result, the importance of military modernisation was fully recognised by the Chinese Communist Party after it came to power. In the Chinese First Five-Year Plan (1953–7) military modernisation was one of the top priorities. This was also the case with the atom bomb project (launched in 1955 – see below) and the Third Front investment programme of 1964–71 (see below). Military modernisation was also one of the four modernisations advocated by Zhou Enlai and Deng Xiaoping (see Chapter 3).

Importance of the Soviet defence sector

The defence sector consumed a large and generally increasing share (except after World War II and after the death of Stalin and the end of the Korean War) of resources in the Soviet economy during the planning era, as shown in Table 4.1. It was regarded as a top-priority sector. (In discussions among themselves in the 1980s, Soviet leaders referred to the defence sector as their ‘holy of holies’.) This resulted from the experience of the Civil War and World War II, Marxist–Leninist doctrine, the hostility of the rest of the world and inertia.

Table 4.1 *Employment in the defence sector (thousands) Russian Empire and USSR*

	1913	1930	1932	1940	1988
Armaments industry	120	242	480	1,206	10,450 ^b
All industry	4,410	4,554	6,729	10,967	37,376
Armaments as % of all industry	2.7%	5.3%	7.1%	11.0%	27.96%
Armed forces	1,430	595 ^a	730 ^a	4,200	5,300 ^c

^a 1 January. These figures exclude naval forces, internal security forces and territorial forces. On 1 January 1933 the figure was 820,000.

^b This is the employment in the 1,770 enterprises of the nine defence industry ministries. Some of their output was civilian. In 1990 about half of the defence industry’s output comprised civilian goods. Hence the figure in the table is a gross exaggeration of the number of people in the defence industry ministries engaged in producing weapons. However, according to a former deputy head of the Defence Industry Department of the Party’s Central Committee (Katayev 2001), about 546,000 workers in the civilian sector of the Soviet economy (i.e. outside the nine defence industry ministries) were engaged in the production of military equipment (but not of weapons). In addition, 388,000 people in the Ministry of Defence were involved in the maintenance of military equipment. The defence-industry sector included 450 scientific research and 250 design organisations. For a discussion of the various categories of defence-industry employment (in Russia not the USSR) see Gaddy (1996: 14–24). According to Cooper (2013), in 1990 the defence industry (including research and development) employed more than 8 million people.

^c 1985. Excludes about 600,000 internal security forces. In 1988 the total number under arms, including the forces of the Committee of State Security (KGB), the Ministry of the Interior (MVD) and the railway troops, was 6.2 million. In that year the armed forces also had 63,900 tanks, 12,200 warplanes and helicopters, and 435 warships. Sources: Davies (1993: 600); Ken (2002: 459); Odom (1998: 426); Zolotarev (2000: 414); and Katayev (2001: 58).

The resources devoted to defence rose sharply in 1931 and 1932. This was a response to the Japanese invasion of Manchuria in 1931. They rose again in 1936–40, in response to German rearmament and the Spanish Civil War. By 1940 they were already about 17 per cent of the GNP according to international national income accounting conventions. They naturally increased very substantially during the Soviet–German war (1941–5). They also increased in the late Stalin period as a result of the Cold War and the Korean War. There was another increase in 1968–88 (when manpower in the armed forces roughly doubled). However, there was not a continuous increase throughout the Soviet period. There was a huge demobilisation after the end of the Civil War, and after the end of World War II (although major nuclear, missile and air-defence programmes were launched then). There was also a major reduction in military manpower and defence expenditures in 1953–60 (the post-Korean War, post-Stalin and early Khrushchev period). The extent of demobilisation in 1953–60 is shown in Table 4.2.

It should be noted that the 1953–60 reduction in military expenditure and manpower was accompanied by a continuation of the nuclear, missile and air-defence programmes initiated in the late Stalin period. At the end of the period the USSR's capacity to wage nuclear war was much greater than at the beginning. The period was one of both demobilisation (a massive reduction in armed forces numbers) and modernisation (the re-equipment of the armed forces with modern weapons). In the language of contemporary US policy discussion, it was a policy of 'more bang per buck' (or 'more rubble per rouble'). However, the demobilisation seems to have been motivated largely by economic and foreign policy considerations. Khrushchev was very conscious of the opportunity costs of Soviet military programmes. He also adopted a foreign policy which differed from that of Stalin, of which reduced armed forces was an important part.

Military expenditures also fell sharply after 1953 in other countries of the socialist camp. For example, in Hungary they fell from 12 per cent of the net material product (NMP) in 1952 and almost as much in 1953 to about 4.7 per cent in 1955, about 4.4 per cent in 1956 and only about 1.9 per cent in 1957 (Germuska 2008: 821). This reversed the big build-up in military expenditures in 1948–52. As a result, the share of civilian products in the output of Hungarian defence plants rose sharply in 1953–5. Hungary's conversion of military factories to civilian products

Table 4.2 *Soviet demobilisation, 1953–60*

Year	Total expenditures of state budget (billion roubles)	Expenditures of Ministry of Defence (billion roubles)	Defence expenditures as % total state expenditure	No. in armed forces (thousands)
1953	398.0	124.2	31.2	5,396 ^a
1954	443.2	100.3	22.6	n.a.
1955	539.5	107.4	19.9	4,638 ^b
1956	561.0	97.8	17.4	4,147 ^c
1957	603.8	96.7	16.0	n.a.
1958	627.7	96.2	15.3	n.a. ^d
1959	707.6	96.0	13.5	n.a.
1960	862.1	96.0	11.1	n.a. ^e

^a Authorised. The actual number probably diverged somewhat from this figure.

^b August.

^c January.

^d The official figure published in the USSR in the Brezhnev era was 3.623 million. See Skorobogatkin *et al.* (1968: 501). However, this figure seems non-comparable with the earlier figures in this column since the 1968 book also gives (p. 500) a figure for 1955 of 5.763 million which differs from the figure used in the table, which is based on an archival source that seems more reliable.

^e In January 1960 a reduction of 1.2 million was announced. Had this been implemented, then by the time it had been implemented, if the 1958 level was really 3.623 million, the armed forces would have been reduced to about 2.5 million. However, this reduction was not fully implemented, and the actual number of servicemen in 1960 appears still to be classified, so it is not yet possible to state what the number of servicemen in 1960 actually was. However, it seems that by 1962 the number of people in the armed forces had fallen to 2.8–3.0 million and remained at about this level till 1968 when the Brezhnev era military build-up began.

Sources: Simonov (1996: 294); Evangelista (1997). These expenditure figures exclude the budgetary subsidies to the defence industries, and the research and development costs of the nuclear and rocket programmes, and hence underestimate the total costs of the military sector. Simonov (1996: 329) estimates that in 1950 the military and security (Ministries of the Interior and State Security) sectors of the economy cost about a quarter of the net material product. The peak of the Korean War / late Stalinist militarisation of the USSR seems to have been 1952–3.

in the 1950s was not easy and took some time, but in due course was successful (Germuska 2010). By the first half of the 1960s they were producing large numbers of consumer durables, such as refrigerators, washing machines, televisions and motorcycles.

The defence sector of Gosplan

Gosplan always had a department concerned with planning for possible (or actual) war, but the precise organisational form this took varied over time. In 1927 the already existing War Planning Section was reorganised as the Defence Sector. It was created by a decree of the Politburo, with special officials 'who are obliged in all economic planning to take account of the needs of defence'. It worked on plans for the defence industry, military transport, mobilisation planning and other matters concerning defence. It worked in close cooperation with the army staff. In December 1937 it was decided to dissolve the Defence Sector of Gosplan. Its main sections became part of the staff of the Committee of Defence (the top-level body that determined the USSR's defence policy), and the remaining section became the Mobilisation Sector of Gosplan. During World War II Gosplan had departments for the various branches of military industry, e.g. a tank industry department, an aviation industry department, and so on. Subsequently, responsibility for mobilisation planning and the defence industries was reorganised. In 1954 what was termed the 'First' department of Gosplan was established to deal with mobilisation planning. In 1958, a Gosplan Directorate for the defence sector, consisting of industry departments and the 'First' department, was created.

Despite the existence of Gosplan's Defence Sector in its various incarnations, it proved difficult to integrate defence planning into the overall planning of the national economy.² Proposals for defence-related output or projects from the Ministry of Defence³ often arrived late and only with difficulty were included in the national economic plan. In addition, the requirements of the Ministry of Defence often changed as a result of new information about the activities of potential enemies and technical progress. Furthermore, the Ministry of Finance often resisted allocating all the money necessary to implement the plans of the Ministry of Defence. Five-Year Plans were not a very suitable instrument for regulating defence production since the available technology, international situation and the policies of the Soviet

² For a detailed account of the planning of weapons production in the USSR in the 1930s, and the relationships between the various bodies involved, see Markevich (2008).

³ This Ministry actually had a variety of names in the Stalin period.

government could change substantially after the plan had been drafted. The Defence Sector of Gosplan compiled the defence section of the 1951–5 Fifth Five-Year Plan, but did not include explicit plans for nuclear weapons and long-range missiles (probably because these items were planned by super-secret special bodies whose output plans (if any) were not known to Gosplan). Nor did it anticipate the post-1953 decline in military expenditures which resulted from the death of Stalin and the end of the Korean War. Annual plans were largely a matter of bargaining between the Ministry of Defence, which normally wanted to increase output and incorporate the latest technology, and the production ministries and enterprises, which were interested in a plan that was feasible without too much effort.

Defence sections were also created in the national planning offices of the other socialist countries. Initially, these were copies of the Soviet prototype, but later they sometimes diverged from it. For example, the Defence Section of the Hungarian National Planning Office gradually developed into a strategic planning department which looked for international cooperation possibilities both in the West and in the East (while retaining its responsibility for mobilisation and supplies).

In the USSR the Defence Sector of Gosplan was just one of the central bodies concerned with planning the Soviet defence–industrial complex. It was a staff body, which provided data for the leadership, and drew up plans for the development of its sector, but was not a line body responsible for the management of the defence sector. Other important central bodies were the General Staff, which constituted the demand side of military planning, the Defence Industry Department of the Party's Central Committee, and the Military–Industrial Commission that was supposed to coordinate and direct the ministries directly responsible for the production of the weapons and other goods required by the armed forces. Relations between these bodies varied over time. The General Staff, formally created in 1935 (when the Red Army staff was converted into the General Staff) was modelled on the German General Staff. According to Marshal Zakharov, who was himself Chief of the General Staff in 1960–3 and 1964–71, in the years before World War II (Shlykov 2001: 50):

The General Staff kept close and constant watch on the state of the defence industry. Its activity was not limited to parcelling out tasks to the branches of military-weapons production or to monitoring the finished goods as they were

received by the army: it also involved such military issues as: developing and designing new combat hardware; maintaining the mobilization readiness, not only of the defence industry, but of all industry in general; creating mobilization stockpiles of matériel and combat assets; the well-planned placement [i.e. location] of new factories and their counterparts [i.e. the duplicate factories that could take over the tasks of the main factory if the main factory was destroyed]; production cooperation and much more.

The importance of the General Staff seems to have grown in the post-Stalin era. Its Chief was appointed First Deputy Minister of Defence a few days after Stalin's death. In the 1960s, 1970s and 1980s it seems to have played a key role in determining Soviet defence production. This was facilitated by the priority accorded to defence and the secrecy surrounding the General Staff and its activities. The General Staff model of combining staff and command functions differed sharply from that of the USA and some other countries with civilian control of the armed forces (Shlykov 2001).

The General Secretary of the Communist Party had the decisive say in all Soviet defence matters. However, different General Secretaries exercised their power in different ways. Stalin and Khrushchev exercised their power in autocratic and secretive ways. They were interested in the details of weapons, and decided themselves which programmes to initiate, cancel or deploy. They made decisions on major strategic issues and also micromanaged a variety of details. Brezhnev's style was different. In his period in office there were four influential groups in decision making about strategic missiles: the Party (represented by the Central Committee Secretary for defence matters); the military (represented by the Minister of Defence and the Chief of the General Staff); the defence industry (represented by the Minister of General Machine Building); and the Military-Industrial Commission (which linked weapons programmes with the industrial ministries, Gosplan and numerous other bodies). In 1969, when these bodies were unable to agree which of three possible systems should be used as a third-generation ICBM system, Brezhnev decided to produce and deploy all three (Zaloga 2002: 138–41). This was a very expensive decision, and also caused operational difficulties (it meant the Strategic Rocket forces had to train people to use, and to maintain, three quite different systems), but it had a major political advantage for Brezhnev. It kept all the interest groups happy. Everybody saw their favourite system deployed. Gorbachev's style was different from that of both Stalin/Khrushchev and Brezhnev, although his

critical attitude to the armed forces, and reformist policies, were analogous to the views and policies of Khrushchev.

It should be noted that besides the political and military leaders, weapons engineers such as Korolyov, Tupolev, Chelomey and Yangel (who all headed weapons design bureaus) also played an important part in determining which weapons were produced. This was natural because they were the people who understood what was technologically feasible now, and what was likely to become so in the future. Their role varied over time depending on the technological and political situations.

Mobilisation planning

An integral part of Soviet war preparation was mobilisation planning, that is, planning for the mobilisation of the armed forces and the economy for war. This was necessary so that, on the outbreak of war, all those concerned would know how to behave, and the armed forces would have the people and supplies necessary for victory. The centre worked out production plans for the economy in the event of war and accumulated strategic reserves of raw materials. All Soviet enterprises were obliged to adopt mobilisation plans listing their production tasks when war broke out, and to have the capacity, stocks and labour to achieve those tasks when the war began. For example, Soviet tractor plants made preparations to switch over to tank production on mobilisation. One element of mobilisation planning was evacuation planning – i.e. planning the evacuation of key factories and their employees from endangered areas. Much more than during preparations for World War I, Soviet plans included ‘shadow’ factories in the rear, which, in case an important factory in a forward position was destroyed or captured, could take over the same line of production. These duplicate or ‘shadow’ factories continuously received information from the main factory on technological changes and new production processes.

Important enterprises had mobilisation departments working out these plans and checking their feasibility and accordance with military requirements. These plans were regularly updated. Important industrial cities, such as Leningrad, had special organisations to coordinate the mobilisation plans of all the organisations in their cities (Losik and Shcherba 2000: 180–1). Mobilisation plans did not just remain on paper. Numerous exercises were held to try them out. On the basis of experience with them, bottlenecks could be exposed and eliminated, and improved

versions of the plans prepared. The existence of these plans and of the exercises with them were some of the reasons why Soviet industry was able to shift quickly to military production after 22 June 1941 (the date of the German attack), and evacuate so many enterprises to safe areas a long way from the front. Similarly, it would have been able to shift over to a war footing quickly if the Cold War had turned hot (although nuclear attack might have rendered these plans nugatory very quickly).

Mobilisation planning had four important economic disadvantages in peacetime: one concerning the products produced; one concerning the methods of production; one concerning stocks/inventories; and one concerning production capacity (Epstein 1990: 130–3; Gaddy 1996: 38–41; Cooper 2013). First, in peacetime many civilian goods were manufactured to military specifications, so as to make it easier to switch over to military production on mobilisation. For example, Soviet tractors were large, heavy and powerful. This was not very helpful for agriculture – it wasted fuel and compacted the soil – but made switching over to tank production in the event of war easier. Similarly, in the 1980s, the most common Soviet lorry/truck was a 4–6-tonne model. This was not manufactured because it was the most useful in the civilian economy but because the Soviet army preferred it. In addition, some output produced for military reasons was just redundant in peacetime, and useless when produced in peacetime. For example, in the late Soviet period, the USSR produced about 4 million tonnes of aluminium per annum. This ensured that if war broke out the USSR would have enough aluminium for the immediate large-scale manufacture of war-planes (and other products). However, this output greatly exceeded peacetime demand, and the excess could not be exported because it was a strategic material. Hence, the excess, which was about 50 per cent of production, was just scrapped. Secondly, many civilian manufacturing enterprises were equipped with universal machines rather than specialised machines and equipment. This reduced efficiency and quality, but made it easier to switch over to military production on mobilisation. Thirdly, to be prepared for war the USSR accumulated large stockpiles of goods expected to be required during the war. They were of two types, the state strategic reserves which contained a large variety of goods that would be required during a war or other catastrophe, and the mobilisation reserves that were intended to allow each enterprise to fulfil its mobilisation plan for three to six months. These stocks had a substantial opportunity cost – they could have been used for civilian

investment, consumption, or export. In addition, maintaining them required substantial inputs (buildings, people, heating, etc.). Fourthly, the metals industry, chemical industry, civilian machine-building, energy industries and other industries providing inputs had to maintain spare capacity so that they would be ready to switch over to military production on the outbreak of war. This spare capacity too had a substantial opportunity cost. On the other hand, consumer goods (e.g. vacuum cleaners, washing machines, motorcycles) manufactured at defence plants were widely considered by Soviet consumers to be better than those produced in civilian enterprises (because of better quality control, even in the civilian parts of defence enterprises, than in the civilian sector).⁴

Much of the waste in the Soviet economy is usually ascribed to 'the inefficiency of central planning'. However, this is one-sided. In World War II Soviet industry seems to have been more efficient than German industry, producing far more weapons per tonne of steel available, and with a higher labour productivity (per person if not per hour) despite the 'inefficiency of central planning'. Much of the waste in the Soviet economy was actually a by-product of the system of mobilisation planning. For example, in the 1970s and 1980s, the production of fertilisers was greatly increased. However, it was notorious that much of this increased production was simply wasted. It was left lying around in heaps to decay in the rain. The explanation is simple. The fertiliser factories were built and kept in operation as part of mobilisation planning. They were reserve capacity for the ammunition industry, and on mobilisation would have switched over to producing ammunition. The fertiliser output was just a by-product produced in order to keep the reserve ammunition production capacity in use and supplied with labour and other inputs necessary when war broke out (Shlykov 2001: 84). Considered from a military point of view, the system of mobilisation planning was highly efficient. It ensured that in a major

⁴ At the end of the Soviet period the defence industry produced 100 per cent of the TVs, tape recorders, movie and still cameras, and sewing machines produced in the USSR; 97 per cent of the refrigerators and freezers (refrigerators from the Krasnoyarsk missile plant were exported to many countries); 70 per cent of the vacuum cleaners and washing machines; 50 per cent of the motorcycles; and about 20 per cent of the civilian aircraft, tractors, automobiles, trams, railway wagons (railroad cars), ships, drilling and medical equipment, and diesel engines.

industrial war of the World War II type, the Soviet economy could be converted to military production faster than its opponents.

The Soviet version of mobilisation planning solved a 1930s' dilemma of states planning for World War II. The factories necessary for wartime production should ideally have been ready as soon as the war broke out. If they were only built after war broke out, they would probably not have been ready in time, and the country would be defeated. However, using them to produce weapons long in advance of the war risked wasting resources in producing weapons that by the time the war broke out were obsolete. Hence the need for a sector that produced civilian goods in peacetime but could be switched over to military production on mobilisation. This was effective in World War II and contributed to the Soviet victory. However, this system was carried on into the 1970s and 1980s when it was less and less relevant to the war in which the USSR might have engaged (nuclear war) or to the war in which it did engage (Afghanistan). Indeed, in Russia the reservation of substantial production capacity for mobilisation purposes seems to have survived the collapse of the USSR and been one of the factors hindering the conversion of defence industry to civilian purposes in the 1990s.

Planning the import of technology

Since the USSR normally lagged behind Western technology and the main military innovations came from the USA, it was much more efficient for the USSR to obtain the latest technology from its potential opponents than to attempt to reinvent the wheel. In this way, it could make quick progress and save valuable research and development resources. Some foreign military technology was obtained by chance. For example, the Soviet bomber Tu-4 (produced from 1947) was a copy of the US B-29, three of which landed in the USSR in 1944 after being damaged in a raid on Japan and which were retained by the USSR. Some foreign military technology could be obtained through commercial channels. For example, in 1946–7 the USSR purchased jet engines from the UK company Rolls Royce which were reverse-engineered, produced on a large scale and used to power the MiG-15 jet fighter.⁵

⁵ About 13,000 MiG-15s were produced. They were successfully deployed in the Korean War, e.g. in shooting down US B-29 bombers.

However, military technology could not in general be obtained by chance or by purchase and had to be obtained by espionage. In the 1930s and 1940s, quite a few spies provided information for ideological reasons, which naturally reduced the cost. Later on, agents had to be paid, but the price was generally much below the value of the information to the USSR. The best-known example of the illicit acquisition of US technology is, of course, the atom bomb, but it was very far from being the only such case. The acquisition of foreign military technology was actually a continuous, important and large-scale activity of the military planning organisations.

Around 1980, planning the illicit import of foreign technology seems to have been organised as follows (Hanson 1987). Twelve industrial ministries (the nine defence industry ministries and three civilian ministries) submitted requests for foreign military technology to the Military Industrial Commission (MIC) which evaluated them. The MIC then allocated the selected tasks to the acquisition agencies, the State Security Committee (KGB), Military Intelligence (GRU) and various other bodies. There seem to have been two-year and five-year plans for the acquisition of foreign military technology, with scope for revising the plans during the planned periods. In 1979–80, about 3,000 acquisition tasks were under way each year. In 1979–80, 4,000–5,000 pieces of hardware and about 80,000 technical documents were acquired annually. These acquisitions seem to have been useful, and helped the USSR keep up with Western technology. According to Andrew and Mitrokhin (2000: 724), indirectly citing a Pentagon estimate whose accuracy is uncertain: ‘During the early 1980s probably 70 per cent of all Warsaw Pact weapons systems then in use were based on Western technology.’

The main problem with the copying of already existing foreign weapons was that, by the time the Soviet version entered production, it would already be obsolete, since the potential enemy had already introduced a more advanced weapon. The first Tu-4 strategic-bomber regiments entered service in 1949. By 1952 the USA was employing the B-47 and B-36 which were much superior to the B-29/Tu-4.

There was also a risk in illicit acquisition of technology. The information acquired might be disinformation aimed at harming its users. To take a civilian example, when France and the UK launched their programme to build a supersonic passenger airliner (Concorde), the USSR decided to beat them to it. This was intended to demonstrate the superiority of Soviet technology. In the usual way the USSR acquired

information about the Concorde's design. However, it has been alleged that the UK and France, aware of this, ensured that some of the information supplied, if applied, would ensure that the plane would not be airworthy. The USSR did beat the Franco-British effort. The prototype of the Soviet supersonic airliner (the Tu-144) first flew two months before the Concorde prototype. However, the Tu-144 was only introduced into passenger service two years after the Concorde, and turned out to be very unreliable. It was withdrawn from passenger service after only seven months and fifty-five scheduled flights. It was not airworthy. One spectacular crash took place at the Paris Air Show in 1973. Although Defence Minister Marshal Ustinov tried to foist it on the military (he primarily represented the defence industry), they did not want it and turned it down. Essentially the Tu-144 was just a huge waste of money.

Whether any of the military technology that the USSR acquired by illicit means contained such disinformation, and if used, would have caused more harm to the user than to the intended victim, is currently unknown. However, it is known that the Soviet authorities were worried about this possibility. After acquiring a Siemens computer to store information on 3 million people, fear that it contained some hidden bug that would have negative effects led to its being left unused in a store-room for five years (Andrew and Mitrokhin 2000: 598).

During the Warsaw Pact period the East European countries, particularly East Germany, assisted the USSR with the acquisition of foreign military technology. China too has been very active in the acquisition of foreign military technology, in the 1950s from the USSR by agreement, and later from the USA without agreement.

Military and state security representatives

Defence production under all economic systems suffers from weak cost control. This is mainly because of the primary attention of defence officials to security goals, and the lack of competition among producers. In order to control quality in a shortage economy, all Soviet enterprises had a department of quality control, which was supposed to ensure that only output that met the agreed specifications was delivered. However, these departments were under the control of enterprise management, and, under shortage conditions, buyers were frequently pleased to receive anything they could get their hands on.

In order to control quality and costs, all Soviet enterprises producing defence equipment had military representatives (Harrison and Simonov 2000) permanently stationed at them. These were serving military officers responsible to the Ministry of Defence, and not employees of the enterprise to which they were attached. They were normally better paid and had shorter actual working hours than the staff of the enterprises' own quality-control departments. They were supposed to check the materials used, the production process, and the cost and quality of the output. The fact that only military customers had their own representatives in producing enterprises reflected the priority situation of the military in the Soviet economy. (Another reflection of the priority status of defence is that defence enterprises were sometimes able to use their status to force local authorities to build housing for their workers, or to acquire housing under construction that had been intended for other ministries.) The military representatives had extensive formal powers, including rejecting output that did not meet quality specifications, and rejecting cost calculations (and, hence, prices in a cost-plus world) that were exaggerated. In practice, in the bargaining process between industry and the military they normally placed most emphasis on quality and were prepared to collude with the enterprises in exaggerating the quantities produced. Military representatives were not just a few isolated people, as Table 4.3 shows.

It has been estimated (Harrison and Simonov 2000: 230) that the typical number of military representatives in a defence enterprise might be in the region of 30–50. The military representatives were engaged in constant bargaining with the defence enterprises. The military representatives wanted high output, continuous modernisation of production and low costs. They could use their formal powers, but usually had inadequate knowledge about the production process to fully realise

Table 4.3 *Number of Soviet military representatives in 1940*

Ground forces	13,791
Navy	3,004
Rear services	990
Air defence forces	34
Total	20,281

Source: Harrison and Simonov (2000: 229). The discrepancy between the sum of the items and the total is in the underlying archival source.

their goals. In addition, they were interested in retaining the goodwill of the producers – a valuable asset in a shortage economy. The defence enterprises were interested in low plans for the production of goods they were familiar with and high prices for new products. This bargaining process took such forms as: arguments about costs; regulatory capture (sometimes resulting from informal payments in cash or kind); collusion by military representatives in accepting failure to meet the quantitative targets in the agreed contracts between the enterprises and the armed forces; and refusal to accept part of the output produced on the grounds that its quality was inadequate.

On the whole, this system worked reasonably well. Some Soviet weapons – such as the World War II T-34–85 tank⁶ and the BM-13 Katyusha rocket mortar, and the post-World War II AK 47 attack rifle (the Kalashnikov) – were generally accepted as being of high quality. They were effective, produced in huge quantities, were durable, had low production costs and were easy to use. Similarly, during the Cold War, Soviet fighter aircraft compared well with comparable US planes, although they usually went into production a few years later, and were specifically designed to combat the earlier US ones. However, in the defence sector as a whole, domestic innovation and cost control were weak.⁷

For especially high-priority projects, the usual system of military representatives was superseded (mainly in 1937–53) by a system of representatives of state security. Their bargaining power was much greater than that of the military representatives because of the sinister reputation of state security, and because they could arrest any individual or group suspected of delaying the programme concerned. In the early post-World War II years when the Soviet atom bomb was being developed, the head of the project, L. P. Beria, who was initially also head of state security, had special representatives, known as ‘plenipotentiaries of the Council of People’s Commissars’,⁸ who were usually generals of state security, in all the relevant plants and research

⁶ This was mass produced from the beginning of 1944. It was an improved version of the T-34 which had been mass produced from the autumn of 1940. For a detailed history of the T-34 and T-34–85 see Baryatinskii (2011).

⁷ Although Soviet cost control was less than ideal, there is no evidence that it was worse than in the USA or UK. Indeed, it may well have been better.

⁸ Subsequently Council of Ministers.

institutes. Their task was to report to Beria on what was going on, ensure security and assist progress in the work.

State security not only controlled the work done on priority projects by free scientists and engineers. It also disorganised research and production by arrests of important specialists, and organised research institutes composed of arrested specialists. Some of the latter, such as the aircraft designer A. N. Tupolev and the rocket specialist S. P. Korolev, were subsequently released because of their good work while imprisoned. At the end of World War II, state security representatives played a role in the conversion of military enterprises to civilian production. Although the role of state security declined after the death of Stalin (1953) and arrest of Beria (1953), it remained important (e.g. in obtaining foreign military and technical information, controlling nuclear weapons,⁹ appointments, dismissals, promotions and permission to travel abroad) right up to the collapse of the USSR.¹⁰

In China (Cheung 2009: 34) 'A fledgling military representatives system was established in the beginning of the 1950s, but this mechanism was suspended with the Cultural Revolution and was not reinstated until 1977.'

Defence and the location of industry

Defence considerations played a major role in decisions about the location of industry, although in peacetime rapid increases in relative production in safe areas were difficult to realise, and determining which areas would be safe in wartime was uncertain (Stone 2005). In the USSR defence considerations were a major reason for building industrial and mining complexes in the 1930s in the Urals and Siberia, far from possible attackers. These new plants were safe from invaders, but had higher transport and building costs than would have been the case in the old industrial areas. In China in the Maoist period, defence enterprises were deliberately sited in the deep interior, far from the coast, where they were thought to be

⁹ Until 1959, the Soviet Air Force's nuclear bomb storage was controlled by the KGB. In the 1970s, to activate the nuclear missiles on Soviet submarines required the insertion of three special keys. These keys were controlled by the captain, the political officer and the KGB officer.

¹⁰ The USSR also had another mechanism to check on the performance of the defence industry, the system of state control which functioned as a kind of auditing system (Harrison and Markevich 2008: 72–3).

Table 4.4 *Third Front investment as a proportion of national investment (%)*

1963–5	38.2
1966–70	52.7
1971–5	41.1

Source: Naughton (1988: 365). There is a discussion of the meaning of these figures (*ibid.*: 365–7). The proportion of *industrial* investment that went to the Third Front was higher than the figures in the table. Naughton (1988: 366) estimated it as at least two-thirds of budgetary industrial investment in 1965–71.

more secure. This was particularly the case in 1965–71 when investment was concentrated in ‘the Third Front’, the provinces in the southwest which were a long way from the potential First Front (the major urban conurbations of Shanghai, Beijing–Tianjin and Shenyang, which in the 1960s accounted for more than half of China’s industrial output and were considered to be especially vulnerable to enemy attack). A rough indication of the magnitude of this investment is given in Table 4.4.

The figures in Table 4.4 show that the Third Front campaign was not just about the location of a few key defence–industrial plants and airfields. It was actually the core of China’s industrial policy in 1966–70, a period in which economic development was subordinated to war preparations.

The stress on the need to concentrate investment in the Third Front was precipitated by the expansion of the US war in Vietnam (an ally of China). It was accentuated by worsening relations with the USSR and border clashes with the USSR in 1969. However, the improvement of relations with the USA, and the coming to power of Deng Xiaoping in 1978, led to the end of the Third Front strategy.

The emphasis on investment in the Third Front had some positive results. It led to the linking of some previously isolated provinces (such as Yunnan) into the national railway system. It opened up some ferrous and non-ferrous metal resources. It also led to the construction of some reasonably efficient industrial enterprises. However, it also had high costs, economic, human and environmental. The rush resulting from the stress on the need to act quickly, and the emphasis on strategic rather than economic considerations, led to many problems concerning plant

design and site selection (Naughton 1988: 376–7). It has been estimated (*ibid.*: 379) that, in the late 1970s and 1980s, China's industrial output was 10–15 per cent less than it would have been if the Third Front programme had not been undertaken and the investment had been used elsewhere. In the 1980s, when priorities were different, some of the newly constructed factories were relocated, some were abandoned, and some were left to struggle on with subsidies and state assistance.¹¹

On the human level, many people were forced to abandon their homes and move to new places in the Third Front. Food, housing and work conditions were often poor. In addition, the rush, military atmosphere and lack of attention to health and safety often led to high levels of work accidents. When building the Panzhihua steel mill in southwest Sichuan, the number of fatalities among the workforce appears to have averaged 5.4 per cent p.a. in 1965–75, with a peak of 13 per cent in 1965 (Shapiro 2001: 152). These are extremely high figures and, if accurate, illustrate the way in which people were sacrificed for military projects in the Maoist period.

On the environmental level, Third Front investments, and ill-conceived land reclamation projects carried out at the same time, led to extensive air, water and soil pollution, deforestation and resulting soil erosion (Shapiro 2001: 154–8, 181–5). One result was numerous health problems for people who lived near the new industrial plants. Another was a sharp decline in wildlife as birds, fish and land animals were wiped out.

Competition in weapons design

Competition is a basic part of the capitalist system. Normally, it was absent in the 'planned' economy, where production proceeded on the basis of instructions from above. However, prior to the production of weapons, it was necessary for the authorities to choose the best. They were normally confronted with intelligence reports about foreign R&D, and actual foreign weapons, and also a variety of possible domestic products, each promoted by a weapons designer or team of weapons designers, and all of uncertain performance. These weapons designers competed among themselves for the favour of the authorities.

¹¹ The rapid development of industry in the deep interior of China for defence reasons was not a Maoist innovation. The KMT government had pursued such a policy in 1932–7 in anticipation of a war with Japan.

For example, in aircraft production the Mikoyan, Yakovlev, Ilyushin, Sukhoi and other design bureaus competed to get their designs accepted. This competition was encouraged by the leadership, which recognised its value in generating good products. For example, in September 1939, the Politburo increased the number of aircraft design bureaus to twenty so as to stimulate competition. The outcome was that (Simonov 2000b: 218): ‘The victors in a fierce competitive struggle were the design bureaux of S. V. Ilyushin (the armoured Il-2 assault aircraft), V. M. Petlykov (the Pe-2 dive-bomber), A. N. Tupolev (the Tu-2 frontline bomber), S. A. Lavochkin (the LaGG-3 fighter), A. I. Mikoyan (the MiG-3 fighter), and A. S. Yakovlev (the Yak-1 fighter).’

In this way Soviet weapons design benefited from two types of competition, with foreign countries externally, and internally between rival designers (or design bureaus).

Closed cities

In order to produce the components for the USSR’s strategic weapons programmes, a number of special secret cities were created (by the late 1980s there were more than fifty of them). They were not listed on any map, and were known only by their post office box number. Security in them was strict. One of them was Krasnoyarsk 26. This was a town for the production of weapons-grade plutonium. It offered its employees a higher living standard than elsewhere in the USSR (e.g. better food, better housing). It was begun in 1950, and had its golden age in 1958–68. However, in the mid 1980s orders from the Ministry of Defence started to decline sharply (Glazyrina 2000: 199). The situation worsened after the collapse of the USSR, and in 2010 the last plutonium reactor was closed. Additional weapons-grade plutonium was no longer required. What is now the town of Zheleznogorsk retains a nuclear waste storage facility and also a satellite manufacturer, but no longer enjoys the privileged living standards of its golden age. In the Brezhnev era the closed nuclear cities seem to have employed more than a million people.

The closed cities provided an efficient and secure method of producing strategic weapons components. Concentrating the production of dangerous substances (e.g. plutonium) in remote mono-product towns, far from the main urban centres, protected the population of the major cities from the consequences of possible accidents and leaks. (On the other hand, the nuclear power stations that the closed cities made

possible were located in heavily populated areas.) However, this system also ensured that, when the demand for their output declined, it would be difficult to convert them to other purposes. Their subsequent fate was to some extent analogous to that of abandoned mining towns, and a warning about the inflexibility and economic costs of remote, but quite populous, mono-product towns.

The closed cities, with their production of dangerous products such as plutonium, their generation of massive nuclear waste and concentration on military goals resulted in substantial soil, water and air pollution. There were some serious accidents, both in the Soviet and post-Soviet periods. For example, in 1993 there was an explosion at the former Tomsk 7 (now Seversk). A large part of a uranium-separation building was destroyed. Radiation rose to dangerous levels but fortunately that day the wind was blowing away from the most populated areas.

Determining the potential enemies

In the 1920s and early 1930s the USSR regarded its main potential enemies in a possible war as its Western neighbours, notably Poland and Romania, and standing behind them France and Britain. This reflected the experience of the wars with Poland in 1919–21 and the intervention of France and the UK in the Russian conflicts of 1918–21. However, preparations for an attack from these quarters turned out to be unnecessary. No such attack transpired. From the mid 1930s, the USSR regarded its main potential enemies as Germany and Japan. The former did indeed attack it in 1941. Japan did not attack the USSR, but was itself attacked by the USSR in 1945. After World War II the main potential enemy was the USA. However, the USSR, especially in the Brezhnev–Andropov–Chernenko era, prepared for a war, not just against the USA but against a large and increasing list of potential enemies. Zolotarev (2000: 411) has pointed out that, in the post-World War II period:

According to the views of the Soviet political leadership, they had to successfully oppose the united armed forces of NATO, Japan, and also with China after the split with the Chinese leadership. In practice this evaluation required not only numerical superiority over the armies of the probable opponents, but also a high technological level of their equipment. Even a temporary lag in these matters behind the armies of the states mentioned was regarded as unacceptable.

Naturally this policy of preparing for a simultaneous war with so many opponents led to inflated armed forces and stocks of weapons, and was a major burden on the economy.

Estimates of enemy potential

Estimates of the military potential of possible enemies is an essential part of military intelligence in all countries. They are a major input into defence planning. It is important that they be accurate. If the estimates are too high, excessive resources will be devoted to war preparations. If they are too low, the armed forces will be inadequately equipped if war breaks out, and this may lead to losing the war. The estimates used by the Soviet General Staff were frequently enormously exaggerated, which led to the accumulation of unnecessarily large peacetime stocks of weapons at great cost to the economy. In the early 1930s, it was estimated that in the event of war, Britain would be able to build 30,000 tanks a year. This was far beyond Britain's real possibilities. In 1940, when building tanks to replace those lost in France and repel a possible invasion was a high priority, Britain built just 1,400 tanks. According to the former Soviet military intelligence officer Shlykov (1998: 43), the estimates used in the USSR in the Brezhnev period were just as grossly exaggerated, and led to the USSR accumulating absolutely unnecessary quantities of weapons. When intelligence officers brought this to the attention of Gosplan, officials there were more interested in avoiding blame for the waste of resources than in taking economically rational decisions. Senior officers in the General Staff, to which military intelligence was subordinated, were happy with the exaggerated estimates, and did not want them reduced. That might have threatened their budgets. The suggestion of referring the matter to academic institutes for objective analysis was rejected on the grounds of secrecy. Hence, the USSR in the 1970s and 1980s spent unnecessarily large resources preparing for war with opponents whose military potential was greatly exaggerated.

This illustrates how a combination of bureaucratic behaviour and secrecy can lead to wasting resources on a massive scale.¹²

¹² In 1937 the military intelligence estimates for Germany's wartime production potential used by Gosplan's Defence Sector in preparing the Third Five-Year Plan (1938–42) were also too high (Samuelson 2000: 64–5), but the extent of exaggeration was much less.

An interesting example of the boomerang effect of exaggerating enemy potential concerns the Pershing II – a US missile deployed in Western Europe in the early 1980s. The Soviet military was very worried about the effect of this allegedly very accurate missile. Given its location and perceived range, it would have been able to attack them with almost no warning time, and kill the national leadership in Moscow before it could issue orders for retaliation. (Actually, for the US it was a tactical weapon introduced in order to counter Soviet missiles and not a strategic weapon, and it was uncertain whether it could actually reach Moscow.) Gorbachev was able to use this exaggerated threat as an argument in an attempt to convince the military of the merits of the INF (Intermediate-Range Nuclear Forces) treaty (which required the Pershing II to be removed but also required many more Soviet than US missiles to be destroyed, and permitted US inspectors to carry out on-site inspections in the USSR to check compliance). Although Soviet commanders were infuriated by the treaty, it did at any rate eliminate the US weapons system about which they had professed so much concern!

Why was the USSR victorious in World War II?

The killing of much of the Soviet army's leadership by Stalin in 1937, and the poor performance of the USSR in the war with Finland in 1939–40, led to a widespread expectation in 1941 that the USSR would be defeated by Germany. Germany had a more advanced economy, with higher labour productivity and a smaller agricultural sector, outstanding scientific achievements (prior to Hitler, German was the international scientific language), its armed forces had recent experience of victorious campaigns, and it was able to use the resources of Western and Central Europe. Nevertheless, the USSR won. Why was this?

Following World War II the Soviet victory was variously ascribed to the mistakes of Hitler; the genius of Stalin; the merits of socialism, public ownership and the planned economy; the heroism of the Soviet people, etc., etc. From the 1990s, however, following Overy (1995), attention has been focussed on the production achievements of the USSR. During the war the USSR heavily out-produced Germany in the main categories of armaments. Furthermore, it increased its output of armaments faster than Germany, so that its production superiority was greatest early in the war. Whereas already in 1940 it out-produced Germany by 30 per cent in both tanks and self-propelled guns, and in

combat aircraft, by 1942 it produced four times as many tanks and self-propelled guns as Germany and 90 per cent more combat aircraft (Harrison 2000: 100). This was an extraordinary achievement for a country that had been invaded, and had lost a large part of its population, territory and industrial resources.¹³

How did the USSR achieve this? A major role seems to have been played by the application of the mass production methods that had been introduced into Soviet industry in the 1930s. In the First Five-Year Plan, American engineers and firms, and the practice of copying from the USA, played important roles in the design and development of new plants. In addition, both collectivisation and the Stakhanov movement were instrumental in breaking craft traditions. By concentrating on a relatively small number of weapons, produced in very large numbers, the USSR was able to out-produce the more variegated high-quality German output. World War II was an industrial war with huge quantities of industrial products being used by all its major participants. Hence, the two main victors of World War II were the homeland of mass production (the USA) and its most successful imitator (the USSR).

Naturally, large-scale production was only useful if the weapons produced in large quantities were effective. Soviet designers of guns, tanks and planes were as advanced and forward-looking as their German counterparts. Soviet military intelligence gave their weapons designers precise information on the expected evolution of German weapons. The careful examination of German trophies from the battlefield also served as a basis for Soviet weapons. These were often better adapted to the real frontline conditions in Russia and Ukraine than were the German ones, which could be of better quality but more troublesome to repair under field conditions.

¹³ In a speech on 6 November 1941 Stalin ascribed the Soviet losses at the beginning of the war to German numerical superiority, especially in tanks. This was completely false. In 1941–2 the USSR had more tanks than Germany. For example, on 1 January 1942, despite all its losses in 1941, on the Soviet–German front the ratio of Soviet tanks to German ones was 1.9 to 1. The Soviet disasters in 1941 were not a result of numerical inferiority but of poor leadership, communications and tactics. The Soviet victory at the Battle of Kursk in 1943, a major tank battle which was the turning point of the war, was not won by the USSR because of the superior quality of the T-34. It seems that it was qualitatively inferior to the German Tiger and Panther tanks. The Soviet victory seems to have been a result of having more tanks than the Germans, and good intelligence.

The actual production of large numbers of weapons such as tanks and military aircraft during the 1930s seems in retrospect to have been largely a waste, since in 1941 they were mainly obsolete and were quickly lost. Indeed, they largely just consumed valuable fuel, ammunition and trained crews. (This view is based on hindsight. At the time they may have seemed necessary to deter Japan from attacking Soviet interests or fighting Japan if attacked.) However, the production capacity that had been laid down, the production technology that had been introduced (mass production), the design of suitable weapons (such as the T-34 and the Katyusha) and the system of mobilisation planning were all essential to Soviet victory.

Economic planning and nuclear weapons

The development of nuclear weapons by the USSR, China and North Korea was a combination of the import of technology and the concentration of resources on key projects that was facilitated by the traditional model of socialist planning. In all three cases, the import of technology was important, and helped to reduce the time taken to acquire nuclear weapons. The USSR imported nuclear technology from the USA (by espionage) and nuclear materials and scientists from Germany (by capture).¹⁴ The first Soviet atom bomb was a copy of the US plutonium bomb. It has been estimated (Zaloga 2002: 7) that the US and German assistance saved the USSR about six years in building its atom bomb. China imported nuclear technology from the USSR. In 1958–60 the USSR helped China build a uranium-enrichment plant, a plutonium-producing reactor and a plutonium-processing plant. (However, the first Chinese bomb was a uranium one.) It also helped China train scientists and engineers in the relevant skills. North Korea imported nuclear technology from Pakistan.

However, in all three cases, the domestic political and economic systems were also very important. These systems enabled poor countries, a large part of whose population lived in poverty, to devote to making atom bombs the resources that this activity required. In all three countries, the

¹⁴ In 1945, when the USSR was very short of uranium for its nuclear programme, it removed 100 tonnes of uranium concentrate from Germany for this purpose (Simonov 2000a: 157). It also acquired German scientists and laboratory equipment. Captured German scientists played an important role in designing uranium separation technology (Zaloga 2002: 7).

atom bomb programme carried on in periods when famine conditions prevailed in the country. The nuclear programmes proceeded regardless, since the governments gave top priority to them. In 1958 China's Central Military Commission adopted an eight-point document 'The Guidelines for Developing Nuclear Weapons' (Lewis and Xue 1988: 70). Point 5 reads: 'In order to achieve success rapidly in developing nuclear weapons, we must concentrate human, material, and financial resources ... Any other projects for our country's reconstruction will have to take second place to the development of nuclear weapons ...' As Holloway (1994: 172) noted with respect to the Soviet nuclear project:

The building of the atomic bomb was the kind of task for which the Stalinist command economy was ideally suited. It resembled the huge construction projects of the 1930s – the steel city at Magnitogorsk, or Dneprostroi, the great dam on the Dnieper. It was a heroic undertaking for which the resources of the country could be mobilized, including the best scientists and industrial managers, as well as the slave laborers of the Gulag. The project was a curious combination of the best and worst of Soviet society – of enthusiastic scientists and engineers produced by the expansion of education under Soviet rule, and of prisoners who lived in the inhuman conditions of the labor camps.¹⁵

Of course, this system, although useful, was not necessary, if the import of technology was on a large enough scale. Israel was able to assemble its first atom bomb in 1967 without it, after seven years of large-scale French assistance (Cohen 1998).

The atom bomb project not only played an important role in international relations but also played an important role in Soviet domestic history. Its importance saved Soviet physics in 1949 from the fate of Soviet genetics. In addition, the physicists who enabled the project to be implemented were part of an international community of scientists who were more interested in international cooperation than in international conflict (Holloway 1994; Evangelista 1999). One of their leaders (A. Sakharov – who had played an important role in the development of the Soviet hydrogen bomb) subsequently became a prominent dissident and then a leader of the opposition to the CPSU in the late perestroika period. Hence the Soviet nuclear programme played an important role, first, in strengthening the Soviet system, but ultimately in destroying it.

¹⁵ It seems that, in China too, prisoners were used in the nuclear programme, e.g. as part of the labour force which built the Lop Nur nuclear test site (Lewis and Xue 1988: 179).

International dissemination of the Soviet model of defence planning

An important aspect of the adoption of the Soviet economic model in Eastern Europe after World War II, and in China after 1949, was the adoption of the Soviet model of defence planning. Hence defence sections of the planning office, mobilisation planning and military representatives in defence-industry plants were widely copied. The idea that defence planning meant copying the USSR and embedding defence planning in the national economic planning system was widely accepted. As the defence department of the Hungarian National Planning Office put it in a paper of March 1950 (Germuska 2008: 816):

Also in this matter we rely mostly on the experience of the Soviet Union. As the great Patriotic War of the Soviet Union¹⁶ demonstrated, the mobilisation of industry could only be realised properly in the framework of socialist economic planning ... The war economy also has to be planned. In the planning process we will make use of the KR-organisations [the mobilisation departments] that were established on the initiative of the HM [Ministry of Defence], and in particular we will make use of the previous work of the Department of Industrial Records [the military planning section] of the Ministry of Heavy Industry.

From the Soviet point of view, the internationalisation of the Soviet model had some negative consequences. The export of both policies and hardware turned out to generate considerable problems. The strikes in East Germany in 1953, and in Poland in 1956, and the abortive revolution in Hungary in 1956 were partly a result of the decline in living standards resulting from the massive build-up of military expenditures in 1948–53. China, whose military development the USSR assisted in the 1950s, became an enemy of the USSR in the 1960s. The extensive export of arms to ‘friendly countries’ in the 1970s and 1980s won the USSR/Russia few lasting friends and nor did it ultimately earn as much in hard currency as it promised (it earned something in hard currency from oil exporters when oil prices were high, and in barter goods, but a large proportion of the arms were sold on very soft terms or planned payments were ultimately written down or written off).

¹⁶ The Soviet–German war 1941–5.

Structural militarisation

The term 'structural militarisation' to describe the Soviet economic system was coined by the former Soviet military intelligence officer Vitaly Shlykov (1997, 2001, 2004). It referred to the combination of: large armed forces; a high share of the national income devoted to military and defence-industry activities; the high priority of the military and defence-industry sectors; the system of mobilisation planning with its subordination of current civilian production to military needs and the accumulation of large stocks of goods needed in wartime; the accumulation of stocks of weapons far in excess of real military requirements; the maintenance of these phenomena for decades; the failure of the economy to respond as expected to market reforms; and the long-run subordination of the whole society to the needs of the military and the defence industry.

One way of using this concept is to consider the much-discussed question of the share of the Soviet economy devoted to military purposes. It was long obvious that the figures officially published in the USSR before perestroika grossly underestimated this. As a result, a variety of alternative estimates have been published in the West and in the USSR/Russia. The standpoint of structural militarisation enables one to see clearly the problematic nature of the attempt to calculate one single figure for the defence burden, and the danger of applying to the USSR the international national income accounting framework developed to analyse a quite different economic system. Take the example of the aluminium industry. According to the national income accounting framework, only the aluminium actually currently used in the defence industry is an input into the defence sector, and its use is included in the cost of the planes produced from it. However, if the price of aluminium is held below its world market price, then the resulting figure for defence costs will be an underestimate. Furthermore, if the entire aluminium industry only exists to provide for the needs of defence on mobilisation, then it would be reasonable to consider the cost of the entire aluminium industry a military expenditure. Furthermore, aluminium is an energy-intensive industry. If capital-intensive hydroelectric power stations were built mainly or exclusively to power the aluminium industry, then the capital costs of the hydroelectric stations are really just as much military expenditures as new military airfields. Or consider science. In 1913, Russia had a little more than 10,000 scientists. By 1941, the USSR had

98,000 scientists, almost ten times as many. In 1985, their number was 1,500,000 (about a quarter of the number in the whole world) and the total employed in the science sector (this included secretaries, cleaners, canteen staff, etc.) was about 4,500,000. A large proportion of the scientists worked for the military or the defence industry. According to normal national accounting conventions, only their wages in Ministry of Defence establishments or the payments for their services to outside organisations are defence expenditures. However, in the USSR they would probably have been working in an institute of a defence-industry ministry or the Academy of Sciences, and their pay would have been part of industrial research or an outgoing of the Academy. In a private ownership economy, R&D expenditure by private firms does not count as military expenditure but as civilian R&D. It only becomes a military expenditure if the Ministry of Defence buys it, either directly or as an input into a military project. In a state-owned economy this distinction makes little sense. Since a high proportion of the work of the Academy of Sciences was for military purposes, should the budget of the Academy be added to the 'military' budget? And what about the higher educational institutes which trained engineers and scientists, the majority of whom would later work in the defence sector, either immediately or on mobilisation? Were these military expenditures? Obviously, in an economy where the state owns the means of production, regards defence as a high-priority sector, as the 'holy of holies' of the economy, and operates a system of mobilisation planning which subordinates the entire economy to the needs of national defence, it is difficult to draw the line between 'military' and 'non-military' expenditure. The standard international national income accounting conventions assume that a sharp line can be drawn between military and non-military expenditures. However, in a country with comprehensive mobilisation planning of the Soviet type, such a distinction makes little sense, because all economic decisions – what to produce, where to produce, what stocks to hold – are assessed by the authorities from the point of view of their usefulness in war. Shlykov regarded the Soviet economy as 100 per cent militarised, not because of the application of standard international national income accounting, but because of the role of military factors in determining its allocation of resources.

As a description of the Soviet economy, Shlykov's term is somewhat one-sided. It downplays the role of the civilian Party leadership in

creating, modifying and ending this system. Stalin killed the leadership of the Red Army in 1937; Khrushchev reduced the armed forces and military budgets in 1953–60; and Gorbachev withdrew Soviet forces from Eastern Europe, introduced a unilateral moratorium on nuclear tests and arranged the INF (Intermediate-Range Nuclear Forces), CFE (Conventional Forces in Europe) and START1 (Strategic Arms Reduction Treaty) agreements, all despite the wishes of the military and defence-industry sectors. Ultimately, it was the civilian Party leaders, and not the military or defence-industry chiefs, who determined the policies adopted in the USSR. Furthermore, the term ‘structural militarisation’ oversimplifies the role of non-military sectors of the economy, such as education and agriculture. Education was not just aimed at producing specialists for the defence industry (although this was undoubtedly an important part of its function). Similarly, the large investments in agriculture in the Brezhnev era were not primarily for military purposes, even though the army required feeding and fertiliser factories could produce ammunition on mobilisation.

Nevertheless, the term ‘structural militarisation’ does draw attention to a very important aspect of reality. The long-term maintenance of such a large military effort, and the institutional arrangements that made it possible, were obviously crucial characteristics of the Soviet ‘planned’ economy. Shlykov (2004: 158–9) argued that:

The greatest victim of this policy was the civilian sector of the Soviet economy. For more than half a century, the government channelled the country’s best technologies as well as human and material resources into the defence sector. Meanwhile, civilian industries and infrastructure suffered decades of gross neglect and rising inefficiency.

The military–business complex

Since the PLA (People’s Liberation Army) originated as a guerrilla force it has always undertaken some economic activities, such as agriculture and the manufacture of uniforms and simple weapons and their ammunition. In the period 1979–98 the PLA’s economic activities grew very substantially and embraced a very wide range of activity in agriculture, manufacturing and services, including also international trade. This was intended to generate income, compensating the armed forces for the sharp fall in budget appropriations at the beginning of the Dengist

period (in 1979–81 the defence budget was cut by 24.6 per cent). These economic activities also provided employment for dependants (wives) of military personnel. The PLA was able to turn to economic gain its special advantages (priority use of the railways; privileged access to raw materials; exclusive control over a large part of the radio frequency; exemption from tolls and customs duties; and de facto exemption from civilian criminal law). It built up a flourishing range of activities, in areas ranging from the production of steel and cement, coal mining, the manufacture of clothes, ice-cream retailing (as joint-venture partner with Baskin-Robbins), hospitals, securities trading and insurance, construction, and telecommunications, via property development, to pharmaceuticals. Particularly important were its conglomerates, which were partially modelled on the Korean *chaebol* and the Japanese *keiretsu*.

However, the military–business complex generated substantial corruption. It also diverted the PLA away from its main activity – preparing for war. It was not easy to combine commercial activities with the military ethos. Furthermore, military enterprises were sometimes less efficient than civilian ones, and only survived because of the special privileges of the military. Hence in 1998 it was decided to divest the PLA of most of its economic activities. It retained its farms (important for feeding the troops). It also retained some hospitals which served the general public, some enterprises providing employment for dependants, and some telecommunications activities.

The military–business complex was a good example of a non-standard mechanism (non-budgetary financing of the military, which instead generated its own income by economic activities) being used to facilitate the reform process. It can be considered an example of ‘transition with Chinese characteristics’. The extent of corruption in the military–business complex, and the role it played in the decision to divest the PLA of most of its economic activities, also illustrates the importance of corruption in China in the Dengist and post-Dengist periods.

Secrecy

All countries strive to protect their military and diplomatic secrets. However, the USSR took secrecy to extremes. Article 58.6 of the RSFSR (Russian Republic) Criminal Code provided that giving state secrets not just to foreign governments and ‘counter-revolutionary

organisations' but even to individuals was punishable by at least three years in the Gulag and possibly death by shooting. Merely giving information to another person which the head of a department, institution or enterprise had declared was not to be revealed was punishable by up to three years in the Gulag. From the mid 1930s to 1956, scarcely any economic statistics were published and a huge range of information was classified as secret. Even when the publication of a statistical annual resumed, much information remained classified. This was intended to prevent enemies knowing about the military potential of the USSR and its weak spots.

Soviet secrecy may have had some positive results. For example, in the Cold War era it may have made US bomb and rocket targeting of key Soviet objectives more difficult. In addition, Soviet secrecy forced the USA to devote significant resources to trying to estimate real Soviet military expenditures. However, it also had counterproductive effects. One of the reasons the Nazis attacked the USSR in June 1941 was that they had inadequate knowledge of Soviet war preparations, and thought the invasion would be a pushover. Had they been aware of the magnitude of Soviet military production and the possibilities for its rapid expansion, they might have thought twice about that fateful decision.

Similarly, in the summer of 1940, in view of its potential military applications, and the risk that the Nazis would build a nuclear bomb, the leading US scientific journals voluntarily decided to cease publishing fission-related papers. This was accepted by the leading scientists in the field, many of them refugees from the Nazis. In early 1942, the Soviet physicist Flerov looked carefully at the US journals, noticed that they had stopped publishing anything about fission, and that the leading specialists in this area were not publishing on anything else either. He concluded that the subject was now regarded as a military secret, and that the USA had launched a programme to develop nuclear weapons (actually the decision to make a determined effort to build an atom bomb was only taken in June 1942). Accordingly, he wrote to the Soviet authorities urging them to take action to utilise the possibilities of nuclear fission (Holloway 1994: 78–9). This illustrates how making a topic secret can provide other countries with valuable information as to what is happening.

Soviet secrecy had important internal economic consequences. It made it easier for defence enterprises to hide their resources, costs and

mistakes from their customers and superiors. The Ministries of Defence and Finance had difficulties in obtaining access to these 'state secrets'. It also made it possible for the budget of the Ministry of Defence (a top secret, naturally) to be hidden not just from the general public but also from most Politburo members (it was known to a couple of them but they kept it to themselves). These uses of secrecy naturally had cost-increasing consequences. In the absence of accurate budget data, it was difficult to argue for reductions. The secrecy surrounding the defence sector also hampered spin-off from the military to the civilian sectors, and thus reduced innovation and economic growth.

Another important result of Soviet secrecy is that it created a gulf between published and publicly discussed Five-Year Plans and annual budgets, with their silence (or distorted figures) about defence, and the real situation. This undermined public understanding of the real economic situation and discussion of possible economic reforms.

Soviet secrecy also had adverse public health consequences. In 1957 there was an explosion at a nuclear waste dump near Kyshtym in the Urals. This was, of course, kept secret, although it spread more than 2,000,000 curies over 20,000 km² and led to the evacuation of about 11,000 people (Josephson 2005: 279). Similarly, nuclear waste was released into the air in 1967 when Lake Karachai, also in the Urals, evaporated, and winds blew radioactive substances into the surrounding area, affecting about 40,000 people. The secrecy surrounding these events reduced the pressure to raise safety standards in the nuclear industry. It allowed the nuclear industry to get away with a culture of inattention to public health issues that culminated in the 1986 Chernobyl disaster. In the late 1990s, the Russian organisation the World Organisation of Health for Radiation Medical Problems, founded in 1991, had a register of 550,000 persons exposed to excessive radiation by Soviet nuclear programmes (which included 220,000 who took part in attempting to overcome the effects of the Chernobyl disaster).

Did the military and the defence-industrial complex cause the collapse of the USSR?

After the destruction of the USSR, the size and significance of its defence sector gradually became apparent. This led to the assertion by some writers that the size and growth of the military and defence-industry

complex caused the collapse of the USSR. For example, Derluguian (2000: 205–12) argued that:

The USSR disintegrated because it overspecialized in preparing for industrial-age warfare, in building the bureaucratized mobilization state ... In the language of business consultants, the Soviet military was an extraordinary case of bad investment rooted in the ... assessment of previous success and sustained by an inertial and comfortably insulated corporate culture.¹⁷

The alleged mechanisms on which this conclusion is based are threefold, and concern *costs*, *structure* and *people*. First, there was the cost of military programmes, which had a major opportunity cost in terms of civilian investment and civilian consumption forgone. Secondly, there were the interests of the military and the defence-industry complex, that made economic reform much more difficult. In Hungary, when the 1968 reform was introduced it was confined to the civilian sector and the defence sector basically remained run on administrative-command lines (Germuska 2008: 824). In the USSR, with its much larger armed forces, extensive defence-industry complex (including thirteen closed nuclear cities) employing large numbers of workers, engineers and scientists, the defence sector was much larger and such a division of the economy more difficult to realise. Hence, the military and the defence-industry sector hampered attempts to modernise the economic system that Stalin had established. When attempts were made to liberalise the Soviet economy, they frequently had unintended and unwanted effects – partly the result of the size and importance of the defence sector. Thirdly, many of the people who ran the USSR in the Brezhnev era had experienced World War II and their perceptions of economic policy were much influenced by that. They wished, above all, to prevent a repetition of the disaster of June–October 1941 (the opening months of the Soviet–German war, in which the USSR lost huge numbers of troops, weapons and a large swathe of its territory), and to retain the territories and sphere of influence the USSR had acquired as a result of that war. They were much less interested in overcoming the problems of the

¹⁷ Inertia and reliance on obsolete technology were undoubtedly important in the Soviet armed forces and weapons production. For example, the last horse cavalry divisions were not disbanded till 1957 (Zaloga 2002: 19). Another example of inertia is the fact that by the late 1970s and 1980s (Zaloga 2002: 205): ‘weapons were built as much to keep up employment as to satisfy any particular defence need’.

administrative-command system, adapting it to the post-Fordist world, or taking effective measures to accelerate innovation, technical progress and economic growth. Their preoccupation with World War II – and the inertia of a huge country, with powerful institutions supporting the status quo, ruled by the elderly – led them to retain a system that had helped prepare for, wage and win World War II, but was less relevant to the actual and potential conflicts that the USSR faced in the 1970s and 1980s.

However, such a monocausal explanation is inadequate. It neglects the policies of Gorbachev and the internal and international environment. The traditional system had been created by the then leader of the Party – Stalin – in response to the domestic and international situation in the late 1920s and early 1930s. The Party leader in the mid 1980s, facing a quite different situation, adopted quite different policies. This was possible because in the USSR the top leader had considerable freedom in initiating policies.¹⁸ Whereas Stalin had been confronted by perceived hostile classes internally and the Great Depression externally, Gorbachev inherited a situation in which the perceived hostile classes ('nepmen', 'kulaks' and 'bourgeois intellectuals'¹⁹) had all long ago been marginalised, died out, or killed off, and much of the external world was clearly more successful economically than the USSR. In addition, as pointed out in Chapter 3, in the perestroika period the USSR was hit very badly by a sharp fall in world oil prices, which meant a dramatic worsening of its terms of trade, and led to an acute balance of payments crisis and a substantial increase in the budget deficit.

Although the military and the defence–industry complex on their own did not cause the collapse of the USSR, they undoubtedly contributed to it. They did this in three ways. First, they consumed massive resources which hampered the development of the civilian sector.

¹⁸ For example, Khrushchev was worried that the USA was using the arms race to destroy the Soviet economy (Evangelista 1999: 104), and by that means to obtain its goals even without war. He was determined not to fall into the perceived US trap, sharply reduced Soviet military manpower, and favoured a relatively modest nuclear force. Brezhnev, on the other hand, pursued quite different policies, increasing military manpower and greatly increasing the nuclear force.

¹⁹ 'Nepmen' was a derogatory term used to describe the private traders and producers of the 1920s NEP (New Economic Policy) period. 'Kulaks' was a term of abuse used to describe relatively well-off peasants. 'Bourgeois intellectuals' were educated and professional people who had qualified in the pre-Soviet period. All were marginalised, deported, or killed off in 1929–38.

Secondly, their size and importance made the attempt to introduce market elements into the economy and integrate the USSR into the world economy more difficult. Thirdly, their leaders supported the attempt to reverse Gorbachev's policies in August 1991, which was a miserable failure and accelerated the collapse of the USSR.²⁰

The end of the Soviet military and defence-industry complex

Soviet military expenditures seem to have reached a peak in 1988. Subsequently, they were reduced, amidst much talk of conversion of the defence industry to civilian purposes. This was a result of Gorbachev's perestroika programme. However, a drastic reduction in military expenditures, weapons output, the status of the armed forces and military manpower only took place in the 1990s, after the USSR had been replaced by its successor states. As Shlykov (1997: 10) observed in 1997: 'In only a few years the military force that held most of the world in terror has been plunged into penury and humiliation.'

The cuts in Soviet military expenditures in 1988–91 were part of a wider programme which included better relations with the West, the democratisation of Soviet society and dramatic ideological changes. The defence-industry complex and armed forces were using resources which the new leadership of the USSR hoped to use for civilian economic and social purposes, and hindering the development of good relations with the West. While growing military and defence-industry expenditures had seemed desirable under conditions of economic growth and traditional Marxism–Leninism, as the economy first stagnated and then declined, and the General Secretary radically altered the official ideology, military and defence-industry expenditures came to be seen as an unnecessary burden which harmed relations with the rest of the world.

²⁰ Of the eight members of the State Committee for the State of Emergency which attempted to take power in August 1991, one was the Minister of Defence, one was the Communist Party's top official in charge of the defence-industry complex, one was the director of a major missile producer, one was the head of state security, one was the Minister of Internal Affairs, and only three were not concerned with internal or external security.

Conclusion

Defence planning was always an important part of socialist planning. The Soviet model of defence planning, developed in the 1920s and 1930s, was transplanted to Eastern Europe after World War II, and to China after 1949. However, the share of resources devoted to military purposes fluctuated sharply in accordance with the international situation and the policies of the national leaderships.

The economic system that Stalin created treated military production and military preparations as high priority sectors. One aspect of this system was the use of competition, external and internal, to achieve high-quality weapons. This system, combined with the use of mass production methods in industry, enabled the USSR to defeat a more economically advanced state in World War II. In addition, in 1945–91 the military resources created by this system successfully deterred aggression against the USSR.

This system, combined with the import of technology, enabled atom bombs to be quickly developed. Relatively poor countries, such as the USSR, China and North Korea, were able to produce these technologically very advanced weapons. It also enabled large armed forces to be maintained. This system also enabled the USSR in the 1970s to reach strategic parity with the more economically advanced USA, and to become one of the two great powers.

However, the concentration of resources on military programmes had substantial costs for the civilian economy. These were not only the obvious costs of maintaining the armed forces and producing weapons, and their opportunity costs for investment and consumption. There were also less obvious costs such as the production of inefficient civilian products in plants whose mobilisation plan required rapid transition to military production, and high transport and building costs resulting from locating industrial plants for strategic rather than economic reasons. Much of the waste usually ascribed to 'the inefficiency of central planning' was actually a by-product of the system of mobilisation planning. It is difficult to produce meaningful internationally comparable figures for Soviet defence expenditures because of the specific features of the Soviet economic system. The priority of military goals had serious environmental and public health consequences. The concentration of resources on military programmes also depended on economic growth, and on an ideology which regarded the world as divided into

antagonistic camps between whom relations were bound to be poor and war quite likely.

When economic growth turned into stagnation and the Soviet leader abandoned the ideology, the ground was prepared for the drastic reduction in weapons production, the size of the armed forces and defence expenditure that took place in the 1990s in the successor states of the USSR. The militarisation of the Soviet economy was an important obstacle to the post-Soviet transition process in the former USSR, in particular in Russia and Ukraine, and part of the explanation for the difficulties these countries experienced in the 1990s. In the People's Republic of China, military modernisation has always been an important goal. However, in the initial economic reform era military expenditures from the state budget were sharply reduced and partially compensated for by the development of the military–business complex.

SUGGESTIONS FOR FURTHER READING

Background

- D. R. Jones, 'The Imperial Army in World War I, 1914–1917', in F. W. Hagan and R. Higham (eds.), *The military history of Tsarist Russia* (New York, 2002), pp. 227–48.
- N. Stone, *The Eastern Front, 1914–1917* (New York, 1975).
- S. Broadberry and M. Harrison (eds.), *The economics of World War I* (Cambridge, 2005).
- J. Lovell, *The opium war: Drugs, dreams and the making of China* (London, 2011).

Planning for war

- V. Kontorovich and A. Wein, 'What did the Soviet rulers maximise?', *Europe-Asia Studies*, 61(9) (2009), 1579–1601.
- V. Shlykov, 'The Soviet system of mobilization preparedness', in V. Genin (ed.), *The anatomy of Russian defence conversion* (Walnut Creek, CA, 2001), pp. 65–88.
- V. Shlykov, 'The structural militarization of the Soviet economy: The unknown phenomenon', in Genin (ed.), pp. 92–105.
- V. Katayev, 'MIC: The view from inside', in Genin (ed.), pp. 53–63.
- P. Hanson, 'Soviet industrial espionage', *Bulletin of the Atomic Scientists* 43 (1987), 25–9.
- D. Stone, *Hammer and rifle: The militarization of the Soviet Union, 1926–1933* (Lawrence, KS, 2000).

- L. Samuelson, *Plans for Stalin's war machine: Tukhachevskii and military-economic planning, 1925–1941* (Basingstoke, 2000).
- J. Barber and M. Harrison (eds.), *The Soviet defence–industry complex from Stalin to Khrushchev* (Basingstoke, 2000).
- P. Gregory, 'Soviet defence puzzles: Archives, strategy and underfulfilment', *Europe-Asia Studies* 55(6) (2003), 923–37.
- S. Zaloga, *The Kremlin's nuclear sword: The rise and fall of Russia's strategic nuclear forces, 1945–2000* (Washington, DC, 2002).
- M. Leitenberg and R. Zilinskas, *The Soviet biological weapons program: A history* (Cambridge, MA, 2012).
- P. Germuska, 'Military-economic planning in socialist Hungary', *Europe-Asia Studies* 60(5) (2008), 809–30.

World War II

- M. Harrison, *Accounting for war: Soviet production, employment and the defence burden 1940–1945* (Cambridge, 1996).
- M. Harrison (ed.), *The economics of World War II: Six great powers in international comparison* (Cambridge, 1998).
- R. Reese, *Why Stalin's soldiers fought: The Red Army's military effectiveness in World War II* (Lawrence, KS, 2011).
- S. Zaloga, J. Kinnear and P. Sarson, *T-34–85 medium tank 1944–1994* (London, 1996).
- J. C. Hsiung and S. I. Levine (eds.), *China's bitter victory: The war with Japan 1937–1945* (Armonk, NY, 1992).

The atom bomb

- D. Holloway, *Stalin and the bomb* (New Haven, CT, 1994).
- J. Lewis and L. Xue, *China builds the bomb* (Stanford, CA, 1988).
- C. L. Pritchard, *Failed diplomacy: The tragic story of how North Korea got the bomb* (Washington, DC, 2007).
- M. Kroenig, 'Importing the bomb: Sensitive nuclear assistance and nuclear proliferation', *Journal of Conflict Resolution*, 53(161) (2009), 161–80.

The economics of defence in a planned economy

- M. Harrison, *Guns and rubles: The defence industry in the Stalinist state* (New Haven, CT, 2008).
- H. S. Rowen and C. Wolf (eds.), *The impoverished superpower* (San Francisco, 1990).
- J. Mulvenon, *Soldiers of fortune: The rise and fall of the military–business complex, 1978–1998* (Armonk, NY, 2001).

- B. Naughton, 'The Third Front: Defence industrialization in the Chinese interior', *China Quarterly* 115 (1988), 351–86.
- D. Stone, 'The first five-year plan and the geography of the Soviet defence industry', *Europe-Asia Studies* 57(7) (2005), 1047–63.

The economics of conversion

- P. Germuska, 'Military industry versus military-related firms in socialist Hungary: Disintegration and integration of military production during the 1950s and early 1960s', *Enterprise & Society* 11(2) (2010), 316–49.
- C. Gaddy, *The price of the past: Russia's struggle with the legacy of a militarized economy* (Washington, DC, 1996).
- V. E. Genin (ed.), *The anatomy of Russian defence conversion* (Walnut Creek, CA, 2001).
- J. Cooper, 'From USSR to Russia: The fate of the military economy', in P. Hare and G. Turley (eds.), *Handbook of the economics and political economy of transition* (London, 2013), pp. 98–107.

5 | *Investment planning*

At the present time, the USSR is energetically implementing the Five-Year Plan for the construction of socialism . . . Heavy industry occupies a central place in this plan, in particular those branches of industry which are connected with increasing the defence capacity of the country . . . The basic goal of the Five-Year Plan is to increase military strength.

Lieutenant-colonel Kasakhara, Military attaché, Japanese
Embassy in Moscow (July 1931)¹

The share of investment in the national income

The traditional model was generally effective in mobilising resources for investment. That was a major reason why it was developed and maintained. Ofer (1987: 1784) argued that: ‘The most outstanding characteristic of Soviet growth strategy is its consistent policy of very high rates of investment . . . These high rates . . . are almost without precedent for such long periods.’ This argument was based on official Soviet statistics which, certainly in the late Soviet period, overstated net investment (Kontorovich 1989, 2001). Furthermore, even higher rates of investment were attained in China after it discarded the traditional model. Nevertheless, it is certainly true that high investment rates were attained for long periods, especially in the early years of the traditional model.

These high investment rates were possible as a result of institutions quite different from those of capitalism (Mau and Drobyshevskaya 2013: 38):

the scale of economic accumulation was unfettered by the unpredictability of private savings and investment. Economic activity was not constrained by

¹ This is an extract from a report presented to General Kharada of the Japanese General Staff, who visited Moscow in July 1931 in connection with the Japanese attack on Manchuria (Khaustov, Naumov and Plotnikova 2003: 292–3).

high levels of taxation or by the autonomous decisions of private enterprises. Any possibility of the flight of capital was effectively cut off by comprehensive financial controls. Totalitarian political control removed conventional limits to the quantity of financial resources that could be mobilized for the goal of accumulation. This exceptionally high level of national savings, stable in the long term, made possible a leap forward in industrialization and a sharp increase in rates of economic growth.

What was the purpose of these high investment rates? It seems that the main aim was rapid convergence with the advanced countries, both in the military and civilian sectors. Investment planning was to a considerable extent concerned with implementing the goals of defence planning, as outlined in the previous chapter. This had a major impact on the sectoral allocation of investment and the location of industry. It was also concerned with creating the possibility of raising consumption, the planning of which is considered later in Chapter 8.

The increase in the level of investment in the national income from that which characterised the semi-market economy of the NEP period (1921–8) to the higher rates characteristic of the traditional model took place in the First Five-Year Plan (1928–32). In 1928–32 there was a huge increase in investment in the USSR. This was possible because of a disregard for financial constraints and monetary equilibrium, and the readiness to replace them by force and enthusiasm.

The question of the sources of this enormous increase in investment was examined in Ellman (1975):

From a Keynesian point of view, the sources of the increase in investment in 1928–32 were (a) the utilisation of previously wasted resources (e.g. unemployed labour), (b) the increase in the urban labour force, (c) the increase in the volume of basic wage goods marketed by agriculture, (d) the fall in urban real wages, (e) imports (both of machines and skilled labour), and (f) the increase in the output of industry and construction during the First Five-Year Plan. The two key mechanisms for obtaining the additional investment resources were collectivisation (which made possible the increase in the volume of basic wage goods marketed by agriculture and the increase in the urban labour force) and the rapid inflation (which facilitated the fall in urban real wages).

From a Marxist point of view, the origin of the huge increase in accumulation during the First Five-Year Plan was (a) an increase in absolute surplus value resulting from the increase in the urban labour force (30%), and (b) an increase in relative surplus value resulting from the fall in real wages (101%), less (c) a decrease in unequal exchange with agriculture (–31%).

The four key mechanisms for obtaining the additional accumulation were: the transition of the unions from trade unionism to production mindedness, the rapid growth of forced labour, the replacement of a market relationship between agriculture and the industrial sphere by a coercive relationship, and the increased differentiation between the elite and the masses.

The conclusion about the crucial role in increasing investment played by the increase in the labour force and the fall in its real wages was based on a detailed study of the Soviet national accounts for the First Five-Year Plan period made during the Soviet period. This conclusion was subsequently confirmed after the collapse of the USSR by study of the Soviet economic archives. These suggested to Gregory and Harrison (2005: 732) that the implicit model that the Soviet leadership used to determine the relationship between investment and consumption in the first two Five-Year Plans can be set out as in Figure 5.1.

Figure 5.1 shows a situation in which the state is trying to obtain as much output as possible for investment, but has to provide some output for consumption, since otherwise the workers will not work well or at all, and output (and hence investment possibilities) will fall. The level of output is assumed to depend on the effort of the workers (this is shown by the curve $Q(E)$), who have a choice between working hard and fooling around, turning up late, or getting drunk at work. Worker effort depends on real wages and coercion (this is shown by the $E(W, C)$ line. Workers are assumed to have a reservation wage (W^{***}), below which they will not work and maybe strike, riot, or

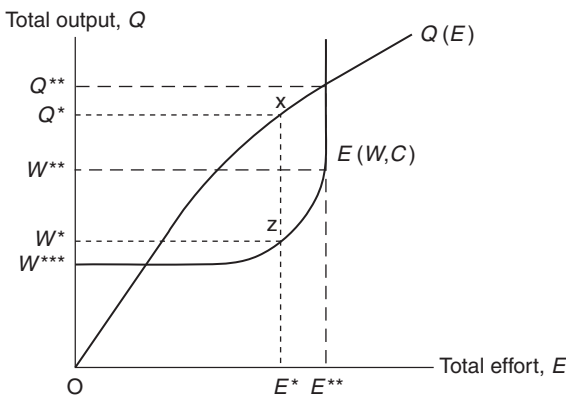


Figure 5.1 Maximising investment subject to variable worker effort

support opposition political movements. They are also assumed to have a fair wage (W^{**}) at which effort is maximised. The choice problem for the political leadership is to select the level of wages (and coercion) that maximises the surplus. At or above the level of wages (W^{**}) that maximises effort (E^{**}), output is maximised (Q^{**}) but a large part of the output constitutes wages and is consumed, and investment is not maximised. At the reservation wage W^{***} effort is very low, and there is very little output. In order to maximise investment the political leadership has to choose the wage level W^* that generates the effort level E^* , which means that the rectangle OW^*ZE^* is consumed, and Q^*XZW^* can be invested.

As far as the sources of the increase in accumulation in China are concerned, Lippit (1975) drew attention to the role of land reform in enabling what had previously been property income to be converted into investment resources. The relationship between the agriculture and non-agricultural sectors in China during the planning era is considered further in Chapter 6.

Also important in raising the share of investment was the existence of a political institution (the Communist Party) which enabled the wishes of the leadership to be conveyed to the localities and implemented there, and the enthusiasm of many people to build socialism. The relative importance of all the factors which influenced the share of investment in the national income varied over time and between countries.

Another way of looking at the share of investment in an economy that is aiming to converge as quickly as possible was developed by the Yugoslav economist Horvat (1958). It is based on three assumptions: first, that the objective of economic policy is to maximise the rate of growth; secondly, that the marginal productivity of investment is a diminishing function of the share of investment in the national income; thirdly, that the marginal productivity of investment reaches zero well before the share of investment in the national income reaches 50 per cent, because the economy has a maximum absorptive capacity. 'The easiest way to use this concept is to conceive the economy as a giant productive capacity capable of being expanded at a certain *maximum* rate, also at a lower rate, but *not at a higher rate*. Any additional inputs (investment) would not produce *additions* to but *reductions* of output' (Horvat 1958: 748). The idea is that, at a certain point, the technical and social problems caused by the reorganisation

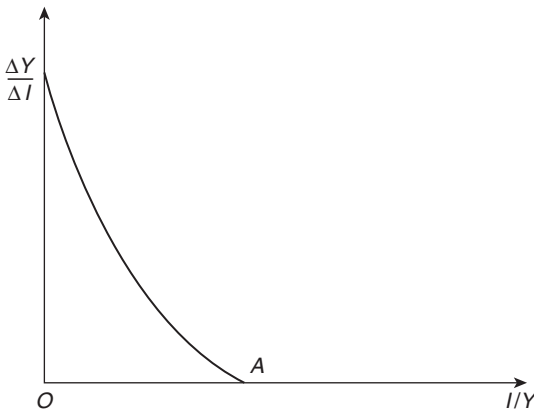


Figure 5.2 Absorptive capacity and the optimal rate of investment. $\Delta Y/\Delta I$ is the increment output–investment ratio. I/Y is the share of investment in the national income

of production to accommodate the investment are such that the marginal product of the investment is zero and beyond that point is negative.

Given these three assumptions, the problem of planning the optimal share of investment can be illustrated by Figure 5.2. The figure depicts a situation in which, when the share of investment is low, the return on marginal investment is high. As the share rises the return falls. When the maximum absorptive capacity is reached, the maximum rational share (A) is attained.

Accordingly, for an economy seeking to converge as quickly as possible with the high income countries, the problem of finding the optimal share of investment resolves itself into the empirical question of finding out what the maximum absorptive capacity of the economy is. According to Horvat (1965: 575) his criterion ‘produces a share of investment in national income of about 35 percent . . . if recent experience and national income statistics may be trusted’.

Given the second and third assumptions made above, and assuming that A is known, the Horvat approach fits in well with the ‘overtaking and surpassing’ approach to economic policy discussed in Chapter 1. It gives that share of investment which enables the gap to be eliminated in the shortest time. However, it can only be considered ‘optimal’ if the ‘optimum’ is defined as that share which enables the gap to be closed in

the shortest time, rather than in a more conventional way.² A valuable feature of the Horvat approach is that it directs attention to the possibility of wasteful overinvestment (investment which is in excess of A). It seems that this situation often occurred in the state-socialist countries.

Another economist who stressed the dangers of overinvestment was Kalecki (1972a, 1986). He went beyond Horvat's macroeconomic argument, and considered the structural bottlenecks that constrain the optimal rate of investment. He stressed the limits to rational investment set by: natural resource constraints; the availability of labour; the need for balance of payments equilibrium; the construction period of new plants; and the need not to sacrifice present consumption unnecessarily.

It would be a mistake to identify the actual level of investment with the intentions of the top leadership. In human societies there is often a discrepancy between *intentions* and *outcomes*. Marxists expected that under socialism this divergence would disappear, since mankind would consciously determine its own future. Nevertheless, it persisted, even under state socialism. For example, in the USSR the leadership was repeatedly confronted by the unexpected outcomes of its own policies, from the economic crisis of 1931–3 to the stagnation of the late Brezhnev era and the economic breakdown of 1989–91. As a result of this discrepancy, it is necessary to study not only *plan choices* but also the processes governing *plan outcomes*. For example, given that the actual share of investment in the national income often differed from that which was planned, it is necessary to study both normative theories about what the share should be and the behavioural processes, and properties of the economic environment, that influence what it actually is.

A major factor which determined it was the behaviour of the investors (e.g. ministries, enterprises, republics). This was characterised by Kornai (1980) as *investment hunger*. This term describes a situation in which there is an almost unlimited desire by potential investors for additional investment resources, regardless of the likely economic return to them. Not facing the threat of bankruptcy, but facing a situation in which the interests of their organisation and officials would only benefit from additional investment, they tried by hook or by crook to obtain

² That Horvat's 'optimal' share is not 'optimal' in the conventional welfare economics sense was shown by Sen (1961: 485–6). Horvat's approach can be thought of as a variant of the utility maximisation approach in which a constraint (absorptive capacity) is introduced and the maximand is switched from a subjective one (utility) to an objective one (growth).

additional investment resources. For example, expected costs were underestimated and/or the benefits to be expected were overstated.

The share of investment was also influenced by the economic environment. For example, the sharp fall in the share of investment in the national income throughout Eastern Europe in the early 1980s partly resulted from: the sharp worsening of the credit rating of Eastern Europe; the deterioration in the international political climate; the second oil shock; and the difficulty of finding remunerative export markets (this resulted both from the economic environment and system-related factors).

Summary

The traditional model was generally effective, certainly in its early years, in mobilising resources for investment. The main instruments for attaining this were a mixture of repression (the use of violence to collectivise agriculture and enforce wage reductions); institutional change (the transformation of the trade unions into agencies for implementing state policies and part of the increase in employment); the Communist Party (which conveyed the wishes of the leadership to the localities); and enthusiasm to build socialism. The relative importance of these factors varied over time and between countries. One analytical approach to the choice of an optimal share of investment in the national income was considered, that of growth maximisation. It is a useful way of thinking about the problem for an economy aiming at rapid economic growth. It draws attention both to the inverse relationship between the share of investment in the national income and the return on investment, and to the possibility of wasteful overinvestment. Both theory and practice suggest that actually attaining a desired level of investment may involve changes in the relations of production, i.e. in the socio-economic system. The actual share of investment resulted from the interaction of the central leaders trying to impose their priorities on the economic process, the other economic actors (ministries, republics or provinces, enterprises) striving to begin and then complete their pet projects, and the economic environment.

The sectoral allocation of investment

An important feature of the early stage of socialist industrialisation was the allocation of investment resources primarily to producer goods industries rather than to consumer goods industries. In the USSR, where

Table 5.1 *Division of Soviet industrial production between consumer and producer goods (%)*

(1)	(2)	(3)
Year	Producer goods	Consumer goods
(1913	35.1	64.9)
1928	39.5	60.5
1940	61.2	38.8
1946	65.9	34.1
1950	68.8	31.2
1955	70.5	29.5
1960	72.5	27.5
1965	74.1	25.9
1970	73.4	26.6
1975	73.7	26.3
1980	73.8	26.2
1985	74.8	25.2
1990	72.4	27.6

Note: Column (2) refers to what in Soviet planning and statistical practice was known as group A, and column (3) to group B. This division corresponds neither to the Marxist distinction between Departments 1 and 2, nor to the division between heavy and light industry.

Source: Soviet statistical handbooks.

socialist planning existed the longest, the share of consumer goods in total industrial output fell almost continually from 1928 to 1966, and then roughly stabilised, increasing at the end of the perestroika period. Some data are set out in Table 5.1.

In China, the share of heavy industry in total industrial production rose steadily in the First Five-Year Plan (1952–7), rose very sharply in 1958–60 as a result of the Great Leap Forward (GLF), but then declined in the ensuing economic crisis. From its low of 1967–8 it rose again to a level in the late 1970s roughly equal to the 1958–9 level, but then declined somewhat in the early 1980s. The level of the early 1980s was significantly below that of both 1958–60 and 1970–9. It remained, however, above the level of 1957. Towards the end of the plan era it rose further. Some data are set out in Table 5.2.

For many years it was customary for Soviet economists to assert (*Political economy* 1957: 721) that: ‘the law of priority growth of the

Table 5.2 *Division of Chinese industrial production between light industry and heavy industry (%)*

(1)	(2)	(3)
Year	Heavy industry	Light industry
1952	35.6	64.4
1957	46.9	53.1
1960	66.7	33.3
1967	48.5	51.5
1970	56.6	43.4
1979	56.9	43.1
1981	48.6	51.4
1985	50.4	49.6
1999	58.0	42.0
2002	60.9	39.1

Source: Official statistical publications.

production of the means of production . . . is a necessary condition for ensuring the uninterrupted advance of socialist production'. This formulation is actually a paraphrase of the view expressed by Stalin in *Economic problems of socialism in the USSR* (1952) that: 'the national economy cannot be continuously expanded without giving primacy to the production of means of production'. As policy changed, this position was abandoned, and replaced by the view (Dovgan' 1965) that the sharp increase in the share of producer goods output in total industrial output had been necessary during the early stages of socialist industrialisation, but that it was *not* a necessary condition of steady economic growth that the share of producer goods output in total industrial output rises indefinitely. The traditional Soviet doctrine was criticised in China before it was abandoned in the USSR. Already in *On the ten major relationships* (1956), Mao criticised the excessive emphasis on heavy industry at the expense of light industry and agriculture in the USSR and Eastern Europe. He suggested that China should learn from this experience and develop light industry and agriculture proportionately. Nevertheless, heavy industry was developed disproportionately in China in 1957–60 and 1969–79, and this outcome came under much criticism in China after 1978.

There was clearly a *non-economic* justification for the increased share of producer goods in total industrial output – the needs of defence. This

Table 5.3 *Share of consumer goods in industrial output in selected countries (%)*

	1871	1901	1924	1946
Great Britain	52	41	40	31
France	65 ^a	44 ^b	35 ^c	34 ^d
Germany	n.a.	45 ^e	37 ^f	25 ^g – 23 ^b
United States	44 ⁱ	34 ^j	32 ^k	30 ^l
Switzerland	62 ^m	45 ⁿ	38 ^o	34 ^p
Italy	n.a.	72 ^q	53 ^r	37 ^s –
Japan	n.a.	n.a.	59 ^t	40 ^u
USSR	–	–	67 ^v –	61 ^w 39 ^x – 29 ^y

^a1861–5, ^b1896, ^c1921, ^d1952, ^e1895, ^f1925, ^g1936, ^h1951, ⁱ1880, ^j1900, ^k1927, ^l1947, ^m1882, ⁿ1895, ^o1923, ^p1945, ^q1896, ^r1913, ^s1928, ^t1925, ^u1950, ^v1913, ^w1928, ^x1940, ^y1955.

Source: Patel (1961).

was noted already by the Japanese military attaché in Moscow in 1931, an extract from whose report heads this chapter. The large increase in the share of producer goods in total industrial output in the USSR in 1928–40 was partly (but not entirely) a result of the increased share of the defence industry in total output (it also reflected the increased share of investment in the national income). Defence needed steel, non-ferrous metals, chemicals, machine tools, electricity, coal, oil, improved railways, shipbuilding and aeroplane building. After World War II, defence, investment and inertia maintained a high share of producer goods in total Soviet industrial output.

Is there any *economic* justification for the proposition that the share of group A in total industrial production ought to rise during the early stages of socialist industrialisation, and if so, what is it? One line of argument is that the increase in the share of producer goods in total industrial output is a normal feature of economic growth regardless of the economic system. Some figures which have been selected to support this view are set out in Table 5.3.

Assuming that it is a fact that there is a general tendency for the share of producer goods in total industrial output to rise over time,³ it is easy to explain it in terms of the nature of technical progress.

³ For a denial of the validity of this 'fact' see Wiles (1962: 286–8).

Economic development largely consists of the replacement of the production of commodities primarily with labour, with the assistance of a small quantity of intermediate goods and a very limited capital stock, by the production of commodities primarily using capital goods with the assistance of long chains of intermediate goods and limited labour. Comparing eighteenth-century cotton textile production with twentieth-century synthetic fibre production, the latter required, in addition to the requirements of the former, construction of the factory, electricity to power, light and heat it, a heavy engineering industry to produce the capital equipment needed, and a chemical industry to produce the synthetic fibre. If, as a result of technical progress, an increasing proportion of the gross output of consumer goods industries is accounted for by inputs of intermediate products, and a decreasing proportion of the gross output of consumer goods industries is accounted for by value added in the consumer goods industries themselves, as in the above example, then over time the share of consumer goods output in total industrial output will fall. A similar result will occur if an increasing proportion of consumer demand is for products a low proportion of whose gross output consists of value added by consumer goods industries.

The first economist to focus attention on the relationship between the consumer goods and producer goods industries in a plan for rapid economic growth was the Soviet economist Feldman.⁴ He derived two important results: one about the ratios of the capital stock in the two sectors; the other about the allocation of investment to the two sectors. The first result was that a high rate of growth requires that a high proportion of the capital stock be in the producer goods sector. This is illustrated in Figure 5.3.

Feldman's second theorem was that, along a steady growth path, investment should be allocated between the sectors in the same proportion as the capital stock. For example, suppose that a 20 per cent rate of growth of income requires a K_c/K_p of 3.7. Then to maintain growth at 20 per cent p.a. requires that $3.7/4.7$ of annual investment goes to the consumer goods industries, and $1.0/4.7$ of annual investment goes to the producer goods industries.

⁴ Feldman's model was published in the USSR in 1928. An English translation is published in Spulber (1964). For an analysis of the model by one of the founders of Western growth theory, see Domar (1957).

Table 5.4 *Feldman's two theorems*

$\frac{K_p}{K_c}$	$\frac{dY}{dt}$ (in %p.a.) (when $K/Y = 2.1$)	$\frac{\Delta K_p}{\Delta K_c + \Delta K_p}$
0.106	4.6	0.096
0.2	8.1	0.167
0.5	16.2	0.333
1.0	24.3	0.500

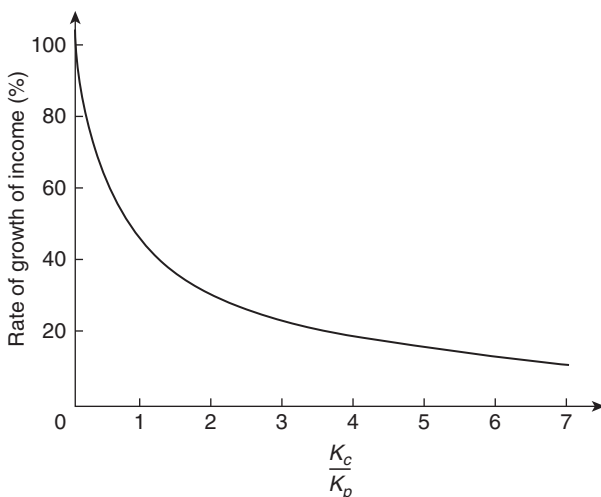


Figure 5.3 Feldman's first theorem. K_c is the capital stock in the consumer goods industry, K_p is the capital stock in the producer goods industry

The interrelationship of the two theorems is shown in Table 5.4, in which Feldman explained how any desired growth rate, given the capital-output ratio, determined both the necessary sectoral composition of the capital stock and the sectoral allocation of investment.

Given the capital-output ratio, the higher the K_p/K_c ratio, i.e. the greater the proportion of the capital stock in the producer goods sector, and correspondingly the higher the $\Delta K_p/(\Delta K_c + \Delta K_p)$ ratio, i.e. the greater the proportion of new investment in the producer goods sector, the higher the rate of growth. With a capital-output ratio of 2.1, to raise the growth rate from 16.2 per cent to 24.3 per cent requires increasing the proportion of the capital stock in the producer goods sector from

1/3 to 1/2, and the share of investment in the producer goods sector from 1/3 to 1/2.

The conclusion Feldman drew from his model was that the main task of the planning organisations was to regulate the capital–output ratios in the two sectors and the ratio of the capital stock in the producer goods sector to that in the consumer goods sector. For the former task, Feldman recommended rationalisation and multishift working, for the latter, investment in the producer goods sector.

Both at the time and for some decades thereafter, Feldman's conclusion that, to begin a process of rapid economic growth, it is necessary to rapidly expand the capacity of the producer goods industries seemed paradoxical. It was contrary to the traditional view that the 'proper' path of development was 'textiles first'. What was Feldman's proof, and is it valid?

Feldman's own argument was rather laborious, but the essence of the matter is very simple, and can be explained by means of an arithmetical example. Consider a two-sector (consumer goods and producer goods) economy, with a capital–output ratio of 2 in each sector, that has available 100 units of investment resources which can be invested either in the consumer goods sector or in the producer goods sector. The choice is represented in Table 5.5.

If the initial investment is made in the consumer goods sector, then there will be a once and for all consumption increment of 50. Consumption will rise from a level of 500 in year 1 to a level of 550 in year 2, and thereafter remain on a plateau. If, on the other hand, the

Table 5.5 *Consumption paths on various investment strategies*

Year	Initial investment in the consumer goods sector (strategy S)			Initial investment in the producer goods sector (strategy F)		
	Consumption	K_c	K_p	Consumption	K_c	K_p
1	500	1000	0	500	1000	0
2	550	1100	0	525	1050	100
3	550	1100	0	550	1100	100
4	550	1100	0	575	1150	100
5	550	1100	0	600	1200	100
6	550	1100	0	625	1250	100

initial investment is made in the producer goods sector, then there will be an annual increment of 50 to the capital stock in the consumer goods sector, which will ensure an annual consumption increment of 25. Consumption will rise by only 25 in year 2, but it will also rise by 25 in each subsequent year. When the initial investment is made in the producer goods sector, there is an initial loss of possible consumption, but by year 3 consumption is equal on the two paths, and from year 4 onwards annual consumption is greater with strategy *F* than with strategy *S*, and the absolute difference increases annually. Given a long enough time horizon, strategy *F* is clearly superior.

The reason why investing in producer goods is advantageous in models of an economy divided into horizontal sectors is very simple. An investment in the producer goods sector enables the capital equipment of the consumer goods sector to expand. This is not a flash in the pan. After each period of production in the producer goods sector, the capital stock in the consumer goods sector rises. This enables the output of consumer goods to rise. There is a steady rise in the output of consumer goods, the annual increment being the capital stock in the producer goods sector divided by the product of the two capital-output ratios. In the example, the capital stock in the producer goods sector is (from period 2 onwards) the initial investment of 100 units.

An investment in the consumer goods sector, on the other hand, merely results in a once and for all expansion of the productive capacity of that sector, and consequently a zero growth rate in the output of consumption goods (after the initial increase).

From this point of view, the crucial difference between an investment in the producer goods sector and one in the consumer goods sector is as follows. The former produces a steady stream of capital goods for use in the consumer goods sector, each of which in turn produces a steady stream of consumption goods. The latter, however, merely produces a steady stream of consumption goods, and the absolute level of this stream thereafter remains unchanged.

The argument depends crucially on the assumptions that construction periods are the same in both sectors; machines are immortal; and the sectoral capital-output ratios are the same. If these assumptions are dropped, it is possible to assign values to the construction periods, the lives of the capital goods and the sectoral capital-output ratios that reverse the results. The argument also assumes that the supply of investment resources is independent of the allocation of investment, a long

enough time horizon and a closed economy. Feldman's argument was developed in terms of a two-sector model, but applies equally to a model of a closed economy divided into m ($m > 2$) horizontal sectors, provided that the other Feldman assumptions are made.

The main lesson to be learned from the Feldman model is that the capacity of the capital goods industry is one of the constraints that limit the rate of growth of an economy. There may well be other constraints, such as foreign exchange, urban real wages, marketed output of agriculture, or poor governance. Indeed, it is possible that one or more of these is/are the binding constraint/s and that the limited capacity of the producer goods sector is a non-binding constraint. Economic planning is largely concerned with the removal of constraints to rapid economic growth. Accordingly, in its early stages a prominent role can be played by the rapid development of the producer goods sector. This was also recognised by the Indian economist Mahalanobis (1953) at the start of Indian planning.

Feldman's division of an economy into two sectors is crude and scarcely operational. A major advance in economic analysis after the publication of his paper was the development of numerical multisectoral models (Leontief 1966). One important use of these models is to study the relationship between the rate of growth of the national economic aggregates and the relative output of the various industries. In the usual input-output notation:

$$X = (I - A)^{-1}Y$$

Assuming that A is given, X can be calculated for varying values of Y . Assuming that the variants of Y considered refer to some future year, this enables the changes in the relative output of the different industries in this final year, resulting from various hypothetical national income aggregates, to be studied.

In the 1960s such studies became an integral part of the planning process in the state-socialist countries. An example taken from Soviet experience with the elaboration of the 1966–70 Five-Year Plan is set out in Table 5.6. The table shows how the technological relationships between industries are such that, the higher the rate of growth of the national economy, the wider the divergence between the rate of growth of an industry such as engineering and an industry such as the food industry. However, it also shows that a massive increase in investment

Table 5.6 *Industrial implications of different macroeconomic growth rates (rates of growth, % p.a.)*

	Variants				
	1	2	3	4	5
Net material product	5.6	6.1	6.6	7.1	7.5
Consumption	6.7	6.8	6.9	7.0	7.0
Investment	2.5	4.1	5.7	7.3	8.7
Engineering and metal working	7.1	8.2	9.3	10.4	11.4
Light industry	6.3	6.6	6.8	7.0	7.2
Food industry	7.1	7.3	7.4	7.5	7.6

Source: Ellman (1973: 70–1).

(a more than trebling of its rate of growth), and a substantial increase in the rate of growth of engineering and metal working, would only produce a very modest increase in the rate of growth of consumption. It also suggested that, for all five variants, agriculture (which provided the main material input into the food and light industries) was likely to be a major bottleneck (since the growth of agricultural output was unlikely to meet their projected growth).

Naturally, the analytical argument about the need to concentrate on industries such as engineering depends heavily on the closed economy assumption. China's experience has shown that a dynamic export sector, which initially specialises in labour-intensive goods, can make a major contribution to economic growth (see Chapter 9). In addition, the argument also has nothing to say about services. It is basically concerned with a traditional industrial economy. In an open economy with a large (potential) services sector and without a structurally militarised economy, the priorities for the allocation of investment might well be different.

Summary

In the USSR, a major reason for the concentration of investment resources in heavy industry was the needs of defence. In general, the technological structure of a closed industrial economy is such that, the higher the rate of national economic growth required, the higher the rate of growth of the output of industries such as engineering and the greater the share of

investment that has to be allocated to them. In a closed economy where the capacity of these industries is an operative constraint, a major task of planning for raising the growth rate must be to direct investment resources towards expanding the capacity of these sectors. This proposition was first formulated in a 1928 paper by the Soviet economist Feldman, and is now generally accepted. In an open economy, with a large services sector, and without a structurally militarised economy, the priorities for the allocation of investment might well be different.

The location of industry

The location of industry in the state-socialist countries was determined by a variety of factors – the inheritance from the previous regime, the availability of labour and raw materials, transport costs, bureaucratic bargaining, and strategic considerations. The importance of the latter was noted in the previous chapter. General Lagovskii (1961: 155–61) of the Soviet General Staff Academy, in his analysis of the relationship between (military) strategy and economics, stressed the need to take account of strategic factors in location decisions:

When building new enterprises, the need to take account of the factors influencing their defence from the enemy, their anti-air-attack defence, has immense importance. Determining the geographical location for new construction, it is necessary to take account of a mixture of economic and strategic interests. However, sometimes the strategic interests have to take precedence over the economic ones. [This was also Mao Zedong's view and was particularly important in China in 1965–71, as pointed out in the previous chapter.]

Lagovskii drew two important policy conclusions from this. First, that it was desirable to locate factories producing weapons or inputs into weapons in remote places where they would be much less likely to be successfully attacked. Secondly, that important military products should never be produced by just one factory but that there should always be a duplicate facility producing, or able to begin producing immediately, the product concerned. Naturally both these policies were cost-increasing.

The USSR built or expanded production facilities and cities in very cold and inhospitable regions. This was intended to exploit local raw materials, populate these regions and develop areas a long way from the frontiers for strategic reasons. Locating tank production in Chelyabinsk – thousands of kilometres from potential enemies – seemed very prudent in

the 1930s and 1940s. However, this type of location incurred substantial costs. Compared with Canada, where in the period 1930–80 the population gradually moved to warmer areas, in the USSR in the same period an increasing share of the population lived in colder areas (Hill and Gaddy 2003: 38, 52–3). The development of Siberia was regarded as a major achievement in Soviet times, and conformed to military-economic doctrines as expounded by specialists such as General Lagovskii.⁵ However, it resulted in substantial additional costs for infrastructure, production and living compared with the development of warmer areas. Furthermore, the distance of the Siberian cities from the traditional centres of Russian life and economic activity generated large transport costs.

Exploiting Siberia's rich natural resources seemed attractive, both in the Soviet and post-Soviet periods. The development of the West Siberian oilfields played a key role in Soviet economic development in the 1970s. However, it simultaneously generated massive export earnings, and enabled the rulers to put off adapting their policies and system, with fatal consequences for the system. Similarly, the natural resource rent from developing both the existing Siberian oil and gas fields, and new ones such as the oil and natural gas of Sakhalin, formed an important source of revenue for the Russian state in the opening decades of the twenty-first century. In addition, the diamonds of Sakha (Yakutiya) and the platinum, palladium and nickel of Norilsk were useful sources of export revenue in the Putin period. However, these resource riches made Russia (and Kazakhstan, Azerbaijan and Turkmenistan) vulnerable to the 'resource curse' (Sachs and Warner 2001; Gel'man and Marganiya 2010).

Industry planning

In the state-socialist countries investment plans were worked out for the country as a whole, and also for industries, ministries, departments, associations, enterprises, republics, economic regions and cities. An important level of investment planning was the industry.

⁵ Lagovskii (1961: 197–9), for example, argued that the concentration of industrial production in particular areas in capitalist countries was irrational, since it made them more vulnerable – a smaller quantity of bombs was necessary to destroy their industry than if it had been more dispersed.

Industry investment planning was concerned with such problems as the choice of product, of plants to be expanded, of the location of new plants, of the technology to be used and of sources of the raw materials. To resolve these issues it was necessary to collect and process the necessary data.

Data collection

For a producer goods industry, part of the demand will be for given products, but there will in general be considerable substitutability between products. It will, therefore, be necessary to gather data on the relative costs and usefulness of different products. If this is not done properly, and the results acted on, then waste will result. For example, as Abouchar (1971) pointed out, a major source of waste in the Soviet cement industry prior to World War II was the large number of grades produced, and the failure to capture the gains from standardisation.

The possibility of expanding plants largely depends on the availability of space, labour and raw materials, and the cost of transport of output to customers. Similarly, possible locations of new plants depend largely on the availability of raw materials and labour and on transport costs. An important difficulty at this stage is that, in general, the prices of producer goods and labour power in the state-socialist countries were not equal to their national economic opportunity cost. Hence, it was sometimes necessary to mount a special investigation of costs, or use the shadow prices resulting from the investment plan of the appropriate industry. In an economy in which producer goods are rationed, it was not in general true that the prices at which transactions take place (*Guidelines* 1972: 62) 'may ... provide a good first step in the estimation [of social costs]'.

In a well-known aphorism, Lenin defined Communism as 'Soviet power plus the electrification of the whole country', and the introduction into production of advanced technology always played a major role in socialist planning. The first state-socialist country, which under capitalism was notorious for its wooden ploughs, was from the 1950s well known for its space programme. In the traditional Soviet type of organisation, each industry had a ministry which was responsible for adopting the latest ideas, incorporating them in its investment plan, and imposing a unified technical policy on its industry. However, complaints were frequent (see for example Bek 1971) that innovation was

hindered by the monopoly position of the major R&D organisations. Examples of technical conservatism at the R&D stage in the USSR included, almost ignoring alternatives to the home-grown SKB process for the manufacture of synthetic rubber, and devoting inadequate attention to processes for the manufacture of alloy and quality steel other than electric-slag remelting (Amann *et al.* 1977).

The possibilities for obtaining raw materials depend on known reserves, geological prospecting and foreign trade possibilities. The state-socialist countries devoted extensive efforts to geological prospecting, in which field they had a good record.

Data processing

The main method used from the 1960s onwards in the CMEA countries for processing the data relating to possible investment plans into actual investment plans was mathematical programming. In the USSR, after extensive experience in this field, a Standard Methodology ('Standard' 1978) for doing such calculations was adopted by the Presidium of the Academy of Sciences.

The Soviet Standard Methodology presented models for three standard problems. They were: a static multiproduct production problem with discrete variables, a dynamic multiproduct production problem with discrete variables, and a static multiproduct problem of the production-transport type with discrete variables. The former can be set out as follows:

Let $i = 1 \dots n$ be the finished goods or resources; $j = 1 \dots m$ be the production units; $r = 1 \dots R_j$ be the production technique in a unit; a_{ij}^r be the output of good $1 \dots n'$ or input of resource $i = n' + 1 \dots n$, using technique r of production in unit j ; C_j^r are the costs of production using technique r in unit j ; D_i is the given level of output of good i , $i = 1 \dots n'$; P_i is the total use of resource i , $i = n' + 1 \dots n$ allocated to the industry; and Z_j^r is the unknown intensity of use of technique r at unit j .

The problem is to find values of the variables Z_j^r that minimise the objective function

$$\sum_{j=1}^m \sum_{r=1}^{R_j} C_j^r Z_j^r$$

i.e. minimise costs of production subject to

$$\sum_{j=1}^m \sum_{r=1}^{R_j} a_{ij}^r Z_j^r \geq D_i, i = 1 \dots n'$$

i.e. each output must be produced in at least the required quantities

$$\sum_{j=1}^m \sum_{r=1}^{R_j} a_{ij}^r Z_j^r \leq P_i, i = n' + 1 \dots n$$

i.e. the total use of resources cannot exceed the level allocated to the branch;

and

$$\sum_{r=1}^{R_j} Z_j^r \leq 1, j = 1 \dots m$$

$$Z_j^r = 0 \text{ or } 1, j = 1 \dots m, r = 1 \dots R_j$$

i.e. either a single technique of production for unit j is included in the plan, or unit j is not included in the plan.

In order to illustrate the method, an example will be given which is taken from the Hungarian experience of the late 1950s in working out an investment plan for the cotton weaving industry for the 1961–5 Five-Year Plan (Kornai 1967: chapter 5). The method of working out the plan can be presented schematically by looking at the decision problems, the constraints, the objective function and the results.

The decision problems to be resolved were:

- (a) How should the output of fabrics be increased, by modernising the existing weaving mills, or by building new ones?
- (b) For part of the existing machinery, there were three possibilities. It could be operated in its existing form, modernised by way of alterations or supplementary investments, or else scrapped. Which of these options should be chosen?
- (c) For the other part of the existing machinery, either it could be retained or scrapped. What should be done?
- (d) If new machines were purchased, a choice had to be made between many types. Which type should be chosen, and how many of a particular type should be purchased?

The constraints consisted of the output plan for cloth, the investment fund, the hard currency quota, the building quota and the material

balances for various kinds of yarn. The objective function was to meet the given plan at minimum cost.

The results provided answers to all the decision problems. An important feature of the results was the conclusion that it was much cheaper to increase production by modernising and expanding existing mills than by building new ones.

It would clearly be unsatisfactory to optimise the investment plan of each industry taken in isolation. If the calculations show that it is possible to reduce the inputs into a particular industry below those originally envisaged, then it is desirable to reduce planned outputs in other industries, or increase the planned output of the industry in question, or adopt some combination of these strategies. Accordingly, the experiments in working out optimal industry investment plans, begun in Hungary in the late 1950s, led to the construction of multilevel plans linking the optimal plans of the separate industries to each other and to the macroeconomic plan variables. Multilevel planning of this type was first developed in Hungary, but later spread to the other CMEA countries.

Problems of industry planning

The three chief problems of industry planning seem to have been: the lack of the necessary data; technical conservatism; and departmentalism. Consider each in turn.

Soviet experience showed (Ellman 1973: 77 and 86–7) that the biggest obstacle to the compilation of useful optimal industry plans was the lack of the necessary data. In the section on the use of mathematical models in a book on improving planning written by some officials in the Soviet Gosplan it was stated that (Drogichinsky and Starodubrovskii 1971: 184):

the information required for models, optimising the utilisation of resources, is not readily available, and it is necessary to gather it separately. It is this work which occupies at the present time not less than 80% of all the work involved in solving such problems, and for complicated problems – 90%.

At first sight this situation may arouse surprise, because for the working out of plans, it would seem, all the necessary information is available. For the efficient utilisation of models, however, for example for planning production, the nomenclature must be substantially wider than that confirmed in the plan. This results from the necessity to exclude the influence of possible assortment changes on the decision taken. The following examples may clarify this. In the national economic plan there are two figures for the production of leather

shoes and children's shoes. The calculations underlying the plan are based on 7 aggregated groups of shoes and 4 small groups. For the problem which enables the maximum production of shoes subject to the structure of demand and the given resources to be calculated, shoes are divided into 257 types, and the full nomenclature of shoes and related items runs to about 36,000 items. The types are chosen in such a way that an alteration in the assortment inside each of them would have a much smaller influence on the plan than changes in the assortment between types.

The data required were not purely physical, but had to be made comparable by means of prices and a rate of interest. The prices and recoupment period used in many of the calculations were unsatisfactory in a number of respects. It was even necessary to devote extensive research to calculate the 'proper' figures to use for transport costs, the actual freight tariffs being of little significance from an efficiency point of view! All these difficulties were a result of the partial ignorance of the planners.

The technical conservatism of the major R&D organisations was often a serious problem. Some examples were given above. Its seriousness for the economy arose from the policy of concentration of initiatives.

Departmentalism refers to the fact that planning organisations often gave greater weight to the interests of their own organisation than to the national economy as a whole. For example, Val'tukh (1977) and Bufetova and Golland (1977) estimated that in the USSR investment in the production of better-*quality* steel would generally have produced bigger returns to the national economy than the investment of the same resources in producing a greater *quantity* of steel. The ministry, however, ignored this possibility, since it was evaluated by quantity of output and the gains from greater quality accrued to the users. This is an example of the problems for the national economy created by the fact that the decision makers formed a coalition and not a team. The central planners, who were supposed to check the proposals of the branch ministries, often did not have enough knowledge of the problems of the users, interest in responding to them, or authority over the branch ministries, to do other than rubber stamp the suggestions of the producers.

Summary

A major type of investment planning was industry planning, carried out by the branch ministries. The main method used for this from the 1960s in the CMEA countries was mathematical programming. Considerable

difficulties existed in the drawing up of rational industry plans, largely resulting from the partial ignorance of the planners and the fact that the decision makers formed a coalition and not a team.

The choice of technique

A feature of traditional Soviet planning was the emphasis on large modern plants, embodying the latest international technology, and often imported or scaled-up versions of foreign plants. Well-known early examples were the Stalingrad tractor plant (designed by a US firm, and with much of its equipment imported from the US) and the Magnitogorsk iron and steel plant (intended as a copy of the steel mill in Gary, Indiana, of US Steel). Such plants could take full advantage of economies of scale. In addition, it was thought that their construction would be a quick way of reducing the technology gap and catching up with the most advanced countries. They also had the political advantage of creating proletarian islands in a peasant sea. As constructed in the USSR, these plants were often labour-intensive variants of capital-intensive techniques. This means that for the auxiliary operations (such as materials handling), unlike the basic operations, labour-intensive methods were often used in order to save scarce investment resources.

The adoption of this type of technology was not the result of precise calculations by economists as to the relative merit of this or that type of technology. Indeed, during the Stalin era (1929–53), the orthodox view in the USSR was that the function of economists was not to contribute to improving the efficiency of planning, but was to provide ex-post rationalisations of government economic policy. In *Economic problems of socialism in the USSR* ([1952] 1972: 61, 74–5) Stalin decisively rejected the view that the function of political economy:

is to elaborate and develop a scientific theory of the productive forces in social production, a theory of the planning of economic development ... The rational organisation of the productive forces, economic planning, etc., are not problems of political economy but problems of the economic policy of the directing bodies. These are two different provinces, which must not be confused ... Political economy investigates the laws of development of men's relations of production. Economic policy draws practical conclusions from this, gives them concrete shape, and builds its day to day work on them.

To foist upon political economy problems of economic policy is to kill it as a science.

As Yaroshenko, one of the participants in the discussion of the draft textbook of political economy to which Stalin was reacting, put it, in a passage quoted by Stalin: 'healthy discussion of the rational organisation of the productive forces in social production, scientific demonstration of the validity of such organisation' was replaced by scholastic 'disputes as to the role of particular categories of socialist political economy – value, commodity, money, credit, etc.'

Many years after the traditional Soviet policy was first implemented, it was rationalised by Dobb (1960: chapter 3) and Sen (1968). They argued that, in an economy where the share of investment is sub-optimal and all profits are reinvested and wages consumed, investment ought to take the form of capital-intensive projects (i.e. projects with a high capital-labour ratio) and *not* labour-intensive ones. The logic of this argument can be seen by looking at Figure 5.4, which is taken from Sen.

Consider an economy with a given quantity of investment resources which can be combined with varying quantities of labour to produce output. Labour is assumed to have a zero social opportunity cost (because it is assumed that the country is characterised by large open or disguised unemployment). The production function is given by the curve Q_1Q_1 . The wage rate is given by $\tan w$, and the wage bill by OW .

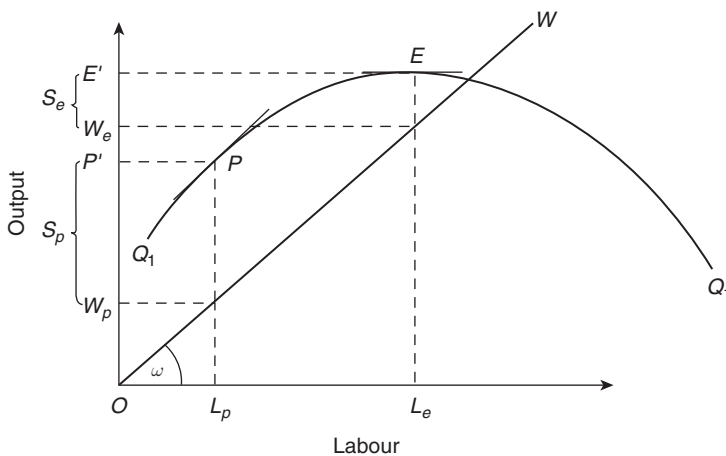


Figure 5.4 The choice of technique

Consider the choice between two techniques of production, P and E . P is the more capital-intensive technique, and E the more labour-intensive technique. At P the marginal product of labour equals the wage rate, and the surplus is maximised. At E the marginal product of labour equals zero, and output is maximised. The criterion of maximum output and employment per unit of investment would indicate that E is the preferred technique. Consider, however, technique P . It has a lower output and employment than E , but the surplus of output over consumption (i.e. $S_p \equiv OP' - OW_p$) is greater than the surplus generated by E (i.e. $S_e \equiv OE' - OW_e$). If the share of investment in the national income is sub-optimal, then the additional surplus ($S_p - S_e$) resulting from the adoption of technique P may be more valuable to the economy (because it permits an increase in the share of investment and the rate of growth) than the loss of consumption ($W_e - W_p$) and employment ($L_e - L_p$) that adopting technique P would cause. Hence, technique P , and not E , is the desirable one. In general, developing countries should use 'conveyor belts' rather than 'wheelbarrows'.

Considered as a rationalisation of traditional Soviet policy, the Dobb-Sen argument is entirely irrelevant, since there is no reason to suppose that under traditional Soviet planning the share of investment was sub-optimal, or that the surplus generated by the construction of modern plants was a significant source of investment finance. Indeed, it seems likely that the share of investment was often in excess of the absorptive capacity of the economy, and the new plants – with their long construction and running-in periods, production of producer goods and foreign exchange requirements – a significant source of inflationary pressure. The argument, ironically, has most relevance under capitalism as a defence of the social utility of the traditional family-controlled business that has no access to outside finance, squeezes real wages and reinvests all profits.

An important disadvantage of the traditional Soviet strategy is that it can lead to a substantial waste of resources, and hence to lower living standards than are necessitated by the level of accumulation chosen. The waste arises because there may be material and human resources which have a zero opportunity cost from the standpoint of the national industrialisation programme, but which could be used to provide useful goods and services. For example, a collective farm may be able to establish a workshop to produce toys made out of local timber during the farming off-season. Such local initiatives, which were illegal in the

USSR during the Stalin period, cost society nothing, and benefit the members of the collective farm. Accordingly, a feature of the reaction against the Stalinist model, both in Eastern Europe and China, was a stress on the usefulness of capital-saving techniques and small enterprises. Indeed, in some countries where there were no significant economies of scale, and private persons were able to obtain resources (e.g. their own labour or that of their families, or their own home) otherwise unavailable for social production, small-scale private enterprise was permitted (e.g. in running shops, restaurants, motor car repairs and housing repairs). Although this was often criticised from the standpoint of utopian socialism, with its emphasis on moral factors rather than material ones, from a Marxist perspective it made excellent sense. It contributed to the efficient utilisation of resources, and hence to the attainment of a high level of labour productivity.

A well-known theoretical challenge to the traditional Soviet policy was delivered by the Polish economist Kalecki (1972a: chapter 10). He emphasised that in the short run the adoption of the Dobb–Sen strategy would lead to a loss of employment and output. He objected to a policy that would delay the transition to full employment and waste potential output. He also suggested that in the long run technical progress considerably reduces the practical significance of the Dobb–Sen argument. The reason for this is that with technical progress the marginal product of labour corresponding to each level of the capital–output ratio will, in general, grow. This means that the optimum technique, on the surplus maximisation criterion, has a capital–labour ratio which falls over time. Hence, although there is a static case for the Dobb–Sen position, once dynamic factors are introduced, even on their choice criterion the policy implications are at variance with the traditional Soviet policy. This second argument is illustrated in Figure 5.5.

The production function in period 1 is Q_1Q_1 , and in period 2, as a result of technical progress, Q_2Q_2 . Consider the choice between techniques E and P . P maximises the surplus, but provides less employment and output than technique E . In period 2 the same is true for R and S , but the difference in capital intensity is smaller, and R is less capital-intensive than P . Hence the Dobb–Sen argument loses much of its practical significance when dynamic factors are introduced.

Kalecki's first argument is true and important. It was also argued by Joan Robinson (1977: 164). Kalecki's second argument is also valid, but it does not eliminate (although it does reduce) the advantages of the more

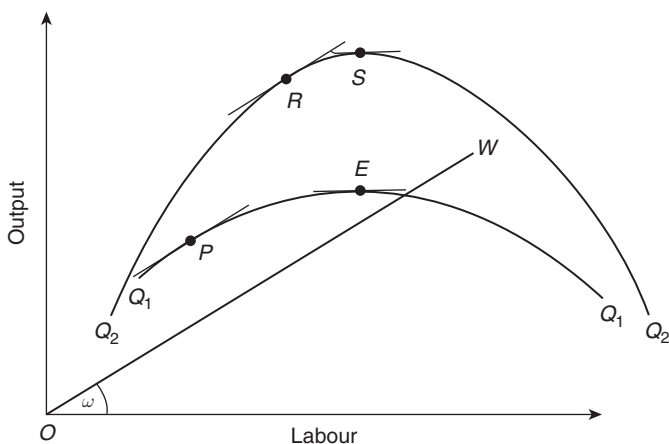


Figure 5.5 Technical progress and the Dobb-Sen criterion

capital-intensive technique at any moment in time. In addition, the trend in the capital-labour ratio suggested depends on an assumption about the nature of technical progress, which is not the only possible one.

Another challenge to the traditional Soviet policy came from Maoist China. There a policy was adopted, generally known as 'walking on two legs', which stressed the need to adopt both investment-intensive and investment-saving techniques. This is discussed by Robinson (1977), Bagchi (1978), Xue Muqiao (1983: 29–30) and Xu Dixin (1982: 28). The Maoist policy of using, where possible, capital-saving techniques led to the widespread development of both urban and rural small-scale industry. (The latter is discussed in Chapter 6.) Despite the widespread existence of very important economies of scale, small-scale industry can have several important advantages. First, and most important, it can produce goods that otherwise would not have been produced. This may have an important positive effect on output, labour morale and labour productivity. Secondly, it can produce output quickly, unlike large modern plants which may have long construction and running-in periods. Thirdly, the diseconomies of small enterprises may be compensated by the use of otherwise unutilised resources. Fourthly, it can provide employment. Fifthly, the training received by those working in small-scale industries may be a significant contribution to training the labour force required by a national industrialisation programme.

A big disadvantage of a policy to encourage capital-saving techniques is that it may lead to the use of inferior techniques. (An inferior technique is one which, in terms of Figure 5.5, is to the right of *E*. It has a lower output per unit of investment than other feasible techniques, and hence its adoption slows down development.) This has happened both in China and in India.

A large-scale programme for the development of small-scale industries requires a very different style of economic management from that implicit in the traditional model. In the latter model, the job of medium- and low-level economic management is to carry out instructions from above. The use of local initiatives to improve the allocation of resources can be a criminal offence. However, if the former programme is adopted, it is necessary to give local officials wide autonomy. This was recognised by Mao in his 1956 speech *On the ten major relationships* (1977b: 13–14).

At present scores of hands are reaching out to the localities, making things difficult for them. Once a ministry is set up, it wants to have a revolution and so it issues orders. Since the various ministries don't think it proper to issue them to the Party committees and people's councils at the provincial level, they establish direct contact with the relevant departments and bureaux in the provinces and municipalities and give them orders every day. These orders are all supposed to come from the central authorities, even though neither the Central Committee of the Party, nor the State Council, knows anything about them, and they put a great strain on the local authorities. There is such a flood of statistical forms that they become a scourge. This state of affairs must be changed.

This does seem to have happened. Ishikawa (1972: 73–4) noted that in Maoist China:

The party leadership plays a crucial role in the establishment of the industrial enterprises under the direct control of the county governments. This leadership is exercised at present mainly to initiate local industries within the means of the local governments and by mobilising the cooperation of other local enterprises . . . This type of leadership seems to be different from the behaviour observed in a highly centralised system of government where an official's behaviour is influenced by individualistic considerations of performance criteria or by the profit–loss calculation . . . This kind of party leadership . . . is a special [investment inducement] mechanism, which could not exist in the context of a Soviet-type bureaucratic system and it is also an indispensable ingredient of the present system of organisation of county industry.

It is also an example of the use of indirect centralisation via the political process to local authorities.

Experience has shown that stress on small-scale production may lead to a number of problems. The output may be of low quality, produced at a high cost, and the pay of the workers very low. After 1978, there was much stress in China on the need to merge small-scale enterprises into specialised concerns that could benefit from economies of scale and technical progress. In some cases, modern plants had been partially idle for lack of raw materials which were being used at small-scale plants with much higher costs. Nevertheless, small-scale production continued to flourish in China after 1978, as a result of the increased freedom given to state, collective and private enterprises, but with a greater attention to market needs, costs of production and technical progress. The policies of the post-Mao period also required an appropriate management model, one based on extensive autonomy for qualified enterprise management.

In the USSR, Stalin's theoretical legacy was criticised at the Twentieth Congress of the Soviet Communist Party (1956), and the way was opened for Soviet economists to contribute to raising efficiency. The first area in which they achieved significant results was in the field of project evaluation. An official Method of project evaluation was published in 1960, and revised versions in 1964, 1966, 1969 and 1981. The following is a very abbreviated outline of the 1981 version.

In evaluating investment projects, a wide variety of factors have to be taken into account, e.g. the effect of the investment on labour productivity, capital productivity, consumption of current material inputs (e.g. metals and fuel), costs of production, environmental effects, technical progress, the location of economic activity, etc. Two indices which give useful synthetic information about economic efficiency (but which are not necessarily decisive in choosing between investment projects) are the coefficient of absolute economic effectiveness and the coefficient of relative economic effectiveness.

At the national level, the coefficient of absolute effectiveness is defined as the incremental output-capital ratio

$$E_p = \frac{\Delta Y}{I}$$

where E_p is the coefficient of absolute effectiveness of a particular project, ΔY is the increase in national income generated by the project and I is the investment cost.

The value of E_p calculated in this way for a particular investment, had to be compared with E_a , the normative coefficient of absolute

effectiveness, which was fixed for each Five-Year Plan and varied between sectors. In the Eleventh Five-Year Plan (1981–5), it was 0.16 in industry, 0.07 in agriculture, 0.05 in transport and communications, 0.22 in construction, and 0.25 in trade. If

$$E_p > E_a$$

then the project was considered to be efficient.

For calculating the criterion of absolute effectiveness at the level of individual industries, net output was used in the numerator instead of national income. At the level of individual enterprises and associations, in particular when a firm's own money or bank loans were the source of finance, profit was used instead of national income.

The coefficient of relative effectiveness was used in the comparison of alternative ways of producing the same product. In the two products case

$$E = \frac{C_1 - C_2}{K_2 - K_1}$$

where E is the coefficient of relative effectiveness, C_i is the current cost of the i^{th} variant and K_i is the capital cost of the i^{th} variant.

If $E > E_n$, where E_n is the officially established normative coefficient of relative economic efficiency, then the more capital-intensive variant was considered economically justified. In the Eleventh Five-Year Plan, E_n was in general 0.12, but exceptions were officially permitted in the range 0.08/0.10–0.20/0.25.

In the more than two variants case, they should be compared according to the formula

$$C_i + E_n K_i \rightarrow \text{minimum}$$

i.e. choose that variant which minimises the sum of current and capital costs.

After the 1960 Method was promulgated in the USSR very similar criteria were adopted throughout Eastern Europe. In Poland, Czechoslovakia and Hungary a transition was fairly quickly made from a recoupment-period-type criterion to a present-value-type criterion.

After the promulgation of the first edition of the Soviet Method, official methods for project evaluation were issued throughout the world, for example in the UK (*Investment* 1965), and by international organisations for developing countries (*Manual* 1968–9, *Guidelines*

1972). Perhaps the main lesson to be learned from the experience of the European state-socialist countries is that the formulation of a rational criterion for deciding between investment projects is only part of the process of reducing waste in investment. One of the problems common to all these investment criteria is that they are concerned with the choice between given investment variants, and do not consider the generation of the variants between which choice has to be made. Important factors which influence the latter are foreign trade policies and the criteria used for evaluating the work of economic organisations. Poor decisions in these areas may lead to substantial waste despite the use of rational criteria to decide between given projects. For example, as pointed out in the previous section, organisations judged by the quantity of their output are unlikely to be very interested in proposals to increase quality at the expense of quantity, regardless of their national economic efficiency. Often no genuine use of rational criteria to choose between projects took place at all. What actually happened was that the criteria were used to make an arbitrary choice look scientific. For example, a favoured project was advocated, and made to look attractive by a comparison, using the criterion, with a purely spurious alternative. If by some mischance the project advocated by some organisation failed to meet the official criterion, the costs were often underestimated or partly transferred to some other organisation (e.g. in the case of multipurpose projects such as hydro-power stations). In general, the choice of projects owed more to interorganisation bargaining in an environment characterised by investment hunger than it did to a detached choice of a cost-minimising variant.

The main function of project evaluation criteria in state-socialist countries appears to have been to provide an acceptable common language in which various bureaucratic agencies conducted their struggles. Agencies adopted projects on normal bureaucratic grounds, and then tried to get them adopted by higher agencies, or defended them against attack, by presenting efficiency calculations using the official methodology but relying on carefully selected data.

Another way of reducing waste is to cut the construction and running-in periods for new plants. Ways of doing this include: reducing the share of investment in the national income; improving the criteria for evaluating the work of construction organisations; and improving the supply of materials to construction sites. Some examples of the waste resulting from excessive construction periods are given in Table 5.7.

Table 5.7 *Construction periods and economic institutions (years)*

	Capitalist countries	Poland during the Three-Year Plan (^a) (1946–9)	Poland during the Six-Year Plan (^b) (1950–5)
Coal mine of 5,000 tons capacity per day	8–10 ^c	–	13–15
Electric thermal power station of 200–300 MW	c.2 ^d	–	4–5
Quality steel mill of medium size	2–3 ^e	–	Over 7
Canned meat factories, slaughter houses	–	0.75–1.0	3–4

^aThe Three-Year Plan was a rehabilitation plan similar to those throughout Europe after World War II.

^bThe Six-Year Plan was Poland's first Soviet-style plan.

^cUK and FRG (West Germany)

^dWestern Europe.

^eWestern Europe. (A similar mill was built in pre-World War II Poland in two years.)

Source: Zielinski (1973: 5).

Summary

The traditional Soviet view was that capital-intensive plants, embodying the latest international technology, and often imported, or scaled-up versions, of foreign plants, should be built. This view was rationalised by Dobb and Sen. They argued that, in an economy where the share of investment in the national income is sub-optimal, and profits are reinvested and wages consumed, techniques should be chosen so as to maximise the surplus. This argument was not relevant to the USSR, and was also probably not relevant to the other state-socialist countries.

The traditional Soviet view was criticised in theory by Kalecki and in practice both in Eastern Europe and in China. Kalecki emphasised the loss of employment and output caused by following the traditional Soviet policy, and the diminished practical importance of the Dobb–Sen argument caused by technical progress. The Chinese developed the policy of ‘walking on two legs’, using both capital-intensive and

capital-saving technologies. Emphasis on capital-saving techniques may lead to the adoption of wasteful inferior techniques. Widespread development of small-scale industry required a different style of economic management from the traditional model.

In the USSR, efforts to reduce waste in technological choice were of a technocratic kind, with the development of formal criteria for project evaluation. Their introduction, however, was only a part of the long and difficult struggle to reduce waste in investment planning.

Investment tension

Excessive construction periods are one of the results of *investment tension* (Kornai 1980: chapter 9). This term describes the chronic shortage of investment goods that characterised state-socialist economies. The permanent shortage of investment services and goods (e.g. capacity of design and construction organisations, availability of engineers and workers, materials, machines and equipment) had important consequences. For one thing, it led to long construction and running-in periods (see Tables 2.1 and 5.7). Since the goods and services required to finish projects were being used elsewhere, each project took longer to complete than it should have done. Hence, the waste of resources in uncompleted investment projects. For another example of this phenomenon see Table 5.8. In addition, investment tension led to diminished rates of technical progress, since by the time a project was completed the

Table 5.8 *Construction periods in Hungary and Japan*

Hungary: average construction time	1976	32.5 months
	1977	32.5 months
(the sample covers several industries)		
Japan: average construction time	1966	
Wood industry		12 months
Synthetics		16 months
Pharmaceuticals		6 months
Textiles		12 months
Power stations		30 months

Source: Kornai (1982: 136).

technology it embodied was sometimes already out of date. Both these factors reduced the efficiency of investment.

Periodic campaigns to reduce investment tension, by concentrating resources on key projects and postponing the others, were normal under state socialism. They usually had no permanent effect, however, because of investment hunger. This was a deep-rooted phenomenon, resulting partly from the ambitious plans of the Party leadership, and partly from the lack of financial discipline, which it was difficult to eradicate. In Hungary, for example, even the transition to the NEM was insufficient to end it.

However, a particularly dramatic attack on wasteful investment took place in China in 1979–81 during the economic restructuring of that period (Naughton 1995: 87–8). The number of large investment projects under construction was almost halved, and more than twice as many projects were cancelled as were completed. This ‘great write-off’ was part of a strategy of reorienting the economy from heavy and military industry to agriculture and consumer demand. This was a success, and was the beginning of China’s search for a new development strategy, and ultimately a new economic system.

Gigantomania

An important feature of investment planning was ‘gigantomania’. This is a Soviet word, dating from the 1930s, which refers to the building of giant projects which were very expensive, had a low return, and were often ecologically harmful, but were supported by the Party as part of its programme of building socialism and impressing the world with Soviet achievements. Examples are the White Sea – Baltic Canal (which was too shallow to be made much use of, was built by forced labour and cost a large number of lives); the 1948 Stalin Plan for the Great Transformation of Nature (Weiner 1999: 88–93); Khrushchev’s campaign to sow the Virgin Lands (which were marginal land and in places liable to erosion); and Brezhnev’s Baikal–Amur railway. For both the White Sea – Baltic Canal and the Baikal–Amur railway (BAM) military-strategic considerations were important motivations for undertaking them. Such projects were adopted without careful cost–benefit analysis, and could only be adopted in a country in which the supreme political leader could initiate investment projects without much attention to costs and returns.

Investment cycles

A characteristic feature of capitalism is its cyclical development. Marxists have traditionally considered this to be one of the inefficiencies of capitalism, one of the examples of the anarchy of production, which would not exist in a socialist economy. In this connection it is interesting to consider whether or not history has corroborated the Marxist view.

Experience showed that economic development under state socialism does not necessarily proceed smoothly. It was entirely possible, as was demonstrated by events in China, Poland, Cuba, Czechoslovakia and Yugoslavia, for output in one year to fall below that of the previous year. For example, according to official Chinese statistics, the Chinese national income fell by 18 per cent in 1961 and a further 7 per cent in 1962. Still more common have been substantial fluctuations in the rate of growth of investment. What explains these fluctuations? The attempt to answer this question gave rise to an extensive discussion.

Some authors suggested that, although there were fluctuations, these had political causes and should not be confused with economic cycles. For example, Wiles (1982) examined the data for Eastern Europe for 1950–80 and argued that the sharp fluctuations visible all had political causes. Furthermore, he argued, there are no cycles, since no regular periodicity can be observed. On the other hand, Bauer (1978) developed a theory which assumes that the investment fluctuations observed are cycles, and explained them as resulting from the behavioural regularities generated by investment hunger and investment tension.

The Bauer model is as follows. It distinguishes four phases, run-up, rush, halt and slowdown. In the *run-up*, as a result of investment hunger, more investment projects are begun than was foreseen in the Five-Year Plan, so that the investment front is widened. In the *rush* phase, the increased number of projects started leads to an increased volume of investment outlays. Actual investment outlays exceed planned investment outlays and shortages of investment resources (e.g. capacity of the design and construction organisations, materials, machines and equipment) re-emerge or grow. The share of investment in the national income rises, at the expense of either consumption or the balance of payments. Completion dates recede into the future.

The increased chaos on the investment front and consumption or balance of payments problems lead the planners to cut sharply, i.e. *halt*, their approval of new investment projects. The planners attempt to

deal with the situation by completing the projects already begun. This proves very difficult, however, because of the shortages of investment goods and services and the understatement of costs which now come to light.

The final phase is *slowdown*. In this phase the approval coefficient for new projects continues to fall, and, in addition, the planned and actual outlays on investment are reduced. As a result, the share of investment in the national income falls, to the benefit of consumption or the balance of payments. Resources are concentrated on the completion of key projects, and the volume of unfinished investment projects falls. Hence, shortages are reduced. Conditions exist for a new run-up.

The Bauer model is interesting because of its economic explanation of the observed fluctuations, and because of the key role it assigns to the behavioural regularities generated by the system in explaining these fluctuations. Analogous models have been found to explain developments in Czechoslovakia (Gerritse 1982) and the GDR (Boot 1984). Nevertheless, it is clear that in certain periods and in certain countries political factors have been of great importance. For example, the East European investment upswing of 1951–2 and the downswing of 1953–5 were results of the reaction of the Soviet leadership to the Korean War and the death of Stalin. Similarly, the Chinese investment booms of 1959 and 1978 were primarily a result of political decisions. Furthermore, the USSR appears not to fit into the Bauer theory, as he himself recognised. (In the USSR, official statistics show a fairly steady growth rate of investment outlays.) Even in the USSR, however, the approval coefficient fluctuated. Furthermore, the picture for that country may be distorted by misleading official statistics.

Both purely political and purely economic explanations are only partial, since they ignore the interaction of political, economic and environmental factors. More complex political-economic or systems-theoretical models might be able to explain more of the phenomena.

Summary

State socialism was not a sufficient condition for eliminating investment fluctuations. The state-socialist countries experienced sharp investment fluctuations. Some of them were caused by political factors. Behavioural models to explain cycles have been developed, based on forms of behaviour specific to the state-socialist economic system. These models,

or developments of them, have substantial explanatory power for a number of countries for normal periods.

Was investment planned?

The existence of a substantial gulf between investment activities and the plans which were supposed to regulate them has been demonstrated both historically and theoretically. On the historical level, a number of case studies have demonstrated the difference between plan and outcome. An example is set out in Table 5.9. The table depicts a situation in

Table 5.9 *Plans and outcome for the Kuznetsk Combine*

Plan	Planned costs (million roubles)	Actual expenditures	Planned pig iron capacity (thousand tons)	Actual pig iron production
Goelro Plan (1920)	–	–	330	–
Project for the First FYP (1926)	79.7	0.1	First part 330	–
Ural-Kuznetsk Project (1926)	–	–	For 1935/6 660 820–1,070	–
First FYP (1928)	130	2.5	First part 160–330	10.4
Project 1929	–	–	800	–
Plan for 1931	350	–	1,200	–
Plan for 1932	–	–	1,200	242.4
Second FYP (1934)	629.4	–	1,200	–
1933	–	429.0	–	–
1934	–	586.9	1,280	854.5
1935 Plan	762.0	717.0	1,200	–
1936 Plan	941.2	860.2	1,700	–
1937	–	–	–	1,471.3
1938 Plan	–	–	1,917	–
1939	–	–	–	1,453.7
1940	–	–	–	1,535.9

Source: Davies (1984: 71).

which the plans and actual outcomes for a top-priority project for many years were widely divergent. The planners simply did not see how long it would take to build and bring into operation the Kuznetsk Combine. The 1931 plan for pig iron production was not reached until 1937. The 1938 plan was not fulfilled before the war.

Another historical example of the nature of Soviet investment planning, also drawn from the experience of the First Five-Year Plan with high-priority projects, concerns the Magnitogorsk metallurgical combine (Kirstein 1984). In January 1929, the USSR Council of Ministers approved the project, with a planned capacity of 650,000 tons, and it was included in the First Five-Year Plan. In the spring of 1929, construction began. Obtaining workers was not easy in view of the difficult living conditions (only tents or earth huts to live in, poor food, no electricity, etc.). Labour turnover was high. Construction materials were scarce, so that the construction site had to organise its own production of bricks and materials from local resources, thus losing economies of scale. In July 1929, planned capacity was raised to 850,000 tons. In November, it was raised to 1,100,000 tons. Subsequently, this was raised to 1,600,000 tons. Then, in February 1930, the Politburo adopted a resolution calling for 2,000,000 tons capacity for Magnitogorsk, with an option to expand production to 4 million tons. The first two blast furnaces were to be put into operation earlier than previously planned, on 1 October 1931. This resolution necessitated a complete revision of planning for the entire project.

On the theoretical level, the behaviourists stressed the importance of phenomena (such as investment cycles and investment tension) which had a marked impact on the investment process but were not planned by the centre. Nobody consciously planned for investment tension and investment cycles. In fact, they planned to overcome them. Nevertheless they persisted, since they resulted from definite forms of behaviour generated by the given social relations and institutional conditions.

In view of these factors, the question arises, in what sense was investment (and indeed, economic development in general) planned?

An answer to this question was provided by the systems school. They pointed out that a planned economy was a complex system in which the plan was just one of the factors, along with the behaviour of the entities in the system and the economic environment, which determined the outcome. Hence, it was only to be expected that the outcome would differ from the plan. The fact that the plan was not a completely

insignificant input into the processes determining the outcome was shown by the fact that priority projects such as the Kuznetsk and Magnitogorsk combines generally did get built, even if the plans were repeatedly altered, or the actual output initially lagged behind the ambitious plan goals.

Summary

Investment was not planned in the sense that the outcome accorded closely with the plan. Normally it did not. Investment was planned in the sense that the plans were an important input into the complex process which shaped the investment effort.

Conclusion

The traditional model was usually successful in mobilising resources for investment, and normally devoted high shares of the national income to investment. This resulted from the socio-economic and political changes that accompanied its introduction. An analytical approach to the question of the optimal share of investment in the national income for a country aiming at rapid economic growth is Horvat's growth-maximising approach. This fits in well with the 'overtaking and surpassing' approach to economic policy. A valuable feature of this approach is that it draws attention to both the inverse relationship between the share of investment and the return on investment and to the possibility of wasteful overinvestment. As far as the actual share is concerned, the Marxist and systems approaches are both useful. The former draws attention to the influence of social factors, for example, land reform. The latter stresses that outcomes are influenced not only by plans but also by behavioural regularities and the economic environment.

For many years in the CMEA countries it was orthodox that 'the law of the priority growth of the production of the means of production . . . is a necessary condition for ensuring the uninterrupted advance of socialist production'. The allocation of investment resources primarily to the producer goods sector largely reflected the importance of defence considerations. A theoretical basis for the emphasis on producer goods was provided by the Soviet economist Feldman in 1928. The key assumptions of his two-sector model are: a long time horizon; a closed

economy; the independence of the allocation of investment and the supply of investment resources; equal construction periods in the two sectors; immortal machines; and identical capital–output ratios in the two sectors. The main lesson to be learned from the Feldman model is that the capacity of the capital goods industry is one of the constraints limiting the rate of growth of an economy. In a closed economy where the capacity of this sector is a binding constraint, a major task of planning for raising the growth rate must be to direct investment resources towards expanding the capacity of this sector. The use of input–output enabled the high-growth industries to be pinpointed more precisely, while preserving the essence of Feldman’s insight.

The location of industry was determined by a variety of factors, one of which was strategic considerations. A striking feature of Soviet location decisions was the movement of population to colder regions. A major type of investment planning was industry planning, carried out by the branch ministries. The main method used for this from the 1960s in the CMEA countries was mathematical programming. Considerable difficulties existed in the drawing up of rational industry plans, largely resulting from the partial ignorance of the planners, and the fact that the decision makers formed a coalition and not a team.

The choice of techniques is an interesting and much discussed problem. The traditional Soviet view was that (labour-intensive variants of) capital-intensive plants, embodying the latest international technology, and often imported or scaled-up versions of foreign plants, should be built. This view was criticised in theory by Kalecki, and in practice both in Eastern Europe and China. The Chinese developed a policy of ‘walking on two legs’, using both capital-intensive and capital-saving technologies. Emphasis on capital-saving techniques may lead to the adoption of wasteful inferior techniques. Widespread development of small-scale industry requires a different style of economic management from that in the traditional model. In the USSR, as in other parts of the world, efforts to reduce waste in technological choice were of a technocratic type, with the development of formal criteria for project evaluation. Their introduction, however, was only a part of the long and difficult struggle to reduce waste in investment planning.

Investment tension was an endemic problem under state socialism. It resulted from the behaviour generated by the system, and was a serious source of waste.

State socialism was not a sufficient condition for the elimination of economic fluctuations. In particular, investment fluctuations were common under state socialism.

Investment activities under state socialism were not planned in the sense that the outcome corresponded closely with the plan. Normally it did not. Investment was planned, however, in the sense that the plans were an important input into the complex process which shaped the investment effort.

The state-socialist countries normally had a high share of investment in the national income and low returns on investment. The former was an important cause of the latter (because of diminishing marginal productivity of investment and investment tension).

Investment planning was not a socially rational process for achieving the efficient allocation of scarce investment resources. It was part of the relationship between individuals and groups, in the course of which decisions were taken, all of which were imperfect and many of which produced results quite at variance with the intentions of the leadership.

SUGGESTIONS FOR FURTHER READING

Share of investment

- J. Kornai, 'A general descriptive model of planning processes', *Economics of planning* 10(1-2) (1970), 1-18.
- B. Horvat, 'The optimum rate of investment reconsidered', *Economic Journal* 75(299) (1965), 572-6.
- Xue Muqiao, *China's socialist economy*, 2nd. edn (Beijing, 1986), pp. 155-61.

Sectoral allocation

- G.A. Feldman, 'On the theory of growth rates of national income', in N. Spulber (ed.), *Foundations of Soviet strategy for economic growth* (Bloomington, IN, 1964), pp. 174-99, 304-31.
- E. Domar, 'A Soviet model of growth', in E. Domar, *Essays in the theory of economic growth* (New York, 1957), pp. 223-61.
- M.H. Dobb, 'The question of "investment priority for heavy industry"', in M.H. Dobb, *Papers on capitalism, development and planning* (London, 1967), pp. 107-23.
- D. Granick, *Soviet metal fabricating and economic development* (Madison, Milwaukee, WI, and London, 1967).

- K. N. Raj and A. K. Sen, 'Alternative patterns of growth under conditions of stagnant export earnings', *Oxford Economic Papers* 13(1) (1961), 43–52.
- K. N. Raj, 'Role of the "machine-tools sector" in economic growth', in C. H. Feinstein (ed.), *Socialism, capitalism and economic growth* (Cambridge, 1967), pp. 217–26.
- Ma Hong, *New strategy for China's economy* (Beijing, 1983), chapter 2.
- Ji Chongwei, 'China's achievements, experiences and prospects in opening to the outside world', *Social Sciences in China* 14(1) (1993), 143–52.

Case studies

- M. Payne, *Stalin's railroad: Turksib and the building of socialism* (Pittsburgh, 2001).
- S. Kotkin, *Magnetic mountain: Stalinism as a civilization* (Berkeley, 1995).
- C. Ward, *Brezhnev's Folly: The building of BAM and late Soviet socialism* (Pittsburgh, 2009).
- F. Hill and C. Gaddy, *The Siberian curse: How Communist planners left Russia out in the cold* (Washington, DC, 2003).
- K. Lebow, *Unfinished utopia: Nowa Huta, Stalinism, and Polish society* (Ithaca, NY, 2013).

Industry planning

- J. Kornai, *Mathematical planning of structural decisions* (1st edn Amsterdam, 1967; 2nd edn Amsterdam, 1975).
- M. Ellman, *Planning problems in the USSR* (Cambridge, 1973), pp. 75–90.
- L. M. Goreux and A. S. Manne, *Multi-level planning* (Amsterdam, 1973).
- 'Standard methodology for calculations to optimize the development and location of production in the long run', *Matekon* 15(1) (1978), 75–96.
- L. V. Kontorovich, N. I. Cheshenko, Iu. M. Zorin and G. I. Shepelev, 'On the use of optimization methods in automated management systems for economic ministries', *Russian Social Science Review* 20(4) (1979–80), 22–46.

Choice of technique

- A. K. Sen, *Choice of techniques*, 3rd edn (Oxford, 1968).
- A. Chilosì, 'The theory of growth of a socialist economy of M. Kalecki', *Economics of Planning* 11(3) (1971), 161–88.
- Mao Tse-tung, *On the ten major relationships* (Peking, 1977).
- S. Ishikawa, 'A note on the choice of technology in China', *Journal of Development Studies*, 9(1) (1972), 161–86.
- A. Bergson, *The economics of Soviet planning* (New Haven, CT, and London, 1964), chapter 11.

- D. M. Nuti, 'Large corporations and the reform of Polish industry', *Jahrbuch der Wirtschaft Osteuropas* 7 (Munich, 1977), section 7 ('The selection of investment projects').
- A. K. Bagchi, 'On the political economy of technological choice and development', *Cambridge Journal of Economics* 2(2) (1978), 215–32.
- J. Giffen, 'The allocation of investment in the Soviet Union', *Soviet Studies* 32 (4) (1981), 593–609.
- J. Kornai, 'Appraisal of project appraisal', in M. J. Boskin (ed.), *Economics and human welfare* (New York, 1979), pp. 75–99.
- T. Gustafson, *Reform in Soviet politics* (Cambridge, 1981), chapter 4.
- J. Robinson, 'Employment and the choice of technique', in K. S. Krishnaswamy, A. Mitra, I. G. Patel, K. N. Raj and M. N. Srivinas (eds.), *Society and change* (Bombay, 1977), pp. 156–69. Reprinted in J. Robinson, *Collected economic papers*, vol. V (Oxford, 1979), chapter 22.

Investment tension

- J. Kornai, *Economics of shortage*, vol. A (Amsterdam, 1980), chapter 9.
- Xue Muquiao, *China's socialist economy* (rev. edn Beijing, 1986), pp. 183–4.

Investment cycles

- A. Eckstein, *China's economic development* (Ann Arbor, 1975), chapter 11.
- T. Bauer, 'Investment cycles in planned economies', *Acta Oeconomica* 21(3) (1978), 243–60.
- P. Wiles, 'Are there any Communist cycles?', *ACES Bulletin* 24(2) (1982), 1–20.
- R. Gerritse, *The realm of necessity* (Amsterdam, 1982).
- P. Boot, 'Industrial cycles in the German Democratic Republic and Professor Wiles' thesis', *ACES Bulletin* 26(1) (1984), 1–26.
- T. Bauer, *From cycles to crisis? Recent developments in East European planned economies and the theory of investment cycles*, WIIW Research Report (Vienna, 1988).

Was investment planned?

- R. W. Davies (ed.), *Soviet investment for planned industrialisation, 1929–1937: Policy and practice* (Berkeley, 1984).
- E. Neuberger and W. J. Duffy, *Comparative economic systems: A decision-making approach* (Boston, 1976), chapter 2.
- B. Z. Rumer, *Investment and reindustrialization in the Soviet economy* (Boulder, CO, 1984).

6 | *Planning agriculture*

Another thing we have learned from experience is the importance of developing agriculture. As long as the people are well fed, everything is easy, no matter what may happen in the world.

Deng Xiaoping (1984: 384)

The case for collectivism

The case for collective, rather than private, ownership and management of land is simply one specific aspect of the general socialist argument for socialism rather than capitalism. Comparing socialist with capitalist agriculture, Marxists have traditionally considered that the socialist system has four important advantages. First, it prevents rural exploitation, that is, the emergence of a rural proletariat side by side with an agrarian capitalist class. Secondly, it allows the rational use of the available resources. Thirdly, it ensures a rapid growth of the marketed output of agriculture. Fourthly, it provides a large source of resources for accumulation.¹ Consider each argument in turn.

Writers such as John Stuart Mill (1891), Doreen Warriner (1969) and Michael Lipton (1974) advocated organising agriculture on the basis of peasants or smallholders operating efficient, family-sized, farms. On the basis of theoretical and empirical analysis Marxist researchers have traditionally argued that this ‘solution’ to the agrarian problem is illusory. As Engels explained in his famous essay *The peasant question*

¹ The third and fourth arguments are often conflated. This is a serious source of confusion. It is entirely possible for the marketed output of agriculture to grow rapidly but for agriculture not to provide resources for industrialisation (for example, if the marketed output is used to feed a repressive apparatus or is exported in exchange for armaments). Conversely, it is entirely possible for rapid industrialisation to be accompanied by a decrease in the net transfer of resources from agriculture (for example, if the increase in industrial inputs in agriculture exceeds the increase in the marketed output of agriculture).

in France and Germany (1894): 'we foresee the inevitable ruin of the small peasant'. The reasons for this were both social (concerning exploitation and class conflict) and technical (concerning economies of scale and technical progress). The former were clearly explained by Lenin in *The development of capitalism in Russia* ([1899] 1956: 172), his classic study of Russian rural society in the 1890s. He found that in the Russian countryside:

all those contradictions are present which are inherent in every commodity economy and every order of capitalism: competition, the struggle for economic independence, the snatching up of land (purchasable and rentable), the concentration of production in the hands of a minority, the forcing of the majority into the ranks of the proletariat, their exploitation by a minority through the medium of merchant capital and the hiring of farm-workers. There is not a single economic phenomenon among the peasantry that does not bear this contradictory form, one specifically peculiar to the capitalist system, i.e. that does not express a struggle and an antagonism, that does not imply advantage for some and disadvantage for others. It is the case with the renting of land, the purchase of land, and with 'industries' in their diametrically opposite types; it is also the case with technical progress in farming.

In addition, the Marxist–Leninist tradition lays considerable emphasis on the economies of scale which exist in agriculture as in industry. It also stresses the importance of technical progress, and the need for large units to take full advantage of it. The efficient use of tractors and other machinery may require land holdings larger and more consolidated than many peasant holdings. All these factors ensure that the peasant, like the artisan, forms part of a mode of production which in the Marxist view is destined to be wiped out by the higher labour productivity of large-scale production. Despite their theoretical opposition to it, the Bolsheviks did in fact implement a distributivist land reform in 1917–18, in order to gain political support at a crucial moment. Bolsheviks saw in the outcome the results that Marxist theory would lead one to expect, the emergence of a stratified society in which rich peasants employing wage labour coexisted with an increasing number of poverty-stricken labourers.² Abdel-Fadil

² This view of Soviet rural society in the 1920s was strongly challenged both at the time and subsequently. According to Shanin (1972: 199), the Bolshevik understanding was 'a misleading conception of rural society'.

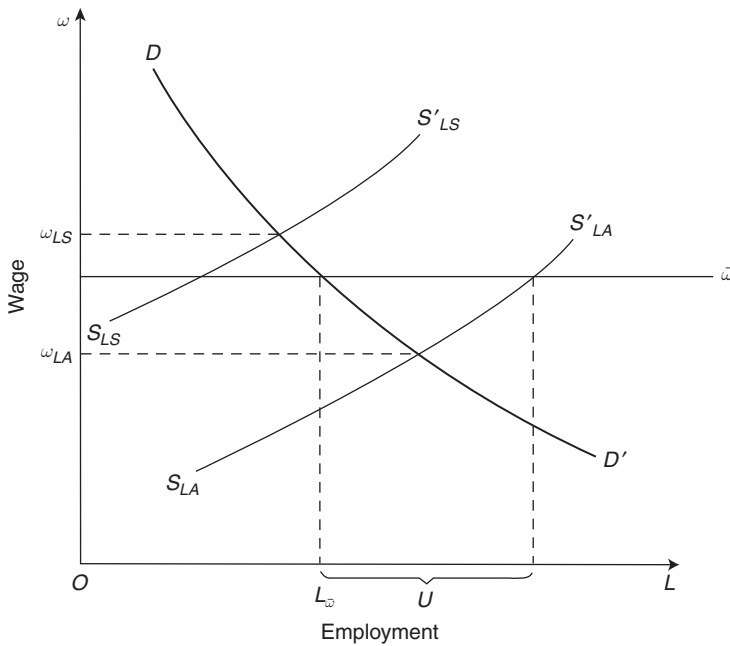


Figure 6.1 The cause of unemployment: the neoclassical view

(1976) saw in the aftermath of the distributivist Egyptian land reform of the 1950s a similar outcome.

The capitalist organisation of agriculture often coexists with substantial rural unemployment and underemployment. Why is this? There are three standard explanations: neoclassical, Keynesian and Marxist.

The neoclassical explanation concerns the marginal product of labour. This is illustrated in Figure 6.1.

DD' is the demand curve for labour. It is determined by the marginal product of labour. The supply curve of labour is given by SS' . In an economy where labour is scarce relative to land and other means of production, the supply curve is $S_{LS}S'_{LS}$ and the equilibrium wage is w_{LS} . In an economy where labour is abundant relative to the means of production, the supply curve is $S_{LA}S'_{LA}$. The equilibrium wage is w_{LA} . Suppose the actual wage is \bar{w} (e.g. because of custom, subsistence needs or the law). Then employment will be $L_{\bar{w}}$ and unemployment will be U . The cause of the unemployment is the excessively high level of wages. Wage labour is an inefficient mode of labour organisation when the

marginal product of part of the labour force that wishes to work at the prevailing wage rate is less than that wage. It is for this reason that narodniks argue that peasant farming is more efficient than wage labour in labour-surplus economies. Whereas under wage labour, labour will only be employed till the marginal product of labour equals the wage rate and the remainder of the labourers will be unemployed, under peasant farming labour will be performed until the marginal product of labour is zero. As a result, in conditions of labour abundance, under peasant agriculture output will be higher (because more work is performed) and unemployment much lower (both because greater work is performed and because it is spread among family members) than under capitalist agriculture. If underemployment exists in peasant agriculture, the neoclassical view is that it must be caused by the zero marginal product of labour resulting from the abundance of labour relative to means of production.

The Keynesian view emphasises the role of effective demand in determining unemployment. If effective demand is too low relative to the availability of labour, then unemployment will result. The way to deal with it is to raise the effective demand for food products, e.g. by an income redistribution which diverts demand from imported luxuries to food, or by grants to poor consumers, or by state purchases of food products for sale to the poor at subsidised prices

The Marxist view is that unemployment in capitalist agriculture (as in capitalist industry) is an inevitable result of the capitalist mode of production. Marx explained in volume I of *Capital* (1961: 642) that, in agriculture, the General Law of Capitalist Accumulation is that:

As soon as capitalist production takes possession of agriculture, and in proportion to the extent to which it does so, the demand for an agricultural labouring population falls absolutely, while the accumulation of the capital employed in agriculture advances, without this repulsion being, as in non-agricultural industries, compensated by a greater attraction. Part of the agricultural population is therefore constantly on the point of passing over into an urban or manufacturing proletariat, and on the look out for circumstances favourable to this transformation . . . But the constant flow towards the towns presupposes, in the country itself, a constant latent surplus-population, the extent of which becomes evident only when its channels of outlet open to exceptional width. The agricultural labourer is therefore reduced to the minimum of wages, and always stands with one foot already in the swamp of pauperism.

The function of the unemployed under capitalism is to depress wages³ and ensure labour discipline.⁴ The Marxist view is that under socialism, on the other hand, there is no social requirement for not using labour, and an obvious social need to employ all the available people.

Besides irrational use of labour, capitalist and pre-capitalist agriculture is often marked by the irrational use of land and other inputs. The causes of this can be analysed analogously.

During the process of economic development the growing urban population requires an expanding supply of agricultural products. If the marketed output of agriculture does not grow then the supply of labour to industry is likely to be adversely affected. Communists have traditionally considered that the capitalist organisation of agriculture is likely to be less efficient in mobilising agricultural output for industry than the socialist organisation of agriculture.

Marxists have traditionally expected collectivist agriculture to supply a major share of the resources required for rapid accumulation. In a speech at the July 1928 Plenum of the Communist Party's Central Committee, Stalin (1954: 165–7)⁵ analysed the question of the origin of the resources required for Soviet industrialisation. He began by considering capitalist industrialisation.

In the capitalist countries industrialisation was usually effected, in the main, by robbing other countries, by robbing colonies or defeated countries, or with the help of substantial and more or less enslaving loans from abroad.

You know that for hundreds of years Britain collected capital from all her colonies and from all parts of the world, and was able in this way to make additional investments in her industry. This, incidentally, explains why Britain at one time became the 'workshop of the world'.

You also know that Germany developed her industry with the help, among other things, of the 5,000 million francs she levied as an indemnity on France after the Franco-Prussian war.

³ The reserve army of unemployed ensures that (ibid.: 582): 'The rise of wages [during the boom] ... is confined within limits that not only leave intact the foundations of a capitalistic system, but also secure its reproduction on a progressive scale.'

⁴ The reserve army of unemployed ensures that the employed workers (ibid.: 595) 'submit to over-work and to subjugation under the dictates of capital'.

⁵ The passage cited can also be found at www.marxists.org/reference/archive/stalin/works/1928/07/04

One respect in which our country differs from the capitalist countries is that it cannot and must not engage in colonial robbery, or the plundering of other countries in general. That way, therefore, is closed to us.

What then remains? Only one thing, and that is to develop industry, to industrialise the country with the help of *internal* accumulations . . .

But what are the chief sources of these accumulations? As I have said, there are only two such sources: firstly, the working class, which creates values and advances our industry; and secondly the peasantry.

The way matters stand with respect to the peasantry in this respect is as follows: it not only pays the state the usual taxes, direct and indirect; it also *overpays* in the relatively high prices for manufactured goods – that is in the first place, and it is more or less *underpaid* in the prices for agricultural produce – that is in the second place.

This is an additional tax levied on the peasantry for the sake of promoting industry, which caters for the whole country, the peasantry included. It is something in the nature of a 'tribute', of a supertax, which we are compelled to levy for the time being in order to preserve and accelerate our present rate of industrial development, in order to ensure an industry for the whole country . . .

It is an unpalatable business, there is no denying. But we should not be Bolsheviks if we slurred over it and closed our eyes to the fact that, unfortunately, our industry and our country cannot *at present* dispense with this additional tax on the peasantry.

Stalin's idea of the terms on which the marketed output of agriculture can be obtained, as a constraint on the rate of industrialisation, and of a tribute levied on agriculture as a source of resources for industrialisation, is illustrated in Figure 6.2.

Figure 6.2 illustrates an economy with two sectors: industry and agriculture. Industry produces two goods: machines and textiles. It does this using machinery and workers. Workers are paid in grain which can only be obtained from the peasants who work in the agricultural sector. They exchange grain for textiles. The amount of grain supplied depends on the peasants' offer curve of grain for textiles. The amount of grain so obtained and the wage rate in industry simultaneously determine the labour force in industry in the subsequent period. Time is discrete.

The northeast quadrant shows the production possibility curve in industry. It is technically determined. At time (1), with initial stocks of machines and grain, the planners must choose a point on it – an output mix of machines and textiles. To produce at *T* would ensure that the

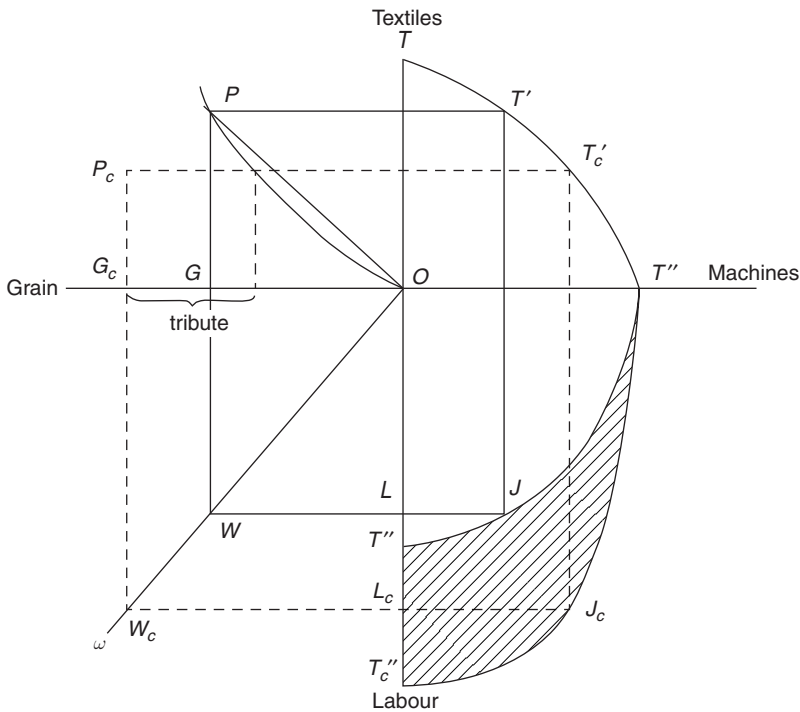


Figure 6.2 The tribute model

peasants were well dressed, but entail zero production of machines, i.e. zero investment in industry. To produce at T'' would provide the maximum possible addition to the capital stock in industry, but would lead to the dissolution of the industrial labour force, and zero production in industry at time (2). The planners have to balance these considerations when choosing. Whatever point is chosen (say T') determines investment in industry and the stock of textiles available for sale to the peasantry.

These textiles are sold to the peasants and realise a quantity of grain (say OG) determined by the peasants' offer curve. (The slope of the vector from the origin to P gives the price ratio of the two goods.) The quantity of grain realised determines the point reached on the Ow line. The slope of the Ow line in the southwest quadrant is the grain wage of labour in industry, which is socially determined. The quantity of grain obtained from the peasants determines the point reached on the Ow line

(say W), and hence the size of the labour force (OL) in time (2). The southeast quadrant shows the relationship between the labour force and the increment to the capital stock available for production in the industrial sector at time (2) for different choices of output mix at time (1). Given T' (and thus P , G , W , L and J) the production possibility curve TT'' for subsequent periods can be determined.

The model shows the initial capital stock, technology, the terms on which the peasants will sell grain and the real wage rate, simultaneously constraining growth. Assume that the rate of growth so determined is below that desired by the Party. Then one way of raising the rate of growth is by the use of coercion to levy a tribute on the peasantry, i.e. to force them off their offer curve to point P_c . This is shown by that part of the figure in dashes. The transition from peasant agriculture to collectivist agriculture is assumed to raise grain procurement to OG_c . This enables more workers to be employed in industry than with peasant farming, while simultaneously production of textiles is lower and investment higher. This enables the desired higher growth rate to be attained. In the figure, the additional combinations of labour and investment available in period (2) as a result of collectivisation are shown by the shaded area in the southeast quadrant.

Summary

Marxists have traditionally considered that peasant farming is not a viable way of organising agriculture. Comparing capitalist agriculture with socialist agriculture, Marxists consider that the latter has four important advantages. First, it prevents rural exploitation. Secondly, it allows the rational use of the available labour and other resources. Thirdly, it ensures a rapid growth of the marketed output of agriculture. Fourthly, it provides a large source of resources for accumulation.

Problems of collectivism

In this section five problems of collectivist agriculture will be considered, economies of scale, labour incentives, the use of collective farms for taxation, inequality and the use of administrative methods.

Economies of scale play an important role in Marxist-Leninist arguments about why peasant farming is not a viable way of organising agriculture. Experience, however, has shown that agriculture is

fundamentally different from industry in that organising workers in large productive units does not in general raise productivity. As Joan Robinson (1964: 1) explained:

For the deployment of labour, a rather small scale is required. Workers are spread out over space so that discipline is hard to enforce; an incentive wage system is not easy to arrange or administer; there has to be a great diffusion of managerial responsibility; every field is different, every day is different and quick decisions have to be taken. For getting work out of the workers a peasant family is hard to beat. Discipline and responsibility are imposed by the pressing incentive to secure the family livelihood.

This is the main explanation of the abundant evidence (Dorner 1972: 120) that 'output per unit of land is inversely related to farm size'. As Lipton (1974: 289) noted:

Part of this relationship is spurious (because holding size is usually smaller on good soil), but much of it survives even in micro studies where the soil quality can be held constant. Small family farms can saturate the land with plenty of labour per acre, as there is little else for the labour to do (except perhaps at seasonal peaks). Large commercial farms must supervise labour and pay it the full market price, which is likely to rise if they buy too much of it. Another and more surprising fact is that, as Colin Clark has often emphasised, all the careful micro work shows that *capital* per acre also increases as farm size declines . . .

Where labour is abundant relative to land, the efficient utilisation of scarce resources requires small, not large, units, a finding paradoxical from a Marxist-Leninist standpoint. Where there is a high labour-land ratio, the main production problem of agricultural development is to raise land productivity and not labour productivity. Hence, in labour-abundant farming there is a smaller gain from organising labour in large units than there is in industry, where factories raise labour productivity by the division of labour (and also by strict supervision, which is not possible in a spatially dispersed activity such as farming). The gains from the division of labour in agriculture are also limited by the sequential nature of much agricultural work. Raising land productivity is largely a matter of the application of modern inputs such as improved seeds and artificial fertilisers.

In addition, there are also managerial diseconomies of scale in agriculture. The efficient large-scale organisation of labour requires efficient planning, administration and bookkeeping work which is unnecessary under peasant farming, where each peasant organises his own work

himself. The extent of this managerial diseconomy of scale depends on two factors. First, the size of the organisation. The bigger it is, the more serious the problem. Secondly, the educational level of the farmers. An important cause of the adverse effects of organising Chinese agriculture into communes in 1958 was the large size of the workforce per commune, in a society in which many farmers were illiterate. They were incapable of handling even the simplest bookkeeping.

Although, in the area of the efficient deployment of agricultural labour, the Marxist–Leninist thesis of the advantages of large-scale organisation is invalid where labour is abundant relative to land, there are important areas in which the Marxist–Leninist thesis of the importance of economies of scale is correct. For example, transport and marketing. Furthermore, when land is scarce, the efficient use of land of different qualities requires specialisation, which is incompatible with peasant farming in the strict sense of the term. But specialisation is compatible with smallholder farming – small-scale farming whose output is destined for the market – and with large-scale capitalist farming. Also, the division of land into fragmented plots and the use of land for boundary lines are common sources of waste in agriculture when there is private ownership of land. Obviously, investment in irrigation, water control and land reclamation may require very large-scale organisations, as in the irrigated areas of Central Asia or the river valleys of China or the United States.

To establish effective labour incentives for collective agriculture is a difficult but very important task. In the USSR, where collectivist agriculture was first established, it was organised on what was virtually a feudal pattern.⁶ Work on the communal fields was enforced by coercion and in many years paid very little. The livelihood of the collective farmers was gained from their private plots, the right to which depended on their performance of labour for the collective farm. The farmers were tied to

⁶ Serfdom in the Russian Empire was abolished in a gradual process that was only completed at the beginning of the twentieth century. It began in three Baltic provinces in 1816–19 (on terms very unfavourable to the former serfs), was extended to most of Russia in 1861 (but not to the Transcaucasus – in Georgia it began only in 1865), and was finally completed in 1906–7 when payments by former serfs for the land they had received were ended and peasants received the right to live wherever they liked and were no longer tied to their native village. Under the terms of the 1861 Emancipation the former serfs were still bound to the land and also obliged to pay for the land they received. (However, this was more favourable than the terms of the abolition of slavery in the southern states of the USA in 1865 which did not provide land for the former slaves.)

the land by the passport system.⁷ This system did produce an increased supply of basic wage goods for the towns, but only at the cost of a low level of labour productivity and very high costs of production in agriculture. In addition, throughout the era of collective farming the Soviet government was unable to provide the whole population with a continuous supply of high-quality foods – fresh fruit and vegetables, and meat, milk and eggs. In some periods (1931–4, 1941–5, 1947) the absence even of sufficient bread led to famine. The absence of adequate labour incentives was a serious problem in Chilean agriculture under the land reform carried out by the Christian Democrats in the late 1960s. It was assumed that the consciousness of the villagers had been so transformed that material incentives could be neglected. As Lehmann (1974: 95) has observed, for this to have worked:

there would have to be a high level of morally based co-operation among the *asentados*, in the absence of an effective material incentive. In practice, however, it was common to hear the argument that there is no point in a man working hard if another spends his time drinking. My interviews with workers and *asentados* in 1969 show a very clear concern for a fair return to physical effort expended in work. Thus, where there is a lack of trust among co-operators they prefer to turn their energies to the family economy where such a return is more secure.

In China, the need to increase material incentives was a major reason for decollectivisation in 1979–84. The collectivist labour incentive system in Maoist China suffered from two major problems: private income and the allocation of collective income. In the late 1960s and 1970s at least 25 per cent of the peasants' personal income came from the private sector. Here the link between work and income was direct. Work in this sector was therefore more attractive to the peasants than work in the collective sector. As for work incentives in the collective sector, there were two problems. First, part of the output was not distributed to those who had produced it, but used for taxes, investment, to support cadres, and for other purposes. Secondly, of that part which was available for peasant consumption, a substantial amount was distributed in the form of a ration which was allocated according to family size and age structure. In poor areas, this basic grain ration swallowed up the bulk

⁷ (Internal) passports were identity documents. They were not issued to collective farmers till the late 1970s. Without one it was illegal to live in a town.

of the output available for distribution. Hence, in poor areas, labour incentives for work in the collective economy were weakest. It is therefore not surprising that decollectivisation began in those areas and spread from there to the rest of the country.

A serious threat to the success of collectivist agriculture (from the standpoint of the welfare of the villagers and the levels of productivity and output) was its treatment by the government primarily as a source of taxation. A major purpose of Soviet collectivisation was precisely to raise rural taxation, or as Stalin put it in the passage already quoted, to levy a 'tribute' on the peasantry (see also Stalin 1955a: 52–9). This policy did provide the state with an increased supply of basic wage goods (bread, potatoes and cabbage). It also, however, contributed to a high-cost agriculture and chronic urban shortages of quality foods. Similarly, in China the failure of average rural incomes to rise significantly under collectivisation was a major cause of decollectivisation in 1979–84.

From a socialist perspective, a major problem of collectivist agriculture was that its introduction and maintenance may be based on crude coercion, and be incompatible with the transition to a society which is egalitarian and under social control. Collectivisation in the USSR was largely a matter of the application of state power to crush peasant farming, and was necessarily accompanied by widespread deportations. It created a hierarchical society, employing an unparalleled apparatus of repression and with a concentration of power akin to that of the Roman Empire. In China the Great Leap Forward led to an enormous increase in work done, most of which was wasted, and a dramatic fall in output. The inequality between those who had to do the extra work and those who inspired the Leap, and the lack of social control over the decisions taken were extreme.

The decollectivisation of agriculture was not a sign of a widespread desire for the hard work, long hours and insecurity of peasant farming. It was a sign of the failure of a collectivist agriculture primarily concerned with establishing and maintaining control by the state and its officials over the peasants, to satisfy the needs and wishes of the rural population. In 1961, Chen Yun made an investigation of the real situation in Xiaozheng Commune of Qingpu county (near Shanghai). The peasants had both criticism and praise for the Party's agricultural policies (Chen Yun 1982: 156):

Their criticisms and complaints [Chen Yun wrote in a letter to Deng Xiaoping] may be summarized as the following four: first, they do not have enough to eat;

second, the cadres at the grass-roots level set high quotas arbitrarily in disregard of realities, and they have failed to participate regularly in work and have led privileged lives; third, the cadres have given wrong orders in production and refused to make self-criticisms; and fourth, because collective production has not been organized well, the peasants lack enthusiasm – while by contrast, they show great enthusiasm for private plots and sideline production.

It is scarcely surprising that, when in 1979–82 the political pressure from the centre for the institutional arrangements which had contributed to this situation weakened, spontaneous decollectivisation should take place.

A major negative aspect of collectivist agriculture in many countries is the use of administrative methods, such as instructions from above, rather than economic methods, such as price and tax policy, where the latter would be more efficient. The consequent growth of bureaucracy and decline of local initiative has been simply a dead loss to society.

These problems were important reasons for the decollectivisation of agriculture. This took place in Yugoslavia in 1950; in Poland in 1956 (partially – the other part of Polish agriculture was never collectivised); in China in 1979–84; and in the FSU (Former Soviet Union) and Eastern Europe as part of the post-Communist transition.

Summary

There are five main problems of collectivist agriculture. First, the absence of some of the economies of scale postulated by Marxism–Leninism and the presence of managerial diseconomies of scale. Secondly, the need to design an effective system of labour incentives. Thirdly, the use of collective farms by the state primarily as instruments of taxation and control of the rural population. Fourthly, the extreme inequalities and lack of social control over decision making, to which it can lead. Fifthly, the use of administrative methods where economic methods are more efficient. These problems were important reasons for the decollectivisation of agriculture.

The coercive model

The model

In *The Wealth of Nations* Adam Smith analysed ‘previous accumulation’, i.e. the accumulation the existence of which is a precondition for

self-sustaining capitalist growth. Taking this notion as his starting point, Marx in part VIII of *Capital*, volume I, analysed 'the so-called original⁸ accumulation'. He stressed two factors, the creation of new relations of production (the employment of propertyless labourers by capitalists), and the use of force. ('In actual history', wrote Marx in *Capital*, volume I, chapter 26, 'it is notorious that conquest, enslavement, robbery, murder, briefly force, play the great part . . . The history of [original accumulation] . . . is written in the annals of mankind in letters of blood and fire.') During the Russian Civil War some Bolsheviks adapted Marx's concept to Soviet conditions and analysed 'original socialist accumulation'.

As interpreted, for example, in Bukharin's famous work *The economics of the transition period* (1920: 101–2), original *socialist* accumulation has in common with original *capitalist* accumulation primarily the use of coercion to create a labour force. As such, the concept provided a convenient rationalisation of Party economic policy during the Civil War, for example the militarisation of labour and the use of force to obtain agricultural products. During NEP the concept was used by Preobrazhensky in the course of his well-known analysis of Soviet economic growth.

In the mid 1920s the idea of 'original socialist accumulation', i.e. of socialist construction by means of coercion against the peasantry, was decisively rejected by the Party. In a well-known paper of 1925 (*Bol'shevik* no. 8), Bukharin argued that it was unnecessary and even harmful to the economy to carry on class warfare by administrative methods. If a 'St Bartholomew's massacre' were organised for the village bourgeoisie, the socialist state would lose large resources for economic growth, which could otherwise be exploited for its purposes through channels of taxation and the banking system. In the late 1920s, however, under the influence of the increasing difficulties with grain procurements and the criticism of Party policy by the Left, views within the Party changed.

In his speech in July 1928, quoted above, Stalin announced his acceptance of the need to levy a 'tribute' on the peasantry to provide resources for investment. At the end of 1929, he launched the policies of dekulakisation, collectivisation and taking grain.⁹ These policies

⁸ Marx used the phrase 'ursprüngliche Akkumulation'. In the Moore–Aveling translation of *Capital*, this is rendered as 'primitive accumulation'. Some writers, such as Gershenkron and Sweezy, refer to 'original' or 'primary' accumulation, and this, as Pollitt (1971) has noted, is the better translation.

⁹ For a description of the latter, see Lewin (1974).

required the use of coercion on a large scale, over many years. The logic of Stalin's policy was analysed above.

The outcome in the USSR

The collectivisation of agriculture in the USSR did lead to a sharp increase in the extraction from agriculture of basic wage goods (bread, potatoes and cabbage). In the case of grain (needed for making bread, the basic wage good in the USSR, and for exports), this is shown in Table 6.1.

Table 6.1 shows that by 1932 state grain collections had risen by about 70 per cent compared to 1928 and the proportion of the harvest extracted by the state had approximately doubled. This increase in grain obtained by the state was not a result of increased production, but of the state taking products which would otherwise have been eaten by livestock or the rural population. This, together with the drought of 1931 and the poor harvest of 1932, led to a catastrophic drop in livestock numbers in 1929–32 and a famine in 1931–4 (the peak of the famine was in 1933).

Table 6.1 *State grain extraction, USSR 1928–32^a (million tonnes)*

	1928	1929	1930	1931	1932	1933
Harvest	66.5	65.5	75.0	61.0	57.5	73.5
Marketed/Collected ^b	10.8	16.1	22.1	22.8	18.5	22.7
Output remaining in the villages (for food, fodder and seed)	55.7	49.4	52.9	38.2	39.0	50.8
State extraction share (%)	16.2	24.6	29.5	37.4	32.2	30.9

^a Mass collectivisation in the USSR began in the autumn of 1929.

^b These are gross figures, and take no account of grain returned to agriculture (see Table 6.3). Hence the third row is understated. However, both the second row and the last one do show the effectiveness of the state in various years in extracting grain from the villages, even if some of that grain had to be used for agricultural purposes. *Source:* Davies and Wheatcroft (2004: 446–9) for all the harvest figures (these are given as a range – in the table the midpoints have been used) and the collection figures for 1930–3. The collection figures for 1928 and 1929 come from Davies *et al.* (1994: 286, table 19). Both at the time and up to the present the harvest figures for this period have been very controversial and a wide range of figures for this period have been used. The figures in the table seem the most reliable currently available, but should be understood as the midpoints of ranges rather than point estimates.

It seems that the number of excess deaths from the famine was about 5.7 million (Davies and Wheatcroft 2004: 415), i.e. about the same number as that of Holocaust deaths. The worst affected peoples were the Kazakhs and the Ukrainians. Collectivisation was implemented largely by state terror (although there was some support for it from the rural poor, enthusiastic Communists and urban workers). Dekulakisation led to the deportation of 1.8 million peasants in 1930–1, mainly to remote and inhospitable regions, and the relocation of a significant but currently unknown number of peasants within their regions. The state security service (OGPU) arrested 379,000 people, and recorded 20,000 death sentences in 1930; arrested 479,000, and recorded 11,000 death sentences in 1931;¹⁰ arrested 499,000, but recorded ‘only’ 3,000 death sentences in 1932; and arrested 505,000, and recorded a ‘mere’ 2,000 death sentences in 1933.¹¹ Nearly all those arrested and shot were peasants.¹² Despite extensive peasant resistance to it (Viola 1996), the terror was successful and collectivisation was implemented – by July 1933, 83 per cent of the arable area and 64 per cent of peasant households had been collectivised. The proportions increased in subsequent years as the authorities tightened their squeeze on the remaining non-collectivised peasants.

The collectivisation of agriculture in the USSR also provided a substantial increase in the urban labour force. The mass deportations from the villages, and the mass arrests, together with the sharp drop in animal products and grain supplies per capita, severely depressed rural living standards and drove millions of villagers to the towns.

Although the state did obtain an increased supply of basic wage goods as a result of collectivisation, the supply of livestock products fell sharply. Furthermore, the state had to provide substantial resources for

¹⁰ This figure is given in a 1953 document (‘The Pavlov report’). This figure understates the numbers who died as a result of OGPU violence, since it naturally excludes people who died in riots, resisting arrest, and as a result of ghastly living conditions in the remote and inhospitable regions to which they were exiled, in prison, in camps, in transit, or after release as a result of treatment while detained by the OGPU. These were deaths, but not official death sentences.

¹¹ Work in regional archives has shown that this last figure is an underestimate of the number actually shot by the OGPU in 1933, for which there are currently no reliable figures. The figures for the number shot in 1930, 1931 and 1932 may also be underestimates.

¹² In August 1990, the Soviet President Gorbachev issued a decree which, *inter alia*, recognised ‘as illegal, contradicting basic civil and socio-economic human rights the repression carried out in relation to the peasants in the period of collectivisation . . .’.

agriculture. A significant share of Soviet investment after 1929 was devoted to agriculture. Much of this investment was wasted. Collectivisation itself meant that much of the investment in tractors was simply required in order to offset the disinvestment in animal traction power caused by the state taking the grain which was needed as fodder to keep the draught animals (horses) alive. In addition, the very sharp increase in food prices on the free market meant that much of the squeeze on living standards was transferred to the working class. According to the Soviet researcher Barsov (1974: 96), the amount of unequal exchange was higher in 1913 than in any year of Soviet power, and higher in 1928 (i.e. prior to collectivisation) than in the late 1930s (i.e. after collectivisation). Barsov's findings suggest that collectivisation did *not* lead to an increased net transfer of commodities from agriculture. Hence, Stalin's 1928 implicit argument for collectivisation, based on the idea that it would lead to an increased net transfer of commodities to industry, seems to have been wrong, at any rate in the Soviet case.

The actual process of accumulation which took place in the USSR during the first three Five-Year Plans differed in three important respects from that analysed in Preobrazhensky's book *The new economics*. First, there was no increase in unequal exchange between agriculture and industry. Secondly, the fall in urban real wages (what Trotsky had earlier termed 'the self-exploitation of the working class') played an important role in financing the increase in accumulation. At the end of the First Five-Year Plan, real wages per worker were only about half of what they had been at the beginning of it. The decline in working-class living standards was, however, much less than the decline in real wages, because of the big increase in the urban participation rate (e.g. the abolition of urban unemployment during the First Five-Year Plan and the increased employment of women). By the end of the Second Five-Year Plan (1937), urban per capita consumption was above that at the beginning of the First Five-Year Plan. Thirdly, the whole process was based on coercion rather than use of the price mechanism.

After Stalin's death, the Stalinist model was gradually abandoned in the USSR and Eastern Europe. The reason for this was the adverse effect of the model on output and on the availability of quality foods in the towns. A variety of new policies were applied (higher procurement prices, greater toleration in some years for the household sector, an increase in sown area, greater investment). According to a US specialist (Millar 1977), in 1951–75 total Soviet agricultural output grew at not

Table 6.2 *Improvements in the Soviet diet, 1950–76*

Product	Per capita consumption in 1976 as a percentage of	
	1950	Norm
Meat and fat	215	68
Milk and milk products	184	78
Eggs	348	72
Fish and fish products	263	101
Sugar	361	105
Vegetable oil	285	85
Fruit and berries	336	33
Vegetables and melons	169	59
Potatoes	49	123
Bread and bread products	82	128

Source: Agababyan and Yakovleva (1979: 142).

less than 3.4 per cent per annum. The population in this period grew only 1.4 per cent per annum, so that per capita output grew at *c.* 2 per cent per annum. This was a very satisfactory performance, and one much better than in many other countries. Besides this quantitative improvement, there was also a qualitative improvement with a significant increase in the output and consumption of high-quality products. Some relevant data are set out in Table 6.2.

Table 6.2 shows very clearly the sharp improvement in the Soviet diet in the third quarter of the twentieth century. Per capita consumption of fish and meat more than doubled, milk and milk products nearly doubled and vegetables rose by two-thirds. At the same time, the per capita consumption of potatoes halved, and that of bread also fell. Nevertheless, even in 1976, per capita consumption of fruit, vegetables and meat were still significantly below the norms (for the use of norms in consumption planning, see Chapter 8).

Considered historically, the most important achievement of post-Stalin agricultural policy was to eliminate famines in the USSR. Famines were endemic in Tsarist Russia. The USSR experienced four famines, in 1921–2, 1931–4, 1941–5 and 1946–7. In addition, throughout the period 1931–52 Soviet people were dying of starvation or food deficiency diseases. (In the 1930s the USSR experienced a major malaria

epidemic largely arising from food shortages.¹³) As a result of the progress of the Soviet economy after 1947 the famine of 1946–7 was the last famine in the USSR. This was an achievement of fundamental importance in a country traditionally prone to famines.

The reasons for this impressive performance appear to have been: a huge increase in modern inputs (e.g. chemical fertilisers and machinery); an improvement in the economic position of the farmers (whose real incomes increased enormously in this period); an increase in the sown area; and a more consumer-oriented economic policy. The latter was manifested by the fact that, from the late 1960s, the USSR invested in agriculture on an enormous scale, and that, from the early 1960s, it was prepared to buy grain in large quantities from abroad, as was done by some West European countries.

Nevertheless, Soviet agriculture in the third quarter of the twentieth century suffered from four problems. First, it had a low initial level (largely resulting from the policies pursued in the previous quarter century). Secondly, it was a high-cost agriculture, requiring massive inputs of land, investment and labour. Thirdly, output, especially of grain, fluctuated sharply from year to year. Fourthly, the investment, labour and price policies pursued in the distribution sector (see Chapter 8) were not favourable to the general availability of good-quality food.

In 1976–91 the performance of Soviet agriculture was very disappointing and there were massive food imports, widespread shortages, and local rationing in some parts of the country in the 1980s. This resulted from prolonged adherence to non-market clearing prices; errors of economic policy (such as heavy investment in agro-industrial livestock complexes for red meat production and harmful irrigation projects); widespread waste; continued failure to implement adequate labour incentives for farm workers; environmental problems; and increased fossilisation of the bosses in the late Brezhnev period, followed by the economic incompetence of the perestroika period. The collapse of the USSR led to the decollectivisation of agriculture in its successor states. However, in Russia this was a policy initiated and implemented by the state, and large-scale farming remained important.

¹³ The incidence of malaria in Russia (not the USSR) rose from 2.1 per cent of the population in 1928 to 4.7 per cent in 1935. The 1935 level was about 90 per cent higher than the 1913 level. (For these figures and also data on the incidence of other infectious diseases in 1913–36 see Vishnevskii 2006: 262.)

The rural population had adapted to collective and state farming and had little enthusiasm for this new upheaval.

Summary

In the coercive model, which was applied in the USSR under Stalin, the resources for rapid industrialisation are intended to be obtained from agriculture by coercion. The application of this model did enable the Soviet state to sharply increase its inflow of basic wage goods and its stock of labour. It also was an important explanation of the high costs and low productivity of Soviet agriculture. From the standpoint of inter-sectoral flows, the increase in marketed output of basic wage goods was offset by the decline in the marketed output of livestock products and the increased flow of industrial goods (e.g. investment goods) to agriculture. The increase in investment in the USSR after 1928 required both labour and commodities. The increase in the labour force came mainly from agriculture and was fed on food obtained from agriculture. The increase in commodities came largely from industry and construction themselves.

In a speech of 1928 Stalin considered two sources of Soviet accumulation, the working class and the peasantry. The purpose of Soviet collectivisation was to finance industrialisation by levying a tribute on the peasantry. The outcome was that a large share of the burden *did* fall on the peasantry. Agricultural output fell but marketed output of basic wage goods rose, so that many peasants starved. Simultaneously, however, real wages fell (largely because of the scarcity of food) and employment enormously increased so that the major part of the contribution to the increase in investment came from the working class.

The coercive model was gradually abandoned in the USSR and the other CMEA countries after Stalin's death because of its adverse effect on output. During the post-1991 transition to capitalism, agriculture in the FSU was decollectivised (but large-scale farming remained important).

The outcome in China

The People's Republic of China, which was initially closely allied with the USSR, ideologically, militarily and economically, naturally began to build socialism on the basis of the Soviet example. This meant introducing Soviet-style economic institutions. Hence, agriculture in China also was collectivised, mainly in 1955–6. The goals of economic policy in

China also followed those of the USSR – rapid industrialisation and the development of the armed forces (e.g. the nuclear weapons programme, as discussed in Chapter 4). In addition, China copied the USSR in using coercion to transform rural institutions. Nevertheless, there were some differences between Stalinist and Maoist agricultural policies.

Whether rapid industrialisation required, as Stalin had argued, forcing agriculture to pay a ‘tribute’ to industry, was something on which Mao Zedong’s verbal attitude fluctuated. In his 1956 speech *On the ten major relationships* Mao (1977b: 285) referred to ‘The prolonged failure of the Soviet Union to reach the highest pre-October Revolution level in grain output.’ The conclusion he drew was that the Soviet stress on collecting tribute had hindered production. A successful collective agriculture, with rising production, required that the real income of the peasantry should grow steadily. In accordance with this line of analysis, in China net grain procurements, as a proportion of output, seem not to have increased during collectivisation, in marked contrast with the situation in the USSR. This is shown in Table 6.3. In the USSR the net procurement ratio increased sharply during the collectivisation process. In China it did not. This gain (from the standpoint of the peasants) was abandoned after the formation of the communes, in the immediate aftermath of which (1959) the net procurement rate reached the very high level of 28 per cent. This was a significant contribution to the 1958–62 famine. This disastrous policy was accompanied by the adoption of Stalin’s tribute approach (Mao 1977a: 88). In 1960 Mao wrote about agriculture in a way which combined endorsement of Stalin’s tribute approach with delusions about the Chinese peasantry: ‘Stalin as well as Lenin said, “In the period of socialist construction the peasantry must pay tribute to the state.” The vast majority of China’s peasants is “sending tribute” with a positive attitude.’

The Great Leap Forward (GLF),¹⁴ however, was an aberration, and throughout the 1960s and 1970s the net procurement ratio seems to

¹⁴ As Liu Shaoqi correctly pointed out at the Seven Thousand Cadres Conference (January–February 1962), the Great Leap Forward was in practice a great leap backwards, with major declines in agricultural and industrial output. His call for testing policies in practice, rather than imposing them everywhere without knowing their consequences, was also very sensible. (Liu Shaoqi was denounced in the Cultural Revolution in 1966, expelled from the Party in 1968 and died in 1969 after serious mistreatment. He was posthumously rehabilitated in 1980.)

Table 6.3 *Collectivisation and grain extraction USSR and China (million tonnes^a)*

(1)	(2)	(3)	(4)	(5)	(6)
Year	Output	Gross procurements ^b	Net procurements ^c	(3) as % of (2)	(4) as % of (2)
USSR ^d					
1928	66.5	10.8	10.0	16.2	15.0
1929	65.5	16.1	13.7	24.6	20.9
1930	75.0	22.1	20.0	29.5	26.7
1931	61.0	22.8	19.6	37.4	32.1
1932	57.5	18.5	15.6	32.2	27.1
China ^e					
1953	167	47.5	35.9	28.4	21.5
1954	170	51.8	31.6	30.5	18.6
1955	184	50.8	36.2	27.6	19.7
1956	193	45.4	28.7	23.5	14.9
1957	195	48.0	33.9	24.6	17.4

^a The absolute magnitudes of the data for the USSR and China are non-comparable.

^b For the USSR this is the total of centralised collections, decentralised collections and the milling levy.

^c For the USSR this is gross procurements less amounts returned to agriculture, e.g. as fodder, seed, or food for cotton-growing areas in Central Asia.

^d Collectivisation in the USSR began at the end of 1929, and embraced the majority of peasant households by the end of 1932.

^e Collectivisation in China took place mainly in 1955–6.

Sources: The figures for Soviet grain output are the midpoints of the figures in Davies and Wheatcroft (2004: 446). The actual output figures for these years are uncertain. This uncertainty is best captured by a range (as is done by Davies and Wheatcroft). Giving a single figure is an example of spurious accuracy. However, the table uses the midpoints in order to make the Soviet figures comparable with the Chinese ones. The figures for gross procurements for the years 1928, 1929 and 1930 come from Davies (1980: 427), and for 1931 and 1932 from Davies and Wheatcroft (2004: 469). The deductions from gross procurements to estimate net procurements for 1930, 1931 and 1932 are taken from Davies and Wheatcroft (2004: 470–3). For 1928 and 1929 the deduction is taken from Davies (1980: 432 and 433). For 1928 the only deduction for which there are data is seeds. If there were other transfers to agriculture in that year then the 1928 net procurement figure would be an overestimate. For China the figures are published official figures. A convenient presentation of them is Ash (2006). Their accuracy is uncertain. Liu and Yeh (1965) estimate different figures.

have been no higher than prior to collectivisation. However, the failure of grain output to rise relative to population meant that in the Third Five-Year Plan (1966–70) per capita grain production was marginally below what it had been during the First Five-Year Plan (1953–7) and in the Fourth Five-Year Plan (1971–6) only marginally above it. In other words, the Chinese rural population lived at about the subsistence minimum throughout the Maoist period (except in 1958–62 when part of it fell below it). Despite Mao's 1956 words, there was no steady increase in the real incomes of the peasantry under collectivisation. Hence, in practice, Maoist China failed to implement the sensible conclusion Mao had drawn in 1956 from the Soviet experience.

Although China in the 1950s copied Soviet experience, it also strove to take advantage of its own specific situation. There were two major differences between Stalinist and Maoist agricultural policies. First, in Maoist China a major role in rural social transformation was played by the rural Party organisations. Secondly, greater attention was paid to the utilisation of rural resources.

Because it came to power after a long civil war in which its strength lay in rural areas, the Chinese Communist Party had very large numbers of rural cadres and a considerable knowledge of rural conditions when it achieved power. This was a complete contrast to the situation in the USSR, and had many important policy consequences. For example, whereas land reform in the USSR was a mainly spontaneous process, in China it was organised and directed by the Party. Similarly, collectivisation in China did not have to be primarily extractive, because the strength of the rural Party organisation enabled the government to obtain quite a high rate of marketed output even with private ownership, as can be seen from Table 6.3. Already in 1953 the Chinese central government introduced a state monopoly of the purchase of grain with compulsory procurement quotas for each peasant household. The strength of the rural Party organisations, and the density of the rural population, enabled this to be implemented prior to collectivisation, quite unlike the situation in the USSR. Hence, collectivisation per se was much less important for the extraction of grain to feed the towns, the army and export than it had been in the USSR. In China the main result of collectivisation was that it enabled the state to obtain control over the *labour* of the peasants – control over their main *output* already having been obtained by the state monopoly of grain marketing and compulsory household procurement quotas. In addition, whereas Soviet

collectivisation relied heavily upon massive state terror, the Chinese cadres generally succeeded in organising collectivisation without employing massive state terror (which had already been extensively used to implement land reform).¹⁵

In traditional rural China there existed substantial surplus labour during the farming off-season (November–February), unutilised natural resources (e.g. limestone, rivers suitable for the generation of hydro-electricity) and an acute shortage of modern inputs (e.g. chemical fertilisers, farm machinery and electricity) for agriculture. A major aspect of the Maoist variant of the coercive model was an attempt to mobilise the available rural resources. This took the following forms:

First, the use of off-season farm labour for labour-intensive rural infrastructure activities. These included the construction of water control and irrigation systems; land terracing; afforestation; road building; and the construction of schools, hospitals, other public buildings and housing. This was in accordance with the advice to developing countries offered earlier by Nurkse (1953: 36–47). Since the labourers on these projects were usually paid in work points¹⁶ issued by their normal production teams, and construction machinery was conspicuous by its absence, the cost to the state was zero or very little. The advantage of this system was that extra output was produced at zero or very little state opportunity cost. The disadvantages were that arduous work was performed during time which may well have had considerable private opportunity costs for the labourers (e.g. in terms of leisure or household activities); that it may have had an adverse effect on agricultural output (if some of the labour was not really surplus, or if the resulting reduction in food and cash payments per work point had a disincentive effect); and that some of the output may have been useless (like the Pyramids of Ancient Egypt); or harmful (e.g. badly planned irrigation projects).¹⁷

¹⁵ There was some state terror in China in 1953–5 to enforce the state monopoly of grain marketing and household procurement quotas, and also peasant resistance to them (Dikötter 2013: 217–20), but this seems to have been on a considerably smaller scale than their analogues in the USSR in 1930–2.

¹⁶ Work points were rights, based on work performed for the collective, to a share in the income of the collective, after it had met its obligations to the state and provided for social needs.

¹⁷ For example, in 1958 the Gansu province Party committee decided to implement a major effort to divert the Tao river to irrigate the Loess plateau. This was the Yintao Project (J. Yang 2012: 122–5). This included a canal to run for 1,150

Secondly, the development of rural small-scale industries. Under Mao rural small-scale industries meant industrial enterprises administratively subordinated to counties, communes or brigades, and not to higher-level bodies. Being subordinate to a county usually implied obtaining the bulk of inputs, and distributing the bulk of outputs, within the county. Rural small-scale industry was not necessarily rural (some of it was located in county towns) and was not always so small (some plants employed more than 500 people). Its essential characteristics were that: it largely functioned outside the state planning and administrative system; output per plant and per person was much lower than in the state sector; it often made more use of indigenous technology than the state industrial sector with its large plants often using imported machinery; it was often concerned with serving agriculture; it mainly used local resources; and average employment per plant was less than in the state industrial sector. It was a sector which evolved substantially over time and was heavily influenced by the course of political events. It began during the Great Leap Forward, was generally closed down in 1961 and 1962, and was revived again during and after the Cultural Revolution. The main rural small-scale industries were energy (e.g. hydroelectricity and coal mining), iron and steel, chemical fertilisers, cement and farm machinery.

Many of the rural small-scale industries set up at the time of the Great Leap Forward were very inefficient, producing poor-quality products at high cost. During and after the Cultural Revolution they seem to have been more rational, using local resources to produce goods useful for agriculture. Small nitrogen fertiliser plants, for example, seem to have played a useful role in a country where food output, foreign exchange and engineering capability for large process plants were all serious constraints slowing down development.

The Maoist attempt to mobilise all the resources available in rural areas was in striking contrast to Stalinist policy. A feature of the Soviet manpower scene in the Stalin period, and to a lesser extent also in the 1950s and 1960s, was the existence and persistence of rural under-employment. The main cause of this was political. The Bolsheviks

kilometres. A huge mass of manual work was involved. The average daily manpower employed was 106,000 in 1958, 112,000 in 1959, and 80,000 in 1960. However, the project was badly planned and raised numerous technical difficulties. In 1960 it was abandoned. No land had been irrigated by it. All the work invested in it, and the lives of the workers who died while working on it, had been wasted.

viewed the countryside as a source of tribute, and of possible political enemies, and neglected the welfare of the rural population. In Maoist China, on the other hand, rural infrastructure projects and a narrow range of rural small-scale industries were encouraged. (Private rural enterprise was, of course, severely restricted in the Maoist period, to an extent which fluctuated over time.)

A Maoist policy which had an adverse effect on efficient resource utilisation in the countryside was that of grain self-sufficiency. Each province, and each district, Mao argued, should be self-sufficient in grain. This policy led to the loss of the gains from specialisation and caused considerable waste and loss of potential income and consumption.

Results

During the 1950s, there was a rapid transformation of rural social relations in China. A large-scale land reform in 1950–2 (mostly in 1950 and 1951) was followed by the organisation of mutual-aid teams, so-called cooperatives (first elementary and then advanced), and finally communes (1958). The transition from peasant agriculture to fully socialist so-called cooperatives (i.e. collectivisation) mainly took place in 1955–6. Collectivisation in China was much more successful than in the USSR in a number of important respects. First, there was no decline in grain output. Secondly, there was no dramatic decline in livestock numbers. For example, in the two years 1928–30, the number of pigs in the USSR fell by 47 per cent and by 1932 had fallen still further. In China, on the other hand, the number of pigs fell by only 17 per cent in 1954–6, and then increased in 1956–8. Thirdly, it required far fewer deaths as a proportion of the rural population. Fourthly, it was not accompanied by the death or deportation of the best farmers.¹⁸

¹⁸ To some extent this comparison is too favourable to China. As far as the triumph of voluntarism is concerned, the Chinese analogy with the year of the breakthrough (1929) was not 1955–6 but the Great Leap Forward (1958). This, like its Soviet counterpart, did lead to a significant decline in output of crops and livestock numbers and a large number of deaths from starvation. As far as political violence in the countryside is concerned, the peak period in China appears to have been not collectivisation (1955–6) but land reform. According to one source (Moise 1983: 142–3), the number of executions during the land reform and the campaigns that led up to it was probably in the range 1–1.5 million. The total number arrested (most of whom seem to have been imprisoned) was probably more than double this. Furthermore, about half (?) as many persons as were

This greater success resulted from the non-extractive nature of the collectivisation, the greater strength of the Party in the countryside, and the possibility which China had (but which the USSR as the pioneer did not have) of learning from the experience of other countries. An important aspect of the latter point was that collectivisation was better prepared and planned in China than in the USSR, where basic issues such as the private plot were only worked out during and after the collectivisation process. Nevertheless, this gain relative to the Soviet experience was thrown away by the Great Leap Forward, which led to a sharp fall in crop output and livestock numbers. The revolutionary euphoria of 1958–60 in certain Party circles in China, like that of 1929–30 in the USSR (and also like that during the Civil War in the USSR and in the 1960s in Cuba), had a severe negative effect on output.

The main achievements of the 1950s were an immense increase in labour inputs (e.g. into irrigation works), and a substantial change in the distribution of income. Another important aspect was the increase in the share of the national income going to accumulation as a result of redirecting what was formerly property income derived from agriculture (Lippit 1975). Much of the increased labour input (e.g. into backyard steel furnaces and poorly planned irrigation projects) was wasted. The increase in agricultural output was modest. The combination of these factors ensured a sharp fall in real income per unit of labour input and this, together with the 1958–9 attempt to move towards distribution according to need, led to a sharp decline in labour incentives. Some figures on output and productivity are set out in Table 6.4.

From Table 6.4 it can clearly be seen that, between 1960 and 1977, grain output per labourer remained below the level of the late 1950s. In 1977, after two decades of collectivisation, grain output per labourer was less than it had been twenty years earlier, and only fractionally above what it had been in 1952. Collectivisation had failed entirely in one of its main aims, a steady and significant rise in agricultural labour productivity.

formally arrested ‘were put in the custody of the masses for surveillance and reform through labour’ without being formally arrested. In addition, members of the families of those executed, and of the victims of other punishments, were discriminated against until the end of the 1970s. According to a more recent writer (Dikötter 2013: 83), ‘The exact number of victims killed in the land reform will never be known, but it is unlikely to have been fewer than 1.5 to 2 million people from 1947 to 1952. Millions more had their lives destroyed by being stigmatised as exploiters and class enemies.’

Table 6.4 Productivity of Chinese agricultural labour in grain output

Year	Agricultural labour force (millions)	Grain output (million tonnes) ^a	Grain output per labourer (kg/labourer/year)
1952	173.17	163.92	946.6
1957	193.10	195.05	1,010.1
1958	154.92	197.65	1,281.78
1959	162.73	169.68	1,042.71
1960	170.19	143.85	845.20
1961	197.49	136.50	691.17
1962	212.78	154.41	725.68
1965	233.98	194.53	831.4
1970	278.14	239.96	862.7
1975	294.60	284.52	965.8
1976	294.48	286.31	972.3
1977	293.45	282.73	963.5
1978	294.26	304.77	1,035.7

^aThe accuracy of these figures is uncertain.

Source: *Statistical yearbook of China 1985* (1985: 213 and 255); Ash (2006).

Grain is the basic foodstuff in China, and in this period food accounted for a high proportion of consumption. Therefore, the failure of grain output per capita to rise significantly and steadily under collectivisation automatically had an adverse effect on consumption. China experienced a major famine between 1958 and 1962. Measured absolutely, by the number of victims, it seems to have been China's and the world's largest ever.¹⁹ Estimates of the number of excess deaths in 1958–62 naturally depend on assumptions about the accuracy of official population statistics, and about what the death rate would have been in the absence of a famine. Assuming that the population registration data should be adjusted in the light of the census and fertility survey data, Ashton,

¹⁹ Measured relatively, as a share of the national population affected, the Chinese famine of 1958–62 was much less serious than the Irish famine of the late 1840s. The population deficit resulting from the latter (excess deaths + shortfall in births, but excluding emigration) seems to have been in the range of 13–18 per cent of the total population. Including emigration it was about 30 per cent of the total population. Moreover, the Irish population never regained the pre-famine level. Relatively speaking, the Irish famine of 1846–50 was a much bigger disaster than the Chinese famine of 1958–62.

Hill, Piazza and Zeitz (1984) estimated that in the four-year period mid 1958 to mid 1962 there were about 30 million excess deaths (of which about 20 million were between mid 1959 and mid 1961). They also estimated that the shortfall in births was even bigger, about 33 million. This makes a total population deficit in mid 1962 resulting from the famine of about 63 million, of which the shortfall in births is the larger component. This shortfall in births was followed by a birth boom in 1962–5. Hence, an estimate of the population deficit at the end of 1965 would be much lower than one of the population deficit in mid 1962, and would be sensitive to the precise counterfactual assumptions made about mortality and fertility in 1958–65.

Other authors, both Western and Chinese, have made different estimates of the demographic consequences of the famine than those of Ashton *et al.* The resulting range of estimates of excess mortality is very wide, from about 17 million to about 45 million. The wide range of estimates is explained by three factors. First, the official demographic statistics for this period are known to be inaccurate. This was partly because local officials ‘improved’ the figures they submitted to the higher organs in order to make the results of their own work look better. This was a result of the normal bureaucratic practice of subordinates transmitting inaccurate information (see Chapter 2, p. 41). It was also partly because officials at the centre – in accordance with the principle of partymindedness in statistics (Chapter 2, p. 28) – adjusted the published figures so as to make the disaster look less bad. ‘Negative’ calculations were destroyed, and ‘positive’ ones published. All the available estimates are based on adjusting the various published demographic statistics. Since various adjustments are possible, a wide range of results is inevitable. Secondly, although the famine was most intense in 1959–61, there were also famine deaths in 1958 and 1962. Naturally estimates confined to 1959–61 are lower than estimates that also cover 1958 and 1962. Thirdly, some of the estimates are influenced by political factors.

A well-known recent estimate is that of J. Yang (2012). He estimated the number of famine deaths in 1958–62 at 36 million, and the decline in births at 40 million, making a population loss of 76 million at the end of 1962. However, the accuracy of his quantitative estimates is doubtful. For example, the province with the largest number of famine deaths was Sichuan, but J. Yang (2012: 244) asserts that ‘it is impossible to obtain reliable figures on the number of starvation deaths’ in Sichuan because, during the famine, to cover up the disaster, the Sichuan Party

committee 'strengthened population statistical work' (i.e. gave instructions to falsify the demographic data). Furthermore, estimates of 'excess' deaths depend on accurate data about the level of 'normal' deaths. J. Yang accepts the official mortality data from the immediate pre-GLF period, which is probably too low. Demographic research (Ó Gráda 2013: 339–40) suggests that Yang's figure of 36 million excess deaths is too high, perhaps by as much as 10 million. In addition, his figure of 40 million missing births is both a rounded and imprecise figure, and ignores the birth boom that followed the famine. Nevertheless, even with these adjustments, the loss of life was clearly a gigantic human disaster on the scale of a prolonged major war.

The causes of the famine have been much discussed (D. T. Yang 2008). It seems that the diversion of inputs from grain production (e.g. labour diverted to backyard steel production, irrigation works and land reclamation projects, and a reduction in the area sown to grain), the high level of procurements and the adverse effect on labour productivity of the reduction in nutrition, together with adverse weather,²⁰ were the proximate causes of the fall in grain output. J. Yang (2012: chapter 5) drew attention to the role of the communal kitchens (established in 1958, partially closed in 1959, subsequently revived and finally closed down in 1961), and prohibition of cooking at home, in increasing mortality. The communal kitchens distributed excessive food when first set up; denial of access to them was used as a punishment by local cadres; they were sometimes at a long distance from part of the population; they sometimes required people to wait in the rain or snow before being allowed in; and they were responsible for cases of food poisoning. Particularly serious was that their existence, and the ban on cooking at home, eliminated the incentive for villagers to have their own poultry and pigs, which was a substantial loss for rural food supplies. J. Yang ascribed a third of the mortality during the famine to the existence of the communal kitchens. They were supported by Mao, as a sign of the coming of

²⁰ In the Maoist period, in official Chinese accounts, adverse weather was blamed for the 'hardships' of 1959–61 (the famine was not publicly acknowledged). J. Yang (2012: 452–6) argued that, while weather conditions in 1958–62 were not ideal, they were not the cause of the famine. D. T. Yang (2008) considers that the weather did have a negative effect on output, but only a small one. According to Ó Gráda (2013: 342–3): 'While the authorities doubtless greatly exaggerated the role of weather, its true impact remains to be determined.'

Communism, and benefited the local cadres who were able to use them to obtain preferential access to food (and women).²¹

Famine death rates varied very widely between provinces. Important factors determining the number of famine deaths were the policy of local officials and the income level of the province prior to the famine. The provinces with high death rates, such as Sichuan and Anhui, had Party leaders who enthusiastically followed the Maoist policies. Other provinces had leaders who, as far as possible, tried to shield their populations from harmful central policies. There were also important differences in famine mortality between counties within the same province. Furthermore, the famine was particularly serious in poorer provinces, where the population was normally at about the subsistence level, and where a relatively small decline in the availability of food could generate a famine. It was less serious in provinces with a higher level of normal food consumption per person, which could sustain a decline in food consumption per person without a famine.

The main ultimate causes of the famine were the extreme inequality and lack of social control over decisions concerning agriculture to which collectivisation and the communes had led, combined with the political power of the revolutionary leader and the institution (the Chinese Communist Party) which enabled him to implement his decisions. One man at the top of the political hierarchy was able to initiate harmful and misguided policies (which had a negative effect on agriculture and the rural population), enforce them and reject sensible criticisms of his policies, e.g. by Marshal Peng Dehuai at the 1959 Lushan Conference (Bernstein 2006). The reason why the fall in grain production led to a catastrophic famine was because China at that time

²¹ In 1961, when the political wind had veered, the first secretary of the Gansu province Party committee wrote that (J. Yang 2012: 196): 'The masses deeply detest and loathe the communal kitchens. The masses say, "Make friends with a canteen manager and you'll never want for buns and soup." The masses say, "There are no limits on the stomachs of the kitchen staff, the warmed brick beds of the livestock keepers, and the rations of the team leaders and managers." The masses say, "A knife hangs over the rice ladle." The masses say, "The communal kitchen is a dining hall (a place for getting food), a tribunal (a place where team leaders and managers beat and scold people), and a bordello (where team leaders and managers hire the prettiest girls as kitchen staff and mess around with them)." For example, the leader and manager of Team 6 . . . took more than their share out of commune members' grain rations and used these rations to seduce and rape thirteen women. In 1960, thirty-nine people who ate at this communal kitchen died.'

was a country where hundreds of millions of people lived at or just above the subsistence minimum, so that a fall in the availability of grain led to massive deaths. Furthermore, although the state began importing grain on a substantial scale from 1961 this was too little too late, and the quantities required to make a significant difference were politically and financially unfeasible at the beginning of the famine. The fact that the famine deaths were mainly in rural areas was because the communes enabled the state to extract sufficient grain to maintain the urban rationing system and export grain (to pay for machinery imports), and left the rural inhabitants as residual claimants. This was the great merit (from the point of view of the state) of collectivised agriculture.

To sum up, the famine was a Food Availability Decline (FAD) famine (to use Sen's terminology). The FAD was caused by harmful government policies (the GLF, the communes, high procurements, the diversion of resources away from agriculture, the inattention to peasant labour incentives and living standards). The possibility of introducing, enforcing and maintaining these harmful policies resulted from the political system. Those who died were rural inhabitants, who – unlike the beneficiaries of the urban rationing system, the army, foreign creditors and cadres – were residual claimants to food, or to use the Sen terminology, had an inadequate entitlement to food, under the Maoist version of state socialism.

During the famine, the state's efforts to extract grain from the peasants sometimes took on brutal forms. According to a 1960 report (J. Yang 2012: 289):

A minority of cadres arbitrarily imposed corporal punishment on the masses, such as binding, hanging, and beating, withholding of food, protracted kneeling, and exposure to cold or heat. Some set up unauthorized jails and labour reform teams. Others resorted to outrageous punishments such as smashing fingers with rocks, jabbing fingers with needles, cutting off ears, branding noses, sewing lips together, and so on.

In its efforts to create a post-capitalist mode of production, Maoist China introduced elements of pre-capitalism, familiar from accounts of serfdom and slavery (and the early years of collective agriculture in the USSR which also experienced famine and cannibalism).

Even after the national recovery (1962) hunger and malnutrition persisted in the poorest provinces (notably in Guizhou, Gansu and Ningxia) even during normal years and affected other provinces at

Table 6.5 *Per capita food availability in China (kcal)*

Years	Daily per capita food availability (kcal)		
	Total	Plant foods	Animal foods
1923–33	2,280	2,070	210
1933	2,130	1,940	190
1931–7	2,226	2,073	153
1957	2,075	1,962	113
1974	2,045	1,910	135
1977–8	2,130	1,995	105
1983	2,710	2,555	155

Note: Both the reliability of the data (for any particular year/s) and their comparability over time are imperfect.

Source: Smil (1986: tables 2 and 5). I have excluded from table 6.5 the FAO data in Smil's table 2, since the FAO's data on animal food availability are clearly non-comparable with Smil's own calculations. The discrepancy for 1977–8 between the total and the sum of its components is in the source. Data on grain and pork consumption by workers in Wuhan (Dikötter 2013: 269) also suggest that consumption of both in 1957 was lower than it had been in 1937.

times of drought, floods, or political upheavals (e.g. Sichuan in 1976). Some data on food availability are set out in Table 6.5.

It would appear, subject to data limitations, that throughout the Maoist period average food availability in China was no higher, and possibly lower, than it had been in the 1930s. It was only in the early 1980s that average food availability rose sharply relative to the 1930s. Data on average food availability are inadequate to answer the question of how extensive rural undernourishment was. That depends on the distribution of consumption and the calculation of needs. Data on both of these are imperfect, but using the available data, Smil (1986) estimated that in 1983 about 90–100 million peasants were undoubtedly short of food, and a further 100 million had a diet which probably fell short of the requirements for a healthy and vigorous existence in the Chinese countryside. In the Maoist period these figures would have been much larger.

A later study indicated that as late as 1992, 20–50 per cent of children below the age of 6 were stunted, and 10–35 per cent were underweight for their age in most provinces (Banister and Hill 2004: 65).

From the peasants' point of view, an important defect of collectivised agriculture was that it subjected them to the orders of cadres. The cadres

were often arrogant, made arbitrary decisions and were frequently corrupt. They were responsible not to the peasants but to their own superiors. This authoritarian system was unpopular and resented, and it collapsed as soon as the political pressure for it from the centre weakened.

One advantage for the peasants from the collectivist system was that it provided a basic level of medical services and also primary education (these were paid for out of the incomes of the collectives). This contributed to a high level of life expectancy relative to countries with a similar level of income per head and private ownership of land, and also an increase in literacy.

Chinese agriculture was decollectivised in 1979–84. The land tenure arrangements existing in the mid 1980s over most of the country in the collective sector could be characterised as a state tenancy system. The land was in public ownership, and officially could not be bought or sold. It was rented out to households for periods of at least fifteen years. Provided they met their tenancy obligations (set out in a contract between each household and the state), the tenants were free to decide what and how to produce. The hiring of labour was permitted. Leasehold rights were transferable between households. Furthermore, households were free, on their own or in cooperatives or as companies with other households, to engage in a variety of agricultural, commercial and industrial operations. The production and marketing arrangements were a mixture of peasant farming (the households organised production themselves, and consumed a large part of their own output) and smallholder farming (much of the production was for the market). Private plots too were encouraged in the post-Mao period. By 1981 they accounted for more than 40 per cent of peasant income.

Table 6.6 shows that whereas during the collectivisation period (after the GLF disaster) per capita production scarcely increased (if the comparison was with 1957, the first year of basically complete collectivisation, the output growth figure would look still worse because of the collapse of output in 1959–61). On the other hand, during decollectivisation it grew rapidly, and for many years of family farming it grew at a very satisfactory rate. These major gains relative to collectivised agriculture are usually ascribed to the greater incentives provided by family farming. This is generally taken as confirming the arguments of John Stuart Mill, Doreen Warriner and Michael Lipton in favour of small-scale family farming. However, the extent to which the output increases in Chinese agriculture post-collectivisation should be ascribed to the change in the

Table 6.6 *Growth of agricultural value added in China, 1965–2001 (real terms, % p.a.)*

	Agricultural output	Agricultural output per capita	Agricultural system
1965–80	2.4	0.3	Collective farming
1980–4	9.9	8.4	Decollectivisation
1984–2001	4.0	2.8	Family farming

Source: Bramall (2004: 114).

system, has been disputed. Some writers treat as the main cause the Green Revolution which has taken place in China (greater application of chemical fertilisers, improved seeds, more irrigation). For example, Bramall (2004) argued that the output increases resulted primarily from price increases (i.e. increases in state procurement prices) and the application of modern inputs (e.g. chemical fertilisers, improved varieties of grain and cotton, irrigation, machinery, electrification). Nevertheless, the general view is that (Naughton 2007: 243): ‘The success of reforms in agricultural production demonstrated conclusively that rural collectives were less efficient in agriculture than household farms.’ However, Naughton also pointed out that the end of collective farming also led to a sharp decline in the public services that the collectives had provided, notably health care and primary education.

Furthermore, state tenancy Chinese-style is not the system advocated by Mill, Warriner and Lipton, who advocated private ownership. Evidently family farming with state ownership – and local government control – of the land, and extensive state-financed agricultural R&D, is a Chinese (and Vietnamese) agricultural system which has evolved in densely populated countries, with large rural populations and adverse land to labour ratios, ruled by Communist Parties which wished to stimulate agricultural output within a socialist framework. However, it should be noted that, over time, the position of the tenants relative to the owner/landlord (i.e. the state) has strengthened as contracts have lengthened, the obligations of the tenants have been reduced, and the rights of tenants to sell, let, mortgage, or bequeath their land have increased. Whether the tenants’ use rights will in due course be transformed into de jure ownership rights remains to be seen.

A very striking feature of the Chinese rural scene in the 1980s was the rapid growth of the rural non-agricultural sector. The number of township (formerly commune), village (formerly brigade), cooperative, individual and private, rural non-agricultural enterprises grew very quickly in numbers, output and employment. By 1985, the total number of these enterprises was 12.2 million, with a labour force of 70 million, or 19 per cent of the total rural labour force, a gross output of about 17 per cent of national gross output and exports equal to about 5 per cent of national exports. They were a development of the small-scale rural industries initiated in the Maoist period, but differed from them in a number of respects. These included their wider range of activities, wide range of institutional forms, the position of their managers and their workers, their market position, and the scope they offered for legal economic activity outside the state or collective sectors. Their growth reflected, *inter alia*, the rise after 1978 in rural incomes (which created their market), the partial restoration of pre-1949 patterns of rural economic life, and their encouragement by the authorities.

The township and village enterprises (TVEs) enjoyed their golden age in the period 1978 to the mid 1990s, when they were the most dynamic part of the Chinese economy (Naughton 2007: chapter 12). TVE employment grew from 28 million in 1978 to 135 million in 1996. TVE value added grew from less than 6 per cent of GDP in 1978 to 26 per cent of GDP in 1996. The TVEs competed with state-owned enterprises on the domestic market and provided export-processing for Hong Kong and Chinese-diaspora entrepreneurs overseas. The TVEs utilised the abundant labour available in Chinese villages to produce goods and provide services that domestic and foreign customers wanted. Initially, they were mainly owned by villages or townships, which gave them political protection and economic advantages (e.g. in obtaining credit). From the mid 1990s they were increasingly privatised. A big advantage of the TVE sector was that no all-China uniform regulations for it were established, and different localities were largely free to choose the organisational forms, products and services to provide, and the links with the rest of the world, that suited them. As a result, the TVEs differed substantially in different regions. In addition, in some regions they were very numerous and in others sparse. Considered from the point of view of the traditional model of a socialist economy, they were a strange and system-alien element, but they were very successful, generating a large volume of output, exports, income and employment.

In their heyday they were an excellent example of ‘transition with Chinese characteristics’.

A significant sector of the TVEs were TVMs (township and village coal mines). These were a development of the commune and brigade coal mines of the Maoist period. Their output grew rapidly, both absolutely and as a share of total coal output. In absolute terms it grew rapidly in the four decades from 1970, and by 2009 their annual output exceeded a billion tonnes. As a share of output it peaked in the late 1990s at around 45 per cent. The growth of TVMs had six advantages: utilising resources that would otherwise have been left unutilised (e.g. coal deposits that were too small or scattered to interest a state-owned mine) producing an essential fuel (mainly for local purposes); providing employment and income; contributing to local development – in many areas they were an important source of local government revenue; providing competition for the state-owned coal mines; and reducing deforestation by providing the population with an alternative to local timber for heating and cooking (Wright 2012: 102–9). However, they also had a number of disadvantages, mainly concerning the environment and safety. They caused air and water pollution and subsidence. They provided poor working conditions, with high accident, disease and death rates. Safety was sacrificed to keep costs down. The competition they provided for the state-owned mines was based on cheap labour, the absence of safety measures and the absence of the social benefits (e.g. schools, hospitals, pensions) that state-owned mines provided. Accordingly, the image of the TVMs among the educated urban population was negative. However, as far as the overall balance of advantages and disadvantages is concerned, Wright (2012: 114) argued that ‘the balance between benefits and the admittedly high costs is closer than is generally suggested’. He pointed out that government attempts to close these mines to ‘protect the population from exploitation and pollution’ (and the state-owned mines from competition) were frequently met with substantial resistance from the alleged ‘victims’. ‘In 2005, in Shaoguan (Guangdong), migrant workers from Hunan formed squads to protect their mines against closure, even threatening to close the Beijing–Guangzhou railway line. The disturbances alarmed the central government, which sent a team to investigate’ (Wright 2012: 125).

A dramatic feature of post-Maoist agricultural policy was the rapid decline in poverty. It seems that, in 1978, using the official poverty line,

about 260 million (about 33 per cent) of China's rural population lived in absolute poverty. This had been reduced to 123 million (about 15 per cent of the rural population) in 1983, and by 2002 this figure had fallen to about 28 million (about 4 per cent of the rural population). This was a remarkable and very important achievement. It resulted from a relatively egalitarian distribution of the assets of the communes/collective farms during decollectivisation; price increases; arable output increases; agricultural diversification (e.g. to pigs, poultry and fish); and income earned from the TVEs. However, the official poverty line was not very high, and differences between rural and urban incomes remained a problem.

Did Chinese collectivisation enable the net transfer of resources from agriculture to industry to be increased? The question was examined by Lardy (1983). He argued that previous studies had underestimated the transfers from agriculture to industry because they ignored non-grain agricultural deliveries to the state, hidden inflation in the price of industrial products sold to agriculture, and the tax element in agricultural deliveries to the state; and treated investments in urban water supply, transport and state farms as if they were investments in collective agriculture. When all these factors were accounted for, he estimated that the state *had* extracted considerable resources from collective agriculture. Nevertheless, Ishikawa's calculations, which were not disputed by Lardy, showed an agricultural trade deficit for 1953 and 1956, and Lardy lacked the data to present analogous calculations for the 1960s and 1970s. Taking some of Lardy's points into account, Perkins and Yusuf (1984: chapter 2) estimated that the intersectoral financial flows were such that state industry had obtained substantial resources from agriculture, but that this source of finance had steadily *declined* in relative importance under collectivisation. According to Perkins and Yusuf, the main resource contribution of agriculture to accumulation came from its importance (and, in the 1950s, 1960s and 1970s, predominance) in exports. The differences between the various studies of this issue result from different definitions of the sectors (does 'agriculture' include only collective and private agriculture, or does it also include state farms, or rural non-agriculture?), different data and different methodologies. A monograph by Sheng (1993) stressed the importance of the prices in which the calculations are done. Since the state used low procurement prices to extract resources from agriculture, using those prices to measure intersectoral transfers gives the wrong impression. Furthermore, it is necessary to look not just at the intersectoral transfer of goods but also

that of services. Sheng concluded that in 1952–8 the state extracted resources from agriculture both by taxation and by the price mechanism, but the proportion extracted by tax was gradually reduced. After 1958 the state continued to extract resources from agriculture, but only via prices. On the other hand, there were financial transfers from non-agriculture to agriculture in 1956–83. In 1979–83 these transfers may well have compensated for a large part of the resources extracted from agriculture by the price mechanism. Unlike Ishikawa, Sheng found persistent resource transfers from agriculture to non-agriculture in 1952–83. Sheng also pointed out that the underpricing of agricultural goods reduced agricultural production, and thus hindered industrial growth. An important conclusion of Sheng was that while the state can transfer resources from agriculture to non-agriculture by underpricing agricultural products, this may well have adverse effects on economic growth, and require repeated increases in state purchasing prices to revive economic growth. Furthermore, an implicit conclusion was that the key factor in resource extraction was not collective agricultural production but state control over the marketing of agricultural products. Sheng concluded that, because of data problems, her study was only tentative, and that the most important conclusions were perhaps the unfavourable effects on economic growth and living standards of the policy of extracting resources from agriculture.²²

The relationship between agriculture and industry in Vietnam has been investigated by Nguyen (2006). Nguyen concluded that collectivisation had not enabled industry to obtain a surplus from agriculture. On the contrary, both collectivised and decollectivised agriculture received transfers from non-agriculture. The main economic effect of collectivisation in Vietnam seems to have been its adverse effects on production which slowed down the growth of the whole economy.

The reasons for these unexpected findings are threefold. First, a predatory procurement policy has an adverse effect on output. Secondly, socialised agricultural production has a greater capital and

²² Similarly, a Russian historian looking back at Soviet agricultural policy has observed that (Kornilov 2011: 100): ‘underestimation of the importance of agricultural production for the harmonious development of the national economy, and its utilisation only as a source of resources for redistribution to other sectors led to the degradation of agriculture and for the country to the loss of food independence’. (‘Loss of food independence’ means dependence on agricultural imports.)

materials intensity than private production. Thirdly, peasant and small-holder agriculture are efficient institutional forms under certain conditions.

A predatory procurement policy, often combined with attacks on rural-urban trading links, has an adverse effect on rural incomes, rural consumption and agricultural production. Hence, it becomes a serious brake on economic development. This is why it was (gradually) abandoned in the USSR after 1953, and why the terms of trade of the Chinese farm sector were improved by 38 per cent in 1977-81. Squeezing agriculture to produce 'surpluses' may simply impoverish the population and fail to benefit industry. This is because of its adverse effects on urban food consumption (and thus on labour availability and productivity), the substantial investments and material inputs required by agriculture, and the foreign exchange cost of agricultural imports. Agriculture and industry are not independent sectors but are interdependent. It is complete fantasy to suppose that agriculture produces 'surpluses', independent of the level of industrial inputs into agriculture, and of the supply of industrial consumer goods for the agricultural population, which are available for appropriation in the interests of accumulation.

Socialised agriculture typically requires more investment per unit of output than private agriculture. Private farmers tend to substitute their own relatively abundant labour for purchased inputs. On the other hand, socialised farms, faced with the difficulties of disciplining and motivating labour, the allocation by the state of investment resources independent of prospective returns, a soft budget constraint, and a state which sees in investment the solution to all economic problems, tend to substitute material inputs and investment for labour. Similarly, private farmers tend to use to the maximum possible extent self-produced agricultural inputs, whereas socialised farms with their large scale of operation and soft budget constraint tend to rely on externally purchased inputs of industrial or foreign origin. The relatively high materials intensity and investment intensity of socialised agriculture is well known from many Polish studies (Simatupang 1981). In Polish agriculture in 1975, the average value of fixed assets per fully employed person was four times greater in the socialised sector than in the private sector. Although gross output per hectare in the socialised sector was somewhat higher than in the private sector, net output was much lower. Similarly, in China between the mid 1960s and 1977 agriculture was

technically modernised (improved seeds, electrification, water control, artificial fertilisers), but the economic returns resulting from this were disappointing. To suppose that agriculture can be expected to provide a huge net outflow of goods for an industrialisation programme, and that this is a major rationale for collectivisation, is a fallacy. The socialisation of agriculture, Marxist–Leninist style, can be expected to lead to a greater materials and investment intensity of agriculture.

The efficiency of peasant and smallholder agriculture under certain conditions was explained above. It results from their tendency to apply labour till its marginal product is zero, and from the absence of economies of scale in many lines of agricultural production. The traditional Marxist–Leninist idea that efficient production and technical progress in agriculture always require large units is not true, and is refuted by the experience of Western Europe. Naturally, smallholder agriculture is not efficient under all circumstances. Where there are significant economies of scale, where the land–labour ratio is high, or where the capital required for efficient production is not available to smallholders, smallholder production is not efficient. Nor is it viable under conditions of extreme price volatility (without access to futures markets). The genuine economies of scale that do exist in some branches of agriculture and related activities (e.g. marketing) do not require state control of the sector. They can perfectly well be captured by genuine cooperatives of the type existing in Denmark and in China after decollectivisation.

Summary

Chinese agricultural institutions and policies in the Maoist period had much in common with Soviet institutions and policies in the Stalinist period. The aim – to ensure that agriculture contributed to rapid industrialisation and the development of the defence sector – was the same. The institutions and policies which were introduced attempted to achieve this by establishing state control over the output and work of the rural population. However, there was an important difference in the socio-political environment and in the policies pursued. Maoist policies were able to make use of a dense mass of rural cadres (and the high rural population density). This enabled China to establish state control over the grain market, and a high grain extraction rate, prior to collectivisation. The collectives and communes enabled the state also to control the

labour of the peasants. In addition, Maoist policies aimed to mobilise fully all the resources available in rural areas. The Maoist period in China saw a major famine and rates of growth of output and output/head which were modest by international standards. This lack of dynamism and the resulting low level of incomes and widespread poverty led to the abandonment of the Maoist variant of the coercive model in 1979–84.

The technocratic model

From a purely production point of view, the problems of the coercive model largely result from: the poor labour incentives; the very limited decision-making autonomy of farm management; and the limitations on the private sector, and on the non-agricultural activities of the farms. In the technocratic model, agriculture remained predominantly organised in state or collective farms, but a wage system analogous to that in state industry was introduced so as to provide labour incentives and labour discipline; the management of state and collective farms was given wide autonomy; and the private sector was encouraged, as was the non-agricultural activity of farms. Elements of the technocratic model were introduced throughout Eastern Europe in the 1970s and 1980s. In the mid 1980s, the country which perhaps came nearest to the model was Hungary.

In Hungary, peasant monetary incomes had already surpassed those of urban workers by 1966 and by 1971–2 they were about 10 per cent greater. Social benefits of the workers remained greater, and their hours of work shorter, so that their total remuneration package per hour worked remained better than that of the peasants. Nevertheless, the existence of substantial wages for farm labour meant that rural labour could be mobilised and disciplined by farm management, and, hence, that, unlike the situation in the early 1960s (and in the USSR in the 1970s and 1980s), it was not necessary to rely on students, workers from the towns and the army to bring in the harvest.

The autonomy of agricultural enterprises after 1968 (when the NEM was introduced) increased significantly compared with the nominal autonomy which collective farms enjoyed earlier. In 1957 compulsory deliveries from the farms to the state had been ‘abolished’ and agricultural procurement prices raised. The procurement ‘recommendations’ of local government bodies, however, based on breaking down state

plan requirements for particular areas, tended to carry the force of orders. The introduction of the NEM definitely marked a great expansion of the real autonomy of farms.

Planning continued to have a significant impact on agricultural enterprises, but the planning mechanism under the NEM differed markedly from the old 'direct' plans. Enterprises were still obliged to submit annual plans. The Central Planning Office continued to use the balance method to reconcile supply and demand *ex ante*. The difference from the old system was that, to overcome projected imbalances, the Central Planning Office relied not on issuing instructions to the enterprises, but on altering prices, credit policies, subsidies and wage regulations, so as to induce the enterprises to change their plans in a direction calculated to eliminate the anticipated imbalance. When revised measures of indirect control were being considered for agriculture, the managers of some of the major agricultural enterprises were consulted. Agricultural enterprises were able to buy inputs from a variety of different sources, in quantities and types of their own choice.

It would, however, be a mistake to suppose that Hungarian agriculture was left to market forces. Large subsidies, state-determined prices, bank credit or other official aid needed for investments, and long-term contracts remained important instruments of government regulation of agriculture. Nevertheless, despite these limitations, Hungarian agricultural enterprises *did* have extensive freedom in decision making, and used this to make the best of market opportunities.

An important feature of Hungarian agriculture under the NEM was the symbiosis of collective and private farming. Side by side with the large-scale collective and state farming sectors was a flourishing private sector. There were about 800,000 private plots of members of collective farms, and nearly 1,000,000 small auxiliary farms of non-agricultural or state farm employees. This private sector involved approximately half the national population. The relative contribution of the private sector to output fell sharply between 1960 and 1981 (from 55 per cent to 31 per cent) but remained significant. It was more important in the livestock sector than in the arable sector, but even in the latter it was very important for the production of fruit and vegetables. The collective and state farms provided facilities for the private sector and recognised its importance and permanence. It was officially recognised that the private sector made good use of resources (e.g. the labour of pensioners

and housewives; small buildings) which would otherwise not be available to the national economy, and whose replacement by the state would be expensive.

A feature of the NEM was the rapid growth of the ancillary (e.g. industrial, construction, service) activities of farms. Collective farms in particular showed great energy in exploiting market niches. By 1981, the ancillary activities of collective farms accounted for c.31 per cent of their gross output (excluding the private plots).

The achievements of this system in Hungary were substantial. A wide range of good-quality food products were available in that country and its per capita food production and consumption were high by international standards. It also became a net food exporter. Nevertheless, it continued to face a number of problems, such as: official attempts to restrict the scope of rural enterprise and rural incomes; the slow growth of combined input productivity; difficulties in obtaining access to remunerative export markets; and the stratified nature of the labour force. There was substantial inequality between management and labour.

From 1989 the institutions of Hungarian agriculture were substantially transformed as part of the shift to capitalism (Mészáros 1994).

Summary

The technocratic model was marked by wage labour; extensive autonomy for individual farms; a symbiosis of individual and collective or state farming; and encouragement for the non-agricultural activities of farms. It had favourable effects on agricultural output, but continued to experience a wide variety of problems, political, technical, commercial and social, and was ended with the transition to capitalism.

Harvest fluctuations

The fact that in general throughout history and throughout the world, weather and natural disasters (e.g. droughts, floods) have been major influences on the volume of agricultural output is well known. The availability of drought and moisture indices for the principal grain-growing regions of the FSU (Meshcherskaya and Blazhevich 1997) enables the link between drought and famine in Russia and the Soviet Union to be clearly seen. The famines of 1891–2, 1921–2, 1932–3 and

1946–7 were all associated with droughts. However, although the 1932–3 famine (which actually extended over 1931–4) was the worst in terms of the number of deaths, the drought of 1931 seems to have been a less severe drought than in 1891 or 1946, indicating the importance of policy and other non-drought factors in determining the number of deaths. This is confirmed by the data showing that the severe droughts of 1936 and 1981 did not cause famines.

In China, during the Maoist period, the three bad harvests of 1959–61 were officially blamed mainly on the weather. In the post-Mao period, they were predominantly blamed on the lack of incentives and policy errors. Similarly, in China in the 1980s, the good harvests of the decollectivisation period were officially ascribed to the reintroduction of incentives and successful policies, and the role of the weather was neglected.

Kueh (1984) argued that the freakishly low grain yields in China in 1960 and 1961 *were* primarily a result of bad weather (as the Maoists said at the time). Furthermore, the very good Chinese grain harvests of 1982 and 1983, which are often ascribed entirely to decollectivisation, appear to have been partly due to favourable weather (and the increase in procurement prices).

Although weather is very important in determining the size of harvests, so are policy and institutions. For example, an important cause of the decline in Chinese grain output in 1959 seems to have been the decline in area sown. This resulted from a misconceived official policy. (This was the so-called ‘three–three’ system. It involved allocating a third of the arable land to crops, a third to horticulture and a third to fallow.) Similarly, in the USSR in the 1930s (Wheatcroft, Davies and Cooper 1986: 290): ‘Ignorance by the authorities both of the agro-technical consequences of pressure for short-term increases in the area sown to grain, and of the need for careful crop rotation, undoubtedly had a harmful effect.’ These examples are illustrations of a general phenomenon which was established by Brada (1986) for Eastern Europe. Comparing private with socialised agriculture, socialised agriculture had greater annual fluctuations in crop output, and this was mainly caused by fluctuations in the area sown to crops. These fluctuations were caused by central instructions. This illustrates the proposition, argued earlier in this chapter, that an important problem of socialised agriculture was that it was vulnerable to the use of administrative methods by the authorities, and that in agriculture the use of administrative methods often causes inefficiencies.

Summary

Socialised arable production suffered from sharp year-to-year output fluctuations. These resulted from the interaction of the environment, economic policy and economic institutions. Year-to-year fluctuations in yield were primarily the result of weather fluctuations. Another major influence on year-to-year fluctuations in output were fluctuations in the sown area, which were largely policy-determined and destabilising under socialised agriculture. Socialised agriculture was vulnerable to destabilising policy interventions because it had an institutional structure which gave the centre the possibility of interfering with day-to-day farming decisions.

Mobilisation planning and agriculture

General Lagovskii (1961: 184–5) in his study of the relationship between (military) strategy and the economy, which was much influenced by Soviet experience in World War II, drew attention to the importance of agriculture in ensuring victory in wars:

For conducting a war agriculture is very important. It provides the armed forces and the population with food, and industry with various raw materials, and it is the main source of increasing the personnel of the army and fleet. On mobilisation agriculture provides a considerable quantity of tractors, lorries, emergency repair teams and other non-military items.

On mobilisation, the collective and state farms were expected to be a major (for much of Soviet history *the* major) source of manpower for the armed forces. In addition, until 1956 (by which time the armed forces were completely mechanised), Soviet collective and state farms were also obliged to maintain a planned number of horses so that in the event of war the horses could be mobilised for military-transport needs.

In order to ensure the food supplies of soldiers at the front, Lagovskii (1961: 179) recommended that vegetables and potatoes should be cultivated in areas in or near possible war zones. Moreover, as pointed out in Chapter 4, the excess supplies of mineral fertilisers delivered to the farms in the late Soviet period, and some of the inappropriate farm machinery delivered to them, are explained by the fact that the factories that produced them were primarily designed to produce military products on mobilisation. Hence, the fact that their output was not very suitable for agricultural purposes was a secondary consideration.

Table 6.7 *USSR state grain reserves, 1945–53*
(million tonnes at 1 July in each year)^a

Year	State grain reserves
1945	8.2
1946	10.1
1947	4.7 ^b
1948	10.5
1949	13.9
1950	16.0
1951	16.3
1952	17.3
1953	17.8

^a In the USSR 1 July (shortly before the new harvest) was conventionally taken as the date of the lowest level of grain stocks in each year.

^b 1947 was a famine year.

Source: Ellman (2000b: 608).

Furthermore, in the late Stalin era the USSR accumulated large grain reserves, partly so as to be ready for war (it also accumulated large reserves of other strategic materials). Data on the late Stalin period accumulation of grain stocks are set out in Table 6.7.

In 1950–3, had there been a bad harvest, the USSR would have had enough seed and food to ensure the continuity of agricultural production and the provisioning of the population. In addition, had the USSR been involved in a conventional ground war in 1950–3 (the period of the Korean War), its soldiers would have had enough bread to eat (subject to adequate transport being available, the stocks not being destroyed by enemy bombing, and efficient organisation).

Conclusion

Marxists have traditionally considered that peasant or smallholder farming is not a viable way of organising agriculture. Comparing capitalist with socialist agriculture, Marxists in the past argued that the latter has four important advantages. First, it prevents rural exploitation. Secondly, it allows the rational use of the available labour and other resources. Thirdly, it facilitates a rapid increase in the marketed output of

agriculture. Fourthly, it helps transfer resources for investment from agriculture to industry. The experience of collectivisation in various countries showed that it had a number of problems, e.g. the absence of some of the postulated economies of scale; managerial diseconomies of scale; inadequate labour incentives; the use of collective farms for taxation; inequality; and the use of administrative methods. It also showed that the third and fourth arguments for collectivisation require serious qualification. The treatment of agriculture simply as a source of resources available for redistribution to industry can have serious adverse effects on the welfare of the rural population, agricultural production, national economic growth and a country's international trade in agricultural products. In addition, experience showed that the first argument ignores the enormous inequalities of power and lack of social control over decisions taken, to which collectivisation normally leads. Furthermore, experience showed that the second argument is sometimes true, but often false. As a result of these experiences, collective agriculture has become deeply discredited throughout the world.

The problems of collectivised agriculture led to decollectivisation in Yugoslavia (1950), decollectivisation of that part of agriculture which had been collectivised in Poland (1956), decollectivisation in China (1979–84), and decollectivisation in the FSU (Former Soviet Union) and Eastern Europe as part of the post-Communist transition period.

The practice of collectivisation in various countries and in various periods differed very much. In the USSR, the coercive model of collectivist agriculture was successful in increasing the marketed output of basic wage goods, and the urban labour force. It also created, however, a quasi-feudal social system and a high-cost low-productivity agriculture. It was gradually abandoned after 1953 because of its adverse effect on output. In 1950–76, with different policies but retaining collective and state agriculture, Soviet per capita food consumption improved significantly. In China, the coercive model was abandoned in 1979–84 because of its failure to lead to a satisfactory rate of growth of output and incomes. The subsequent combination of family farming with higher prices and modern technology (such as improved varieties, chemical fertilisers and irrigation, i.e. the Green Revolution) led to a rapid growth of output and consumption and a massive reduction in poverty. In Hungary, the technocratic model, which was marked by a symbiosis of collective and private farming, led to a satisfactory development of output and consumption, but suffered from political,

technical, commercial and social problems, and was abandoned with the transition to capitalism.

Socialised arable production suffered from sharp year-to-year output fluctuations. These resulted from the interaction of the environment, economic policy and economic institutions.

The planning of agriculture took account of the needs of defence and of mobilisation planning. Collectivisation was intended to facilitate the rapid industrialisation needed to prevent defeat in future wars. Plans for the agricultural sector took account of the role agriculture would play on mobilisation.

SUGGESTIONS FOR FURTHER READING

General

- B. Moore Jr, *Social origins of dictatorship and democracy* (Boston, 1966).
- S. Ishikawa, *Economic development in Asian perspective* (Tokyo, 1967).
- M. Karshenas, *Industrialization and agricultural surplus: A comparative study of economic development in Asia* (Oxford, 1995).
- F. Bray, *The rice economies* (Oxford, 1986).
- R. Nurkse, *Problems of capital formation in underdeveloped countries* (Oxford, 1953).
- R. K. Sah and J. E. Stiglitz, 'The economics of price scissors', *American Economic Review* 74(1), (1984), 125–38.
- R. K. Sah and J. E. Stiglitz, 'Price scissors and the structure of the economy', *Quarterly Journal of Economics* 102(1) (1987), 109–34.
- K. E. Wädekin, *Agrarian policies in Communist Europe* (Totowa, NJ, 1982).
- J. Brada and K. Wädekin (eds.), *Socialist agriculture in transition* (Boulder, CO, 1988).
- P. Nolan, *The political economy of collective farms* (Cambridge, 1988).
- M. Spoor, 'Agrarian reform and transition: What can we learn from "the east"?', *Journal of Peasant Studies* 39(1) (2012), 175–94.
- World Bank, *World Bank Development Report 2008: Agriculture for development* (Washington, DC, 2007).

Marxist theory

- A. Hussain and K. Tribe, *Marxism and the agrarian question* (London, 1983).
- A. Hussain and K. Tribe (eds.), *Paths of development in capitalist agriculture* (London, 1984).
- K. Wittfogel, 'Communist and non-Communist agrarian systems', in W. A. Douglas Jackson (ed.), *Agrarian policies and problems in Communist and non-Communist countries* (Seattle, 1971), pp. 3–60.

M. Ellman, 'Agricultural productivity under socialism', *World Development* 9(9–10) (1981), 979–89.

Zhou Qiren and Du Ying, 'A study on specialized households', in Wang Guichen, Zhou Qiren *et al.*, *Smashing the communal pot* (Beijing, 1985), pp. 83–125.

USSR

P. Gregory, 'The Soviet agricultural surplus: A retrospective', *Europe–Asia Studies* 61(4), (2009), 669–83.

L. Viola, *Peasant rebels under Stalin* (Oxford, 1996).

Zh. A. Medvedev, *Soviet agriculture* (London, 1987).

B. Rumer, 'The "second" agriculture in the USSR', *Soviet Studies* 33(4) (1981), 560–72.

M. V. Meshcherskaya and V. G. Blazhevich, 'The drought and excessive moisture indices in historical perspective in the principal grain-producing regions of the former Soviet Union', *Journal of Climate* 10(10) (1997), 2670–82.

N. M. Dronin and E. G. Bellinger, *Climate dependence and food problems in Russia, 1900–1990* (Budapest, 2005).

Eastern Europe

Joint Economic Committee US Congress, *East European economies: Slow growth in the 1980s*, vol. I: 383–445 (Washington, DC, 1986).

N. Swain, *Collective farms which work?* (Cambridge, 1985).

K. Hartford, 'Hungarian agriculture: A model for the socialist world?' *World Development* 13(1) (1985), 123–50.

C. Csaki, 'Economic management and organization of Hungarian agriculture', *Journal of Comparative Economics* 7(3) (1983), 317–28.

China

B. Naughton, *The Chinese economy* (Cambridge, MA, 2007) chapters 10, 11 and 12.

R. Ash, 'Squeezing the peasants', *China Quarterly* 188 (2006), 959–98.

F. Zhong, 'The contribution of diversification to the growth and sustainability of Chinese agriculture', in M. Spoor *et al.*, *Dragons with clay feet?* (Lanham, MD, 2007), pp. 83–92.

C. Bramall, 'Chinese land reform in long-run perspective and the wider East Asian context', *Journal of Agrarian Change* 4(1 and 2) (2004), 107–41.

D. T. Yang, 'China's agricultural crisis and famine of 1959–1961: A survey and comparison to Soviet famines', *Comparative Economic Studies* 50 (1) (2008), 1–29.

- Y. Sheng, *Intersectoral resource flows and China's economic development* (Basingstoke and New York, 1993).
- C. Ó Gráda, 'Great Leap, Great Famine: A review essay', *Population and Development Review* 39(2) (2013), 333–46.
- S. Fan, 'Production and productivity growth in Chinese agriculture: new measurement and evidence', *Food Policy* 22(3) (1997), 213–28.
- K. R. Walker, *Food grain consumption and procurement in China* (Cambridge, 1984).
- E. B. Vermeer, *Water conservancy and irrigation in China* (Leiden, 1977).
- Luo Hanxian, *Economic change in rural China* (Beijing, 1985).

Vietnam

- E. E. Moise, *Land reform in China and Vietnam* (Chapel Hill, NC, 1983).
- A. J. Fforde, *The agrarian question in North Vietnam* (New York, 1989).
- D. A. T. Nguyen, *Agricultural surplus and industrialization in Vietnam since the country's reunification* (PhD thesis, ISS, The Hague, 2006).
- P. L. Pingall and V-T. Xuan, 'Decollectivization and rice productivity growth', *Economic Development and Cultural Change* 40(4) (1992), 697–718.

Korea

- J. Halliday, 'The North Korean model: Gaps and questions', *World Development* 9(9–10) (1981), 889–905.
- D. Goodkind and L. West, 'The North Korean famine and its demographic impact', *Population and Development Review* 27(2) (2001), 219–38.
- S. Haggard and M. Noland, *Famine in North Korea: Markets, aid and reform* (New York, 2007).

7 | *Planning labour and incomes*

The reason [forestry] workers failed to meet scientifically determined yields and targets is that in the forest, as on the farm and at sea, they remained underpaid, mistreated, and unmotivated to improve their unhappy lot. They realized that in comfy offices in Moscow sat cartographers, compilers, and codifiers who had no clue what life was like in a dump truck, on a tractor, or on a boat. The lumberjacks would have told the Moscow bureaucrats that their slovenly performance was linked not only to the low level of mechanization but also to their miserable conditions: the dorms in which they lived were spartan and filthy, with broken windows and no shades. The construction of modest housing for the lumbermen lagged considerably. The workers dropped their clothes on the floor at the end of the day, drank vodka, and fell asleep exhausted. Mice and cockroaches loved these new homes, especially because the clothes were rarely washed; of course there were no laundry facilities. Dining halls were breeding grounds for intestinal disorders, if the workers could stomach the long lines that stretched far from the door and into the mud.

Josephson (2002: 118–19)

Those in urban employment are in a way a privileged elite, into which many a peasant's child would wish to climb. They work and live in more secure and comfortable conditions than the agricultural population and in general receive much higher cash remuneration, as well as labour insurance and medical benefits; this applies more particularly to the regular workers in modern enterprises who are an elite within an elite.

Donnithorne (1967: 182)

Objectives

The main objective of labour planning in the state-socialist countries was to facilitate the fulfilment and overfulfilment of the national economic plan by ensuring that the requisite types of labour were available in the right quantities and places and performed the necessary work.

This involved developing the abilities of the labour force, so as to produce the right types of labour, and ensuring both a rational regional distribution of employment and the efficient utilisation of labour. Each of these objectives will be considered in turn.

Development of the abilities of the labour force

Long before human capital theories were developed in the USA, Soviet economists had analysed the economic importance of education and training. In a well-known paper, Strumilin (1924) argued that expenditure on education was a very high-yielding investment. Strumilin (1931: 598) estimated that for every rouble spent on schooling, the annual national income of the country would increase by at least six roubles. The benefits to the economy of a literate and skilled workforce became commonplace early in the history of the state-socialist countries, which had very extensive education and training programmes. This was organised both in special institutions (e.g. schools, specialised institutes) and also on-the-job. Despite the stress on on-the-job training, formal education was not neglected.

International comparisons of formal education in socialist and capitalist countries at, and shortly after, the end of the socialist system showed some interesting and important differences (Eatwell *et al.* 2000: 62):

For example, international science and maths tests on nine and thirteen year olds in 1991 showed that Hungary, Slovenia and the Soviet Union scored very well on awareness of facts and on application of facts, but much less well on the use of knowledge in unanticipated circumstances ... The Third International Maths and Science Study (TIMSS) held in 1994–95, showed that by international standards the level of maths and science knowledge of 13–14 year olds in central and eastern Europe was good. Children in the Czech Republic, Slovakia, Slovenia, Bulgaria, Hungary and Russia achieved mean scores in maths and sciences that were above the OECD average and ahead of children in the UK, Germany and the US. On the other hand, the 1994 International Adult Literacy Study (IALS), which considered adults rather than children, and focussed on ‘functional literacy’ which gauges the ability to perform tasks encountered in everyday life, including in the workplace, showed that adults in Poland (the only transition country included) scored on average well below the 12 Western countries covered by the study. Poland also had an unusually wide range of scores in functional literacy ...

Education policy in the state-socialist countries was based on manpower planning, and aimed to meet the demands of the national economy for particular skills. This gave rise to three problems. First, many of the training programmes aimed to produce narrow specialists who had difficulty adjusting when the need of the economy changed. Secondly, estimating future demands for particular types of labour under conditions of continuous technical progress was not easy. Thirdly, lower-level teachers and administrators were under pressure to pass all, or virtually all, the students in any year, so as to avoid underfulfilling the plan. This ensured that a proportion of those with diplomas were in fact not qualified for their supposed specialisms.

An important aspect of labour policy under state socialism was urban participation rates, which were much higher than those in capitalist countries. This largely resulted from the fact that a much higher proportion of women were employed. Some relevant data are set out in Table 7.1.

Looked at from the demand side, this greater employment of women mainly reflected the almost unlimited demand for labour by the state in a shortage economy. Looked at from the supply side, it reflected the difficulty of keeping a family on one income. Looked at from an

Table 7.1 Activity rate of women aged 40–44: international comparison (%)

	1950	1960	1970	1980	1985
<i>Socialist countries</i>					
Bulgaria	78.6	83.4	88.5	92.5	93.3
Czechoslovakia	52.3	67.3	79.9	91.3	92.4
GDR	61.9	72.7	79.1	83.6	86.1
Hungary	29.0	51.8	69.4	83.2	84.7
Poland	66.4	69.1	79.5	83.2	84.7
Romania	75.8	76.4	79.5	83.1	85.1
USSR	66.8	77.9	93.2	96.9	96.8
<i>North European countries</i>	30.9	39.9	53.8	69.9	71.1
<i>West European countries</i>	34.5	39.5	46.4	55.1	55.6
<i>South European countries</i>	22.4	25.3	29.7	35.7	37.1

Source: Kornai (1992: 207).

ideological perspective, it reflected the view that in a socialist economy all able-bodied people of working age should work for the state.

In addition to its obvious positive features, this emancipation of women had a number of negative features. For example, Soviet women, by and large, had to work much harder than men. This was partly because they had both paid employment and unpaid domestic labour. In addition, Soviet women did much of the heavy manual work. Furthermore, women in the USSR primarily held the lower-level posts. For example, Soviet medicine was primarily a feminine profession but most of the senior positions in it were held by men. Moreover, household chores were a heavier burden than was normal under capitalism because of lack of investment and low levels of employment in urban infrastructure, distribution and services such as laundries. In the hard years of Soviet industrialisation, 1929–50, Soviet women were a particularly disadvantaged proletarian stratum.

Despite equal pay legislation, throughout the world employed women earn on average less than men. This is so in the advanced capitalist countries, in the less developed countries, and was also so in the economically advanced Central European state-socialist countries. It was also so in the USSR. There were no official Soviet statistics of the relative earnings of men and women (because of the awkward picture they would have shown), but a variety of sample surveys were undertaken and reported in the specialist Soviet literature (A. McAuley 1981: chapter 2). These all showed earnings inequalities similar to those in Western Europe. A thorough post-Soviet study of the role of gender in the labour market (Katz 2001), based on a sample in one Soviet industrial city, found that in 1989 the average monthly pay of women in that city was about 66 per cent of that of men and their average hourly pay about 73 per cent (women worked fewer hours than men). The former figure was about equal to that in the UK, higher than in the US and Canada, but substantially less than in Australia, Denmark, Norway, Sweden and Germany. The latter figure improved the relative position of the USSR.

Although women occupied a variety of interesting and satisfying jobs in the USSR, most Soviet women were engaged in unskilled work, low-level jobs and traditional ‘feminine’ occupations (such as teaching and medicine). Soviet women worked primarily to support a family (this was normally impossible on only one income), and their jobs were often monotonous and boring. As living standards under state

socialism advanced, there was a tendency to improve the situation by measures which gave women more choice between paid employment and looking after their children (e.g. improved family allowances and extended maternity leave), and also by providing more part-time work. The latter enabled women to combine paid employment with domestic labour without having to accept the onerous double burden that full-time employment enforced. The re-education of men, although officially supported, was a slow process. In fact, Soviet women had to deal with an additional problem resulting from widespread heavy drinking by men. This often led to domestic violence directed against women.

Similarly in China an important result of the rule of the Communist Party has been an increase in the female participation rate. According to Maddison (2007: 71), citing a large survey of rural China in 1929–33, at that time female literacy was only 1.2 per cent (compared with 30.3 per cent for men), and they formed only 20 per cent of the farm labour force. In the People's Republic both these figures rose sharply. By 1995 women formed 47 per cent of the rural labour force. In addition, the People's Republic introduced legislation to improve the position of women in society (such as the 1950 Marriage Law which banned forced marriage, bigamy, concubinage and dowries; and the Labour Law which legislated for equal pay and paid pregnancy leave). However, for various reasons, notably that sons were expected to support their parents in their old age, sons were preferred to daughters, especially in rural areas. This, combined with the one-child policy enforced from 1979, stimulated widespread gender-selective abortion, despite its illegality. In 2005 the gender ratio at birth seems to have reached the very high level of 118 boys to 100 girls. The authorities have attempted to deal with this problem by introducing a pension system in rural areas, and this seems to have had a positive effect in reducing the very unequal gender ratio at birth (Ebenstein and Leung 2010).

An important aspect of Soviet labour policy was hours of work below those in capitalist countries at a similar level of development. The eight-hour day, a classic objective of the labour movement, was decreed immediately after the Bolshevik coup (1917). In 1929 and 1930 the work week was further reduced to *c.*41 hours a week. In 1940 the standard work week was increased to 48 hours (six eight-hour days). Under Khrushchev the standard work week was reduced to *c.*41 hours a

week (although overtime also took place). In addition, a decree of 1967 announced a transition to a five-day week, and this was generally achieved in 1970. Furthermore, the retirement age in the USSR was below that in many capitalist countries at 60 for men and 55 for women, with still earlier retirement ages for those who worked in certain occupations and regions (although many people continued working past the official retirement age).

Similarly, in China retirement age in state enterprises was normally 60 for men and 55 for women. As far as hours of work in China were concerned, workers in the state industrial sector were, from 1956, supposed normally to work eight hours a day, six days a week. Longer hours were in fact often worked, especially towards the end of plan periods. In many periods, workers were in addition obliged to participate in political activities.

When comparing hours of work, and more generally the utilisation of time, between systems it is necessary to take account not only of hours worked in the state sector, but also of both system-related differences in time needed for everyday chores (e.g. shopping) and hours worked by state employees in the non-state sector. Pryor (1977) showed that there were significant differences between the time devoted to shopping in the two systems. In state-socialist countries, e.g. Poland, extensive queues caused shopping time to be considerably greater than in comparable capitalist countries. Hungarian studies showed that, in Hungary in the 1970s, about 17 per cent of the total manhours available were spent in the informal sector (Kornai 1985: 103).

Workers in state-socialist countries were often better off from the standpoint of social security (in old age or illness) than workers in capitalist countries at comparable stages of development. In Eastern Europe and the USSR this resulted from the existence of earnings-related old age pensions and sickness pay, free medical care and the absence of cyclical unemployment. In China it resulted partly from the same factors and partly from the fact that the rural population was organised in villages which provided basic security for their members.

Proper intersystem comparisons of industrial diseases, accidents and deaths is not yet possible because of the lack of adequate data. However, for the USSR there are some data on work accidents, and the data on fatal work accidents are set out in Table 7.2.

Table 7.2 *Number of deaths in work accidents in the USSR*

Year	Total ^a	Coal-mining industry ^b	
		Absolute numbers	as % of number employed
1944	7,050	n.a.	n.a.
1945	7,386	1,950	0.2%
1946	7,899	1,989	0.2%
1947	8,515	2,169	n.a.
1948	9,222	2,330	n.a.
1951	9,208	1,720	0.14%
1952	9,259	1,608	0.12%
1953	9,437	1,570	0.11%
1954	10,360	1,913 ^c	0.13%
1955	10,619	1,993 ^c	0.09%/0.12% ^d
1956	10,056	1,927 ^c	0.08%
1980	21,700 ^e	n.a.	n.a.
1981	20,500 ^e	n.a.	n.a.
1982	20,500 ^e	n.a.	n.a.
1983	19,200 ^e	n.a.	n.a.
1984	19,200 ^e	n.a.	n.a.
1985	16,700	n.a.	n.a.
1986	15,200	n.a.	n.a.
1987	14,600	n.a.	n.a.
1988	14,400	n.a.	n.a.
1989	14,500	n.a.	n.a.
1990	14,100	n.a.	n.a.

^a For the years up to and including 1956 these are (mainly) trade union figures, and hence probably exclude collective farmers and prisoners. The big increase in absolute numbers between 1944 and 1990 reflects the big increase in total employment. Measured relatively to total employment, the death rate fell in this period.

^b These figures are for *accidents* and hence naturally exclude deaths from work-related *diseases* such as pneumoconiosis (black lung) and silicosis.

^c For these years there are figures for the Ministry of the Coal Industry, the Ministry for the Construction of Facilities for the Coal Mining Industry, and for the trade union of the coal-mining industry. The figures in the table are the sum of the first two.

^d The reason for two different figures is not clear. It may be the result of counting people at different times of the year (the number of employees increased during the year) or a result of differences between the number of miners and the total number employed in the coal-mining industry, or a combination of these two factors.

^e These figures are approximations. The source used does not give absolute figures for these years. However, it does give rates per 100,000 employees. For 1985 it gives both a rate and an absolute number. This enables approximate figures for 1980 to 1984 to be calculated.

Sources: For 1944–56 the Russian state archive (GARF, f.R5451), for 1980–9 the LABORSTA dataset of the ILO (accessed 31 July 2013) and for 1990 the annual statistical handbook for that year – *Narodnoe khozyaistvo SSSR v 1990g* (1991: 251).

The figures in Table 7.2 are high by the standards of the advanced capitalist countries in the same years.¹ The main reasons for the poor Soviet record in industrial safety were the priority given to production, the inadequate attention to health and safety, the secrecy concerning industrial accidents and the absence of independent trade unions.² In post-Soviet Russia there was a rapid and sustained fall in the number of fatal work accidents (this partly resulted from the decline in the number of employees). In 2011 the number of officially recorded fatal work accidents in Russia was only 23 per cent of the number in Russia in the last Soviet year (1991), and only 15 per cent of the number in 1980.³

As far as China is concerned, data on fatalities in coal mining have been assembled and analysed by Wright (2012: chapters 7 and 8, and appendix). It seems that, in the long run, the annual rate of deaths per million tonnes mined in Chinese coal mining has declined very significantly. In 1925–8, in eighteen major mines, the annual death rate was more than thirty-three per million tonnes mined. In small mines in Henan province in the mid 1930s the death rate was more than a hundred per million tonnes mined. The biggest mining disaster in world history occurred in 1942 in Benxihu (Liaoning), then under Japanese occupation, when an explosion killed up to 1,800 miners. In the PRC (according to official statistics which understate fatalities) the annual death rate per million tonnes mined was about nine both in 1953–4 and in 1978, with sharp fluctuations in the intervening period but no trend.⁴ In the reform and capitalist periods there seems to have

¹ In 1985–90 the number of Soviet fatal work injuries varied between 4.0 and 4.9 times the number of US ones. Even allowing for differences in the total working population and its sectoral composition, these were significant differences. In the same period the fatal accident rate in the USSR was about six times that in the UK, but only about 150 per cent of that in West Germany. The lesser difference between the USSR and West Germany in fatal work accidents than between the USSR and the USA and UK possibly reflects a smaller difference between the USSR and West Germany in the sectoral composition of employment. It may also reflect measurement differences between countries.

² The state-socialist countries did have trade unions, but as the Russian sociologists Gordon and Klopov (2000: 148) observed of the Soviet ones: ‘they were an organic part of the state-socialist power apparatus, its – if one may express it this way – social and charitable service’.

³ See *Rossiiskii statisticheskii ezhegodnik 1999* (1999: 137) and *Rossiia v tsifrakh. 2012* (2012: 115).

⁴ The accuracy of the data for the pre-1978 period is highly uncertain (Wright 2012: 211).

been a marked downward trend, with a fatality rate of only about three per million tonnes mined in 2010. This reduction was a major achievement. However, because of the huge volume of coal mined, the absolute number of deaths remained high (about 100,000 were officially recorded in 1992–2007). Furthermore, in 1992–2009 average Chinese coal-mining fatalities per million tonnes mined remained substantially higher than they were not only in high-income countries such as the USA and UK (in 1963–79) but also in India. The fatality rate in China at the end of the twentieth century and beginning of the twenty-first century was similar to that in Britain in the second half of the nineteenth century. It was much better than in Japan before, during and immediately after World War II, when the death rate was more than twenty per million tonnes mined. It seems that annual average deaths from pneumoconiosis in China were about three times the number of accident deaths. The high death rate in coal mining in China in the socialist period partly reflected the emphasis on production, rather than safety. For example, the explosion at the Datong mine in May 1960 that killed 684 miners took place in a mine that had an official capacity of 90,000 tonnes p.a., had produced 120,000 tonnes in 1959, and had a target of 152,000 tonnes for 1960. Those people who questioned the feasibility of this target, or who drew attention to safety dangers, were denounced as ‘right deviationists’. In the reform period there was more attention by the state to safety, with considerable investment in mechanisation and safety measures in the state-owned mines, and the death *rate* (but not the total number of deaths) declined. Official attention to mine safety seems to have intensified in the capitalist period. In the first decade of the twenty-first century, in coal-mining areas, safety seems to have become an important factor in assessing local officials and in their career progression (Wright 2012: 194). Wen Jiabao (by training a geologist), who was Prime Minister in 2003–12, devoted particular attention to safety in the coal mines.

During the GLF there were extensive deaths among labourers on the numerous water control projects. This resulted from the nationwide famine and the use of violence against hungry workers who were unable or unwilling to work for nothing or for starvation rations. In Gushi county, Henan Province, alone ‘more than seventeen thousand people starved to death on three major irrigation projects. Many laborers also died of starvation or physical abuse while working on the Communist Canal in northern Henan’ (J. Yang 2012: 73).

The physical conditions of work in state-socialist countries were often poor, especially for manual workers. Workplaces were frequently too hot or too noisy, and dirty. For manual workers work was often heavy physical work, wearisome and exhausting. Lavatories and canteens often had a poor standard of hygiene.

An important feature of employment in the traditional model was job security. The prospect of losing one's job because of the vagaries of the economic and financial situation, which is a permanent reality and a major source of anxiety under capitalism, normally did not exist in the traditional model. By and large, all workers in the traditional model enjoyed the kind of job security enjoyed by civil servants under capitalism. In the capitalist countries the expansion of state employment substantially improved conditions of employment (e.g. job security, pensions, promotion prospects, etc.). Similarly, the spread of state employment to the whole economy in the traditional model led to the virtually universal spread of these favourable employment conditions.

Full employment

Communist parties mainly came to power in predominantly rural countries where most of the population was engaged in low-productivity agriculture. As a result, they initially experienced large-scale unemployment resulting from the influx of peasants to the towns. The USSR in the 1920s, China in the 1950s and Vietnam in the 1970s and 1980s all experienced large-scale unemployment for this reason. Both the USSR and China dealt with the problem by the use of administrative measures. In the USSR from 1933 to the late 1970s, the Soviet authorities prevented the excess rural population causing urban unemployment by administrative controls over the outflow of labour from the villages (depriving villagers of internal passports). This reflected, and enhanced, the position of the rural population as second-class citizens. In China urban unemployment resulting from the influx of peasants into the towns was a serious problem in the 1950s. The authorities dealt with it by the household registration system (Whyte 1977) and 'sending down' or *xiangxiang* and *xiafang* (Bernstein 1977) people from the towns to the countryside. Household registration books were legally required of all residents in Chinese cities. An application to be registered in a city could be refused by the relevant officials, and normally was in the case of arrivals from the countryside. Sending

down meant that people, generally recent arrivals, were rounded up and sent back to the countryside. This had the great advantage of saving on urban food demand, and hence on the marketed output of agriculture. Once the unemployed were back in their villages, the responsibility for feeding them rested primarily on themselves and their family. Sending down was also used, after the victory of state socialism in South Vietnam, Laos and Kampuchea, to reduce the urban populations in those countries. In Kampuchea it was used on a particularly large scale. The use of sending down enabled China to avoid the massive disguised unemployment that characterises the urban agglomerations and shanty towns of many Third World countries. In China during the Maoist period sending down appears to have been fairly successful in reducing urban unemployment from the high figures of the early 1950s. By 1971, the authorities claimed that full employment had been reached. This 'success' was based on the use of coercion to enforce sending down on school leavers. From the early 1960s, more than a million school leavers were sent to rural areas each year. By the end of 1977, a total of about 17 million had been so treated. Of these, about half had managed to return home. This left about 7.6 million still in rural areas. Of these, nearly all (about 6.5 million) were able to return home in 1978–9 as a result of the lesser reliance on coercion by the post-Mao leadership.⁵ This led to a surge in urban unemployment (Naughton 1995: 89–91). At the end of 1978, the official unemployment rate in Shanghai was 8.7 per cent and in Tianjin 7.8 per cent. This was initially mainly dealt with by encouraging early retirement and creating jobs in the state sector. In addition, there was a rapid growth in 'labour service companies' (Naughton 1995: 117). These were normally created by state enterprises or municipal governments, combined training and temporary work, and created collective enterprises primarily engaged in trade and catering. This provided both employment and useful services for the population. The number of labour service company employees rose from 1.52 million in 1979 to 9.8 million in 1986. These activities were outside the state planning system but were not private enterprises. Municipalities played an important role in their creation and management. Furthermore, self-employment was permitted and by the mid

⁵ These are official figures. Allowing also for about 2 million sent to rural areas before the Cultural Revolution and a million who went with their parents, the total was probably 20 million (not 17 million). See Shapiro (2001: 241).

1980s self-employment had become widespread. As Chen Jian (1987: 57) observed of self-employment: 'Without adding to the economic burden of the state, it can provide jobs for part of the youths awaiting job assignments. It also provides more shops, food and beverages, and services for the inhabitants. It is advantageous all round.'

Apart from the influx of peasants, the state-socialist countries normally experienced permanent urban full employment. This was a fundamental qualitative difference from the situation in the capitalist countries, where the search for work and the threat of unemployment are permanent problems for all, especially the young, the unskilled and ethnic minorities.

How was permanent full employment realised? How were the socialist countries able to eliminate the scourge of unemployment which the capitalist countries have been unable to do? Two, somewhat different, explanations have been given. On the one hand, Kornai (1992: chapter 10) argued that full employment was not the result of a policy aimed at ensuring full employment, but essentially a by-product of a system that generated shortages of all inputs, of which labour is just one, albeit a very important one. On the other hand, Granick (1987) argued that it was a result of policies which reflected acceptance of a right of all workers to employment. He formulated the Job Rights – Overfull Employment (JROE) hypothesis, according to which, at any rate in the 1960s–80s in the USSR, the maintenance of JROE was a goal (or a constraint in achieving the goal/s) of the planners. Granick also stated his hunch that the JROE also applied to the USSR in the 1930s and to three East European countries in the 1970s.⁶ According to this hypothesis, the authorities aimed to ensure that no one would have to endure the humiliation of idleness. As to why the Soviet authorities attached such a high priority to job creation and job security, Granick was agnostic. (Other writers ascribed it to a de facto socio-political contract between the government and the working class.)

Kornai was clearly right about the origins of full employment. When urban unemployment (of existing urban residents) in the USSR disappeared in 1930, that was a surprise to the leadership. It had not been anticipated in the First Five-Year Plan. However, the leadership accepted it and treated it as an advantage of the planned economy (an

⁶ For the application to Hungary (for which it was first formulated), see Granick (1973).

understandable reaction in the light both of socialist ideas and of the Great Depression). However, Kornai also recognised that once full employment had emerged and been treated in official propaganda as a major system-related achievement, it became a right of the workers which the leadership neither wished, nor was able, to reverse. This was close to saying, along with Granick, that full employment had become a goal of the leadership. It differed from the Granick approach mainly by focussing on the properties of the traditional system rather than the objective function of the leadership.

The success of the USSR in increasing employment and absorbing the inflow of workers from agriculture, households and education can be seen from Table 7.3.

Three interesting conclusions can be drawn from Table 7.3. First, the USSR was very successful in expanding state employment. In the thirty-nine years 1951–90, state employment increased by about 180 per cent. Secondly, there was an absence of cyclical unemployment in the USSR. State employment increased in every year up to 1987, and total employment (including ‘cooperatives’ and self-employed) in every year up to 1990. Thirdly, there was a continuous increase in employment in publicly provided services (education and medical care) and scientific research (a large part of which was military research).

It should be noted that the employment relationship in the state-socialist countries differed radically from that which was normal in the private sector of capitalist countries. Workers could not easily be dismissed, and workers without jobs could expect jobs to be found for them even if their marginal output in them was low or non-existent. This means that part of the ‘employment’ in the state-socialist world corresponded to public-sector job creation schemes and unemployment benefits in the advanced capitalist countries. According to Mikul'skii (1983: 243), the traditional estimate of superfluous industrial employment in the USSR was 15–20 per cent. This estimate, he suggested, was inaccurate and may have been too low. In China, as part of the reform process, beginning in 1988 enterprises were encouraged to carry out ‘reoptimization’ of the labour force (Naughton 1995: 211–12). This involved checking in each enterprise or workshop how many of the existing workers were really needed. Of the workers covered by ‘reoptimization’ 6 per cent were declared redundant. New jobs were found for nearly all of them. In addition, in the late 1980s many state-owned firms sent some of their redundant workers on leave (Naughton

Table 7.3 *State employment in the USSR (millions)*

Year	Total ^a	Industry	Agriculture ^b	Construction	Transport	Education and culture	Trade	Medical	Science
1951	40.4	15.3	3.4	3.3	4.1	3.3	3.4	2.1	0.7
1956	51.9	19.7	6.0	4.5	5.2	4.1	3.8	2.7	1.1
1961	65.9	23.8	7.5	6.5	6.5	5.2	5.0	3.7	2.0
1966	79.7	28.5	8.9	7.5	7.4	6.9	6.3	4.4	2.7
1971	92.8	32.0	9.5	9.5	8.2	8.3	7.8	5.2	3.3
1976	104.2	34.8	10.8	10.7	9.4	9.3	9.0	5.9	3.9
1981	114.0	37.2	11.8	11.3	10.5	10.6	9.8	6.3	4.5
1985	117.5	38.1	12.2	11.5	10.9	11.3	10.0	6.5	4.6
1990	112.9 ^c	35.3	10.9	12.1	8.6	12.8	9.8	7.6	4.0

^aThe total is greater than the sum of the subheadings, since some sectors (e.g. forestry, communications) have been omitted.

^bThis column excludes non-state (i.e. collective farm) employment in agriculture. This (together with the policy of expanding the state sector of agriculture) explains why it grows over time.

^cThe decline in state employment in 1990 reflected the growth of the 'cooperative' and self-employed sectors.

Source: Soviet official statistics.

1995: 240–1). They would receive some income from their employer (typically 60 per cent of their basic pay), and were free to engage in other income-generating activities such as petty trade. By the end of 1989, as a result of the drastic macroeconomic stabilisation adopted in 1989 (inflation in 1988 was 21 per cent) officially registered urban unemployment was 2.6 per cent and, in addition, large numbers were temporarily laid-off or on short-time (Naughton 1995: 282).

Regional employment

Regional employment in the state-socialist countries had socio-political, economic and strategic aspects. First, it was an aspect of their nationalities policy. This was – in principle – concerned not with ensuring purely ‘formal’ political freedom for formerly subject nationalities, but with their rapid social and economic development. Secondly, it was – in principle – concerned with the efficient utilisation of natural resources. Hence, Soviet regional policy combined large-scale industrial investment in densely populated formerly backward regions, such as Central Asia, with large-scale natural resource development in sparsely populated Siberia. The expansion of urban employment opportunities in Soviet Central Asia during the period of Soviet power and the development of the West Siberian oilfield were both major achievements of Soviet power. Similarly, the increase in the employment of Roma in the formal sector was an important achievement in Eastern Europe.

One would expect that in a market economy the labour force would have to adjust to the availability of jobs, but that in a socialist planned economy the supply of jobs would be adjusted to the availability of labour. In an empirical study, Pryor (1973: 290–7) corroborated this expectation. He found that regional differences in the proportion of the population engaged in mining and manufacturing showed an approximately equal tendency to diminish in the post-World War II period in the state-socialist and capitalist countries, but that in the former this was associated with jobs moving to where the people were, and in the latter with the reverse. There are problems with the data used in this exercise, but this is an interesting, if provisional, finding.

Soviet regional policy had a number of problems. First, in the Stalin era, the development of natural resources in sparsely populated areas was frequently undertaken by prisoners in concentration camps. For example, the mining of nickel and other non-ferrous metals at what is

now the town of Norilsk (a town in eastern Siberia north of the Arctic Circle) began as part of the Gulag. (Besides producing non-ferrous metals it was, and is, also one of the world's biggest producers of pollution.) Secondly, it was often very inefficient. For example, the Baikal–Amur railway (BAM) in the Soviet Far East was very costly, and the immediate economic returns on it very low. Its construction began as a Gulag project. Its first section was built in the 1930s by Gulag prisoners and its Far Eastern section was first built in 1944–6 using Soviet prisoners and German and Japanese prisoners of war. Mortality among these prisoners was high. After Stalin's death the unfinished railway was abandoned. It seems to have been revived in the Brezhnev era mainly for military reasons (to provide a railway to the Soviet Far East further away from the Chinese border than the Trans-Siberian railway, which would be safe for use in the event of a war with China). Thirdly, regional relations within the USSR retained some of the colonial features inherited from the Russian Empire. After the collapse of the USSR, there was much criticism in Central Asia and by international observers of how the USSR's Central Asian policies had devoted excessive attention to the production of raw materials, such as cotton, for Russian industry (and had negative environmental consequences, e.g. the desiccation of the Aral Sea).

A striking feature of socialist planning was the lesser degree of urban agglomeration than in the rest of the world. State-socialist countries had fewer large cities than would have been expected if their urban development had been unplanned. One measure of this concerned primacy, that is the fraction of the national urban population living in the largest urban area. Deichman and Henderson (2000: 5) showed that in 1975–95 this was significantly lower in Eastern Europe and Central Asia than in the rest of the world. They also showed (*ibid.*: 6) that Poland's elasticity of city rank with respect to size was less than forecast by Zipf's law (although it did increase significantly in 1950–90).⁷ This means that cities' (population) sizes were further apart than is normal in the rest of the world. Similarly, Clayton and Richardson (1989: 162) found that major Soviet cities were smaller (i.e. had a smaller population) than predicted by Zipf's law. Hill and Gaddy (2003: 17–22)

⁷ Zipf's law is the empirical regularity that if cities are ranked by population, and the log of the ranking is plotted against the log of the population, the resulting points form a straight line with a slope of -1 .

confirmed this violation of Zipf's law for post-Soviet Russia in 2002. It seems that both these phenomena (low primacy and violation of Zipf's law) were the result of policy in the socialist planning period. This policy had both positive and negative effects. On the one hand, it enabled the state-socialist countries to avoid the urban sprawl which characterises many other countries, e.g. the vast slums in many developing countries. On the other hand, it limited freedom of choice in where to live and required rigorous police implementation to maintain. Furthermore, it also seems to have had a negative effect on economic development in the post-socialist period, since it reduced external economies from the concentration of economic activities (Kontorovich 2006).

The violation of Zipf's law was considered by the Soviet leaders as a positive factor since it increased survivability in the event of a major war. As Khrushchev (1960: 35) explained:

Of course in the event of a new world war all countries will suffer. We too will experience big misfortunes and we too will have many victims. However, we will survive because our territory is huge and the population less concentrated in large industrial centres than in many other countries. The West will suffer much more.

Rational utilisation of labour

The traditional model was generally good at attaining and maintaining full employment. It was much less good, however, at attaining the rational use of labour. It led to a *volume* of employment that compared favourably with that under capitalism, but a level of *productivity* that compared adversely with that under capitalism. The systemic reasons for this were sixfold. First, the enterprises were primarily concerned with the fulfilment of output plans and expansion and not with profit making. Hence incentives for cost reduction were weak. Additional workers were normally useful. They made plan fulfilment easier. They also formed an insurance against plan increases or the diversion of part of the labour force to public duties (e.g. help with the harvest). Furthermore, by increasing the total wage bill they might have had favourable effects on the income of the management or of the enterprise. Secondly, under permanent full employment, workers had a strong bargaining position. When enterprises were competing against each other for extra workers, the law and custom prevented management easily sacking unsatisfactory workers, and workers could easily find

alternative employment elsewhere, slack work was unlikely to be penalised. Thirdly, low wages had an adverse effect on labour incentives. Low real wages resulted in worker dissatisfaction, and had an adverse effect on labour productivity. The link between satisfaction, or otherwise, with living standards and labour effort was expressed in popular jokes in all the state-socialist countries. There was a familiar Soviet saying: 'As long as the government pretends that we live well, we will pretend that we work well'; and a Polish saying: 'The government pretends to pay us – we pretend to work.' Fourthly, the supply system (i.e. the rationing of material inputs) produced numerous work interruptions as a result of shortages of necessary components. Fifthly, the inattention to health and safety issues (noise, temperature, ventilation and safety) also reduced productivity. Sixthly, the absence of counter-vailing power had adverse effects. Lacking trade unions independent of the state, and collective bargaining, normally lacking employment possibilities outside the state sector, and sometimes lacking the possibility of legally changing their jobs (e.g. China in the Maoist period; the USSR in 1940–56), workers had little control over their work (although, as under capitalism, they did have some control over the pace of work on the shop floor) and were very vulnerable to arbitrary measures by the bosses. This naturally affected the quality of their work negatively.

The need to raise productivity received continuous attention in all the state-socialist countries. The chief methods used to attain this goal were investment and training, discipline, foreign trade, hardening the budget constraint, and transforming the enterprises from economic and social organisations into purely economic organisations.

For raising efficiency, the state-socialist countries relied mainly on investment and training. The investment and training largely took the form of copying the technology and division of labour prevalent in the capitalist world. Labour productivity in the USSR was always considerably below that of the most advanced capitalist countries. Hence great stress was always placed in the USSR on utilising the progressive aspects of Western methods for raising labour productivity. In his well-known 1918 pamphlet *The immediate tasks of the Soviet government* (1965: 259), Lenin wrote that the Taylor system of scientific management:

like all capitalist progress, is a combination of the refined brutality of bourgeois exploitation and a number of the greatest scientific achievements in the field of analysing mechanical motions during work, the elimination of

superfluous and awkward motions, the elaboration of correct methods of work, the introduction of the best system of accounting and control etc. The Soviet Republic must at all costs adopt all that is valuable in the achievements of science and technology in this field. The possibility of building socialism depends exactly upon our success in combining Soviet power and Soviet organisation of administration with the up to date achievements of capitalism. We must organise in Russia the study and teaching of the Taylor system and systematically try it out and adapt it to our needs.

This attitude persisted down to the collapse of the USSR, and explained the admiration Soviet officials, planners and economists had for the large Western corporations, which they regarded as marvels of the scientific organisation of labour.⁸ It also explained the concessions offered by the Soviet government to Western firms in the 1920s, the import of technology by all the state-socialist countries in the 1970s, the R&D cooperation agreements between Western firms and the USSR, the East–West industrial cooperation agreements, and the East–West joint ventures. With the Western technology came the Western organisation of labour without the independent worker organisations that exist in the West. M. Dido (1971), the Secretary of the CGIL, Italy's Communist-Party-dominated labour federation, discussed this question with specific reference to the huge car plant built by Fiat at Tol'yatti in the USSR.

The entire project has been carried out on the basis of plans prepared and supervised by Fiat technicians ... not only the technical equipment but also the organisation of work is of the Fiat type ... it is impossible to distinguish the administrative organisation ... whether with regard to working conditions or the absolute priority given to productivity from that of the Turin plant ... At Tol'yatti ... they have adopted not only Western machines but also Western systems of organisation. To have a minimum of equilibrium, however, such a system presupposes at the very least the existence of a strong trade union force. But at the present moment such a force does not exist, neither in the Soviet Union nor in the other countries of Eastern Europe.⁹

⁸ The standard Soviet phrase for the efficient utilisation of labour (*nauchnaya organizatsiya truda*, literally 'the scientific organisation of labour') is a literal translation of *l'organisation scientifique du travail*, the French term for Taylorism. In France the phrase *l'organisation rationnelle du travail* was adopted when the reaction against Taylorism set in, but in the USSR the original term, which had Lenin's support, was retained.

⁹ The translation of this passage is from *Critique* 4 (1975): 23.

When asked what disturbed him most about the plant at Tol'yatti, Dido replied that it was hearing the Turin bosses say that 'The trade union demands are unjustified, since even the Soviet leaders pay no attention to them at Tol'yatti.' The USSR and the countries which followed it, *en principe* postponed any attempt to transform the organisation and division of labour till the higher stage of communism, and in practice postponed it till the Greek kalends.

The irony of the endorsement of Taylorism by a 'proletarian government' which had 'abolished the exploitation of man by man' did not go entirely unnoticed in the state-socialist countries. In the USSR in 1923–4 there took place a very interesting debate on this subject (Bailes 1977). The Taylorist position was defended by the Central Labour Institute, founded in 1920, and its leader A. K. Gastev. It was criticised by 'The Moscow Group of Communists Actively Interested in Scientific Management'. In traditional Marxist fashion the latter criticised Taylorism as having the 'aim of transforming the living person into an unreasoning and stupid instrument without any general qualifications or sufficient all-round development'. The views of the Moscow Group were criticised by the head of the trade unions and a number of prominent Party figures. At a conference held in 1924 to resolve this dispute, the Central Labour Institute was victorious. Its assumptions and approach were recognised as standards for the whole national economy. The use of piecework as an incentive for greater productivity was an important feature of work in the CMEA countries. Disputes about piecework norms were endemic, sometimes with explosive political consequences, as in Poznan in 1956. Perhaps the supreme triumph of Soviet Taylorism was the Stakhanov movement (which began in 1935), which was a state-organised rate-busting campaign on an unparalleled scale. One of its organisers was A. K. Gastev.

Some observers suggested that steps towards a fundamental transformation of the labour process took place in China in 1966–76. According to Bettelheim, the transformation that occurred during the Cultural Revolution signified, *inter alia*, that a struggle was being waged to overcome the division between intellectual and manual labour. Similarly, a new type of technical progress was supposedly taking place in China during the Cultural Revolution (Bettelheim 1974: 78–89). Richman (1969: 258–9) confirmed that the division of labour in China in the 1960s was often less pronounced in Chinese than in 'normal' factories. He suggested, however, that this was simply a

rational response to the extreme shortage of qualified specialists in a backward country. He also considered that it resulted in serious inefficiencies, for example in some of the larger and more complex firms that he visited. Richman (1969: 325–6 and 252–3) also confirmed the great stress on technical progress resulting from innovations introduced by the workers themselves in China in the 1960s. He suggested, however, that the reason this was worthwhile was because of the low technical level of Chinese industry. In future, he argued, science-based innovations were likely to become more important. In addition, he considered that stress on the virtues of ‘worker engineers’ and ‘peasant scientists’ at the expense of scientific research and development had serious costs for China (non-utilisation of qualified people, waste of resources in irrational projects). The waste of time at endless political meetings was stressed by a Soviet scientist who worked in China during the period of close Soviet–Chinese cooperation (Klochko 1964).¹⁰ The main source of technical progress in Chinese industry in the socialist-planning period was, of course, the import of technology from more advanced countries, from the USSR in the First Five-Year Plan, and from the leading capitalist countries in later years. This technology, naturally, was associated with the capitalist division of labour. In 1977 China endorsed the Leninist view of Taylorism, and in 1980, the Chinese State Council decided to introduce piecework in all possible industrial and mining enterprises.

Low labour discipline was a permanent problem for the rulers of state-socialist countries. As far as the utilisation of time was concerned, a well-known feature of the labour process in the USSR compared, for example, with the USA, Germany or Switzerland, was its lower efficiency. Work was often interrupted by shortages of materials, breakdown of machines and breaks for smoking or drinking. Shortages were a characteristic feature of the system, and naturally had a negative effect

¹⁰ According to Klochko (1964: 80): ‘The primary waste in the organisation of Chinese science was in the wasted time of the people engaged in scientific work, rather than in any failure to utilize a piece of equipment or in carelessness with books. Beautiful, well-equipped labs stood deserted for days on end; thousands of technical books in excellent libraries remained closed while potential readers were at meetings, making confessions, or tilling the soil. This poor country, which had invested immense sums of hard currency between 1955 and 1958 to construct libraries and laboratories, had failed to use these capital investments. Trained personnel were distracted from their duties, and even the equipment was allowed to deteriorate through lack of proper maintenance.’

on production. Repeated attempts to raise labour discipline had little lasting effect. From time to time the rulers attempted to raise it by increased use of repression and criminal sanctions (as under Stalin) or discipline drives (as under Andropov) or anti-alcohol campaigns (as under Gorbachev). These had some positive effects but were not permanent solutions. They dealt with symptoms rather than causes.

Another common method of raising labour productivity was by the import of technology and collaboration with the multinationals.

As pointed out above, an important reason for low labour productivity was the economic environment in which enterprises found themselves and the behaviour that this generated. In the traditional model, financial results and profits were of only limited importance for enterprises. Even when profit was an important plan index, a loss-making enterprise could usually rely on its supervising ministry to improve its performance by subsidies, price increases, tax reductions, plan alterations, or other manoeuvres. Hence, compared with the situation of a capitalist enterprise, for whom bankruptcy is an ever present danger, socialist enterprises had a soft budget constraint. Financial results and efficiency indices were less important to them than plan fulfilment in physical terms and responsiveness to official campaigns. If they did get into financial trouble it was normally taken care of by accounting tricks of the supervisory or financial organisations. This situation was the reason why an important aspect of economic reform was attempts to harden the budget constraint. In this way it was hoped to motivate enterprises to overcome difficulties by raising efficiency, rather than by appealing to superiors for subsidies and other assistance. For this reason, creating the possibility of socialist bankruptcy, and a few actual bankruptcies, in countries such as Hungary, China and the USSR in the 1980s, were intended as factors which would generate higher labour productivity. Making bankruptcy a normal economic phenomenon, however, turned out to be very difficult in view of the paternalistic relationship between the owner of the means of production, i.e. the state, and the enterprises it owned and their employees. Enterprises in state-socialist countries were not just economic units. Like large Japanese enterprises they functioned as mini welfare states, providing housing, holidays, food and other benefits to their employees. Furthermore, attractive national welfare programmes were often absent (for example, in the traditional model there was no right to unemployment benefit for the frictionally – or other – unemployed). This made the dismissal of redundant workers exceptionally painful, and was one of the

factors hampering it, and thus reducing labour productivity. Therefore, one aspect of economic reform (and of the transition to capitalism) was to nationalise welfare programmes and reduce the social role of enterprises. It was hoped in this way to make labour mobility less costly to the individuals concerned. Hence unemployment benefits under certain conditions were introduced in Hungary, China and the USSR in the 1980s.

An interesting example of high labour productivity under state socialism concerns Soviet military industry during the Soviet–German war of 1941–5. According to one estimate (Khanin 2003a: 43) labour productivity (per person not per hour) in Soviet military industry in 1943 exceeded that in Germany and the UK by a wide margin and was 90 per cent of that in the USA. Even allowing for the usual problems of international comparisons and possible differences in hours worked per person, these figures are very impressive. They testify to the importance of a combination of factors. These were: the efficiency of state-organised mass production; the effectiveness of mobilisation planning; the effort put in by the workers – frequently women or teenagers – to produce the weapons necessary to defend their families and their homeland against barbarians; and the harsh labour discipline enforced during the war.¹¹ The relative importance of these factors is currently unknown.

Full employment and the reform process

In Yugoslavia, the departure from the traditional model led to the re-emergence of unemployment, which remained a normal phenomenon and a serious social and economic problem down to the break-up of that country. In Vietnam in the socialist planning period, full employment was never attained, even with the traditional model. In the USSR and Eastern Europe, although the introduction of unemployment was sometimes explicitly advocated by economists and managers in order to raise labour discipline and labour productivity, it did not in fact emerge prior to the transition to capitalism. The main reason for this seems to have been that the behaviour of the enterprises characteristic of the

¹¹ In 1941–5, 7,700,000 sentences were handed down by courts and military tribunals for breaches of labour discipline (Papkov 2012: 420). However, not all of them were for industrial workers – 680,000 of them were for collective farmers sentenced under a 1942 decree (Papkov 2012: 412).

traditional model was not changed significantly by the first steps of the reform process. Another reason was the continued recognition by the authorities at all levels of the right to work. The fear of unemployment was often used by opponents of economic reform and may have played some part in the cautious approach generally taken by the authorities to economic reform. The wish to maintain full employment naturally limited the extent to which it was possible to introduce strict financial discipline with bankruptcy as a last resort (this was known as the 'full employment constraint on economic reform'). In China, the end of the traditional model in the early 1990s coincided with the downsizing or closing of a number of loss-making factories, leading to unemployment among their former workers. According to Nolan (2008: 147), 40–50 million people lost their jobs due to reform in state-owned enterprises. At the same time, there was a rapid increase in total employment resulting from rapid economic growth. This new employment was qualitatively different from the former state employment. Because of the existence of unlimited supplies of labour (Lewis 1954), the new capitalist sector was in a position to hire workers at low wages, without employment security or social security, and without trade unions to protect them from harsh working conditions, delays in wage payment, or arbitrary decisions by the bosses.

Methods

The three chief methods of labour planning were administrative, economic and moral.

Administrative methods

In the CMEA countries, it was customary to distinguish between 'administrative' and 'economic' methods of plan implementation. By 'administrative' methods was meant instructions from the top of an administrative hierarchy followed by obedience from below. This is the pattern normal in all armies and civil bureaucracies. Administrative methods were used very extensively in the state-socialist countries. By 'economic' methods was meant the use of financial sticks and carrots. This is the method normal in market economies.

During the Civil War the Bolsheviks relied heavily on administrative methods, and their leaders and intellectuals, building on the foundations

laid by Marx and Kautsky, developed the ideology of relying on administrative methods. As far as the founders of Marxism–Leninism are concerned, it is well known that, according to Marx and Engels, commodity production will cease under socialism because society will organise work directly, without the mediation of the market. It will deliberately allocate the available forces of production according to plan, in accordance with the needs of society. Does it follow from this that the system of organising production in a socialist economy demands a strict central allocation of means of production, labour and consumer goods in physical form? As Brus (1972: 19) has noted:

If we ignore their reluctance to scientifically describe the future socialist economy and draw conclusions from scattered incomplete statements, the answer would be ‘yes’. At any rate in their work it is comparatively easy to find corroborating formulations and hard to find contradictory statements – for instance one’s foreseeing the introduction of market forms. Moreover, from the point of view of ideology and its influence on practice, the ultimate important fact is what the socialist movement *understood* Marx to have said. And of this there is no doubt.

In the works of the late nineteenth-century Social Democrats, the idea that a socialist economy is a natural, non-market, economy is clear, explicit and repeated.

In *The economics of the transition period* Bukharin explained that the transition from capitalism to socialism in the field of labour meant the liquidation of the labour market and its replacement by the allocation of labour by the state. The same thought was expressed by Trotsky in his well-known speech at the Ninth Party Congress (1920).

A much-discussed use of administrative methods, about which much has been learned since the collapse of the USSR, was the creation and utilisation in the USSR in 1930–56 of a network of forced labour institutions, the Gulag Archipelago. This partial reintroduction of serfdom was largely a result of the decision to adopt a coercive model of the role of agriculture in economic development (see Chapter 6). Many of the first inhabitants of the camps were peasants deported from their villages at the time of collectivisation.¹² From the point of view of

¹² Many peasants were deported, not to the Gulag Archipelago, but to ‘special settlements’. These were remote areas, where they had to support themselves. They did not have walls and watch towers, and allowed their inhabitants to live in family groups, but their inhabitants were confined to them, and supervised by the

numbers employed, agriculture in the USSR in the 1930s was by far the most important branch of the economy. Reliance on coercion in various construction and mining enterprises was simply a small generalisation, from a quantitative point of view, of the principle, reliance on coercion, on which the main branch of the economy was organised.

Herdling labour into camps had the advantage of saving on wage costs per worker, and reduced demand for scarce food, but against this must be set the cost of the guards, officials, punitive apparatus etc., as well as the low productivity of the labour. As a result of the latter and the resulting difficulties that the camps had in producing enough to cover their costs, an experiment to raise labour productivity by introducing a wage system was decreed in one camp in 1948 and in 1950 this was extended to the whole Gulag. Gulag officials regarded the outcome as very positive. In 1951 the planning department of the Ministry of Internal Affairs (the ministry then responsible for the Gulag) sent a report to the Deputy Minister about the results of introducing the wage system. This stated, *inter alia* (Borodkin 2008: 148):

Now, with the new system of payment and the predominance of individual piecework, each prisoner receives a wage which directly depends on the results of his own work. Therefore the prisoners, who have an interest in increasing their wages, request the management to eliminate problems that limit production . . . The receipt of wages and the possibility of buying extra food and clothes has a favourable effect on the physical condition of the prisoners. All this has led to an improvement in the productivity of the prisoners and an improvement in the financial position of the camps – the main aims of the introduction of the wage system for prisoners.

This was a striking endorsement of the advantages of economic methods compared with administrative methods.¹³

The use of forced labour camps was copied in China. In May 1951, during the repression of that period, Mao (1977b: 55) pointed out that large numbers of prisoners under suspended death sentences formed a useful labour force ‘which will be conducive to our national construction’.

state security organs. See Viola (2007) or Krasil’nikov *et al.* (2010) for further information.

¹³ Probably this quotation overstates the positive results of the introduction of a wage system for prisoners. In the USSR each new government policy was always initially positively evaluated by officials. However, it does seem that, on the whole, the results really were positive (Borodkin 2008: 152).

A widespread system of camps for 'reform through labour' and 'education through labour' was established in China. Official information about it is classified, but some information has been unearthed by diligent researchers (e.g. Seymour and Anderson 1998). As a result, the total number of camps and of prisoners, their mortality and morbidity, the average length of stay, the relative proportion of criminals and politicals, and the fluctuations in these numbers over time, are uncertain and controversial. What is certain is that these camps (in the 1990s often renamed prisons and in 2013 officially abolished) engaged in farming, mining and manufacturing; that conditions of work were poor, hours of work long, living conditions primitive, beatings and other cruel punishments common, and corruption widespread; and that there were significant differences between provinces. The official stress was on production, but as in the Gulag, low labour productivity and the high costs of the guards and officials resulted in frequent failure to attain the official goal that they be non-loss-making (or if possible profitable). The abolition of these camps in 2013 (if it is not just a change of name) could be a significant step on the road from Maoism to capitalism.

Another example of the use of administrative methods in the USSR was the allocation of new graduates by the state for the first three years of their working lives. A further example of the use of administrative methods concerns the temporary residents of closed cities. According to Granick (1975: 68) 'it seems reasonable to estimate that something over 10% of Romania's total labour force in industry, mining and construction is subject to *de facto* job direction which is imposed upon temporary residents of closed cities'. In Bulgaria in the early 1970s there was a revived stress on administrative methods. A decree of 1972 and a supplementary decree of 1973 reintroduced virtual tying of workers to their place of work. It was forbidden to employ workers who had left their previous job voluntarily or who had been dismissed on disciplinary grounds. This revived emphasis on administrative methods was part of the reaction against economic reform in the CMEA countries in the early 1970s.

When the Chinese planned economy was established during the First Five-Year Plan (1953–7) one of the things copied from the USSR was the use of economic methods to allocate the labour force. One of the features of the Maoist strategy of development adopted in China from 1958 onwards was the increased use of administrative methods of labour allocation. The three key institutions which replaced the

labour market were the employment system (i.e. the system for allocating employees), the personnel system (i.e. the procedures governing personnel matters) and the household registration system (i.e. the regulations governing residence and ration entitlements). Under the employment system, a worker's first job was obtained neither by application to an enterprise nor as a result of choice by an enterprise. The worker was allocated to his/her first job via the assignment office of the school he/she had left, or, less frequently, the assignment office of the area where he/she lived. A worker's first job normally became a lifelong career. According to the personnel system, an employee had no right to apply for another job without the permission of the enterprise where the employee was already working. Such permission was normally denied. Resignation without the approval of one's current employer was considered to be unacceptable. The personnel system was similar to that in the USSR in 1940–56 or in the large-firm sector of Japan during its long post-war boom. The household registration system, which was closely linked with the rationing system and corresponded to some extent to the registration and (internal) passport system in the USSR, hindered physical movement from place to place.

In the 1980s there was much discussion in China of the need to liberalise the allocation of labour. Traditional patterns, however, remained deep-rooted, and within the state sector administrative methods remained of great importance. One change in China that really was implemented before the end of socialist planning, and did have a big impact, was the dramatic relaxation of the rationing system after 1980. This, together with the expansion of the non-state sector, greatly facilitated the big increase in population mobility that took place in the 1980s.

An important administrative method for implementing the labour plan in all the state-socialist countries was keeping files on workers to determine their fitness for particular jobs and material rewards. In the USSR, from 1938, each worker had a labour book, an official document recording their name, age, education, trade, information about his/her work, transfers from one enterprise to another (with reasons) and details of bonuses and awards. Enterprises were supposed to engage workers and employees (other than those entering employment for the first time) only on presentation of their labour books, which the enterprise then kept till the worker was discharged. In addition, the Party committees responsible for filling all important posts kept files on actual

and possible holders of such posts, and the state security organs also kept personnel files which played an important role in appointments and dismissals. In the state-socialist countries, there was a large body of informers collecting information about other people's views and behaviour for these files. The accumulation of information in the hands of the authorities naturally played a major role in determining behaviour in a one-employer state.

Economic methods

The use of economic methods, i.e. of pay, was very common in the state-socialist countries. Material incentives played a very big role in Soviet (and Chinese) regional policy, where pay was much higher, and the number of years' work required for a pension was much lower, in inhospitable regions than in the main cities. Similarly, in the USSR and China, the relative pay of workers in the so-called non-productive sector of the economy (e.g. distribution, education and medical care) was traditionally low, so as to direct labour towards the so-called productive sector (e.g. industry, construction and mining).

Administrative and economic methods were often used in combination. A very important example was the system of national job evaluation (see below). Similarly, in the CMEA countries, the quantitative planning of the demand for labour, and of the output of various kinds of graduates, was normally combined with the planning of relative pay levels so as to attract the appropriate volume and quality of labour.

The ways in which the planners manipulated relative pay, and its effects, were investigated by Hamermesh and Portes (1972). They examined Hungarian data for 1951–67. They found that the planners did raise the relative pay of workers in sectors with the fastest rates of growth of output in order to attract labour to them. They also found that this policy was apparently ineffective, since the supply of labour did not appear very responsive to relative earnings. The main influences on the supply of labour appeared to be the outflow from agriculture and the availability of jobs. The conclusion reached by Hamermesh and Portes (1972: 256) was that: 'the planners were mistaken. They erred in believing that changes in wages of the magnitude they used would affect labour supply.' It is ironical that the mistake of the planners was to take seriously a traditional idea of neoclassical economics: the importance of relative pay in allocating labour.

The use of economic methods was naturally more important in countries where labour was permitted to change jobs, e.g. the USSR from 1956 and the East European countries, than in countries with direction of labour, e.g. China in the Maoist period.

Moral methods

The use of moral incentives was very widespread in all state-socialist countries. In all of them great efforts were devoted during the educational process to internalising the value of hard work for the good of society. The noticeboard with pictures of honoured workers who had worked particularly well, the brigades of communist labour who had pledged themselves to feats of socialist competition, the public meetings at which good workers sat on the platform, the distribution of honours such as 'hero of socialist labour', were all familiar features of state-socialist life. Hoffman (1967: 119) noted that:

So far as non-material incentives are concerned, many of the forms evolved in the Soviet Union have also been used in China; and yet certain techniques have been pushed to greater lengths by the CCP. For example, the mechanism of 'criticism and self-criticism' has been generally employed to a much greater extent than in the USSR. Generally it seems that the Chinese have relied more on non-material incentives and persuasion than the Russians. This reliance on non-material spurs was undoubtedly a factor of great moment in the mis-carriage of the Great Leap Forward.

A problem with moral methods is that, in fact, they were often administrative methods with a veneer of non-compulsion. For example, in the USSR, the Communist Saturday, when workers worked on some Saturdays, supposedly voluntarily, to help in the construction of communism, was actually simply a day's compulsory unpaid work.

How did worker morale and motivation in the state-socialist countries compare with that in capitalist countries? A study of the experience of US firms with industrial cooperation agreements with Poland and Romania (Hayden 1976) reported that in these two countries (ibid.: 108): 'worker morale and initiative [were] close to non-existent'. The account of how the US capitalist corporation Clark Equipment Company, as part of its technology transfer agreement with the Polish concern Bumar Union for the manufacture of heavy-duty planetary reduction axles, had to instil pride of achievement into the indifferent

Polish workers by appealing to their patriotism (*ibid.*: 49) is deeply ironical. If these accounts are typical, they would seem to indicate that, at any rate in Poland and Romania, worker motivation, morale and pride in work under state socialism compared unfavourably with that under capitalism.

It seems that, in general, workers in the state-socialist countries continued to regard themselves as wage workers rather than as co-owners of the means of production. Hence there continued to exist such phenomena as worker attempts to limit the work content of a day's labour power,¹⁴ e.g. conflict over piecework norms. These phenomena were startling and unexpected from a Marxist–Leninist point of view. What explained them? There appear to be five chief factors.

First, the failure of the attempt to replace material incentives by moral incentives. As Kolganov (2012: 578) noted:

The Soviet system attempted to create a mechanism of economic motivation which would be an alternative to the material–monetary one. However, this attempt took place in conditions, where the potential of material–monetary motivation was far from exhausted, and the material–monetary needs of the workers were not met. Furthermore, the hyperbureaucratic system placed obstacles in the way of an alternative motivation based on the principle of the free realisation of the creative abilities of people. Under these conditions for the majority of the population material–monetary motivation was desirable, but in many respects not achieved.

Secondly, the adverse effect of state socialism on personal consumption (see Chapter 8). As the Chinese economist Xue Muqiao (1981: 52) observed: 'If the leaders of the state and enterprises do not concern themselves with the livelihood of the workers and fail to improve it steadily as production grows, the workers will not concern themselves with the interests of the enterprises and the state, but treat them with the mentality of wage labourers.'

Thirdly, the lack of control by workers over their working lives. This did not arise from the malevolence of this or that official, but had a definite theoretical explanation. Experience showed that state ownership, by itself, was not sufficient to transform the relations of production. As the Soviet sociologist Arutiunian (1973: 109–10) noted with

¹⁴ This is what Taylor called 'soldiering' and what used to be known in UK management terminology as 'restrictive practices'.

special reference to Soviet collective farms, though the argument was perfectly general:

It is necessary to face the essence of the phenomenon of *collectivisation of property*. It is not a once and for all affair. Rather, it is a *long process*. From the legal or, more precisely, the political act of collectivisation to actual collectivisation there is a whole period, perhaps even epoch, of historical development that only begins with the immediate act of collectivisation. The revolution in our country eliminated the order under which property was separated from work and created the conditions for their unification. But such a unification is possible only through a long evolution and a series of intermediate socio-economic forms. The criterion for the unification of the means of production and labour power, materialised and living labour, is the degree of the realisation by the producer himself of the functions of management or, in other words, of the disposition of collectivised property ... Empirical studies, however, show that in practice this mechanism [i.e. the formal constitution of a collective farm] by itself does not ensure sufficiently effective participation of each person in the disposition of property.

Acceptance of this thesis undermines any expectation of a higher work morale under state socialism than under capitalism. Furthermore, given that new relations of production were not fully established, the old means of defending worker interests retained much of their usefulness. Workers under state socialism, however, lacked the independent worker organisations normal under capitalism, and from this point of view their position was worse than under capitalism. As A. Hegedus (Prime Minister of Hungary in 1955–6) noted (Hegedus 1976: 88), during the Stalin period:

The principal function of the trade unions became to bring about the realisation of state plans. Work competitions, managed from above and largely manipulated, became their principal contribution to the fulfilment of production plans; their management of this competition, together with the support they gave to the fixing of norms, alienated the working masses from the trade unions and, it may be said, robbed the latter completely of their character as a movement.

This situation largely continued till the end of socialist planning (and in China even after it).¹⁵

¹⁵ An independent trade union movement did emerge in Poland. It was temporarily crushed by the imposition of martial law in December 1981, but came to power in Poland in 1989.

Fourthly, the huge and all-pervading gulf between the words and slogans of the authorities and economic, social and political reality. An example was given above, the Communist Saturday. A compulsory day's unpaid work was treated in the media as if the whole labour force was selflessly working for the common good.

Fifthly, the difficulty of making individual gains by individual efforts in the first economy (i.e. the legal state sector). The state-socialist countries had full employment and job security, a relatively egalitarian income distribution, wage differentials that did not depend very much on the economic performance of enterprises, and an economic system in which it was not legitimate work but other factors (access to closed distribution,¹⁶ illicit earnings, or political decisions) which were decisive for generating real income differences. In the CMEA countries, as in the capitalist world, prolonged overfulfilment of piecework norms was likely to lead, not to prolonged high earnings, but to an upward revision of the norms. Hence, it is not surprising that individual effort in the first economy was conspicuous by its absence. Many observers have suggested that individual effort was typically greater in Yugoslav factories than in CMEA factories. Granick (1975: 426–7) suggested that the reason for this was the strong relationship between the success of individual enterprises and the incomes of their workforces, under the Yugoslav system of self-management.

An additional issue in Eastern Europe (e.g. Poland and Romania) was resentment at working under a system that was unwanted and imposed from outside.

It seems that the Marxist project of overcoming alienation, i.e. of overcoming a situation in which the worker is not interested in his/her work (which forms only a small part of the whole production process and over which he/she has no control) and its outcome (the use values that are created) but only in the wage that he/she receives, made no progress under state socialism. As under capitalism, Taylorism dominated the labour process. On the other hand, there were a number of respects in which the situation was worse than under capitalism. There were no independent trade unions, the link between the wage and the use values created was even more tenuous than under capitalism

¹⁶ 'Closed distribution' means the distribution of goods and services not via shops or other facilities accessible to everyone, but by special shops or other facilities only accessible to limited groups of privileged people.

because of the dictatorship over needs, and workers were partly alienated from their wages because of the difficulty of buying with them the things they wanted (due to shortages and non-market distribution of many goods and services).

Instruments

The main instrument of labour planning used in the socialist countries was the labour balance. A labour balance was simply a material balance which dealt with labour. In the USSR a whole series of labour balances were regularly drawn up, both statistical (concerned with the past) and planning (concerned with various future periods), for the country as a whole and for its subdivisions (e.g. republics and smaller regions). A planning labour balance can be set out schematically as in Figure 7.1.

The chief task of the labour balance was to coordinate available labour resources with the requirements for labour. The available labour resources were calculated from statistical and demographic data, account being taken of any special factors (e.g. the increased provision of nursery facilities for children). The required distribution of labour resources was calculated from statistical data and the planned levels of output and labour productivity. Shortages of labour, in general or in specific categories, gave rise to policies (i.e. increase in training, import of foreign machinery, acceleration of mechanisation) designed to overcome them. The labour balance was only part of the balance of the national economy, and its various sections were intended to be harmonised with the other parts of that balance (more precisely system of balances). For example, the plan for technical progress affected labour productivity and labour requirements for various industries.

Labour coefficients

An innovation in labour planning in the state-socialist countries was the labour coefficient. With its use it became possible to calculate the direct and indirect labour embodied in each unit of particular outputs. This was especially interesting for Marxists because it gave empirical content to the Marxist concept of the socially necessary labour embodied in a commodity, or the value of that commodity.

An analytical expression for the calculation of full labour inputs was first given by Dmitriev (1898). The first calculation of the analogous

	Previous period			Planning period		
	Total of which			Total of which		
		urban	rural		urban	rural
1. Labour resources (including natural increase) of which:						
– population of working age (excluding invalids)						
– workers of pension age or 15 or less						
2. Distribution of labour resources						
(a) By type of occupation:						
(1) occupied in the social economy						
(2) full-time students of 16 and above						
(3) household and private gardening						
(b) By branch of the national economy:						
(1) working in the material production sector (by industry)						
(2) working in the non-productive sectors (by sector)						
(c) By social group (workers and employees, collective farmers, cooperative craftsmen, artisans, family members of workers, employees and collective farmers occupied in housework and private gardening)						

Figure 7.1 A planning labour balance

concept of full commodity inputs was given by Leontief. Leontief's empirical and conceptual work was regularly applied in the state-socialist countries for the compilation of input–output tables in labour units, and the calculation of direct and full labour input coefficients.

The first such table was compiled by the Soviet Central Statistical Administration for 1959 and published in 1962. It showed, in terms of labour, the interindustrial flows, the formation of the final bill of

goods, the formation of the national product and the costs incurred in the non-productive sphere. This calculation corresponded to the Dmitriev–Leontief full labour coefficients. It apparently showed, for example, that out of 97 million person years expended in the national economy in 1959, about 50 million were ultimately devoted to the production of consumer goods, 30 million to capital formation, exports and other items, and 17 million to the so-called non-productive sphere. How the defence sector was included in the calculations is unclear. Subsequently, the Soviet Central Statistical Administration compiled a similar table for 1966. Although input–output tables in labour terms were regularly compiled in the USSR, and full labour coefficients were much discussed and also calculated, it would appear that they did not become an important instrument of labour planning, being confined to various kinds of analytical calculations.

Planning incomes

Socialist incomes policy

Marxists consider that the decentralised ‘system’ of income determination that exists under capitalism is just another aspect of the anarchy of production that must be replaced under socialism by a planned and centralised system. The state-socialist countries normally operated what in Western terminology would be called permanent incomes policies. Important aspects of these policies were: price control; the planning of foreign trade; the elimination of large property incomes; compulsory arbitration; national job evaluation; uniform regional net advantages; the production-mindedness of trade unions; full employment; a proletarian government; and a non-permissive approach to breaches of labour discipline.

Price control was a basic part of incomes planning in state-socialist countries. By keeping prices under control a major source of pressure for wage increases was removed. In some periods, the state-socialist countries were quite successful in controlling prices. For example, between the mid 1950s and the mid 1970s, the European CMEA countries, and in 1963–75 China, managed to maintain more or less stable prices. In other periods rapid inflations were experienced. The difficulties which spiralling prices cause for incomes policy were clearly shown by Soviet experience in 1928–40. In that period the USSR experienced a massive

inflation, with state retail prices rising tenfold (Holzman 1960). A major reason for this was the huge rise in food prices which forced up wages. Similarly, the Polish inflation of the early 1980s made it impossible to implement a successful incomes policy.

The planning of foreign trade had the advantage of somewhat insulating the economy from shocks originating on the world market. Both sudden sharp price fluctuations and sudden falls in effective demand could be avoided – or at any rate postponed – by planning foreign trade on a medium-term basis. This enabled the planners to avoid either sudden sharp money wage increases (in response to an increase in import prices) or sudden real wage cuts (in response to a sudden deterioration in the terms of trade). This naturally facilitated the planned development of incomes.

Marxists have always laid great stress on the absence of the distinction between property owners and proletarians as a necessary condition of a harmonious society. Inequalities of wealth (e.g. housing, money, consumer durables) were substantial in the state-socialist economies. They resulted from the privileges of the elite, income inequalities, inheritance, abuse of official positions, the non-state sector, political stability and economic growth. Nevertheless, an important difference between the state-socialist and capitalist worlds was the absence in the former of the small minority of individuals with immense wealth that plays such an important role in the latter. In the USSR, for example, there was some property income, e.g. interest on savings bank deposits and some rent, and widespread corruption, but conspicuous consumption was limited, and the luxuries enjoyed by top officials, although substantial, did not compare favourably with those of Western billionaires and post-Soviet Russian oligarchs, and were less visible.

In any system labour disputes are bound to occur. In capitalist countries they are resolved by courts or employment tribunals, or by collective bargaining, with the strike, dismissals and the lockout being the ultimate weapons in the hands of the parties. The Soviet system of compulsory arbitration (M. McAuley 1969) provided a method of settling factory-level disputes without interrupting production or wasting resources.

Experience with incomes policy in various countries has shown that the rational and conscious determination of relative incomes is very difficult. The Soviet system for dealing with this was that of national job evaluation (Kirsch 1972). This was a system whereby, in principle,

all jobs and all workers were graded, the jobs by function and the workers by skill. The wages actually received by any worker, above the minimum wage, depended on their occupation and grade, the grade of the job, the work norms, the level of output (if on piecework) or the length of time worked (if on a time system), and the receipt of bonuses and regional coefficients (if any). The underlying idea was to replace the determination of relative incomes by market forces by their determination in a rational, objective fashion, and to stimulate the raising of the qualifications of the labour force, production and productivity. Nevertheless, the 'scientific', 'objective' nature of the resulting income distribution was something of a myth, and national job evaluation did not succeed in establishing a satisfactory relationship between the wages of similar workers in the same plant and in different plants and industries. This seems to have resulted from market pressures; the drive by the authorities to raise labour productivity; the existence of priority sectors; and the labour shortages generated by the traditional model. National job evaluation arose, in large part, as a reaction against the fragmented ministerial wage system that existed in the USSR during the Stalin period.

As far as income relativities are concerned, Adam Smith and his successors stress the allocative function of wages, and the need for differentials so as to equalise the net advantages of all occupations. Keynes and his successors stressed the availability of jobs, and the segmented nature of the labour market, and argued that differentials are largely historic and arbitrary. The experience of the state-socialist countries suggests that the Keynesian doctrine is largely correct as far as relative occupational earnings are concerned, and the classical doctrine is largely correct as far as relative geographical earnings are concerned. Manpower planning, both current and in the field of education, can control the number of people qualified in particular specialisms. This can ensure that there are sufficient people with the requisite qualifications for any category of employment. Although changes in relative earnings may affect the relative attraction of careers as perceived by schoolchildren and their parents, the gestation period is very long and other factors (such as social prestige and gender) also influence perceptions of the relative attractiveness of different occupations. Hence relative earnings can be changed significantly without in the short run much affecting quantitative labour availability. (It may well affect, however, the quality of work performed in the relatively low-paid occupations. In

labour-intensive services such as education and medicine this can have serious adverse effects.)

On the regional plane, however, things are very different. In the USSR, the higher earnings to be obtained in towns would have caused such a mass movement from the villages if free movement of labour had existed, that administrative measures had to be used for decades to prevent this. Similarly, in China the use of administrative methods to prevent an excessive influx of labour to the towns was an important long-standing feature of the pre-reform economic system. Furthermore, administrative measures had to be used in all the state-socialist countries to control emigration. In the USSR the desirability of certain cities (e.g. Moscow) was not offset by lower earnings there, so administrative measures had to be used to control access to them. Similarly, in the USSR the inhabitants of many regions (such as the Far North and Far East) required very substantial regional coefficients for them to recruit and hold labour. In addition, in the 1970s an unplanned migration of labour took place to certain areas (such as the North Caucasus, Transcaucasia and Central Asia) where uniform national wage scales failed to reflect the advantages of abundant sunshine, fruit and vegetables. The need to equalise regional net advantages was naturally more important in a continental country such as the USSR than in a small country.

West European trade unions, like the Social Democratic movement in general, are primarily concerned with distribution. They seek to raise labour's share in the output of capitalism; to protect workers from changes in work organisation that would have an adverse effect on them; to make it more difficult to dismiss them; and to increase state expenditure on free or subsidised public services (e.g. education, medical care, housing). Trade unions in state-socialist countries also sought to advance the interests of their members during both plan compilation and plan implementation. For example, in 1970, in the GDR a discussion was going on about changes in relative earnings in different sectors of the economy. The trade unions accepted that there should be larger wage increases in high-priority than in low-priority industries, but they objected to stagnation of earnings for any group, and insisted on the principle that no group should ever suffer a reduction in earnings. At one point, the draft plan of one ministry called for a stagnation of earnings for some worker groups and an actual reduction for a few. Its trade union thereupon engaged in a struggle to have these tentative decisions reversed (Granick 1975: 168). Similarly, during plan

implementation, the trade unions sought to protect their members in factory or shop-level disputes and represent their interests. That the unions did actually play a positive role in protecting their members was shown for example, rather ironically, by the fact that in China when they were dissolved during the Cultural Revolution the reason given was that they supported and protected their members, the permanent workers, who were a privileged elite compared with the temporary workers and peasants. Nevertheless, they were primarily organs of the state concerned with increasing production. Their main function was to stimulate the increases in productivity that, given the distribution of the national income, are the only source of increasing real wages. The transition of Soviet trade unions from trade unionism to production-mindedness was part of the revolution from above which took place in the USSR in 1928–34.

Full employment was an important aspect of incomes policy in all state-socialist countries. Full employment is a traditional objective of the labour movement, and its attainment removed a major obstacle to labour cooperation in the reorganisation of production.

The proletarian character of the governments of the state-socialist countries was an important aspect of their incomes policies. This proletarian character was self-proclaimed, reflected in some real policies (e.g. full employment and security of employment), and also in the personal background of many of the top leaders.

The ultimate sanction in any society is repression. In the UK at the present time, the control of shoplifting, terrorism, the heroin trade and other types of activity deemed to be anti-social is in the hands of the police and the intelligence service. Similarly, in the state-socialist countries strikes were in general dealt with by the arrest of ‘ringleaders’ and ‘agitators’, as Polish experience in 1976 and 1981 once more indicated.

Intersystem comparisons of income distribution

International comparisons of the distribution of income are very difficult both because of the poor quality of the data and because of the existence of numerous measures of income distribution which can be used for comparative purposes. Nevertheless, there has been some work in this area, notably by Pryor, Vortmann, Wiles and Morrison.

Pryor (1973: chapter 3) found that, comparing Western countries with East European countries, three variables played a statistically

significant role in explaining the pre-tax distribution of non-agricultural labour incomes. They were: the level of development, the size of the population and the economic system. The degree of inequality declined as the level of development rose, increased as the population rose, and was less for Eastern than for Western countries. The effect of property incomes was to increase the advantage (from an egalitarian point of view) of the East European countries.

Similarly, a comparison of the GDR and FRG (Vortmann 1979: 209–10) showed that throughout the period 1960–74 the distribution of the net incomes of employee households was more equal in the GDR than in the FRG. (It also showed that the average income per household in the FRG was significantly above that in the GDR; this differential increased significantly in 1960–75; and that the income of pensioner households relative to that of employee households was significantly lower in the GDR than in the FRG.)

Wiles considered the effects of taxation, and used a different measure of income distribution. His findings are summarised in Table 7.4.

From the data in Table 7.4 the following points emerge. First, the three most unequal countries (USA, Canada, Italy) were all capitalist. Secondly, the most equal country (Sweden) was also capitalist. Thirdly, two capitalist countries (Sweden and the UK) were more equal than the USSR. Fourthly,

Table 7.4 Ratios of income per head in selected countries (ratio of top 5 per cent to bottom 5 per cent)

	Before tax	After tax
UK (1953–4)	5.7	5.0
UK (1969)	5.9	5.0
USA (1968)	13.3	12.7
Italy (1969)	11.2	–
Hungary (1967)	4.2	4.0
Czechoslovakia (1965)	4.5	4.3
Bulgaria (1963–5)	3.8	–
USSR (1966)	6.0	5.7
Sweden	–	3.0
Denmark	–	6.0
Canada	–	12.0

Source: Wiles (1974: 48 and xiv).

the state-socialist countries were more equal than one would expect on the basis of the international relationship linking the level of development and size of population to inequality. Accordingly, two conclusions can be drawn from the Wiles data. First, state socialism was neither a necessary nor sufficient condition for a more equal distribution of income than any capitalist country. It was not necessary because Sweden did without it. It is not sufficient, because even with it the USSR was more unequal than Sweden or the UK. Secondly, in making international comparisons, state socialism is one of the factors associated with greater income equality. This corroborates Pryor's findings. It is important to note that these conclusions depend on the period studied, the countries selected, the quality of the data and the measures of income distribution used.

The data on Soviet income distribution were re-examined by A. McAuley (1977). He reached three interesting and important conclusions. First, Wiles had overestimated inequality in the USSR. In fact, according to McAuley, income inequality in the USSR in the late 1960s was about the same as that calculated by Wiles for Hungary and Czechoslovakia. Secondly, in the late 1960s more than two-fifths of the Soviet population were still living in poverty.¹⁷ Thirdly, since 1956 the USSR had experienced a major reduction in inequality. This had already been noted by Wiles (1974: 25), who had observed that 'the statistical record since Stalin is a very good one indeed. I doubt if any other country can show a more rapid and sweeping progress towards equality.' A very significant factor in this reduction in inequality was the repeated increases in the minimum wage.

In 1989–91 the Soviet authorities released new data on income distribution in 1980–90. They were analysed in Alexeev and Gaddy (1993). They derived the results set out in Table 7.5.

The data presented in Table 7.5 suggest that inequality in the USSR in the 1980s was modest by the standards of unequal countries such as the USA and present-day Russia or China and that inequality declined in the 1980s. However, the validity of these conclusions depends on the reliability of the information provided by the respondents in the household budget surveys, and on the representativeness of these surveys. The

¹⁷ 'Poverty', of course, is a relative and culture-bound concept. In the United States, for example, in the 1970s half a million families below the 'poverty' line owned two or more cars. The measure of 'poverty' used by McAuley was a Soviet one, developed by Soviet specialists for Soviet conditions.

Table 7.5 *Income distribution statistics for per capita income in the USSR, 1980–90*

Year	Gini coefficient	Atkinson indices		
		A = 0.5	A = 2	A = 3
1980	0.290	0.171	0.327	0.414
1985	0.284	0.165	0.316	0.400
1988	0.290	0.158	0.315	0.403
1989	0.275	0.150	0.294	0.376
1990	0.281	0.144	0.295	0.381

Source: Alexeev and Gaddy (1993). The underlying data come from the household budget surveys carried out by the Soviet statistical agency.

respondents naturally did not provide information (which was collected by a government agency) about illegal incomes. For example, it is known that in 1986–7 there was a massive increase in illicit alcohol sales, which were a very profitable business, but any of these profits received by the survey respondents will not have been reported. In addition, there was a rapid growth of both legal and illegal incomes generated in the private sector (self-employed and so-called cooperatives) in 1988–90. Alexeev and Gaddy, following Bergson, very sensibly suggested that illegal incomes probably had the effect of increasing inequality. Furthermore, it is known that the surveys were not entirely representative. Moreover, calculations of *per capita* income implicitly assumed an equivalence ratio of 1 (that is everyone from birth to death was counted as 1) and hence this distribution may well have diverged significantly from the distribution of income *per adult* (or adult equivalent) in a country in which there were wide variations in family size.

It is important to note that the income distribution statistics analysed by Wiles, McAuley and Alexeev and Gaddy concerned normal money income only, and exclude both top money incomes and non-money incomes such as imputed rent from dwellings and the subsidy element in state rents and free medical and educational services. Since there were systematic differences between the value of the subsidy element in state rents and free educational and medical services, between social groups, measurement of only money incomes might give a distorted picture of the distribution of real income. For example, in the USSR, there were

very great differences between the quality of medical care available in Russian villages and that provided in the special facilities available to senior Party and state officials, members of the Academy of Sciences and the Union of Writers, officers in the armed forces and state security organs, foreigners and other elite groups. Whereas in the West the labour movement has always regarded the free provision of medical services as a means of equalising real incomes, it is entirely possible that in the USSR, where the facilities were financed out of indirect taxation and differentially provided, charging the user for medical services on the basis of costs would have increased equality. A similar situation existed with respect to housing. As the Hungarian sociologist Szelenyi (1976: 314–15) observed in a classic study of the sociology of housing distribution in Hungary: *'Rent subsidies thus turned into wage supplements increasing the differences between low and high incomes . . . the administrative system of housing distribution proved to be dysfunctional, that is it led to a result which differed from its declared aim.'*

The existence of important real income differences not reflected in the published data used by Wiles, McAuley and Alexeev and Gaddy does not mean that there is no information available on these differences. In an important paper Matthews (1975) investigated the question of whether there existed in the USSR an elite with real incomes much above those of the rest of the population. His investigation is summed up in Table 7.6.

Table 7.6 *Elite occupational groups in the USSR, 1970^a*

	Thousands	%
Party officials	95	38
State, Komsomol and trade union officials	60	24
The intelligentsia ^b	43	17
Enterprise managers	22	9
The military, police, diplomatic service	30	12
Total	250	100

^a Persons earning 450 roubles a month or more and having access to substantial non-cash benefits. (Average wages in the USSR in 1970 were 122 roubles per month.)

^b I.e. academicians, heads of higher educational institutions, institutes, faculties and laboratories; head doctors; senior legal officials; editors and senior journalists; leaders in the arts and artistic bureaucracy.

Source: Matthews (1975: 13).

Table 7.6 shows an elite group of 0.2 per cent of the employed population, with real incomes much above the average. Matthews's paper was only an initial investigation of this important subject. It was taken further in his book (1978). Further information on this matter can be found in Voslensky (1984: chapter 5).

The need to take account of top people's privileges in calculating income distribution for state-socialist countries was the starting point for the interesting paper of Morrison (1984). He adjusted the standard income distribution data for Eastern Europe to allow for the additional emoluments of the elite. His chief results are set out in Table 7.7.

The following conclusions can be drawn from the Morrison data:

- (1) The most egalitarian of all the countries considered was Czechoslovakia, a socialist country.
- (2) The most unequal country (the USA) was a capitalist country.
- (3) As far as the share of the top 10 per cent of incomes in total income is concerned, the most unequal countries were two socialist ones, the USSR and Poland.
- (4) The position of the worst-off parts of the population (the bottom 10 per cent or the bottom 40 per cent) relative to the national mean was generally better in the socialist countries than in the capitalist ones.
- (5) The position of the middle class (individuals or households in deciles 7 and 8) was worse off in socialist countries than in capitalist ones. This difference was still more marked if the ninth decile is included in this group.
- (6) Because of the relatively favourable positions of deciles 1 to 4, the relatively unfavourable position of deciles 7–9 and the favourable position of the tenth decile in the socialist countries, there was less inequality than in capitalist countries when only deciles 1–9 were taken into account but as much inequality as in capitalist countries for all incomes above the median.

Conclusions (1) and (5) help explain why the Czechoslovak liberalisation movement of 1968 was associated with anti-egalitarian sentiments. Conclusion (3) helps explain why the Polish renewal movement of 1980/81 was associated with widespread exposure of corruption and high living by the former leadership; and the Soviet democratic movement of 1989–91 was associated with attacks on corruption, and on the

Table 7.7 *Distribution^a of income^b in selected capitalist and socialist countries*

Country	D ₁	D ₂	D ₃	D ₄	D ₅	D ₆	D ₇	D ₈	D ₉	D ₁₀	D ₁₀ /D ₁	Relative income of deciles 1, 2, 3 and 4 ^c	Gini coefficient	Theil coefficient
Hungary (1977)	4.3	6.0	7.0	7.7	8.5	9.3	10.2	11.4	13.1	22.5	5.2	0.62	0.244	0.102
Poland (1975)	3.2	5.2	6.2	7.0	8.0	8.6	9.9	11.2	13.7	27.0	8.4	0.54	0.308	0.167
USSR (1973)	3.2	5.3	6.2	6.9	8.0	8.6	9.8	11.1	13.7	27.2	8.5	0.54	0.309	0.169
Czechoslovakia (1973)	5.0	6.2	7.1	7.8	8.6	9.4	10.2	11.4	12.8	21.5	4.3	0.65	0.224	0.086
United Kingdom (1975)	4.4	5.5	6.7	7.3	8.5	9.4	10.6	12.3	14.6	20.7	4.7	0.60	0.249	0.097
Sweden (1970)	4.3	5.7	6.4	7.4	8.5	9.5	10.5	12.3	14.8	20.5	4.8	0.60	0.250	0.099
Canada (1969)	2.7	4.6	6.0	7.0	8.0	10.0	11.8	13.0	14.0	22.9	8.5	0.51	0.299	0.146
USA (1970)	2.6	3.6	5.7	6.1	8.0	9.0	11.0	13.0	15.2	25.8	9.9	0.45	0.342	0.192

^a Unit: individuals ranked according to per capita income.

^b Income concept: secondary income distribution account being taken of non-monetary income of elite.

^c Relative to mean income in the country concerned.

Source: Morrison (1984: 133).

privileges of the elite (both much less than the corruption and elite living standards in the FSU countries in the post-Soviet era).

Morrison's work was useful but not the last word on the subject. His data on income distribution refer to 1969–77 and his list of countries is not exhaustive.

The distribution of income and wealth in the two systems differed also in ways that cannot be seen from comparisons of the overall personal income distribution. A characteristic feature of capitalism is that it produces a small number of very rich people with large amounts of legitimate wealth. The absence of this group under state socialism is a major difference between the systems. (There were millionaires under state socialism, chiefly corrupt officials and second-economy operators, but their wealth was usually not legitimate, not in the form of means of production, and liable to confiscation with a change in the political situation.) The relative incomes of different occupational groups often differed sharply between the systems. For example, whereas in the capitalist world the free professionals are traditionally high earners, in the USSR medical doctors (except for senior medical administrators) were traditionally a low-paid group. On the other hand, some groups of Soviet manual workers, e.g. coal miners and dockers, were rather well paid, with incomes in excess of most university graduates. The relative position of tenants and owner-occupiers also differed. Whereas, in the capitalist world, the latter are generally better off than the former, in the socialist world the situation was reversed. For example, in the USSR the majority of houses in private ownership were traditional-style houses without running water and central heating. The high-income groups lived predominantly in modern flats with good facilities and low rents which were the property of the state.

Intersystem differences in inequality have been examined not only by economists but also by sociologists, a well-known study being Lane (1982). He concluded (*ibid.*: 159) that, although there were important differences in inequality between the systems (e.g. the absence of ownership classes under state socialism), nevertheless inequality was important in both systems. Under state socialism:

in a relational sense, there is inequality of control over wealth, inequality of political power, and in a distributional sense, there is inequality of income and inequality of status. The origins of such social stratification lie in the

bureaucratic nature of political power, in the role structure created by the division of labour sanctioned by the educational system and perpetuated by the family. Such structural features give rise to a hierarchy in which some groups of men (and a few women) have power, prestige and privilege while others lack them. Politically, and not without internal conflict, the privileged acquire the means to help maintain and justify ideologically their advantage.

In China before the transition to capitalism, a large proportion of the population had very low incomes. In addition, there were substantial inequalities, between high officials and others, between town and country, between regions and between genders. Nevertheless, comparing China in the early 1980s with other developing countries, the World Bank argued (*China* 1985: 29) that China had average living standards (as measured, for example, by life expectancy) that were very high for a developing country; had virtually abolished the constant fear of destitution that haunted a significant fraction of the population of other developing countries; had a level of rural inequality that was low by the standards of South Asian countries; and an egalitarian distribution of urban incomes. The most positive feature of China's income distribution, according to this World Bank study, was that the relative position of the worst-off sections of society was much better than under capitalism. This is what one would expect on the basis of Morrison's findings for Eastern Europe. It should be noted that these achievements required massive use of administrative methods. For example, urban inequality would have been much higher if free movement of population to the towns had been permitted. No doubt inequality in Kolkata (Calcutta), Mexico City, or Mumbai could be reduced by deporting the poor to the countryside, but would this represent a social improvement? China's striking achievements in the field of average living standards relative to average GNP are considered further in Chapter 8. Although inequality in China in the early 1980s was low by the standards of many other developing world countries, it was not insignificant.

An interesting example of the importance of economic and social stratification in China prior to the Cultural Revolution was provided by the schools. At that time only a small minority of the relevant age group went to secondary schools because of a shortage of facilities. In the early 1960s the authorities pursued a policy of concentrating resources on a minority of successful schools. The idea was to ensure that sufficient qualified people would be produced to meet the needs of the national

economy. The privileged position of the pupils at these schools was pronounced. Schooling was not free. Tuition fees were not high, on average they were about 5 or 6 yuan a year, at a time when average wages were about 50 yuan a month. Nevertheless, they were not insignificant, particularly if there were several children in a family, bearing in mind that textbooks and stationery also had to be paid for, and that there was an opportunity cost of secondary schooling in terms of wages forgone. Furthermore, the better schools tended to charge more. In 1966 Watson (1975: 127) visited a boarding kindergarten in Zhengzhou which charged 13.5 yuan per month for each child, and one in Beijing which charged 25 yuan. In important cities, a number of well-endowed schools took children almost exclusively from the families of leading cadres (officials). A well-known example was the Number 2 Primary School in Beijing, where many of China's leaders sent their children and grandchildren. The existence of these selective facilities, the substantial charges they made, and the fact that only a small minority received any secondary education, were all aspects of massive inequality by West European standards. In the post-Mao period, as part of the policy of recreating shattered educational standards, the state once more consciously pursued a policy of concentrating resources on a limited number of key schools. This recreated a situation in which there were major differences in life chances between those who did, and those who did not, attend the key schools.

Similarly, unequal access to medical care, as regards both payment and quality, was a permanent feature of Chinese society in the socialist planning period (and was also one of the issues in the Cultural Revolution). Only Party and state cadres and insured workers had free medical care. These two groups appear to have amounted to less than 25 per cent of the urban population throughout this period. The remainder of the urban population had to pay for curative care or do without. The quality of care varied substantially, with that available to high-level cadres being higher than that available to temporary workers. Prior to the Cultural Revolution (and also after it), each large hospital had several single rooms, furnished with sofas and chairs and very comfortable, for cadres of rank 13 and upwards. (Since 1956 the Chinese bureaucracy has been graded into 30 ranks, with 30 the lowest and 1 the highest. Rank 13 approximately corresponds to the secretary of a county Party committee.) In the rural areas, medical care has generally been scanty, of low quality, and has had to be paid for. During the GLF free medical care was

introduced into the rural areas, but this programme disintegrated in the economic stringency that followed. In the Cultural Revolution local rural medical insurance was generally introduced, with small payments to discourage waste, and large numbers of paramedics ('barefoot doctors') trained. Both programmes continued after the end of the Cultural Revolution. Although the People's Republic was unable in its first half century to meet its founders' goal of free high-quality care for all, it did greatly increase health standards for all as measured by mortality and morbidity statistics, and greatly improved the access to, and the quality of, care available to the poor and middle rural inhabitants. Life expectancy in China has increased dramatically since the foundation of the People's Republic, both absolutely and relative to the rest of the world. This is a major achievement.

In the 1970s it became fashionable, especially in World Bank circles, to argue that economic growth that did not benefit the rural poor was quite unacceptable. Great efforts should be made, it was argued, to alleviate rural poverty by combining economic growth with an equitable distribution of income. This doctrine appears to have been implemented in the Chinese countryside in the socialist planning period. A respectable rate of national economic growth was combined with a relatively equal distribution of income. If the World Bank's data are reliable, it would seem that income distribution in rural China in the first three decades of the People's Republic was significantly more equal than in much of the rest of Asia. How was that achieved?

The main factor is obviously the abolition of private ownership of land, which eliminated the distinction between landlords and landless labourers. Another factor was the emphasis on distribution according to need (e.g. the grain ration to which each household was entitled, low-cost basic services such as medical care and education, and welfare benefits for the needy). The price policy pursued, which was consciously pro-poor, with low prices for basic necessities and high prices for luxuries, was also a factor. For example, in China the state prices for food grains and cotton textiles were much lower, relative to the price of bicycles, than in India.

It is most important to note that what was achieved in the state-socialist world was not equality, but inequalities which partly differed from, but partly resembled, those under capitalism. To establish and maintain these differences required very substantial inequalities of power. This illustrates the general proposition that money income and wealth were much less

important factors in social stratification in the state-socialist countries than in the capitalist world, because of the overwhelming importance of the state in the former. In the USSR, the millionaire Ostap Bender was unable to do anything with his wealth. The state security officer Erchov, on the other hand, was able to get the woman he wanted without any trouble, even though she was someone else's wife. He simply instructed the couple to divorce and her to marry him.¹⁸

Similarly, China in the first four decades of the People's Republic was a country where the entire society was transformed by a continuous process of social change from above. The mass of the population was subordinated to the cadres, and the cadres at each level to their superiors. Being a cadre was often a thankless task. Nevertheless, the great inequalities of power between cadres, and between cadres and the masses, were always present. Without them it would have been impossible to carry out the social transformation which took place. As one work-point recorder put it during the Socialist Education Movement (C. Chen 1969: 218), 'The handle of the sword is always in the hands of the cadre. We are powerless.' As was pointed out in Chapter 6, an example of these inequalities of power, and of their importance, is provided by the Great Leap Forward. This forced the mass of the population to perform greatly increased work, much of it wasted, and was a major factor causing the deaths from malnutrition and starvation which took place in 1959–61.

Sen (1983) pointed out that, comparing the experience of China and India over the previous three decades, China combined a much better performance with respect to malnutrition, life expectancy and general destitution in normal years, with a much worse record with respect to famines. India, he asserted, had not experienced a famine since independence. China, on the other hand, had experienced a major famine in 1959–61. The reason, Sen argued, why famine was possible in China but not in India was that India, unlike China, had functioning democratic institutions. In China in 1960 (just as in Ireland in the 1840s), the dying had no political influence and there were no political forces

¹⁸ Ostap Bender is the central character in Ilf and Petrov's famous novel *The golden calf*. By devious means he eventually becomes a millionaire, but the only thing he is able to do with his money is to travel on trains. All other goods and services are available on allocation only. State security officer Erchov is one of the characters in V. Serge's insightful novel *The case of Comrade Tulayev*.

(opposition parties, independent media) which could prevent the authorities covering up the situation.

Some writers have claimed (e.g. Adler-Karlsson 1976) that state socialism is superior to capitalism in the provision of essentials. This argument does draw attention to some important phenomena, such as growth of life expectancy and education. However, it also ignores some important phenomena, notably the repeated failures of the USSR in the Lenin–Stalin period, of China in 1959–61, of Kampuchea under Pol Pot and of African countries of socialist orientation, such as Ethiopia and Mozambique in the 1980s, to provide all the population with the most basic essential of all, sufficient food to prevent starvation.

In Maoist China, inequality was primarily a political, rather than economic phenomenon. Whereas in capitalist countries the ownership of wealth is very important for social stratification, under state socialism the entire population is propertyless but a bureaucratic stratum controls the national wealth. Hence, for example, whereas in India the landless agricultural workers are a particularly oppressed social stratum, in Maoist China it was those with the wrong class origins, victims of repression such as camp inmates, victims of disastrous policies (such as the GLF) and sent-down educated youths whose lives were blighted.

An important feature of Maoist China was the development of a caste system based on the class (or politics) of a person's father (or grandfather). There were five red castes: workers, poor and middle peasants, soldiers, cadres and relatives of revolutionary martyrs; and eight black castes: landlords, rich peasants, counter-revolutionaries, bad elements, Rightists, renegades, enemy agents and capitalist-roaders. In 1966–76 intellectuals belonged to the ninth black category, the 'stinking ninth'. Those born into a black category were discriminated against from birth, and the person's spouse, family and children were similarly affected. Lee (1978: 39) gave a graphic illustration of the importance of caste lines in Maoist China.

A friend of ours stayed at a farm in northern Kwangtung [Guangdong] for six years. He met a man by the name of Chan there. This young man was by nature taciturn and clumsy, and smiles and talks little. He was conveniently classified as 'backward' for his father was a schoolteacher, an intellectual. His parents were struggled against and denounced in the Cultural Revolution. But he remained quiet, kind, solitary and 'backward'. And he developed secret sentiments towards a girl in the herding brigade. When he could contain himself no longer, he wrote a fiery letter of love to this girl. The girl was a

'poor peasant' and therefore of impeccable family history. She was startled and scared and immediately showed the letter to her brigade (all girls). Their leader arranged for her to shame Chan in public and the incident spread. All the farm marvelled at his recklessness. A man of his position daring to touch the daughter of a poor peasant family! The local party branch secretary saw fit to warn him in person, this was a gross violation indeed.

An intellectual (i.e. the son of a schoolteacher) aspired to marry a poor peasant (i.e. the daughter of a poor peasant)! Obviously an unacceptable breach of the caste system.

Categorisation by class origins made some sense during the Civil War and subsequent radical social changes (e.g. land reform). Furthermore, it is very striking that the groups which benefited from affirmative action (positive discrimination) in Maoist China were those suffering from (negative) discrimination in old China and in the capitalist world. Such a reversal of the traditions of millennia was an understandable feature of a revolutionary society. Nevertheless, as a permanent, hereditary, caste system, it was profoundly unsatisfactory. It came under strong attack after the downfall of the 'Gang of Four'. In 1978–9 official attention in China switched from class struggle to economic modernisation. It was declared that most of China's bad-origin persons had remoulded themselves. Though their class-origin labels remained in dossiers, the Central Committee directed that their 'hats' – their official stigmata – be permanently removed. Within a short time, the structure of discrimination based on class labels had simply disappeared. It had been replaced by stratification based on income and wealth. As one villager put it in a 1982 interview (Watson 1984: 141), 'It's not class origin which counts any more; what counts now is making money.'

Categorisation by the class position of one's parents was quite normal under state socialism, especially in the first few decades of the new society. It could have major effects on a person's job, marriage, housing and overall life chances.

Conclusion

Labour planning in the state-socialist countries was concerned with facilitating the fulfilment and overfulfilment of the national economic plan, by ensuring that the requisite types of labour were available in the right quantities and places and performed the necessary work. This

involved developing the abilities of the labour force so as to produce the right types of labour, providing full employment so as to avoid waste of resources, ensuring a rational regional distribution of employment, and ensuring the efficient utilisation of labour. The main methods used, separately and in combination, were administrative, economic and moral. The main instrument was the labour balance.

In general, the position of workers in state socialism with respect to opportunities for improving qualifications, work intensity, social security, hours of work, security of employment and availability of employment compared favourably with those in comparable capitalist countries. In some cases, the position of the workers did not compare favourably with that in comparable capitalist countries. Notable examples are the Gulag Archipelago, and 'reform through labour' and 'education through labour' camps, sent-down people, Soviet collective farmers for much of their history, and those in political disfavour. The effect of state socialism on industrial safety is impossible to assess fully in the absence of the requisite data. For the USSR, the available data on fatal work accidents compare unfavourably with data in the developed capitalist countries. For China, the available data are unreliable, but it seems that in the socialist period the fatality rate in coal mining was high by the standards of the high-income countries, but low relative to China in the 1920s and 1930s, and Japan before, during and immediately after World War II. During the reform and capitalist periods, the trend in the rate of Chinese coal-mining fatalities seems to have been strongly downwards, but in the early capitalist period in China the rate was still high by the standards of the high-income countries and India.

State ownership of the means of production and Soviet-type national economic planning are not sufficient to eliminate unemployment. Urban full employment was established and maintained in the chief state-socialist countries partly by administrative methods: the passport system in the USSR and the household registration system and sending-down in China. In the state-socialist countries the population was less concentrated in big cities than in the rest of the world.

No progress was made under state socialism towards a new, more human, organisation of the labour process. The state-socialist countries copied the capitalist organisation of labour without the counter-vailing power exercised by worker organisations in the West.

The fragmentary evidence available about labour morale under socialist planning suggests that, at any rate in Poland and Romania, it compared unfavourably with that normal under capitalism. The absence of independent worker organisations had adverse effects, not only on labour morale, but also on industrial safety and the use of coerced labour. The state-socialist countries failed to develop an effective alternative, under normal conditions, to monetary incentives for good work. Even in the Gulag, adequate labour productivity required the introduction of monetary incentives.

All the state-socialist countries operated what in Western terminology would be called permanent incomes policies. Important aspects of these policies were: price control, the planning of foreign trade, the elimination of large property incomes, compulsory arbitration, national job evaluation, uniform regional net advantages, the production-mindedness of trade unions, full employment, a proletarian government and a non-permissive approach to breaches of labour discipline.

Satisfactory comparisons between the distribution of incomes under state socialism and capitalism are not yet possible, owing to the poor quality of the available data. Nevertheless, it is clear that the distribution of income under state socialism and capitalism differed in complex ways that cannot be accurately summarised as more or less inequality. Furthermore, income distribution and inequality were related under state socialism and capitalism in different ways. In the latter, money income and wealth ownership are the major factors determining differences in consumption, life chances and social stratification. In the former, position in the political hierarchy, income in kind and membership of a favoured (or unfavoured) caste are of greater importance.

The available empirical evidence about the distribution of income in the USSR is poor. The most striking changes in the Soviet income distribution over time were the very big increases in inequality in the first two Five-Year Plans (1928–37), and the very big reduction in inequality after the Twentieth Party Congress (1956). As far as China is concerned, the widespread impression of an extremely equal society – in the socialist planning period – appears to be quite wrong from the viewpoint of Social Democratic Western Europe in the 1970s and 1980s, but correct from the standpoint of countries such as Mexico or Brazil. The main feature of China's income distribution in that period was the lesser importance in normal years of the extreme destitution

which is the lot of a significant proportion of the population in those developing countries which retained private ownership of the means of production. The main dynamic characteristic of China's social stratification in the socialist planning period was the development of a caste system based on the class (or politics) of a person's father (or grandfather) in the Maoist period, followed by the revived importance of stratification by income and wealth after 1978.

The main reasons for the persistence of inequality under state socialism appear to have been the division of labour, the family, the gendered division of roles and the role of the state in state socialism.

SUGGESTIONS FOR FURTHER READING

General

- J. Kornai, *Economics of Shortage*, vol. A (Amsterdam, 1980), chapter 11.
- H. Scott, *Does socialism liberate women?* (Boston, 1974).
- R. Selucky, *Marxism, socialism, freedom* (London, 1979), chapter 2.
- D. Lane, *The end of social inequality?* (London, 1982).
- F. Parkin, *Class, inequality and political order* (London, 1971).
- B. Askanas and F. Levick, 'The dispersal of wages in the CMEA countries', in S. F. Frowen (ed.), *Controlling industrial economies* (London, 1983), pp. 193–230.

USSR

- L. Siegelbaum, *Stakhanovism and the politics of productivity in the USSR, 1935–1941* (Cambridge, 1988).
- D. Filtzer, *Soviet workers and Stalinist industrialisation: The formation of modern Soviet production relations* (New York, 1986).
- J. Rossman, *Worker resistance under Stalin: Class and revolution on the shop floor* (Cambridge, 2005).
- Planning of manpower in the Soviet Union* (Moscow, 1975).
- K. Katz, *Gender, work and wages in the Soviet Union* (Basingstoke, 2001).
- K. E. Bailes, 'Alexei Gastev and the Soviet controversy over Taylorism', *Soviet Studies* 29(3) (1977), 373–94.
- P. Gregory and V. Lazarev (eds.), *The economics of forced labour: The Soviet Gulag* (Stanford, 2003).
- A. Bergson, 'Income inequality under Soviet socialism', *Journal of Economic Literature* 22(3) (1984), 1052–99.
- M. Matthews, *Privilege in the Soviet Union* (London, 1978).
- A. McAuley, *Economic welfare in the Soviet Union* (London, 1979).

China

- C. Howe, 'Labour organisation and incentives in industry before and after the Cultural revolution', in S. Schram (ed.), *Authority, participation and cultural change in China* (Cambridge, 1973), pp. 233–56.
- C. Howe, *Wage patterns and wage policy in modern China 1919–1972* (Cambridge, 1973).
- E. B. Vermeer, 'Income differentials in rural China', *China Quarterly* 89 (1982), 1–33.
- J. Unger, 'The class system in rural China: a case study', in J. L. Watson (ed.), *Class and social stratification in post-revolution China* (Cambridge, 1984), pp. 121–41.
- C. Hoffman, *The Chinese worker* (Albany, 1974).
- D. Davin, *Women-work: Women and the party in revolutionary China* (Oxford, 1976).
- A. G. Walder, *Communist neo-traditionalism: Work and authority in Chinese industry* (Berkeley, 1986).
- A. G. Walder, 'Wage reform and the web of factory interests', *China Quarterly* 109 (1987), 22–41.
- D. Granick, *Chinese state enterprises* (Chicago, 1990).
- J. D. Seymour and R. Anderson, *New ghosts, old ghosts: Prisons and labor reform camps in China* (Armonk, NY, 1998).
- 'The private economy', parts I and II, *Chinese Economic Studies* 21(1 and 2) (1987–8).
- M. Das and P. N'Diaye, *Chronicle of a decline foretold: Has China reached the Lewis turning point?* (IMF Working Paper 2013).
- E. Friedman and C. K. Lee, 'Remaking the world of Chinese labour: A 30-year retrospective', *British Journal of Industrial Relations* 48(3) (2010), 507–33.

Cuba

- C. Mesa-Lago, *The labour sector and socialist distribution in Cuba* (New York, 1968).
- A. C. Jiménez, 'Worker incentives in Cuba', *World Development*, 15(1) (1987), 127–38.

Poland

- 'Agreement between the government commission and the Inter-Factory Strike Committee concluded on 31 August at the Gdansk Shipyard' ('The Gdansk Agreement'), numerous translations, e.g. K. Ruane, *The Polish challenge* (London, 1982), appendix A.

- B. Simatupang, 'Economic crisis and full employment: The Polish case', *Journal of Communist Studies* 4(3) (1988), 282–300.

Hungary

- J. Timar, *Planning the labour force in Hungary* (New York, 1966).
P. Galasi and G. Sziraczki (eds.), *Labour market and second economy in Hungary* (New York, 1985).
M. Pittaway, *The workers' state: Industrial labor and the making of socialist Hungary, 1944–1958* (Pittsburgh, 2012).

8 *Planning consumption*

For Boris Nikolaevich [Yeltsin] and myself, the visit to the supermarket [in Houston Texas in 1989] was a real shock. Today (in September 1991) my wife went at 7.00 to a shop to buy milk, but there were queues everywhere. For sugar it was necessary to stand in a queue for two days. And that was in Moscow, in the second half of the twentieth century, 73 years after the Great Revolution and indeed in the period when, according to Khrushchev's calculations, we should already be living under communism. Maybe, what we have constructed in our country, that is the real communism?

L. Sukhanov (1992: 148)

Introduction

Consumption planning was concerned with planning the production of consumer goods and services, and with ensuring the consistency of these plans with those for income and expenditure. The main instrument used for harmonising planned incomes with planned expenditures was the balance of money incomes and expenditures of the population.

In order for the latter to balance, it is necessary that wages issued in those sectors of the economy not producing wage goods (investment, social consumption, defence) be soaked up by direct or indirect taxation or by savings (Dobb 1960: 91). If only indirect taxation is used, then the average mark-up (p) of retail prices over costs should be determined by the formula

$$p = \frac{W_{sc} + W_i + W_d}{W_{pc}}$$

where W_{sc} is the wage bill in social consumption;

W_i is the wage bill in the investment industries;

W_d is the wage bill in defence; and

W_{pc} is the wage bill in the industries producing goods for personal consumption.

For example, if one-third of wages are issued in social consumption, investment and the defence sector, and two-thirds in the personal consumption sector, then in the absence of savings and direct taxation the average mark-up should be 50 per cent. Two corollaries of this proposition are as follows. First, the higher the ratio of the wage bill in the non-personal consumption sectors to the wage bill in the personal consumption sector, the higher the mark-up must be. Secondly, in a socialist economy the effect of an increase in savings is that it permits the equilibrium price level to be lower than it would otherwise be. If the equation is violated, this will result either in excess stocks (if the mark-up is too high) or in shortages and queues (if the mark-up is too low).

In calculating the volume of particular goods and services required, the planners used two main methods. One was forecasts of consumer behaviour, based on extrapolation, expenditure patterns of higher income groups, income and price elasticities of demand, and consumer behaviour in the more advanced countries. The other method was that of plan norms. The first method attempted to foresee consumer demands, the latter to shape them.

An example of a consumption plan is the one for China for 1981–5. Its key indices are set out in Table 8.1. The substantial discrepancy between the plan and the outcome demonstrates yet again that the plans often did not determine the course of economic development under state socialism. The planners failed to foresee the size of the increase in consumption which took place.

Consumption in the state-socialist countries was not planned in a uniform way throughout the whole period of their existence. On the contrary, consumption planning depended very much on the stage of economic development they had reached, the economic policies pursued and the planning techniques used. In some periods in some countries it was neglected, and in other periods and other countries much attention was paid to it.

A major innovation in Soviet planning in the 1970s was the compilation not just of industry and republic or regional plans but also of comprehensive programmes aimed at the solution of major national economic problems. A comprehensive programme was primarily a plan for the achievement of a certain objective which required resources from

Table 8.1 *Personal consumption plan for China for 1981–5*

Product	Initial level 1980	Plan 1985	Outcome
<i>Non-durables (consumption p.a.)</i>			
Grain (kg/person)	214.0	222.0	254.0
Edible vegetable oil (kg/person)	2.3	3.3	5.1
Cloth (metres ² /person)	10.0	11.0	11.7
Sugar (kg/person)	3.9	5.0	5.6
<i>Durables (stock in hands of population per hundred persons at year end)</i>			
Bicycles	9.7	18.7	21.4
Sewing machines	4.7	9.0	9.4
Watches	12.9	26.2	34.5
Radios	12.1	22.8	23.1
TVs	0.9	3.4	6.7

Sources: *The Sixth Five-Year Plan of the People's Republic of China for Economic and Social development (1981–1985)* (1984); *Statistical yearbook of China 1986* (1986: 596 and 598).

several industries; had a major impact on the structure of the economy; and could extend over a period of more than five years. An important advantage of the programme approach to planning was that it focussed on the results to be achieved, rather than on marginal adjustments to the initial situation. Another advantage of comprehensive programmes arose from the fact that the achievement of a particular goal in one sector could have a major impact on many other sectors of the economy. This had to be taken into account if disproportions were to be avoided.

In the USSR in the 1980s, several of these comprehensive programmes related to consumption. For example, a Food Programme was adopted in 1982. This was a programme aimed at coordinating the work of agriculture itself; the sectors which provided it with inputs, such as agricultural engineering and agricultural chemicals; and the sectors which transported, processed and distributed its products. It embraced irrigation; land drainage and other land improvement schemes; the pay of agricultural workers and the provision of social facilities in the villages; procurement prices and the debts of farms; and a variety of other agro-industrial questions. The Food Programme derived its

importance and urgency primarily from the deteriorating availability of food in the USSR in the late 1970s, which led to the widespread introduction of food rationing in 1981. The bad harvests of 1979–85, the need to spend huge sums of foreign exchange on grain and meat imports, the use by the USA of the food weapon, the impact of food shortages in Poland, and the poor availability of meat and dairy products in much of the USSR in the late 1970s and early 1980s made the Food Programme of great political and economic importance. It turned out, however, that much of the activity included in the Food Programme (e.g. irrigation of the black earth region, the use of heavy tractors, large-scale cattle complexes) was very wasteful, and some of it hampered the development of agriculture. In the late 1980s the attention of Soviet agricultural policy makers switched to radically different policies (see Chapter 6).

Another comprehensive programme in the field of consumption was the ‘Comprehensive programme for the development of consumer goods and services’ adopted under Gorbachev. This was a complete failure. In the Gorbachev period the shortages of consumer goods rapidly worsened. These worsening shortages and accompanying rising prices were an important reason for the end of the Soviet system and of the USSR. When Yeltsin visited the USA in September 1989, the contrast between the abundance of goods in US supermarkets and the limited assortment, widespread rationing, long queues and increasing shortages in the USSR made an enormous impression on him. They seem to have played an important role in his resignation from the CPSU (in 1990) and his determination to smash state socialism and introduce capitalism in Russia (Sukhanov 2011: 80–90). Similarly, the disastrous situation in the consumer goods market was an important reason for the overwhelming support for independence in the December 1991 Ukrainian referendum. The policies of Yeltsin in Russia in the autumn of 1991 and the vote for independence in Ukraine led within a few weeks to the end of the USSR.

Planning by norms¹

A consumption norm is simply the quantity of a particular good or service required per head of the population. Although the method of

¹ The material in this section is taken from Weitzman (1974).

norms is an alternative to the price mechanism for the determination of output, it is in fact quite widely used in Western countries. It is used in areas where distribution on the basis of purchasing power has been replaced by distribution on the basis of need. Examples are the provision of social housing, hospitals, schools and parks. Calculations of the desirable number of rooms, hospital beds and school places per person are a familiar tool of planning in welfare states. The use of norms in consumption planning is illustrated in Tables 8.2 and 8.3. Table 8.2 shows nutritional norms and Table 8.3 the relationship between them and actual food consumption in the USSR and selected capitalist countries. This type of data clearly provides important information for the planning of agriculture, the food-processing industry and foreign trade.

Tables 8.2 and 8.3 illustrate two important facts about the method of norms. First, where there was an objective, scientific basis for the norms, as in nutritional science, then the norms provide valuable information for the planners. Secondly, that the possibility of *substitution* between products caused serious difficulties for the norm method.² This is shown most clearly by Table 8.4.

Why was it 'rational' for Soviet men to have seven pairs of shoes? Why not four or twelve? Why was it 'rational' for Soviet women to have fifteen dresses? Why not more, or less? Perhaps women preferred fewer dresses and more trousers? It is clear that these clothing stock norms had little basis and were largely arbitrary. What was the 'rational' number of cars per person? In view of its limitations, the norm method of consumption planning came in for criticism in the USSR in the late 1980s (e.g. Rimashevskaya 1987).

What happened when the quantity of a particular good or service which the public actually wished to buy differed from the 'rational' quantity provided by the planners in accordance with the norms? One possibility was to change the norms. For example, experience in the USSR in the 1960s showed that the norms for the purchase of consumer durables (televisions, refrigerators, washing machines, cars etc.) were too low and they were raised (Buzlyakov 1969: 172). Another possibility was to advertise the goods so as to boost sales. Hanson (1974) noted that, in the early 1970s, in the USSR and Poland there was an

² Even in the field of nutrition, the substitutability of many foods, from a nutritive ingredients point of view, cast considerable doubt on the 'scientific' basis of the norms.

Table 8.2 *USSR daily nutritional norms*

Age, gender and labour category	Calorific requirement (in kilocalories)	Intake of nutritional substances (in grams)		
		Proteins	Fats	Carbohydrates
Children to 1 year	800	25	25	113
Children 3–6 years	1,900	65	69	241
Youths 15–17 years	3,300	113	99	467
Working-age adults				
Group 1 (mental labour, e.g. students and office workers)				
Men	3,000	102	97	410
Women	2,700	92	87	369
Group 2 (light manual labour)				
Men	3,500	109	113	478
Women	3,200	102	103	437
Group 3 (heavy physical labour)				
Men	4,000	137	129	546
Women	3,600	123	116	492
Group 4 (very heavy physical labour)				
Men	4,500	146	145	615
Non-working pensioners	2,500	85	74	351

Source: Weitzman (1974: 307). An apparent printing error has been corrected.

increasing tendency to use advertising to boost sales of those consumer goods for which buyers' markets existed. Another possibility was to alter prices to bring demand into line with supply. In the traditional model, however, only limited use was made of price changes (e.g. for seasonal fruits), and emphasis was placed on quantity changes in bringing supply and demand into equilibrium.

The use of price changes in the attempt to bring about equilibrium in the consumer goods market several times (1970, 1976, 1980)

Table 8.3 Actual and normative food consumption in the USSR, and actual food consumption in selected countries (kgs/head/year)

Food categories	Norm	USSR		EEC ^b	USA	China
		1985 actual ^a	1985 as % of norm	1984/5 actual	1982 actual	1985 actual
Bread (in terms of flour)	110	133	121	85 ^c	96 ^d	254 ^e
Potatoes	97	104	107	75	52	n.a.
Vegetables & melons	146	102	70	110	91	n.a.
Fruits & berries	113	46	41	90	59	n.a.
Sugar	40	42	105	34	34	6
Vegetable oil & margarine	9	9.7	108	18	25	5
Meat & meat products	82	61	75	90	107	17
Fish & fish products	18 ^f	17.7 ^f	98	15	6	5
Eggs	16 ^g	14 ^g	88	14	15 ^g	5

^a Soviet consumption figures were not fully comparable with those for OECD countries. The Soviet figures gave too favourable a picture of Soviet reality. For a discussion of relative food consumption in the USSR and USA see Birman (1983: 251–91).

^b 10 members.

^c Total cereals in terms of flour.

^d 'Grains'.

^e 'Grain'.

^f Live weight.

^g Converted from numbers of eggs at the rate of 18 eggs = 1 kg.

Sources: The Soviet norms are derived from *Potrebnosti, dokhody, potreblenie* (1979: 61); actual Soviet consumption is taken from *Narodnoe khozyaistvo SSSR v 1985g* (1986: 445); US consumption comes from *Statistical abstract of the United States 1984* (1983: 129); the data for the EEC are from *Agriculture statistical yearbook 1986* (1986); and for China from *Statistical yearbook of China 1986* (1986: 596).

generated spectacular political explosions in Poland. Although often blamed on the 'failure of the workers to understand the need for equilibrium', it seems that their real cause was the 'failure of the authorities to realize the conditions necessary for equilibrium'. The December 1970 decision by the Polish government to raise food prices

Table 8.4 *USSR rational wardrobe and 1962 US Heller budget clothing stocks (no. of pieces/head)*

	USSR		USA			
	rational wardrobe		Heller budget I ^a		Heller budget II ^b	
	Men	Women	Men	Women	Men	Women
Coats	2.6	2.6	1	2	1	3
Raincoats	0.4	0.4	1	1	1	1
Jackets and sweaters	2.0	3.0	2	1	4	2
Suits	5.0	2.0	2	1	4	2
Trousers	2.0	–	2	2	2	4
Dresses	–	15.0	–	9	–	13
Socks and hosiery (prs)	9.0	9.0	11	10	13	10
Leather shoes (prs)	7.0	10.0	3	5	5	8

^a Family of a wage earner.

^b Family of a white-collar worker (professional or executive).

Source: Weitzman (1974: 312).

substantially, which led to riots in the working-class towns of north Poland and to the fall of Gomulka, had been preceded by an interesting economic discussion (Mieczkowski 1975: 154–71; Nuti 1971). The discussion was initiated by J. Pajestka, the Vice-President of the Polish Planning Commission. He argued that the expenditure pattern of Polish consumers was being distorted by an irrational price system. Some relevant data are set out in Tables 8.5 and 8.6.

The tables show that in 1967 more than half of the personal expenditure of Polish consumers went on food and drink. Pajestka suggested that this high share of food expenditure was partly a result of selling food too cheaply. He argued that, given the relative social costs of producing the different commodity groups (see Table 8.6), it would be more efficient to consume less food and more durables. The argument is illustrated in Figure 8.1.

Consider an economy which can produce either food or durables or some combination of the two, as given by the transformation line TT' . If market prices equal this rate of transformation, consumption would be P . Consumers would be on the indifference curve II' . If actual prices underprice food relative to durables, then the actual consumption point

Table 8.5 *Polish consumption structure in 1967 (%)*

	Total	From personal incomes	From social funds
Food	40.0	44.5	14.2
Drink	9.3	10.6	–
Tobacco	3.1	3.5	–
Clothes and shoes	13.6	15.5	–
Fuel and power	2.3	2.7	–
Housing	7.3	7.7	4.1
Hygiene and health	7.7	3.3	40.1
Culture, sport and tourism	9.8	5.4	41.5
Transport and communications	4.5	5.1	–
Other	1.5	1.7	0.1
Total	100.0	100.0	100.0

Source: Nuti (1971).

Table 8.6 *Social cost–retail price ratios (Poland in 1970)*

1. Food	1.288	
1.1. Meat and poultry		1.732
1.2. Fish		1.287
1.3. Fat		1.288
1.4. Sugar		0.867
1.5. Fruit and vegetables		0.864
2. Clothes and shoes	0.726	
2.1. Fabrics		0.817
2.2. Ready to wear		0.677
2.3. Shoes		0.673
3. Durable goods	0.748	
3.1. Means of transport		0.808
3.2. Electrical goods		0.732
4. Chemical manufactures	0.710	
5. Paper products	0.791	
6. Transport services	1.391	

Source: Nuti (1971).

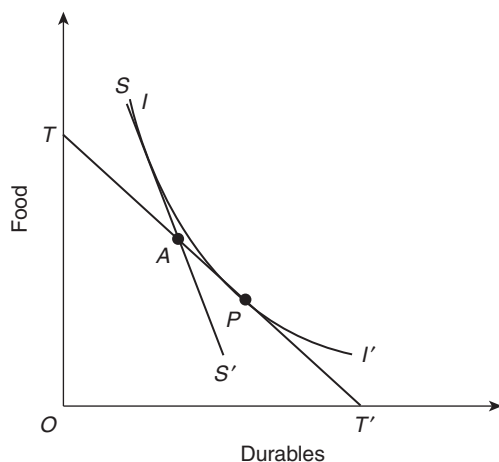


Figure 8.1 Changing relative prices to improve welfare

is A . A is a market disequilibrium point, and is on a lower indifference curve than P . Hence welfare maximisation requires that consumers be confronted by the rational price TT' , rather than the cheap food price SS' .

This argument sounds plausible, but in fact rests on a number of erroneous assumptions. First, it assumes that the relative price of food in Poland was low. In fact, if a wide range of goods and services is considered, and account is taken of the limited availability of many non-food goods and services in Poland, by international standards it was high. Secondly, it assumes that raising the relative price of food reduces its consumption. Under Polish circumstances it normally did not, since the government was forced to provide compensating income increases which enabled people to attempt to purchase at least as much food as before. Thirdly, it fails to understand the role of disequilibrium relative prices in generating apparent shortages of food products. The Polish economist Podkaminer (1982) argued that, throughout the period 1965–78, the disequilibrium in the consumer goods market could have been cured by *cutting* the price of food, provided that the price of durables (e.g. housing) and services had been raised sharply. According to his analysis, the fundamental cause of disequilibrium on the Polish consumer goods market was not the low price of food but the low price of durables (e.g. housing) and services, and their limited availability. Unable to spend

their incomes on housing (which was either unobtainable or very cheap), or on other durables (which were often unavailable), or on leisure or cultural activities (which were either very cheap or unavailable), the population spent its money on food. This generated entirely artificial food 'shortages' (by international standards Polish food consumption was quite high).

Perhaps the most dramatic support for the Podkaminer thesis were the 'surprising' consequences of the huge food price increases imposed by the military regime in 1982. In February 1982, shortly after martial law had been declared, a price reform quadrupled the prices of virtually all foodstuffs (with the exception of bread and cereals, which had undergone similar treatment several months earlier), alcohol and tobacco. This reform naturally necessitated compensating wage and pension increases (otherwise, much of the population would have died of poverty). This 'compensating' (in fact more than compensating) increase in income touched off an acute shortage of all non-food products, the prices of which were now ridiculously cheap. The excess incomes, resulting from the lack of availability of durables and their low prices in the state sector, were spent on food and in the second economy, generating new food shortages and intensified rationing and hectic activity in the second economy. Of the restoration of equilibrium in the consumer goods market there was no sign. This 'surprising' result was generated, on one level, by a lack of understanding of the importance of substitutability between goods and the results of disequilibrium relative prices. On another level, it was generated by the Bonapartist character of the Jaruzelski regime and its support for the peasantry at the expense of the urban working class and urban intellectuals. Furthermore, it is obvious that an alternative policy of dramatically increasing rents and the prices (and availability) of a wide range of durables and services would also have been unpopular, in particular with the social groups on whom the authorities depended. (As pointed out in the previous chapter, cheap housing particularly benefited those holding senior posts in the bureaucratic apparatus. Similarly, holding the prices of cars at disequilibrium levels generates big benefits for those fortunate enough to be allocated a car.) A further confirmation of the Podkaminer argument came with the relative price movements in Poland after the price liberalisation of 1989–90 (Bell and Rostowski 1995).

Summary

The method of norms was the main method of consumption planning used in the state-socialist countries. Its main weaknesses were the arbitrary nature of the norms and the phenomenon of substitutability. The norms could be implemented, *inter alia*, by quantity and price adjustments. The former was the main method used in the traditional model. Unwise use of the latter could trigger off dramatic political protests, and fail to establish equilibrium in the consumer goods market.

Supply and demand

In the USSR the growth of consumption (purchasing power) of the masses continually outstrips the growth of production and pushes it ahead, but under capitalism, on the other hand, the growth of consumption (purchasing power) of the masses never catches up with the growth of production and continually lags behind it, which condemns production to crises ... [In the USSR] the growth of the domestic market will advance beyond the growth of industry and push it forward towards continuous expansion.

J. Stalin (1955b: 300 and 332)

A characteristic feature of consumption in the state-socialist countries was the existence of shortages and queues. This marked the entire history of the USSR. The intensity of shortages varied over time and between countries. For example, in the USSR, the 1950s were a period of declining shortages, whereas the 1970s were a period of increasing shortages. Similarly in Poland there was a drastic worsening of shortages in the late 1970s, culminating in the crisis of 1981, after which the situation improved. What explained the shortages? This is a controversial question to which a variety of answers have been offered.

The macroeconomic explanation is that the shortages and queues were symptoms of suppressed inflation. The volume of purchasing power in the hands of the public was in excess of the volume of consumer goods and services available, given the prices fixed by the state. In the 1920s shortages and queues were officially explained in the USSR as resulting from a 'goods famine'. This phrase suggested that the shortages and queues were a result of physical factors (low output and productivity) akin to the results of a bad harvest. This notion was criticised by a number of Soviet economists. In articles published in 1925 and 1926, Shanin and Novozhilov argued, in effect, that the

shortages resulted from violation of the macroeconomic equilibrium equation on page 290 above. The incomes being generated in the economy were in excess of the market value of consumer goods output. Looking at the matter from a static point of view, Novozhilov argued that the solution was to raise prices so as to restore equilibrium. Looking at the matter from a dynamic point of view, Shanin argued for a rapid expansion of the output of consumer goods, and for only a small allocation of investment resources to producer goods. These ideas were decisively rejected by the Party, which launched instead a rapid expansion of employment in, and output of, producer goods industries. This naturally exacerbated the situation. Rationing of all producer goods and many consumer goods, together with restricted-access retail trade, had to be introduced to keep the situation under control.

Thirty-three years later, Novozhilov (1959: 199–200) reverted to his earlier theme. He argued that the underpricing of goods leads to the expenditure of ‘time and effort on the search for scarce goods and standing in queues. At the same time unproductive and even criminal actions (speculation in scarce goods, under the counter sales by assistants of the scarce goods, etc.) become a source of unjustified enrichment.’

The views of Novozhilov, and other Soviet economists who shared his position on this issue, remained unorthodox up till the late 1980s. The idea of the price mechanism as the most efficient way of allocating scarce goods between consumers was repeatedly rejected by the authorities. They argued that the way to overcome shortages was not to raise prices but to expand output. For example, in a meeting with Moscow workers in January 1983 (*Pravda* 1 February 1983), Andropov raised the question of how to overcome shortages. ‘It is possible, of course, to raise prices. This solution, however, in general does not suit us . . . What remains? . . . It is necessary to produce more goods so that the shops will not be empty.’ The classic exposition of the traditional Marxist–Leninist point of view is contained in a speech by Stalin at the Sixteenth Party Congress (1930), an extract from which is quoted at the head of this section. In that speech he contrasted the relationship between demand and supply under capitalism and under socialism. Capitalism is characterised by overproduction and lack of demand (unemployed labour and machinery; schemes to keep goods off the market by destruction; reductions in output or eliminating competition). Under socialism, on the other hand, demand runs ahead of

production, and provides a stimulus to it. Instead of raising prices to re-establish equilibrium, he advocated cutting prices so as to increase real wages (as was done in 1948–54).

The view that the macroeconomic situation in the USSR was marked by permanent suppressed inflation focusses on the state sector and ignores the second economy. Grossman (1977) pointed out that:

the very presence of a large second economy, and particularly of a black market, in a sense does away with repressed inflation, despite a fairly rigid control of official retail prices. In the second economy, prices tend to be high enough to eliminate any overall 'monetary overhang' (that is, excess of purchasing power over the total supply of goods and services at effective prices) and to forestall a repressed inflationary situation in relation to the controlled and noncontrolled sectors taken together.

This argument was developed further by Nuti (1986).

In a well-known and influential series of papers, Portes also disputed the macroeconomic explanation, but on different grounds. He applied disequilibrium macroeconomics to the available data, and concluded that, for some countries (e.g. Czechoslovakia, GDR, Hungary and Poland) for some periods (e.g. the mid 1950s to the mid 1970s), there is no evidence of permanent macroeconomic disequilibrium. According to this line of reasoning, shortages and queues were not as universal as is often supposed, and, where they did exist, may well have been symptoms not of macroeconomic disequilibrium but of microeconomic disequilibrium. Podkaminer (1988), however, found significant macroeconomic disequilibrium in Poland in 1975–86. An interesting and important conclusion of the research of Portes was that macroeconomic disequilibrium may be a greater problem for economies experiencing the reform process than for economies with the traditional model. Portes and Santorum (1987) applied the Portes analysis to China in 1955–83. They concluded that there were periods of macroeconomic excess demand in China under the traditional model, notably in 1956–8, 1960 and 1976. Nevertheless, under the traditional model there was often a situation of macroeconomic equilibrium or macroeconomic excess supply. On the other hand, once reforms were embarked upon, macroeconomic excess demand became a chronic problem, marking the whole period 1980–3. This was one of the reasons why the reform process in China in the 1980s was far from being a smooth, one-way, process.

The microeconomic explanation is that the state-socialist countries suffered from disequilibrium *relative* prices. It is entirely possible for the macroeconomic balance equation on p. 290 to be met, but for the prices of individual goods to differ substantially from the equilibrium levels. Indeed, one might expect this normally to be the case in the traditional model, since in it the planners frequently combined planned balancing of the incomes and expenditures of the population with a policy of stable prices. The microeconomic explanation has the advantage over the macroeconomic one of explaining the existence side by side of both shortages and excess stocks.

For adherents of the macroeconomic and microeconomic explanations, the way to overcome the shortages was to adjust prices. Experience has shown, however, that just increasing prices may be ineffective in overcoming the shortages. For example, in Poland in the 1980s there was a rapid increase in state retail prices. According to official data (which are unlikely to have been exaggerated), they doubled in 1982, rose by 20 per cent in 1983, 14 per cent in both 1984 and 1985, 18 per cent in 1986, and 25 per cent in 1987. Nevertheless, shortages remained widespread, and equilibrium in the state retail sector was not re-established. It is quite possible, however, that the failure to re-establish equilibrium was caused not by the inappropriateness of price adjustments but by the incompetence of the authorities. If Podkaminer was right, overcoming the disequilibrium on the consumer goods market required a big increase in the relative price (or availability) of non-food products, such as housing rents, durables and services. Since this did not take place, the shortages remained. Alternative explanations are considered below.

From a Marshallian point of view, the permanent existence in countries with the traditional model of shortages, queues and 'scarce goods' (i.e. goods that people want and which are produced, but which are unavailable at a particular place at a particular time), and the replacement of shopping by 'obtaining with difficulty',³ were a result of eliminating both the short-run and long-run equilibrating mechanisms which exist under capitalism. In the short run, it is appropriate to balance supply and demand by adjusting prices, in the long run by adjusting quantities. Both these feedback mechanisms were, however,

³ The word *dostat'* (literally 'to obtain with difficulty') was often used to describe buying goods in the USSR.

eliminated (or severely restricted) in the traditional model. Short-run price flexibility did not exist since prices were determined by state organs and were often stable for prolonged periods. In addition, long-run adjustment of quantities in accordance with consumer demand only existed in an attenuated form, since the output of consumer goods industries was determined by planners in accordance with bureaucratic procedures. Hence, to bring supply and demand into balance required some other mechanism, e.g. queues, shortages, or informal or formal rationing. From a Marshallian perspective, the way to overcome the shortages was to reintroduce the two mechanisms, i.e. flexible prices and the determination of quantities in accordance with consumer demand, the absence of which caused the shortages. The attempt to do this was an important part of the reform process.

The distributive explanation concentrates on factors specific to the distribution sector. For example, as was pointed out in Chapter 7, the CMEA countries deliberately kept down the proportion of the labour force engaged in distribution, and this was a major factor in explaining why shopping there took longer than in comparable capitalist countries. Similarly, they also reduced investment in distribution. Research in Poland (Turcan 1977) suggested that the system of responsibility for missing goods was also very important. In the 1940s regulations were introduced in Poland making those employed in distribution personally responsible for losses, however incurred. (The purpose of this was to reduce theft.) The system evolved, but the most common arrangement when Turcan did his research was that staff were responsible for losses due to dishonesty, and for losses exceeding 1 per cent of the stock value. In these circumstances the staff had to pay for the losses incurred. If a member of staff stole something and, though convicted, was unable to pay, it was the responsibility of the remainder of the staff to pay for the losses, i.e. there was a common responsibility for looking after state property in shops.

Given this system of personal responsibility, stocktaking and checking the receipt of goods were matters of considerable concern to those employed. According to Ministry of Finance regulations, there had to be at least one stocktaking every year, but, if any sales assistant left the shop, a member of the remaining staff had the right to insist that a stocktaking be carried out. In view of this, the unexpected closure of shops, the lack of interest in selling, keeping customers away from products, queues for baskets in supermarkets, etc. all become

explicable. The sales assistant's job was partly that of a store detective or security guard. The staff were at least as interested in preventing theft as in selling.

Turcan's research is extremely suggestive. Whether or not the same system existed in the other CMEA countries is not known to the author. It may well have done so. Obviously factors internal to distribution (low levels of employment and investment, the system of responsibility for preventing loss) are an important factor explaining shopping difficulties in the CMEA countries.

The social explanation is that increasing the relative prices of the scarcest goods was impossible because this would have led to riots and strikes. Experience in the USSR in 1962 and in Poland in 1970/1, 1976 and 1980 certainly suggests that large state price increases for basic food products could produce an explosive political situation. Many workers evidently preferred shortages and queues, or rationing, to the free availability of goods that only those with money could afford. For example, one of the Twenty-One Demands of the August 1980 Gdansk strike committee was the introduction of meat rationing (as an alternative to price rises). Already in 1976, Poland rationed sugar, and the USSR in the 1970s and 1980s had enormous food subsidies combined with meatless days and poor availability of food in many areas. The situation was exacerbated by the policy of leaving prices stable for years, so that the necessary readjustments were very large. On the other hand, in some countries (e.g. Hungary and China) significant increases in food prices did prove feasible without explosive public opposition.

The behavioural explanation concerns the patterns of behaviour that characterise the state-socialist countries, their causes and consequences. For example, according to Kornai (1980, 1985), the fundamental cause of shortages was the soft budget constraint that faced firms in the state-socialist countries. The term 'soft budget constraint' refers to a type of behaviour within a particular social relationship. Firms with a soft budget constraint are not constrained by their financial situation. If they run into financial difficulties, their superiors will always bail them out. This results from the fact that they are state enterprises for whom the central bodies are responsible. Hence, in place of economic considerations, the dominant factors which determine the behaviour of enterprises are bureaucratic factors. This enables them to give free rein to typical bureaucratic objectives such as the desire to expand. The soft

budget constraint thus implies a virtually unlimited demand for all products, and this is the underlying cause of the shortages that so plague consumers. The only way of overcoming the shortages, according to this line of reasoning, is a radical economic reform (e.g. the expansion of the private sector, the end of directive planning, real self-financing, allowing the possibility of bankruptcies, etc.) which introduces hard budget constraints for the enterprises.

Adherents of the behavioural explanation argued that adherents of the macroeconomic and microeconomic explanations were wrong to attach so much importance to the need for raising prices to overcome shortages, since raising prices may not overcome the shortages. This results from a combination of factors. First, many consumer goods were acquired not only by private consumers but also by state enterprises (e.g. foreign trade enterprises), and these were not price sensitive. Secondly, a significant proportion of consumer goods and services were distributed free (education, medical care) or at nominal prices (e.g. housing in many countries), and introducing market pricing for them would have raised major social issues. Thirdly, in many cases the supply curve had a 'perverse' shape, and can be characterised as a 'shortage-preserving supply curve'. The shortage-preserving supply curve is illustrated in Figure 8.2.

Figure 8.2 shows a situation in which there is a normal shortage (e.g. a waiting period of four years for a car), which cannot be reduced by increasing prices because of the behaviour of the planners. When the price is increased, demand falls but so does supply, because the planners respond to the reduction in demand by reducing production or cutting imports or increasing exports. They aim to preserve the normal level of shortage in this market. This behaviour results from: the planners' idea of what is normal and acceptable; the fact that decision making is not guided by profit maximisation; and the general environment of shortages, which means that there are always attractive alternative uses for consumer goods (e.g. exporting them so as to earn scarce foreign exchange).

It seems likely that all the explanations have been important as causes of shortages and queues in the state-socialist countries, the balance between the different explanations varying over time and between countries and products. The debate between the adherents of the various explanations was important in clarifying and deepening understanding of this important issue.

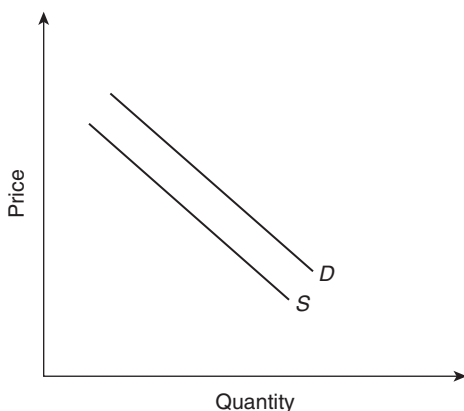


Figure 8.2 A shortage-preserving supply curve

The inability of the state economy to meet all consumer needs gave rise to extensive economic activity in all the state-socialist countries outside the state sector (see Chapter 2). In some periods, the authorities vigorously attempted to suppress this kind of activity, and in others tolerated it. When economic reform was first discussed (e.g. in the USSR in the 1930s and in Poland in the 1950s), attention was usually focussed on the state industrial sector and the need to make it less wasteful and more responsive to the needs of customers. Experience, however, showed that this was very difficult. On the other hand, it also showed that small-scale non-state enterprises could respond quickly to requirements. They had the great merits of producing goods and services that people wanted; of providing incomes and employment; and of not requiring state subsidies. Furthermore, the private sector could play a useful role in reducing disequilibrium in the state sector. It could do this in two ways. First, by increasing the cash required by the population for transactions purposes. Secondly, taxes on the legal private sector could ensure that the output of this sector exceeded the net incomes generated by it, and, hence, that it reduced the demand for consumer goods and services in the state sector. Accordingly, an important feature of the reform process was the relaxation of the restrictions on the small-scale non-state sector. For example, an important aspect of the deepening of economic reform in Hungary in the 1980s and of economic reform in China and Poland in the 1980s was the official encouragement of the small-scale non-state sector. Similarly, in 1986 the USSR

adopted a radical law legalising individual economic activity. This was intended to legalise and encourage small-scale private service and production activities (e.g. repairs to cars and other consumer durables; the building and repair of housing; private lessons and private small-scale medical services; the making of clothes, shoes, furniture, etc.). Similarly, from 1987 small cooperatives, originally intended for running restaurants, doing repairs and producing consumer goods, were encouraged in Soviet official documents. (Although this did increase the supply of goods and services, it was also used on a large scale by enterprise management to pay large sums to itself, and favoured colleagues and employees. This often turned the accounting money used for inter-enterprise transactions into cash, and, hence, added to inflationary pressures.)

Official encouragement for small-scale private service and production activities resulted from the fact that experience showed that the state sector was unable to meet fully the demand for consumer goods and services. This was unexpected from the standpoint of traditional Marxism–Leninism but was true and important.

The existence of a private sector in a predominantly state-controlled economy could give rise to social and economic problems (e.g. it undermined the relative position of senior officials, could undermine work morale in the state sector, and could generate popular jealousy of its high incomes), which sometimes led to official campaigns against the sector. They also sometimes led to bureaucratic obstacles to the existence and development of the sector. In retrospect, the growth of a private sector in countries such as Hungary, the USSR and China was an important stage in the transformation of the traditional model into a capitalist economy.

Another way of reducing shortages and queues in the state sector is that of monetary reform. Examples are the USSR in 1947, Poland in 1950, Romania and Bulgaria in 1952, and Vietnam in 1985. In a monetary reform, most of the money held by the public, both cash and bank deposits, is confiscated (normally by ending the validity of the old money, using unfavourable rates of exchange of old money for new, and/or converting part of the old money into non-negotiable long-term bonds). The aim is to reduce disequilibrium in the state retail sector (and often also to punish speculators). Monetary reform was normally quite effective in reducing disequilibrium in the state sector. For monetary reform to be successful requires that, after the reform,

measured in new money, the supply and demand for consumer goods should balance. If money wages in the new money are much in excess of the availability of goods, and there is a significant free market (e.g. for food products), then instead of eliminating shortages and queues, rapid inflation will be generated. This happened in Vietnam in 1985/6, and seems to have resulted from combining the monetary reform with a transition to the payment to state employees of money wages rather than entitlements to heavily subsidised rationed commodities. This resulted in a big imbalance between the flow of money incomes and the flow of products, especially food products on the free market, and hence in rapid inflation.

An alternative to economic or monetary reform as a way of dealing with shortages is rationing. Formal rationing (as opposed to shortages and queues; informal rationing by place of work distribution, or limits on the quantity of particular products that may be sold to each person; or rationing by the price mechanism) was extensively used in the state-socialist countries. In the USSR, there was rationing in the Civil War, in 1928–35, and during the Great Patriotic War (1941–5). In China all major consumer goods were rationed from the early 1950s until 1980. After 1980 the rationing of many products was gradually relaxed or abolished completely, but remained in force for some time for grain and vegetable oil, and was temporarily reintroduced for pork in December 1987. In Poland the rationing of some foodstuffs was introduced in 1976 and intensified in the early 1980s. In Cuba and Vietnam rationing was extensive and lasted many years. Formal rationing has a number of advantages compared with the free market allocation of consumer goods. First, it enables commodities to be allocated on an egalitarian basis. Secondly, it facilitates control over population movement. For example, in Maoist China rural people could not freely migrate to cities and look for jobs. They had first to apply for permission and receive a ration book usable in the relevant city. (However, this became less relevant as the number of rationed commodities fell, and as supplies on the free market grew.) Thirdly, it enables goods to be allocated in accordance with paternalistic criteria. For example, whereas distribution via the market may lead to children going without milk as parents spend their earnings on alcohol or tobacco, rationing can attempt to prevent this. Fourthly, it enables goods to be allocated on the needs principle, rather than on the desert principle. Fifthly, it enables discrimination to be made between deserving groups of the population who

receive rations (e.g. officials and manual workers) and undeserving ones (e.g. white-collar workers, intellectuals or enemies of the people) who are left to starve.⁴

It also has a number of problems. First, extensive use of rationing undermines material incentives. This may have an adverse effect on labour productivity. Secondly, the accompanying development of a black market is both inefficient and has a demoralising effect. Thirdly, in general, a person who receives rations is worse off with rations than with an equivalent quantity of money. The reason is that the relative quantities of the various rationed goods which the person is entitled to are likely to differ from the relative quantities of the goods which he/she would have bought had goods been freely available. Unless the rations are only for a small number of very basic goods, or there are stringent punitive sanctions against this, this disadvantage of rations relative to universal-purpose coupons (i.e. money) is likely to manifest itself in a formal or informal market, in which rations for different commodities are exchanged against each other or for money. Fourthly, it separates consumption from the productive contribution that people make to society, and makes consumption partly dependent on connections, personal contacts, friendship, etc. in the political and bureaucratic hierarchies. This undermines production, and increases the role of political and bureaucratic factors in social life.

The balance between the advantages and disadvantages of formal rationing depends on the concrete circumstances of particular countries at particular times.

It is not necessary to introduce formal rationing in order to replace flexible prices and quantities by administrative methods, in equilibrating supply and demand. A 1970s Soviet book on consumer demand (Levin and Yarkin 1976: 284–9) considered a number of other administrative methods for regulating demand. They included limiting the number of units sold per customer, only selling goods against preliminary orders, which may take a long time to be fulfilled (for example some types of refrigerators, suites of furniture and carpets), and distributing particularly scarce goods (e.g. cars) via employers rather than via

⁴ In 1948 Zhdanov (then a leading member of the Soviet Politburo) told Djilas how his (Zhdanov's) criticism of the writer Zoshchenko had been taken in Leningrad. The local authorities simply took away Zoshchenko's ration coupons, and did not give them back till after Moscow's magnanimous intervention (Djilas 1962: 150).

the retail system. The fact that such methods were discussed in a book published in 1976 indicates that in the USSR in the mid 1970s the general availability of all goods in all places was still only a dream for the distant future. In the late 1970s and 1980s shortages in the USSR worsened and place of work distribution and local rationing grew in importance.

Rationing may exist not only for consumer goods but also for producer goods. The replacement of competition and flexible prices and quantities by rationing, as the allocation mechanism for producer goods, was an important feature of the traditional model. What effects on the economy are there of eliminating competition between firms, allocating producer goods via a rationing system and balancing supply and demand for consumer goods by increasing supply and maintaining prices stable (or even, if possible, reducing them)? The standard analysis of this question is by Kornai (1971: part III). His argument is summed up in Table 8.7.

Looking at Table 8.7, it is easy to see why capitalism is normally characterised by pressure. It brings rapid technical progress and benefits the upper income groups (as consumers). The costs (unemployment, insecurity of employment, inequality) primarily fall on the working class. It is equally clear why wartime capitalist economies move over to suction. It increases the volume of output; mobilises hitherto wasted inputs; and facilitates social peace by offering the workers full employment, security of employment and greater equality. One can also see why the orthodox Marxist-Leninist view was that suction was preferable to pressure. It raises output in the short run, eliminates unemployment and insecurity of employment, and its adverse effects on consumption do not affect the elite because of the existence of special shops, sanatoria and hotels for the elite, where pressure rules. These special facilities also play a useful role in rewarding conformity.⁵

The ill effects of suction on consumption were a major reason for the dissatisfaction with the traditional model by wide strata of the population in the state-socialist countries. This is easy to understand once one appreciates that shortages and queues have major economic and social costs. These cover such things as: the loss of leisure from standing in queues; the deterioration in social relationships (theft from the state,

⁵ They also generate substantial popular dissatisfaction. One of the Twenty-One Demands of the August 1980 Gdansk strike committee was their abolition.

Table 8.7 *Pressure and suction compared^a*

Area	Pressure	Suction
Output	In the short run brakes the increase in volume.	In the short run stimulates the increase in volume.
Inputs	Partial idleness of resources. Free combination of inputs.	Tight utilisation of resources. Forced substitution of inputs.
Technical progress	Stimulates introduction of revolutionary new products.	Does not stimulate introduction of revolutionary new products.
Quality	Stimulates improvements of quality and a high level of quality.	Does not stimulate improvements of quality or a high level of quality.
Competition	Sellers compete for buyers. Even the monopolist behaves 'like a competitor'.	Buyers compete for sellers. Even when there is a multiplicity of producers each producer behaves 'like a monopolist'.
Adaptation	Producers adapt to consumers in the short run. Producers attempt to establish product differentiation, brand loyalty and mould consumers.	Consumers adapt to producers in the short run. Sharp price adjustments needed occasionally.
Uncertainty	Burden of uncertainty carried by the seller.	Burden of uncertainty carried by the buyer.
Selection	Selection is made by buyer. Generally, progressive selection criteria.	Selection is made by seller or central administrative organ. Generally, indifferent or counterproductive selection criteria.
Information flow	Generally, the seller informs the buyer.	Generally, the buyer seeks to obtain information about buying possibilities.
Social consequences	Generally, unequal income distribution. Leads to demands for full employment. Efforts to deceive consumers. Waste of resources on advertising and marketing.	Generally equal income distribution. Leads to demands for economic reform. Creation of a market for elite where pressure rules. Creation of a black market where goods can be obtained – at a price.

^a 'Pressure' and 'suction' correspond to a buyers' market and a sellers' market, respectively.

Source: Adapted from Kornai (1971: 302).

general disregard for the law, widespread dissemination of the petty trader mentality); and the loss of income resulting from the inability to spend money on desired goods or services at state prices. An attempt to measure the latter was made by Collier (1986). He investigated the following question. How much income would a GDR family of four in 1977 have been prepared to give up if, in return, it could have been assured that the actual availability of goods in the GDR, at GDR prices, in the new lower money income situation would have been the same as in the FRG? In other words, what was the cost to the average GDR family of the fact that desired goods were often not available at state prices? He assumed that tastes in the two Germanies were the same, so that the typical GDR consumer, if faced by FRG prices and availabilities, would buy the same commodities as those actually bought by a typical FRG consumer with an equal real income. He calculated that the answer was 13 per cent. This was a measure of the cost to consumers of forced substitution (i.e. the purchase of goods other than those actually wanted because the wanted goods were not available); transaction costs (e.g. bribes) resulting from shortages; the difference between state and second economy prices; and extra savings held only because desired goods were unavailable at state prices. On the other hand, it takes no account of the additional income which some people gain from the shortages. This is both monetary (e.g. bribes, second economy earnings) and in kind (e.g. the benefits to officials from the use of the housing and cars which they have been allocated at low prices). The additional income accrues to two groups of people: high officials by virtue of their position, and spivs (like Ostap Bender) by virtue of their trading ability and widespread contacts. It should be noted that the availability of goods in the GDR in 1977 compared quite well with that normal in the state-socialist world.

Pressure in an economy divided into classes is accompanied by envy and class struggle. Suction, on the other hand, can give rise to widespread low morale and demoralisation.⁶

⁶ One phenomenon which accentuated popular dissatisfaction and demoralisation in state-socialist countries was the existence of special shops, where scarce, high-quality and luxury goods could be obtained – for convertible currency only. This system, which was initiated in the USSR in the early 1930s, created a privileged stratum with access to attractive consumer goods inaccessible to the mass of the population. The latter were naturally resentful. It was no accident

Kornai's argument stresses the advantage of competition, free entry, and flexible prices and quantities, in a buyer's market, for stimulating technical progress and high quality. This corroborates the arguments of Schumpeter and J. M. Clark that the great merit of the competitive market economy is not that stressed by neoclassical economics, of driving prices down to costs and costs to a minimum. Rather, it is the stimulus it provides to new goods and technical progress.

Reciprocity

The prolonged inability to obtain many goods and services for money in the state sector gave rise to alternative mechanisms for obtaining them. One such was reciprocity. This was a pre-capitalist institution (Polanyi 1957: chapter 4) which enjoyed a revival under state socialism (Kornai 1980: 77; Ledeneva 1998). It consisted of obtaining goods or services by providing goods or services in exchange: in Kornai's example, 'Today you give me material; tomorrow my wife who is secretary at the district clinic will help you get to the doctor in advance of your proper turn.' Reciprocity was very extensive and used both to obtain scarce goods (such as meat or furniture) and valuable services (e.g. good marks for one's children in school exams). The use of reciprocity benefited most those with a large number of useful contacts and something to offer in exchange for favours from others. It was an alternative to money in a society in which money was not a universal equivalent.

Reciprocity was naturally influenced by the culture and traditions of the country in which the shortage economy was introduced. In the USSR this exchange of favours was known as *blat*, and played a crucial role in everyday life, whether it was obtaining scarce food or consumer durables; obtaining treatment in a well-regarded hospital; obtaining some kind of official document; or getting one's child into a good school. As the author of an indignant letter to a high Soviet official in 1940 put it (Ledeneva 1998: 24):

that one of the Twenty-One Demands of the August 1980 Gdansk strike committee was the closing of these shops.

From the point of view of the authorities, sales in these shops were exports. Exports were necessary to pay for imports of machinery and grain and to service debt. Popular dissatisfaction and demoralisation, on the other hand, were so endemic that a little more seemed to the authorities of little significance.

If you need to obtain, that is, to buy stuff in the shop, *blat* is what you need. If it is difficult or impossible for a passenger to obtain a train ticket, it is easy and possible by *blat*.

If you have no apartment, never go to the housing department or anywhere similar, try to have a little *blat* and an apartment will become available.

If you want an excellent promotion at work, at the expense of others, with no justice and legality, again you need *blat*.

Finally, if you address a representative or executive of a state, mass or cooperative organization in order to solve some personal problem just try to achieve a decision without *blat*! You'll break yourself but gain nothing.

The examples given, such as the difficulty of obtaining train tickets, illustrate both the ubiquity of shortages and the essential role which reciprocity played in making everyday life possible and minimally comfortable.

This Soviet exchange of favours was similar to *guangxi* in China and *zalatwic sprawy* in Poland. *Guangxi* differed in some respects from *blat*. *Blat* always had negative connotations, and the word itself seemed to have emerged from criminal slang. *Guangxi* was more respectable and part of the proper relationships between people.

This revival of a pre-capitalist institution illustrated the fact that in some respects state socialism, far from being a more advanced system than capitalism, was a retrogression compared with capitalism. Under capitalism one does not need to cultivate other people in order to obtain train tickets. They are available over the internet to anyone who can afford them.

The effect on consumption of the transition from capitalism to state socialism

Judging by historical experience, the transition from capitalism to state socialism might be expected to have both positive and negative effects on consumption.

On the *negative* side the following would seem to be the most important.

- First, there are the costs of revolution (Bukharin 1920: chapter 6; Sakharov 1969; Ponchaud 1978). Revolutions result from internal and external political conflicts which have a major cost in terms of

lives lost, physical destruction and loss of working time. This will reduce living standards.⁷ In addition, the new regime may have to devote considerable resources (which might otherwise have been consumed) to repressing its internal enemies and/or fighting, or preparing to fight, its external enemies.

- Secondly, there is the loss of the output of small-scale private enterprise. The suppression of artisans, small workshops, petty trade and small-scale private services can have a serious adverse effect on popular welfare.
- Thirdly, once the state is transformed into the main engine of economic development, mistakes in economic policy can have a major – sometimes catastrophic – effect on consumption. Such mistakes are quite common.
- Fourthly, the high share of investment in the national income of state-socialist countries has an opportunity cost in terms of consumption forgone. Huberman and Sweezy (1969: 107) noted that this ‘goes far to explain the extreme austerity of life in Cuba today, so much commented on by all visitors to the island’.⁸
- Fifthly, the establishment of a shortage economy will lead to widespread queues, shortages and popular dissatisfaction.

On the *positive* side the following effects would seem to be the most important.

- First, there are the gains to the poor from the distribution among them of the confiscated stocks of consumer goods of the rich (e.g. housing).
- Secondly, to the extent that the level of production is not adversely affected, it is possible to redistribute the income which formerly accrued to the rich.
- Thirdly, employment can be increased sharply.
- Fourthly, security of employment can be introduced.

⁷ Wiles (1974: 104) noted that: ‘nothing harms the poor so much as a failed revolution, for that gives us the costs without the benefits . . . I would put the odds against a revolutionary attempt, taken at random from human history, at three to one. This is a much more serious conservative argument than the futurity discount or the costs of a successful revolution.’

⁸ Another factor causing the extreme austerity of Cuba in the late 1960s was the Maoist–Guevarist economic model.

- Fifthly, education and medical services can be extended to wider strata of the population and rapidly expanded.

Do the pluses outweigh the minuses, or vice versa? According to Huberman and Sweezy (1969: 108), writing about Cuba, but whose argument is perfectly general, the pluses clearly outweigh the minuses:

we must emphasise that Cuban austerity is not like that in the underdeveloped countries of the 'free world'. In the latter the burden of austerity is borne by the workers, peasants, unemployed, etc., whose incomes are extremely low or non-existent and who usually make up from 75 to 90 percent of the population. The middle strata live in relative comfort and the ruling oligarchies in outrageous luxury. The shops are full only because the price-income system keeps the vast majority from buying what is in them. To the superficial observer there appear to be no shortages; to most of the people there are nothing but shortages. How right was the Cuban boy who said to Yose Yglesias: 'If everyone in Mexico could afford to buy a pair of shoes, how many do you think would be left in the stores?'

The point is that in Cuba everyone *can* afford to buy a pair of shoes, and there are never any left in the stores. And the same goes for nearly all other consumer goods. The explanation is twofold: first, the minimum wage in Cuba is 85 pesos a month and a large percentage of workers get two or three times as much. Moreover, there is a labour shortage so that every able-bodied person can get a job and many families have two or more wage-earners. Second, average rents are very low, education and health and some other services are free, and rationed goods are cheap. The result is a large volume of 'free' purchasing power chasing after a very limited supply of goods. In these circumstances, the shortages which are hidden in other countries rise to the surface for all to see. What's more, they affect the entire population including the top management and the middle strata who would be comfortably off in other countries. In other words, *everyone* feels the shortages, and this sometimes gives the impression that they are a lot worse off than they really are.

For the truth is that the shortages which all Cubans have to bear are not nearly as bad as those which afflict the great majority of Latin Americans.

This verdict, however, is simply a repetition of the traditional Marxist-Leninist view point. To throw more light on the situation, it is useful to calculate a synthetic social indicator, standardised for differences in economic development. This permits a simple numerical comparison between welfare levels in the two systems. An early attempt to do this was made by the Yugoslav economist Horvat, whose work is reproduced in Table 8.8.

Table 8.8 *Social indicators of the state-socialist countries (ranks of indicators)*

Country	Per capita GNP		Life expectancy	Students	Health service	Basic welfare	Difference	
	1968	1970						
(1)	(2)	(3)	(4)	(5)	(6)	(7)	D_1 (8=2-7)	D_2 (9=3-7)
GDR	15	12	6	36	34	15.0	0.0	-3.0
Czechoslovakia	19	16	19	22	5	15.3	3.7	0.7
USSR	22	20	26	5	1	10.7	11.3	9.3
Hungary	23	23	27	37	9	24.3	-1.3	-1.3
Poland	26	24	23	21	23	22.3	3.7	1.7
Romania	28	31	2	26	26	28.0	0.0	3.0
Bulgaria	29	33	5	18	11	14.7	14.3	18.3
Albania	40	39	37	20	34	30.3	9.7	8.7
Cuba	43	41	35	46	35	38.7	4.3	2.3
Average	27.2	26.6	24.4	25.7	16.3	22.1	5.1	4.3

Source: Horvat (1974: 32).

The table was constructed in the following way. The sixty most developed countries for which there were statistics were ranked by various criteria. All the state-socialist countries among them are listed in the above table. Column 5 ranks the number of tertiary students per 10,000 of the population. Column 6 is the arithmetic average of the rank of hospital beds per 10,000 of the population and the rank of physicians per 10,000 of the population. Column 7 is the average of columns 4, 5 and 6. Columns 8 and 9 give the differences, for each country and for the whole group of countries, between the ranking by GNP and that by basic welfare. For example, a figure of +5.0 in D_2 indicates that a country in 1970 had achieved a basic welfare level five places ahead of the world average for a country with its GNP per capita. Conversely a figure of -5.0 in D_2 indicates that a country in 1970 had only achieved a basic welfare level five places behind the world average for a country with its GNP per capita.

The table shows clearly that, using Horvat's method, both in 1968 and 1970 the state-socialist countries had achieved significantly higher levels of basic welfare than the world average for countries with their GNP per capita.

Horvat's paper was interesting as a pioneering attempt to calculate standardised intersystem social indicators. It was also, as is natural with a pioneering work, rather crude. For example, its health service indicators were *partial* measures of *input*. They ignored some inputs, such as medicines and medical supplies, and failed to measure output, i.e. the good health of the population. For example, no hospital beds and one doctor in a country where oral contraceptives and reliable condoms are readily available may be at least as useful from a health point of view as twenty hospital beds used for abortions and ten doctors engaged in abortions and form filling. As a matter of fact, the Soviet death rate rose significantly in the Brezhnev period. The infant mortality rate and virtually all the age-specific death rates also rose in the Brezhnev period. Table 8.8 shows that in 1970 Soviet life expectancy was six places behind the world average for a country with its GNP per capita, while its Horvat health service index was nineteen places ahead. This simply indicated that measuring the *output* of a health service by the *inputs* it uses is wrong. Furthermore, a number of important social indicators (e.g. those relating to housing) were omitted. In addition, the Horvat calculations were vulnerable to Seers's (1976) criticism of the UN's

SSDS (System of Social and Demographic Statistics): it assumed that governments are benign. No attention, for example, was paid to statistics of the proportion of the population in detention. Although none of the state-socialist countries published data on this awkward issue, it is well known that the number of detainees per thousand of the population was much higher in the USSR than in many capitalist countries.⁹ Hence Horvat's calculations must be considered as a useful pioneering work in the calculation of standardised intersystem social indicators, but one to whose conclusions little significance can be attached.

A later attempt to estimate the effect of socialism on social indicators is Burkett (1985). He took an average of indicators of literacy, infant mortality and life expectancy at age 1 (the so-called PQLI or physical quality of life index) for 116 countries, of which 10 were socialist. He regressed a number of variables against this index and found that socialism had a significant position effect on the PQLI of a country, the size of which declined as average incomes increased and increased as the national homogeneity of the population declined. Burkett's paper was more sophisticated methodologically than that of Horvat, but, as in the case of Horvat's study, its conclusions must be approached with caution, for the following reasons.

The data, both those underlying the PQLI and those for GDP per capita, were far from perfect. Burkett considered the possibility of *random* errors in the PQLI data but not that of *systemic* errors. These were quite likely, as a result of the important principle of partymindedness in economic statistics in state-socialist countries (see Chapter 2). Economic and social statistics in the state-socialist countries were calculated and published in such a way as to create a favourable picture of the activities of the government. For example, Burkett used the Soviet official infant mortality figure of 28 per thousand live births for 1974. This ignored, however, the fact that the USSR used a definition of 'live birth' which was different from that of most other countries. (In the USSR, some babies who died within seven days of birth, or who did not

⁹ According to Shtromas (1977), the number of detainees in the USSR was about 2.5–3 million, i.e. 1–1.2 per cent of the population. According to Medvedev (1979), it was 1.5–2 million, i.e. 0.6–0.8 per cent of the population. In the perestroika period, the official statistical handbook began publishing statistics on crime and punishment but not on the total numbers in detention, which remained classified.

breathe when born but did show other signs of life, were registered not as 'births' but as 'miscarriages' or 'stillbirths'.¹⁰ Since – according to the population registration statistics – they had never been born, their death was not – according to the population registration statistics – a death.) Hence the internationally comparable figure for 'infant mortality' for the USSR for 1974 was not 28 but 32. It was very odd in an analysis which aimed to throw light on systemic differences in PQLI not to examine the underlying data for systemic errors.

Furthermore, the choice of components for the PQLI was arbitrary, and threw only limited light on economic welfare. A number of indices not irrelevant to intersystem comparisons were omitted, e.g. the proportion of the population in detention; the proportion of informers in the population; the proportion of the national income devoted to the military and internal security sectors; the average length of time taken by a young person to acquire an independent dwelling; the proportion of the population who died from famine in the twentieth century; the average time taken to do the family shopping per week . . . The inclusion of these indices might well have been not without consequences for the results of intersystem comparisons.

In addition, the Burkett calculations only refer to one point in time (the early 1970s). To draw inferences about the effect on welfare of economic systems in general (not just for a short period) would require a number of different observations.

An important merit of the various calculations of standardised intersystem social indicators that have been done is that they drew attention to the achievements of the state-socialist countries in the provision of public goods (e.g. education, public health) particularly relative to low-income capitalist countries.

Commodity Number One

An important feature of personal consumption in the USSR (and Poland) was the role of alcohol. Alcohol consumption per head of the population was *not* exceptionally high in the USSR. It was in fact lower than in a number of capitalist countries (e.g. France). What was important about the Soviet case were:

¹⁰ For a detailed comparison of the Soviet and World Health Organization (WHO) classifications of the outcomes of pregnancies see Anderson and Silver (1986: 709).

- (a) the share of strong drink (i.e. vodka) in total alcohol consumption (in Western Europe wine and beer are much more important). In the early 1980s, spirit consumption per head in the USSR was probably higher than in any other country in the world;
- (b) the amount of drunkenness (this partly results from (a) and partly from the way alcohol is consumed);
- (c) the share of alcohol in personal consumption;
- (d) the income of the state budget generated by alcohol;
- (e) the adverse effects of alcohol on labour productivity; and
- (f) the suitability of alcohol for the traditional model.

Alcohol consumption per head in the USSR in the 1960s and 1970s was less than in countries such as France and Italy. The level of 'hard' drink consumption (i.e. vodka, whisky, gin, etc.) per capita, however, was probably the highest in the world. The share of hard drink in total alcohol consumption was not uniquely high in the USSR (Poland and Japan had similar shares). What was unique about the Soviet case was the combination of a fairly high level of per capita consumption of alcohol with a high share of hard drink in total alcohol consumption. An important development in the USSR in the Khrushchev–Brezhnev period was the significant decline in the share of hard drink consumption in total alcohol consumption (from 85 per cent in 1955 to 59 per cent in 1979). This reflected the growing production and import of wine in this period. Data on Russian consumption of alcohol are set out in Table 8.9.

The table brings out clearly the substantial growth of alcohol consumption in the Khrushchev–Brezhnev period, the sharp decline in 1985–6 as a result of Gorbachev's anti-alcohol campaign, and the increase as that campaign was abandoned.

Drunkenness was a serious social problem in the USSR, resulting in numerous accidental deaths (e.g. car crashes), widespread diseases, domestic violence and marriage break-ups, and adversely affecting life expectancy. The drunks lying around on the streets were long a familiar sight of Soviet cities. The USSR had a widespread network of sobering-up stations, where drunks were taken and left to sober up. According to Dudochkin (1981: 136), in the late 1970s in the USSR 12–15 per cent of the adult population ended up in sobering-up stations annually.

The large share of household incomes spent on alcohol was a serious social problem in Tsarist Russia (Segal 1967: 226). It remained one in

Table 8.9 *Annual per capita consumption of pure alcohol in Russia (litres)*

Year	Average consumption
1960	9.8
1970	12.0
1980	14.0
1984	14.63
1986	10.77
1991	12.67

Note: These figures include both state-supplied alcohol and illegally produced alcohol. Data on the former come from official statistics, and on the latter were estimated. The figures are per capita, but consumption differed massively by age and gender. The consumption per adult male was considerably higher. A per capita consumption of 15 litres of pure alcohol p.a. (the level approximately reached in 1984) is equivalent to a consumption per adult male of three half-litre bottles of vodka per week (the actual average consumption of vodka by men was less than this, since some alcohol was drunk in non-spirit form, e.g. wine or beer).

Source: For 1960, 1970 and 1980, Tremml (1997: 224); for the remaining years Nemtsov (2011: 53).

the USSR. According to Tremml (1982: 77), in the late 1970s and early 1980s about 15–20 per cent of personal disposable incomes in the USSR was spent on alcohol. This was a very high proportion by international standards.

Alcohol sales brought in a very large income for the state budget. According to one estimate (Tremml 1982: 32), taxes and profits from the production and sale of alcohol in 1982 were about 13 per cent of the income of the state budget. Fiscal considerations were a major reason for the widespread use of alcohol in Tsarist Russia and the USSR. In 1913, taxes on spirits were a major source of state revenue and equalled about 5½ per cent of the national income. Prohibition was introduced during World War I but abolished in the early 1920s largely for fiscal reasons. (The official sale of vodka at the prewar strength, i.e. 40 per cent, was resumed in 1925.) Stalin explained clearly the position of the Party on the vodka question at the Fourteenth Party Congress (1925). He stated that the need to rely on the revenue from vodka was disagreeable but essential, since it provided substantial funds for investment (about 10 per cent of the income of the state budget derived from vodka in 1927).

The adverse effect of alcohol on labour productivity was notorious and a major cause of the Gorbachev anti-alcohol campaign. The 1914–15 cessation of the sale of vodka in Russia is often credited with increasing industrial labour productivity by at least 7 per cent and Gorbachev hoped to achieve analogous results. The campaign was a failure. This resulted from the growth in the production of illegal vodka; the budgetary problems resulting from the loss of revenue; and popular opposition. However, while it lasted it did have favourable effects on public health and life expectancy.

Alcohol as a consumption good fitted in very well with the traditional model. It was easy to produce, very profitable for the state, did not require any after-sales service, and performed the important ideological function of bringing some pleasure to the people and blotting out everyday problems, difficulties and frustrations.

In view of the economic and social problems it generated, the alcohol trade was periodically subjected to anti-alcohol campaigns in the USSR. In 1958/9 there was one such campaign, and in the early 1970s another. The Gorbachev campaign of the mid 1980s was particularly vigorous and far-reaching. Russian governments have been organising anti-drink campaigns since the seventeenth century but vodka has scarcely been eliminated. Alcohol abuse survived the fall of the USSR, and remained a serious problem for its successor states, notably Russia.

Conclusion

The form which consumption planning has taken varied very much over time and between countries depending on the concrete circumstances. A major method was that of norms. This was a useful method, but had two weaknesses. These were: the arbitrary nature of many of the norms, and the phenomenon of substitutability. The norms could be implemented by quantity and price adjustments. The former was the main method used in the traditional model. Price adjustments could be politically sensitive. They could also fail to establish equilibrium in the consumer goods market.

Shortages and queues were common under state socialism. Their intensity and their main causes varied over time and between countries. Important causes were: macroeconomic disequilibrium in the state sector; disequilibrium relative prices; the (partial) elimination of the two feedback mechanisms which exist under capitalism; the behaviour of the

planners; the soft budget constraint of state enterprises; and the organisation of the distribution sector. Shortages and queues had important consequences for the distribution of real income. Senior officials benefited from privileged access, and spivs from their connections. They had considerable costs for the mass of the population and were a major reason for popular dissatisfaction with the traditional model.

Because money was not a universal equivalent, instead of payment in money reciprocity was often used to obtain goods and services.

An important result of the inability of the official economy to satisfy all consumer needs was the existence of a large and flourishing second economy.

One way of tackling shortages and dealing with the second economy was that of economic reform. This had favourable effects on the availability of consumer goods and services, and turned out to be an important step in the transition to capitalism. Other ways of dealing with shortages were monetary reform and rationing.

The general existence of seller's market conditions had an important effect not only on consumer satisfaction and real incomes, but also on a wide range of economic phenomena, such as employment, job security, technical progress and information flows.

Experience showed that the transition from capitalism to state socialism had both negative and positive effects on consumption. The calculation of standardised intersystem social indicators suggests that socialist countries had a relative advantage in the field of public goods, in particular in low-income countries, and that capitalist countries had a relative advantage in the field of private goods.

An important consumption good in the USSR was alcohol, which was produced in both the state and the (illegal) private sector. Its sale was encouraged by the state in some periods (for fiscal and ideological reasons) and restricted in other periods (because of its adverse effects on labour productivity).

SUGGESTIONS FOR FURTHER READING

Theory

D. M. Nuti, 'Hidden and repressed inflation in Soviet-type economies', *Contributions to Political Economy* 5 (1986), 37–82.

C. Davis and W. Charemza (eds.), *Modelling of disequilibrium and shortage in centrally planned economies* (London, 1988).

- L. Podkaminer, 'Disequilibrium in Poland's consumer markets', *Journal of Comparative Economics* 12(1) (1988), 43–60.
- J. Bell and J. Rostowski, 'A note on the confirmation of Podkaminer's hypothesis in post-liberalization Poland', *Europe-Asia Studies* 47(3) (1995), 527–30.

USSR

- B-Y. Kim, 'Causes of repressed inflation in the Soviet consumer market, 1965–1989: Retail price subsidies, the siphoning effect and the budget deficit', *Economic History Review* 55(1) (2002), 105–27.
- E. Brainerd, 'Reassessing the standard of living in the Soviet Union: An analysis using archival and anthropometric data', *The Journal of Economic History* 70(1) (2010), 83–117.
- J. Hessler, *A social history of Soviet trade* (Princeton, 2004).
- E. Osokina, *Our daily bread: Socialist distribution and the art of survival in Stalin's Russia, 1927–1941* (Armonk, NY, 2001).
- A. Ledeneva, *Russia's economy of favours* (Cambridge, 1998).
- V. Nemtsov, *A contemporary history of alcohol in Russia* (Sondertons hogskola, Huddinge, Sweden, 2011).

China

- R. Huenemann, 'Urban rationing in Communist China', *China Quarterly* 26 (1966), 44–57.
- C. Howe, *China's economy* (London 1978), chapter 6.
- China: Agriculture to the year 2000* (World Bank, Washington, DC, 1985), pp. 13–27.
- J. Banister, *China's changing population* (Stanford, 1987).
- M. Yang, *Gifts, favors and banquets: The art of social relationships in China* (Ithaca, NY, 1994).
- A. Ledeneva, 'Blat and Guanxi: Informal practices in Russia and China', *Comparative Studies in Society and History* 50(1) (2008), 118–44.

Eastern Europe

- B. Mieczkowski, *Personal and social consumption in Eastern Europe* (New York, 1975).
- O. Sik, *The bureaucratic economy* (New York, 1972), chapter 3.
- A. Aslund, *Private enterprise in Eastern Europe* (London and New York, 1985).

- I. L. Collier, *Connections, effective purchasing power and real product in the German Democratic Republic* (Berlin 1985), chapters 1 and 2. A revised version of chapter 2 was published in *The Review of Economics and Statistics* 68(1) (1986), 24–32.
- J. Wedel, *The private Poland* (Oxford, 1986).

9 | *Planning international trade*

If the free traders cannot understand how one country can get rich at the expense of another, we should not be surprised since they themselves are also not prepared to understand how, within a single country, one class can get rich at the expense of another class.

K. Marx, *The poverty of philosophy* (1847)

For a long time, we all thought that development of the Chinese economy must not rely on the international market. However, the successful experience of some developing countries has demonstrated that for a country to develop its own economy, it must participate in the international division of labour and use the world market.

Xiao He (1991)

The critique of the capitalist international division of labour

The Marxist–Leninist analysis of international trade is analogous to the Marxist–Leninist analysis of the labour market. Where liberal economists see fair exchange and mutual benefit, Marxist–Leninists see unequal exchange and exploitation. Standard expositions of the traditional Marxist–Leninist perspective can be found in Lenin's *Imperialism*, Sau (1978) and Carchedi (1986). From an analytical point of view, it is clear that each school focusses on a different aspect of reality. The former concentrates on allocative efficiency and the latter on the dynamics of inequality. From an empirical point of view, the real issue is what proportion of actual historical experience is explained by each of the models. A neat illustration of the view of capitalist international trade which underlies anti-globalist thinking was provided by Hymer and Resnick (1971), and is reproduced below.

Consider the standard problem of the gains from trade. To make the question more specific, we analyse the Mercantilist era (c. fifteenth–nineteenth centuries). The situation in the pre-capitalist countries with

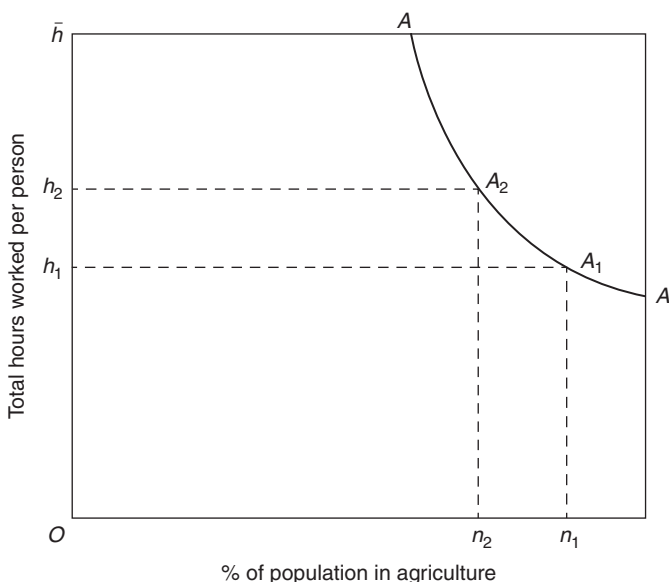


Figure 9.1 The pre-capitalist economy

which Portugal, Spain, the Netherlands, England and France traded is assumed to be as depicted in Figure 9.1.

AA is an isoquant which is determined by the production function

$$\bar{d} = f(a, h, n) \quad (1)$$

where \bar{d} is food produced (and consumed) per head;

a is output per person hour in agriculture;

h is hours worked per person in agriculture; and

n is the % of the population in agriculture.

Assume that \bar{d} is given (for example, by subsistence or custom) and a is given (by technology). The variables are h and n . Hence, comparing equilibrium positions, a lower n implies a higher h , and vice versa.

Consider the point A_1 , assumed to represent the situation in pre-colonial Africa. The proportion of the population engaged in agriculture (n_1) is very high, and the hours of agricultural work of these people (h_1) are modest. Much time is available ($\bar{h} - h_1$), after satisfying food requirements, for the production of rural household goods, for ceremonies and for leisure. The proportion of the population engaged in

non-agriculture, $100 - n_1$, e.g. the ruler and his family, the aristocrats, soldiers, urban servants, clerks, urban traders and artisans (i.e. those termed non-productive by the physiocrats), is small.

Consider the point A_2 , assumed to represent the situation in pre-colonial Asia. The non-agricultural proportion of the population ($100 - n_2$) is larger than at A_1 , and, hence, the hours worked in agriculture per agriculturalist (h_2) is larger than at A_1 , in order to provide food for the larger non-agricultural population.

Compare the welfare of the agricultural population (the great bulk of the total population) at A_1 and A_2 . At both, food consumption per head is the same, but at A_2 hours of work in agriculture are higher than at A_1 because of the necessity of feeding the larger non-agricultural population. Except in the special case in which the agricultural population receives substantial benefits from the non-agricultural populations (e.g. irrigation systems which raise productivity in agriculture, or consumer goods, or defence from attack), it seems reasonable to suggest that the welfare of the masses was higher at A_1 than at A_2 .

Introduce (Mercantilist) trade into the model. In the African case the state grew. A military group that succeeded in monopolising coercive power in a given area could establish law and order for traders and levy taxes. The strength of the state could also be used to enslave part of the population and use it for export, either directly (as slaves) or indirectly (as slave-produced commodities such as gold). It was thus possible to appropriate a surplus through exploitation of labour, as well as through the taxation of trade. As far as welfare is concerned, there were three significant effects. First, the state grew. Secondly, a proportion of the population was enslaved. Thirdly, there was an inflow of manufactured goods (e.g. whisky and guns). The first and third benefited the elite. The first and second were losses for the masses.

In the Asian case the state shrank. The indigenous 'oriental despotisms' were shattered. This was a clear gain to the local agricultural population. This gain was, however, reduced, or eliminated altogether, in those areas where the Mercantilist traders levied significant taxes which fell, directly or indirectly, on the agricultural population.

In the Latin American case, contact with the Mercantilists led to the complete collapse of the local societies. Almost all the inhabitants of Mexico and Peru (and North America) died or were killed.

The gains and losses from Mercantilist trade are summarised in equation (2) below.

$$\text{Gains from trade } (\equiv A) = \left[\begin{array}{l} \text{Gains to elites in Europe} \\ + \\ \text{Gains (or losses) to majority in Europe} \\ + \\ \text{Gains to elites in underdeveloped countries} \\ - \\ \text{Losses of exploited} \\ - \\ \text{Deadweight loss} \end{array} \right] \quad (2)$$

The question is: what is the sign of A ? It is difficult to disagree with Hymer and Resnick's (1971: 482) view that: 'It is hard to imagine any reasonable set of calculations that would show that the value of the increase in world income during the sixteenth, seventeenth and eighteenth centuries could offset the tremendous costs associated with the murder and enslavement of Africans and Americans.'¹

State-socialist countries created their foreign trade institutions precisely to prevent the losses to the backward countries that, in the Marxist-Leninist view, unrestricted trade between advanced capitalist countries and backward countries brings, while still obtaining the benefits international trade can bring under the right circumstances.

The USSR emerged from a civil war in which the leading capitalist countries (Britain, France, Japan and the USA) intervened militarily, and from a world war in which the Russian Empire had fared badly against Germany, with whom the Bolsheviks had been compelled to conclude a peace treaty which signed away a significant part of the Russian Empire. The USSR expected future conflicts with the capitalist world. Besides possible military conflicts, the Bolshevik leaders felt threatened by the cheap goods produced in capitalist countries. Whereas in the USSR goods were scarce, often of poor quality and relatively dear, capitalist goods were abundant, usually of good quality and relatively cheap. Hence, Soviet citizens yearned for them, and

¹ The reasons why different conclusions follow in liberal – in the European sense – models is because the latter treat the population as homogeneous (rather than divided into classes); assume that welfare depends on marketed goods only; and assume that marketed output has two components, size and distribution, and that only the former is relevant for ascertaining 'efficiency'.

people going to the USSR would usually take some with them. This yearning for foreign goods reflected badly on the Soviet system and ultimately was a factor contributing to its destruction.

Soviet foreign trade policy was designed to keep out the cheap foreign goods and the political threat they represented, while at the same time importing the capital goods necessary for achieving the goals of overtaking and surpassing the capitalist countries.² For these purposes the USSR, and the countries which copied its institutions, organised a state monopoly of foreign trade. The advantages of the state monopoly of foreign trade were fivefold.

- First, it enabled the country concerned to use scarce foreign currency in the way that most facilitated rapid development (by cutting out imports of inessential goods and maximising imports of machinery).
- Secondly, it protected domestic industry.
- Thirdly, it insulated the economy from the law of value (e.g. it limited the impact of capitalist recessions on domestic economic activity).
- Fourthly, it allowed the country to use its monopoly power (as a seller) or monopsony power (as a buyer).
- Fifthly, it restricted capitalist influence over the development of the economy to a minimum.

The problems of the state monopoly of foreign trade were threefold, strategic, technical and political. *Strategically* (i.e. from the point of view of growth strategy), because the state monopoly tended to have an adverse effect on exports to capitalist countries, it could harm quality, productivity and economic growth. *Technically*, because the planners lacked sufficient information and time to process it, they could make inefficient trading choices. *Politically*, the possibility of private individuals obtaining commodities they wanted from abroad (e.g. travel, consumer electronics) or selling abroad commodities that they had produced (e.g. wheat or software) was reduced.

² After the two world oil shocks (1973–4 and 1979–81), the USSR used part of its windfall gains from the increased prices of its export of oil and natural gas to import grain on a large scale with a view to expanding its livestock sector, and thus the meat consumption of the population.

Summary

The characteristic feature of state-socialist foreign trade was the state monopoly. This was based on a theory of trade between advanced and backward countries that stressed the losses which unrestricted commercial intercourse can bring the latter. State control of foreign trade had both advantages and problems.

The socialist international division of labour

The disintegration of the single, all-embracing world market must be regarded as the most important economic sequel of the Second World War ... China and other, European, people's democracies broke away from the capitalist system, and, together with the Soviet Union, formed a united and powerful socialist camp confronting the camp of capitalism. The economic consequence of the existence of two opposite camps was that the single all-embracing world market disintegrated, so that we now have two parallel world markets, also confronting one another.

J. Stalin, *Economic problems of socialism in the USSR* (1952)

In this section five different models of socialist international trade will be considered. They are: the socialism in one country model; the socialist imperialism model; the international planning model; the socialist multilateralism model; and the economic integration model. Each model roughly corresponds to the actual historical experience of certain countries at certain times.

Socialism in one country

This model approximately corresponds to the experience of the USSR before 1945 and of China in 1960–78. In it, the country concerned uses the state monopoly of foreign trade to ensure that scarce foreign exchange is used primarily to import machinery and thus accelerate economic growth. The country cuts itself off from the international labour and capital markets. The internal price level is insulated from world prices by the monopoly; the maximum possible volume of imports is acquired; and the choice between possible imports is governed primarily by technological and political factors. Imports are paid for (apart from credits) by selling on the world market sufficient exports

to generate the requisite foreign exchange, almost independently of domestic costs and profitability. The country regards the acquisition of technically advanced imports as the main object of foreign trade. In this it is unlike capitalist countries, which regard exports as the main desideratum in international trade. This is simply another example, analogous to those already encountered in Chapters 6 and 8, of the general phenomenon that economic growth in the state-socialist world was normally supply-constrained. In the capitalist world, on the other hand, it is normally demand-constrained.

When the political leadership became dissatisfied with the traditional model and embarked on reforms, one of the areas in which it made changes was the state monopoly and the attempt to create a socialist world market confronting the capitalist world market. In the USSR in 1986, as part of Gorbachev's campaign to raise the growth rate and in the wake of a sharp deterioration in the Soviet terms of trade, important institutional changes were announced. They were: a decentralisation of the authority to make foreign trade decisions; a willingness to embark on joint ventures with firms from capitalist countries; and an interest in participating in the work of GATT. These were cautious steps in the direction of reintegration into the world market, and rejection of Stalin's thesis of the division of the world economy into two world markets which confronted each other.

In China, as part of the post-1978 economic reforms, major steps reintegrating the economy into the world market were undertaken. These included a substantial delegation of powers to initiate foreign trade transactions, a great increase in foreign trade, foreign borrowing (and later lending), joint ventures, the creation of special economic zones, the opening up of the country to foreign investment, and the export of labour.

These reforms were recognition that, in the socialism in one country model, the level and static efficiency of both imports and exports are often inadequate, and also that the country is unable to gain the dynamic growth and efficiency-enhancing effects of an expanding and competitive export sector. They were also recognition that failure to integrate into the world market had high costs.

The socialism in one country model was not suitable for small, foreign-trade dependent, countries. Nor was it suitable for a group of state-socialist countries.

Socialist imperialism

At the end of World War II Soviet troops occupied much of Eastern and Central Europe, China and Korea. The USSR used the dominant political position which it acquired in this way to benefit itself economically and to impose its ideas on economic organisation on some of its neighbours. It removed machinery from East Germany, Hungary and Romania.³ It reoriented trade towards itself,⁴ and established companies with joint Soviet–local ownership and Soviet management in East Germany, China, Bulgaria, Hungary, Romania, Yugoslavia and Czechoslovakia, which partly produced goods for the USSR.⁵ Throughout Eastern Europe, it imposed an oppressive and inefficient agricultural system, a high share of

³ ‘Stalin showed himself a vastly more efficient extractor and recipient of direct tribute in 1945–52 than France and Britain in 1919–31. Indeed, since Mercantilism there has been nothing like it. The very notion that there was some difficulty in absorbing tribute would have seemed utterly astonishing to him: an example of the “internal contradictions of capitalism” too comical to be true. His own problems, although they were grave and caused terrible waste, affected only his procurement machinery. Once he had reformed that, reparations paid off handsomely’ (Wiles 1968: 488).

⁴ It is also widely believed to have manipulated the terms of trade in its own favour. Firm evidence for this is sparse. The best-known example is Polish coal, of which the USSR bought c.50,000,000 tons in 1946–53 at very low prices. This, however, was part of a deal made in 1945, whereby Poland received all German assets in Poland plus a share of the reparations due to be received by the USSR from Germany. In 1956, the USSR cancelled Poland’s outstanding debt to the USSR (\$626 million) in compensation for the losses Poland had incurred through selling its coal very cheaply.

⁵ According to the Yugoslav Ministry of Foreign Affairs (*White book* 1951: 37–8), in the Yugoslav case, as far as these companies were concerned, ‘The formal parity [in ownership between the USSR and Yugoslavia] . . . was only a screen to conceal direct exploitation and appropriation of profits by the utilisation of Yugoslavia’s natural resources and of the values created by the labour of the Yugoslav working people . . . The two following examples are sufficient to reveal the way these companies were operated to the detriment of Yugoslavia. The JUSPAD (Yugoslav–Soviet Danube Shipping Stock Company) transported Soviet cargo at the price of 12–18 para for one kilometer-ton, while the price was 42 para for Yugoslav cargo. The JUSTA (Yugoslav–Soviet Stock Company for Civil Air Transport) took over complete control of civil air navigation in Yugoslavia even refusing to give the Yugoslav state air transport authorities the data needed for their control work. The operation of these mixed companies at the expense of the Yugoslav economy is but a pale picture of the degree of exploitation that would have resulted from the establishment of a number of mixed manufacturing companies, which the Soviet government had been proposing to Yugoslavia. In such companies undoubtedly, the exploiting tendencies would have been much greater.’

investment and defence in the national income, and an economic model which disregarded personal consumption. Soviet behaviour towards its dependants in this period was much less favourable to them than US behaviour towards its dependants.⁶

The main burden of socialist imperialism fell on what was first of all the Soviet occupation zone of Germany, and then became the German Democratic Republic (GDR). According to one source (Marer 1974), in 1945–60 Soviet Zone/GDR net transfers to the USSR were about 19 billion current US dollars.⁷ This huge sum represented between a fifth and a third of Soviet Zone/GDR GNP in 1946–53, and exceeded the total flow of Marshall Aid to all Western Europe. According to an estimate quoted in the same source, Soviet Zone transfers were about 3 per cent of Soviet national income in 1950 and higher percentages in the immediate postwar years. The burden on the Soviet Zone/GDR was greater than the gain to the USSR, because of the inefficient dismantling of machinery.

Economic relations between the USSR and Eastern Europe (especially the Soviet Zone of Germany), in this period, were analogous to those between the Soviet government and Soviet collective farms under Stalin. In both cases coercion was used to collect tribute. In both cases the Soviet government collected substantial revenue in this way. In both cases, however, there was a substantial cost in terms of low rates of growth of labour productivity, high costs of production, poor development of quality and technical progress, and a sullen resentful attitude by the labour force. Because the collective farmers were geographically isolated, in their case this resentment – once collectivisation had been imposed – never led to any very strong resistance. In the foreign trade case, however, because of the existence of nation states and compact groups of workers in industrial cities, it led to the break with Yugoslavia in 1948, and to the demonstrations by the German workers in 1953 and the Polish workers in 1956.

⁶ At the end of World War II, during which the USSR had liberated all Eastern Europe from the Nazis, its economic situation was extremely grave. Much of its manpower had been killed in the war and its richest industrial and agricultural areas devastated. The United States, on the other hand, suffered relatively few casualties and greatly expanded its output during the war. In addition, the Marshall plan brought the United States major political and economic gains.

⁷ Other estimates are still higher. One plausible estimate is 65 billion 1938 marks, which equals *c.*26 billion 1938 US dollars.

In 1953–6 the USSR radically changed its policies. The legitimacy of varying roads to socialism was recognised. The Soviet shares of the mixed companies were returned to the host countries, and reparations were ended. (The removal of machinery had already ended in 1946.⁸) The prices at which the CMEA traded from the early 1950s were persistently more favourable for the exporters of finished products than for the exporters of raw materials. As a result, the USSR, which mainly exported raw materials and imported machinery, generally had worse terms of trade inside the CMEA than those that prevailed on the world market (Marer 1972). In addition, the USSR extended (mainly by way of trade) substantial economic assistance towards China, notably by providing the designs, machinery and many of the specialists for the construction of the majority of the modern industrial plants, the building of which constituted the core of the Chinese First Five-Year Plan (1953–7). These economic policy changes were part of the general attempt to replace coercion by cooperation in the relationship between the Soviet government and its subjects which characterised 1953–6. (Another example is Soviet agricultural policy.) Similarly, during the 1960s and 1970s the USSR provided Cuba with designs, machinery and specialists for industrialisation, substantial credits and relatively attractive export markets. In addition, in the 1970s and 1980s the USSR provided economic assistance to Vietnam.

The CMEA was not immune to the two world oil shocks (1973–4 and 1979–81). Oil and natural gas were very important Soviet exports, both to the capitalist world and to the CMEA. The (short-term) stability of prices within the CMEA at a time of sharply increased prices in the capitalist world had the effect of temporarily shielding the East European countries from the oil shocks and temporarily depriving the USSR of their full benefit (spot exports to the capitalist world benefited immediately). This meant that, calculated at opportunity costs, the CMEA suddenly seemed to have turned into a significant economic

⁸ It was very inefficient. In Germany, the Soviet organisations concerned often 'failed to pack, label or dispatch properly. Very many priceless assets were simply destroyed or lost. Meanwhile, the ministries quarrelled vehemently over who should have what, and the military government found it impossible to set any upper limit to dismantling. Hence a party arose within the military government and the Ministry of Foreign Trade . . . that favoured the better organised and less destructive process of taking reparations out of current production' (Wiles 1968: 488).

Table 9.1 Opportunity cost of CMEA trade with Eastern Europe for USSR (millions 1984 US\$)

Year	Bulgaria	Czechoslovakia	GDR	Hungary	Poland	Romania	Total
1970	-9	541	1,165	264	454	176	2,589
1971	-26	606	1,108	261	448	102	2,499
1972	-110	380	959	114	367	70	1,780
1973	250	592	1,284	351	566	28	3,071
1974	1,352	1,669	2,673	1,090	1,340	59	8,183
1975	1,030	1,361	1,820	649	1,341	12	6,213
1976	1,008	1,605	2,223	672	1,350	82	6,941
1977	1,022	1,634	2,300	542	1,307	96	6,901
1978	1,185	1,494	2,099	598	946	154	6,476
1979	1,655	1,915	2,605	989	1,705	169	9,037
1980	2,700	3,399	3,958	1,654	2,974	303	14,987
1981	2,782	3,534	4,059	1,653	3,234	289	15,552
1982	2,324	2,917	3,455	1,524	2,611	277	13,107
1983	1,658	2,374	2,677	1,115	2,019	322	10,165
1984	1,744	2,425	2,758	1,246	2,148	379	10,700

Note: These estimated opportunity costs include both the opportunity costs of selling raw material exports at less than world market prices and the opportunity costs of buying East European imports at above world market prices.

Source: Marrese (1986: 302). Totals may not be the precise sum of the rows because of rounding errors.

liability for the USSR. This was pointed out after the second oil shock by Marrese and Vanous (1983). Their calculations are set out in Table 9.1.

The data in Table 9.1 would seem to indicate that the USSR subsidised Eastern Europe on a massive scale. However, Spechler and Spechler (2009) pointed out that whether or not Eastern Europe was a 'burden' on the USSR depended on which items were included in the calculations, and which year(s) was(were) considered. The relations between the USSR and Eastern Europe were not just a matter of trade. They were much wider and included a much wider range of policies. One such policy was defence. The East European CMEA countries were also members of the Warsaw Pact, and as such contributed substantially to the USSR's position in the world, by their military preparations, and by help to developing countries (economic aid, military aid, students hosted). Their military preparations led to military budgets substantially higher than those they would have chosen had they not been

members of the Warsaw Pact. Taking these factors into account, Spechler and Spechler estimated that, in fact, the East European 'burden' on the USSR, even in 1982 just after the second oil shock when it was relatively high, was only somewhere between 3,900 million 1982 US dollars and zero, depending on the estimate of excess military expenditures. Furthermore, calculations of the Marrese–Vanous type do not include the opportunity cost to the East European countries of orienting their trade towards a region which lacked the stimulus of competition and lagged technologically behind the advanced capitalist countries. For Eastern Europe the main burden in its relationship with the USSR was that membership of the Soviet sphere of influence required an economic system that was inefficient, and that greatly reduced the real incomes of the population compared with what they might otherwise have been. This was a burden on Eastern Europe which was not a gain to the USSR but simply a deadweight loss. As Sartre once put it, the CMEA/Warsaw Pact was a system imposed by force that caused losses to both the USSR and Eastern Europe. By the late 1970s, perhaps the main gainers from the CMEA were its less developed members, such as Bulgaria, Cuba and Vietnam. These gained guaranteed export markets, stable supplies of raw materials, and the possibility of re-exporting for hard currency raw materials imported from the USSR.

International planning

In the 1950s the CMEA made the transition from the socialist imperialism model to the socialism in one country model, modified by bilateral trade. Each country planned its own development, its plans including a substantial and growing volume of bilateral trade with its CMEA partners. This was, however, insufficient to overcome the contradiction between the international nature of the productive forces and the nation state. The members of the CMEA, with their existing institutions, were unable to capture all the gains that might have been available from specialisation and economies of scale. The rapid development of economic integration in the capitalist world, particularly in Western Europe, made them increasingly aware of this. In 1960 the Polish leader Gomulka observed of the relations between CMEA members: 'There is no cooperation whatsoever in the important sector of investment: everyone peels his own turnip – and loses by it.'

Accordingly, in 1962, Khrushchev suggested that the CMEA should establish 'a unified planning organ, empowered to compile common plans and to decide organisational matters'. Marxists consider that within any nation the efficient allocation of resources requires national planning, as explained in Chapter 1. Similarly, Khrushchev argued in 1962, the efficient allocation of resources within the CMEA required supranational, CMEA-wide, planning. This planning, it was suggested, should concern itself primarily with investment.

Nevertheless, the CMEA was not transformed into a supranational planning organisation, for two reasons. First, Romania, as a less developed country, objected on classical Listian⁹ grounds to supranational investment planning based on current comparative costs. Secondly, in the early 1960s, it became increasingly realised within the CMEA that there was a contradiction between seeking to raise efficiency and striving to increase still further the role of central planning. It was precisely at this time that there was widespread discussion of how, given the development of the productive forces and the techniques of planning, planning was hindering efficiency. Hence, the focus of discussion within the CMEA on measures to improve its *modus operandi* switched from strengthening the planning element to strengthening market relations.

Socialist multilateralism

According to standard Western theory, bilateralism in international trade is bound to lead to waste. It either constrains the volume of trade to the export potential of the country with the lesser export potential, or forces the country with a greater export potential to accept goods which it does not want very much. This argument was applied to the CMEA by van Brabant (1973, 1974) and Ausch (1972). Ausch's analysis is set out in Figures 9.2, 9.3 and 9.4.

In Figure 9.2, the arrows indicate the direction of trade and the numbers its volume. For example, *A* imports 40 units from *B* and exports 80 units to *B*. Trade is multilateral and each country is in balance of trade equilibrium. Total trade volume is 240. Under conditions of bilateralism with the export constraint operative, trade will

⁹ List was a nineteenth-century German economist. He argued that free trade is only in the interest of the advanced countries, and that backward countries require protection if they are to industrialise.

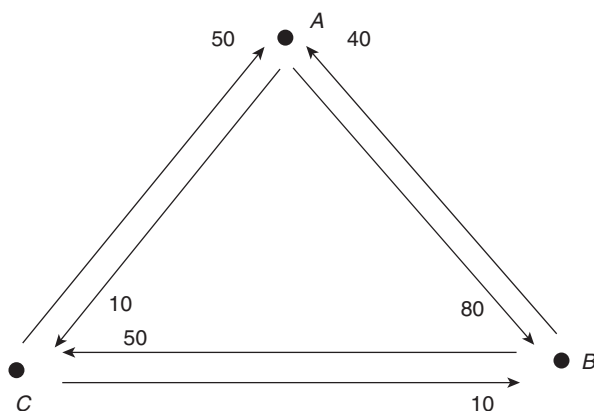


Figure 9.2 Multilateral trade

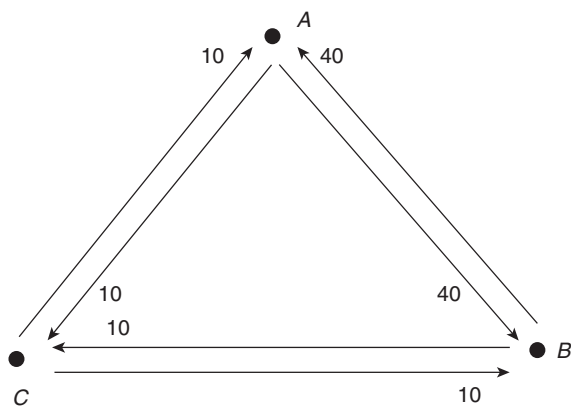


Figure 9.3 Bilateralism with the export constraint operative

take place as in Figure 9.3. Total trade volume is 120. Welfare is substantially less than in the multilateral case. In Figure 9.4, *b* indicates hard commodities, i.e. goods that are really wanted, and *s* soft ones, i.e. goods that are not much wanted. In a situation of bilateralism with soft commodities, the volume of trade is 360. This is more than in the multilateral case, but one-third of the trade consists of the import of soft commodities. Hence, welfare may well be less than in the multilateral case. The softness of much of the trade taking place may be confirmed by the activities of capitalist import-export firms, re-exporting the soft goods and supplying hard ones in exchange, thus

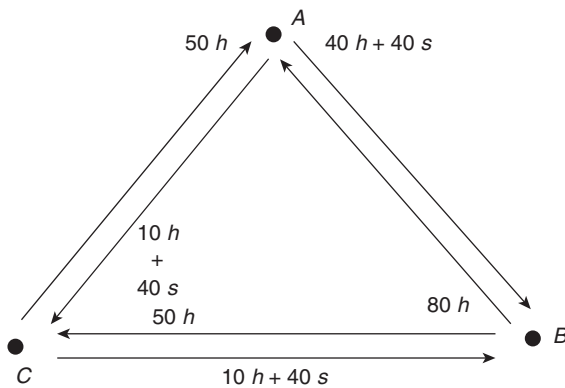


Figure 9.4 Bilateralism with soft commodities

introducing elements of de facto multilateralism. Figure 9.4 also illustrates how the traditional model can generate a discrepancy between output levels and welfare levels.

The merits of multilateralism were recognised in CMEA circles from the mid 1950s. In 1957 and 1963 agreements were reached between the members on multilateral clearing. The 1963 agreement created a special organ for this purpose, the Bank for International Economic Cooperation, accounts with which were kept in transferable roubles. (The transferable rouble was an inconvertible unit of account used for CMEA trade. It was basically just a new name for the 'clearing rouble', the unit of account for the bilateral trade between the USSR and other socialist countries, used from 1950. The new name signified a recognition in principle of the desirability of moving towards multilateralism and convertibility.) In the agreement setting up this bank it was stated that: 'within one year from the foundation of the Bank . . . the Board will study ways of introducing into the scope of its operations transacted in transferable roubles, the possibility of a conversion into gold or freely convertible currencies'. Nevertheless, currencies remained inconvertible and trade bilateral throughout the CMEA's history. Each member of the CMEA strove for strictly balanced bilateral trade with each of their CMEA partners and for each calendar year.¹⁰ Why was this?

¹⁰ Strictly speaking, the trade was not even fully bilateral, since the members sought to balance their trade in hard and soft goods taken separately. A major part of CMEA discussions and trade negotiations consisted of each country trying to export soft goods and simultaneously increase the hardness of its imports. (In

The fundamental reason concerned the internal economic institutions of the USSR. Bilateralism in foreign trade was simply one specific example of the traditional model in action.

In the bilateral case, trade is carried on in accordance with instructions. Prices, which are important for accounting and aggregation, are barely relevant for allocative purposes. In the multilateral case, the volume and composition of trade is largely determined by relative prices. The price system of the traditional model was, however, most unsuitable for allocative purposes. For one thing, internal and external prices were separated. This meant that an enterprise could not realistically compare domestic and foreign prices with a view to making trade decisions. For another, the price a country obtained for its exports varied very much between its export markets. An example is set out in Table 9.2.

As can be seen from Table 9.2, for many exports to CMEA countries, the same commodity could vary in price by more than 100 per cent depending on which country it was sold to. In addition, the relative prices of primary and processed goods differed inside the CMEA and on the world market. Furthermore, the CMEA countries operated a multiple exchange rate system.

Given all these price discrepancies, only administrative control over trade could preserve the planned volume and structure of trade. The transition to multilateralism in foreign trade would have required a reform of the price system so as to enable it to replace many of the administrative procedures which traditionally determined the volume and direction of foreign trade. Hence, foreign trade remained bilateral and currencies inconvertible while the USSR adhered to the traditional model.

Economic integration

The gains from adding to our mutual economic possibilities [within the CMEA] are not measured, of course, only by purely commercial accounting.

L. I. Brezhnev (speech at the Twenty-sixth Party Congress, 1981)

CMEA practice, 'hard' goods were those which ranked high in the preferences of planners, e.g. because they could easily be sold on the capitalist world market for hard, i.e. convertible, currency, or were particularly short domestically; 'soft' goods were those which had no hard currency market or to which the planners attached little importance. In the 1970s, examples of hard goods were oil and other raw materials, and of soft goods food and products of light industry.)

Table 9.2 *Price differences in Hungary's exports to CMEA countries in the mid 1960s*

Major commodity groups	Number of commodities exported to two or more countries	Number of commodities showing price differences exceeding 25 per cent (differences in %)									Total
		25-34	35-44	45-54	55-69	70-9	80-9	90-9	100 and over		
Machinery and equipment	608	42	25	10	21	11	2	8	20	139	
Fuels and other materials (including metals)	52	3	8	3	6	2	-	-	3	25	
Chemical products (including rubber)	18	1	-	1	1	1	-	-	1	5	
Construction materials	10	-	-	-	-	-	-	-	-	-	
Agricultural raw materials (excluding those used for food)	16	-	1	-	2	-	-	-	2	5	
Live animals	-	-	-	-	-	-	-	-	-	-	
Raw products for the food industry	2	-	-	-	-	-	-	-	-	-	
Finished food products	66	5	5	3	6	3	1	1	3	27	
Industrial consumer goods	248	20	11	13	13	7	6	6	16	92	
Total	1,020	71	50	30	49	24	9	15	45	293	

Source: Ausch (1972: 80).

The abandonment in the late 1960s in Czechoslovakia and the USSR of a reform of the traditional model, both internally and within the CMEA, led to the emergence of a new model of CMEA cooperation, that of economic integration. This was clearly embodied in the 'Comprehensive programme for the deepening and improvement of collaboration and the development of socialist economic integration of the CMEA countries', adopted in Bucharest in 1971. The objective of economic integration was to maximise the gains from economies of scale, specialisation and participation in the international division of labour. Economic integration took such forms as trade, industrial cooperation, movement of labour, technical and scientific cooperation, energy integration, the financing of investment, the creation and operation of socialist common enterprises, and plan coordination.

A major aspect of CMEA integration was the coordination of the trade plans of the member states. This facilitated a substantial increase in trade.¹¹ Some data are set out in Table 9.3. In the thirty-three years 1950–83 the exports of the CMEA rose forty-two times (in current prices). It is interesting to observe that the share of their exports to each other in their total exports, which fluctuated around 60 per cent in 1950–72, fell sharply in the period in which the integration model was supposedly being implemented. About 60 per cent in the year the comprehensive programme was adopted, this share had fallen to about 50 per cent a decade later. Major factors explaining this were the increase in world energy prices that enabled the USSR to greatly increase the income from its oil and gas sales to the capitalist world, and the Soviet policy of using this windfall income to finance imports of grain and machinery. This illustrates the general thesis that plans are only one of the factors influencing economic outcomes, the environment

¹¹ Some trade was discouraged by the plans. Foreign trade plans naturally tended to consist of the trade that took place in some base year, adjusted upwards by some percentage. Hence, if a country wanted to sell goods, e.g. the results of a good harvest, for one year only, and did not wish to enter into a commitment to supply increasing quantities of them indefinitely, it strove either not to sell them within the CMEA or to exclude them from the basis and sell them on a one-off 'outside the plan' framework. For example, in the 1970s, Hungary sold the USSR some agricultural products, and bought from the USSR some industrial raw materials, settlement being in US dollars. This trade took place outside the framework of the five-year Hungarian–Soviet foreign trade plan so that it should not be included in the basis.

Table 9.3 *Growth of CMEA trade (billions of current US dollars)*

Year	Total exports by CMEA countries	Of which, exports by CMEA countries to their CMEA partners	Exports to other CMEA countries as percentage of total exports ^a
1948 ^b	3.2	1.4	44
1950	4.2	2.5	60
1955	8.0	4.8	60
1960	13.2	8.1	61
1965	20.0	12.5	62
1970	30.9	19.3	62
1975 ^c	77.4	44.4	57
1980	156.1	77.2	49
1983	174.6	87.7	50

^a Because of price differences between intra-CMEA trade and world market trade, for most of the period these figures exaggerate the share of intra-trade in total trade.

^b The CMEA was founded in 1949.

^c Cuba, which joined the CMEA in 1972, and Vietnam, which joined in 1978, are excluded throughout.

Sources: Kaser (1967: 144) for 1948–65 inc.; UN *Yearbooks of international trade statistics* for 1979–83.

and policy being others, and they are often more important than the plans in determining the outcome.

Integration was concerned not just with trade but primarily with the structure of production. Members of the CMEA tried to coordinate their medium- and long-term planning to cut out duplication of production and gain the maximum benefits from economies of scale and specialisation. This coordination took various forms.

One was the specialisation of production of particular products in one country, with all the CMEA providing a market, e.g. buses in Hungary. In this way, the producer could hope to gain the maximum economies of scale, and consumers the possibility of using their resources more efficiently elsewhere. This was not very successful. The main problems were the predominance of finished products in cooperation projects and inadequate specialisation in the production of components. This situation, which compared unfavourably with that in Western Europe, appears to be an example, on the international level, of the adverse effects on an economy of the rationing of producer goods,

which led all producers to attempt to produce their own components so as to be protected from the failure of supplies to arrive on time and in the quantity and of the quality required (see Chapter 2).

An important area of specialisation within the CMEA was in defence industry equipment (Germuska 2006). This was coordinated by the Defence Industry Committee of the CMEA, originally formed in 1956 but really only effective from 1958. The Hungarian military industry specialised in armoured vehicles, radar, telecommunications equipment and some types of guns. The Polish defence industry specialised in weapons, aircraft, military electronics and armoured vehicles. Czechoslovakia specialised in the production of small arms, aircraft, tanks and explosives. Bulgaria specialised in anti-aircraft missiles, ammunition, optical devices, anti-tank weapons and navigational radar. This specialisation enabled the countries concerned to overcome the problems caused by their small domestic markets for weapons, and enjoy the benefits of economies of scale and specialisation. It also provided them with additional exports. By the 1980s about 70–80 per cent of Hungary's production of military equipment was being exported. According to the Hungarian historian Germuska (2006: 105): 'Defense industry cooperation among the countries of the [Warsaw] pact was one of the most beneficial and profitable sectors of the COMECON integration.'

Another area of integration was the supply of labour by one member to another. By the mid 1970s there were probably about 150,000 workers from CMEA countries working in other CMEA countries. A large share of the foreign workers were employed in the GDR, where the labour shortage was most acute. There were also foreign workers elsewhere. The provision of labour was one of the ways countries such as Bulgaria and Vietnam met their obligations. The movement of labour between CMEA countries (and from countries such as Yugoslavia to CMEA countries) was hindered by currency inconvertibility. Intra-CMEA movement of labour was distinguished from the movement of labour from the global South to Western countries by its small scale; its organised, intergovernmental character; and the fact that foreign workers do not seem to have been employed mainly in unskilled poorly paid jobs.

Yet another area of integration was the joint research and development programme. An example was the joint R&D programme carried out (under an agreement signed in 1972) in the field of numerically controlled machine tools. Scientific and technical cooperation between

CMEA members had a long history prior to the emergence of joint R&D programmes. For many years, a major form of scientific and technical cooperation was the free provision of scientific and technical documents, i.e. designs for new machines, products and processes. This was attractive to the less developed CMEA members (which were net recipients of this documentation), but unattractive to the more advanced members (which were net providers of it). In 1985 the CMEA adopted long-term joint research programmes in electronics, automation, nuclear energy, raw materials and biotechnology (see below).

A well-known and very tangible example of integration was the 5,500 km Druzhba oil pipeline which carried Soviet oil to Hungary, Poland, the GDR and Czechoslovakia. Another was the 2,750 km Soyuz gas pipeline from Orenburg in the USSR to Eastern Europe. Hungary, the GDR, Poland, Czechoslovakia and Bulgaria all helped to build it (as did West Germany which supplied pipes, and France which supplied technical training) and received gas deliveries from 1979 onwards in exchange. In addition, the Mir united electric power grid allowed members to lend or borrow electricity during peak periods and also to export (or import) electricity. The reliability of the joint electricity supply system was, however, imperfect. When there were acute regional power shortages (as in the winter of 1984/5), some members used more electricity than they were entitled to, at the expense of other members. Nevertheless, integration in the energy area (largely the import of Soviet oil and natural gas by the other CMEA members) was one of the major activities of the CMEA. It provided the smaller CMEA countries with an essential raw material, and the USSR with a means of paying for imports from Eastern Europe and a potent political lever. Despite this, East European imports of OPEC crude rose sharply in the 1970s. In determining export markets for oil and gas, the USSR had to balance its hard currency requirements against CMEA integration.

This latter fact illustrated the general proposition that the continued inconvertibility of the CMEA currencies was a serious problem for the CMEA. It tended to ensure that the best quality goods went to the capitalist world, and that it was only goods of lesser quality, or top-quality goods in smaller quantities than were required, that went to other CMEA countries. This is simply an expression of one of the oldest propositions in economics, Gresham's Law, applied to barter trade. In effect, within the CMEA two types of goods (and the corresponding forms of money) circulated, bad or soft goods and good or hard goods.

As Gresham's Law leads one to expect, bad drove out good, so that it was difficult to obtain from a CMEA partner as much as one wanted of goods that were hard. CMEA trade expanded, but so did the frustrations of its members, who were unable within the CMEA to obtain in sufficient quantities the goods they most wanted, owing to institutional limitations.

From 1971, the CMEA had a bank, the International Investment Bank, which extended credits for investments, i.e. project loans. (The IIB was analogous to the EU's European Investment Bank (EIB) or to the original function of the World Bank (IBRD).) Also in the financial field, members of the CMEA were committed by the comprehensive programme to study, in 1976–9, the possibility and procedures for establishing single rates of exchange between their currencies. The plan was to make a decision on this matter in 1980. Nothing happened in this area in 1980, because of the unwillingness at that time of the USSR to abandon the traditional model.

In addition, within the CMEA there were socialist common enterprises ('socialist multinationals'). An early example was Haldex, the Polish–Hungarian concern for processing coal dumps. Other examples were Interatomenergo, the huge organisation created in 1973 to develop and construct nuclear power stations for all the CMEA, and the cotton mill 'Friendship', jointly owned by the GDR and Poland and founded in 1972. Most of the socialist common enterprises had a bilateral character. As a result of the growth and usefulness of socialist common enterprises, in 1976 the CMEA adopted the 'Uniform principles for the creation and functioning of international economic organisations'. This document was intended to provide a legal framework for the socialist common enterprises. It put forward two main principles. First, that the activities of socialist common enterprises should be governed strictly by economic criteria. Secondly, that each socialist common enterprise should be governed by the economic and financial regulations of the country where its headquarters were. The absence of single exchange rates and uniform prices were big problems for these joint enterprises. According to Zubkov (1979: 59), while these problems were not resolved, in every case special coefficients had to be used to convert costs into the national currencies of the participating countries. In one case, it was necessary to use fourteen main coefficients and thirty auxiliary coefficients for this purpose. It is obvious that such a multiplicity of coefficients introduced the possibility of arbitrary decisions, conflicts of national interests and manipulation.

An important aspect of CMEA integration was plan coordination. During the 1970s, members of the CMEA devoted increasing efforts to coordinating their medium- and long-term plans, and these plans formed the basis for their long-term trade agreements. Two other important aspects of plan coordination were the CMEA comprehensive programmes and the joint investment projects.

CMEA comprehensive programmes were an innovation of the late 1970s, and were an application on the international level of the programme approach already applied internally (see Chapter 8 for a brief discussion of consumption programmes). In July 1976, the thirtieth session of the CMEA, meeting in Berlin, agreed to discuss five comprehensive programmes to be implemented in a ten- to fifteen-year period. Three were adopted in 1978, and two in 1979. In 1985 the forty-first session of the CMEA adopted a comprehensive programme of scientific and technical progress up to the year 2000. This was a joint research and development programme for five key areas of technical progress. They were electronics, automation, nuclear energy, new materials and biotechnology.

Examples of the joint investment projects were the Kiyembayev asbestos project in the Urals, the Ust' Ilim cellulose plant in eastern Siberia, and a nickel-cobalt mine in Cuba. The countries supplying the investment resources were scheduled to receive in return some of the output when the project came on stream. These joint investment projects gave rise to considerable conflicts. The smaller East European countries strove to limit their contributions to them, the USSR to increase them. Another problem was the calculation of costs and national contributions for projects undertaken by countries with relative prices which differed between countries and from those on the world market, and with multiple exchange rates. Because of all these problems, the actual volume of joint investments (7 billion transferable roubles in 1976–80, and 2 billion transferable roubles in 1981–5) was considerably below the planned volume (9 billion transferable roubles in 1976–80 and 4.5 billion in 1981–5). This showed that the same economic mechanism which generated excess investment internally limited investment cooperation internationally. On the whole, it seems most appropriate to interpret these joint investments as a combination of a price rise for the exporters with a hardening of the structure of counter-deliveries received by them (Csaba 1985). They resulted, basically, from inconvertibility and bilateralism, which simultaneously

partially demonetised international trade, and generated goods of various degrees of hardness and softness.

The CMEA integration programme failed to provide an attractive alternative to the world market for the CMEA members. When world commodity prices (especially oil) were rising, Soviet exports of these products were attractive to the importing countries. For the Soviet Union, however, the hard currency to be earned on the world market was more attractive than the products to be obtained from the CMEA partners. When oil prices declined (in the late 1980s), the inability of the USSR to expand the quantities of primary products exported set limits to the size of the Soviet market for the other CMEA countries and hampered their export industries. The CMEA was unable to provide the hard currency necessary to meet hard currency debt commitments, a dynamic market, or the stimulus to quality and world standards generated by the fierce competition on the world market.

In addition, the integration process was an important factor strengthening Soviet control over the economies of its junior partners. For example, the development of joint research and development programmes with Soviet lead organisations, with institutes and firms in other CMEA countries playing a subordinate role, weakened the role of national governments and strengthened the grip of the USSR on economic activities in the CMEA countries. This resulted from the dominant position of the USSR within the CMEA. As Abonyi and Sylvain (1977: 153) put it, in a useful survey of the political economy of this process, CMEA integration 'deepens Soviet penetration by structuring the behaviour of dependent ... elites'.

The integration process also led to great efforts in the USSR to determine, and apply, reliable methods for determining the efficiency of foreign trade. There was a considerable literature on the optimisation of foreign trade (e.g. Shagalov 1973). There was also, however, a very substantial gulf between the scientific literature and the real problems of, and methods used in, foreign trade planning. In the USSR, a temporary official method for calculating foreign trade efficiency was issued in 1967. The integration programme led to its being supplemented in 1973 by another temporary method, that for determining the efficiency of specialisation and cooperation within the CMEA. These temporary methods were subsequently replaced by the official *Method for determining the efficiency of the foreign economic contacts of the USSR*. The Soviet use of efficiency criteria for foreign trade followed, with a lag,

that of its East European allies. By the early 1980s, however, the USSR still had not learned the main lesson from the East European discussion of efficiency criteria in foreign trade that had begun in Hungary thirty years earlier. This was that the development of formal criteria for assessing the efficiency of foreign trade was not a major contribution to improving the role of foreign trade in the economy. There were two reasons for this. First, as in the case of the investment criteria considered in Chapter 5, the foreign trade criteria did not actually play much of a role in foreign trade decisions. Secondly, the importance that was at one time attached to them reflected the illusion that, given the right techniques, the planners would make efficient foreign trade decisions. The partial ignorance of the planners, and the complexity of the decision-making process, however, made this unlikely. Experience showed that a more fruitful way to ensure that foreign trade played an active role in the economy, and that exports developed dynamically, was to devolve foreign trade decisions to the enterprises, and create an economic mechanism in which exporting was encouraged and rewarded.

The achievements of the economic integration model turned out to be limited and inadequate. It was hindered by institutional problems (bilateralism and inconvertibility), political problems (the desire of the CMEA members to preserve their national individuality) and the attractiveness of trade with the West. A decade after the integration model was adopted, the proportion of intra-CMEA trade had fallen significantly; single exchange rates had not been adopted; a significant and growing proportion of intra-CMEA trade was in US dollars; the CMEA was an increasing burden for the USSR; and the adverse shift in the terms of trade of the oil-importing countries a serious burden for them. A decade and a half after the model was adopted, dissatisfaction with its results was widespread throughout the CMEA and received vocal expression, in particular, in the speeches of Soviet politicians and the writings of Hungarian economists.

The CMEA was seriously undermined by the dramatic political changes in Eastern Europe in 1989. Countries undergoing (peaceful) anti-Communist revolutions were scarcely likely to want to remain in a Soviet-dominated trading system, unless they received substantial benefits from this. The fatal blow to the CMEA, however, was dealt by the USSR, the country which had created, dominated and sustained it. In January 1990, the USSR proposed that, from January 1991, trade within the CMEA should be at world market prices and settled in hard currency.

This fitted in with the economic reforms then being attempted in the USSR. Furthermore, it was intended to reduce the losses to the USSR from having, in effect, to barter its raw materials for goods produced in its CMEA partners, when it could sell its raw materials (e.g. oil and natural gas) to the capitalist countries and earn hard currency for this. However, losing the opportunity to import raw materials on favourable terms drastically reduced the last incentive for the East European members to remain in the CMEA. The CMEA was dissolved in 1991. The former East European countries reoriented their trade (and politics) towards the EU. The former GDR automatically became part of the EU with German unification in 1990. Poland, Hungary, the Czech Republic, Slovakia, Slovenia, Estonia, Latvia and Lithuania joined the EU in 2004, and Romania and Bulgaria in 2007. Vietnam joined ASEAN in 1995. Cuba, which was hit badly by the end of the CMEA and the USSR, and continued to suffer from the US boycott, benefited from help from Venezuela in the Chavez period. The attempt to realise Stalin's conclusion from the outcome of World War II and create a socialist world market parallel to the capitalist world market did have some temporary and limited successes, but ultimately failed.

The traditional model and the level of foreign trade

It is widely thought that the USSR under Stalin aimed at autarchy and consciously minimised international trade. This view is largely based on the relatively small share of international trade in the Soviet economy in the late 1930s. However, this ignores the key role that the import of capital goods and foreign technical assistance played in the Soviet First Five-Year Plan. Moreover, it seems that the decline in Soviet foreign trade after 1931 was not an *aim* of Soviet policy but a *result* of unplanned and unwanted economic developments both at home and abroad (Dohan 1973, 1976). These were: the decline in exports; the deterioration in the terms of trade; and the need to service foreign debts.

Soviet exports (in constant prices) declined by 52 per cent between 1931 and 1938. Since GNP rose sharply in this period, the decline as a proportion of GNP was still bigger. This decline in exports is explained by the reduced availability of agricultural products (the main export goods), resulting from poor agricultural production and the rapid rise in the urban population and hence in urban food requirements, together

with the restrictions on Soviet exports imposed by the leading capitalist countries to protect their economies during the Great Depression.

The terms of trade deteriorated because during the Great Depression the price of primary products (almost all the USSR's exports were primary products) fell faster than those of industrial products. By 1938 the Soviet export price index (at 1927/8 weights) had fallen to only 46 per cent of its 1927/8 value. Although import prices also fell, their fall was slower and smaller. As a result, the commodity terms of trade (at 1927/8 weights), taking 1927/8 as a base, had fallen to 84 in 1938 (which was a recovery from the low point of 66 reached in 1934).

The USSR had difficulty in exporting sufficient goods to pay for its import wishes, and therefore relied on foreign borrowing to help finance its imports. However, its foreign borrowing took the form of short-term trade credits. These required continuous refinancing, and depended on both economic and political developments. Soviet foreign debts rose rapidly during the First Five-Year Plan and at their peak in 1931 seem to have been equal to about fifteen months of imports. These debts had to be serviced, and tied-credits led to increased prices for imports.

The situation after World War II was investigated by a number of researchers. Pryor (1963) concluded that, in 1955, the trade of each CMEA country was below its 'potential' level by 50 per cent or more. 'Potential' level was defined as the internationally normal relationship between foreign trade and factors such as per capita national income, per capita national production and population. Pryor (1968) reached similar results for 1958 and 1962. Hewett (1976) reached similar conclusions for 1970. He found that (1976: 8) 'typical eastern foreign trade is, *ceteris paribus*, much lower than typical western trade ...'. As a result of these and later studies, Marer (1985: 98–9) stated that 'the consensus of experts is that trade participation ratios of CPEs [centrally planned economies] are certainly not higher, and are most probably significantly lower, than those of MEs [market economies] of approximately the same size and development level'. However, Biessen (1991) pointed out that when a distinction was made between trade with other CPEs and trade with MEs, the situation was different. He analysed data for 1980 and 1986, and found that the state-socialist system had a negative effect on East–West trade, but that the level of intra-CMEA trade was not lower than that of integrating MEs. The former finding was probably explained by a mixture of political (i.e. economic warfare by the West and a wish to protect the economy from the capricious capitalist world by the East) and systemic

factors (the adverse effect on trade with the capitalist world of a supply-constrained economy and poor marketing). The latter finding means that, measured by trade participation ratios, the CMEA seems to have been as effective as the EEC in generating economic integration.

Strategic integration in the world economy

A major feature of China's economic development after 1978 was the 'open door' policy. This meant an opening up of the Chinese economy to the world economy. This took the form, initially, of stimulating exports (*inter alia*, by sharply devaluing the currency which lost 80 per cent of its value relative to the US dollar in 1978–94), and permitting foreign investment, first in special economic zones and ultimately in the whole country. Subsequently, after a prolonged period of rapid economic growth, China joined the key institutions of the world economy (IMF, World Bank, WTO). China's exports provided employment and foreign exchange, and stimulated the quality of Chinese goods. China's imports comprised capital goods, which contributed directly to further economic growth, and consumer goods, which increased the range of goods available to Chinese consumers. The 'open door' policy led to a rapid growth of China's international trade, international investment (initially inward, and then also outward), employment and industrial output. China's integration into the world market can be termed 'strategic integration' (Singh 1993: 21, 1995: 23), because it combined elements of the free market and of the developmental state. On the one hand, trade expanded very rapidly and foreign investment was welcomed. On the other hand, certainly initially: import tariffs were levied; non-tariff barriers to unwanted imports were also used; foreign investment was regulated; capital controls were maintained; and the formation and growth of national large internationally competitive firms (especially in heavy industry) was stimulated. Furthermore, the liberalisation of international trade, investment and finance was a gradual process stretching over decades, in which each step was only taken when it was thought that the economy was ready for it.

China's foreign trade policy in the open door period differed in a significant way from the Ricardian paradigm. This results from the difference between static allocative efficiency and economic growth. In the famous Ricardian example, world income is maximised but the

world remains divided between an agrarian country (Portugal that exports wine) and an industrial country (England that exports cloth). The aim of the Chinese open door policy was not to remain mainly an exporter of labour-intensive products, but to increase employment and use the foreign exchange from exports to import technology and make China a high-tech economy. As Pei Xiaolin, an economist at the Institute of Planned Economy of the State Planning Commission, explained in 1988 (Xiao 1991: 32):

Our aim in joining the international cycle [i.e. the development of TVEs to earn foreign exchange to pay for the import of capital goods] is precisely to rely on exports to get foreign exchange to buy high technology, so that our industrial structure can jump to advanced levels. To rely solely on [our own investment resources in] developing high technology is not possible. That would require a great deal of funds, which could only be accumulated by exports. Once we have the necessary funds we can develop high technology.

Furthermore, China was careful to avoid the danger of excessive indebtedness, which would have transferred economic decision making to its creditors. In the 1980s and 1990s, when it borrowed substantially, its borrowing was largely on soft terms, and was never excessive relative to its foreign exchange earnings. In this way, it avoided the austerity policies normally imposed by their creditors on countries which are unable to service their debts. In addition, its retention for decades of capital controls enabled it to limit both destabilising large inflows of short-term money and large-scale capital flight.

China's strategic integration into the world economy turned out to be phenomenally successful and an enormous benefit to China. Foreign trade grew rapidly, and a large volume of FDI was attracted. Moreover, China avoided the worst effects of the 1997–8 Asian financial crisis. However, the latter did have some negative consequences. Guangdong province was shaken by the bankruptcy of GDTIC (Guangdong Trust and Investment Company) and the insolvency/restructuring of GDE (Guangdong Enterprises). According to Maddison (2007: 104), China's per capita income fell by 1.3 per cent in 1998 (an excellent performance compared with Thailand, Indonesia, Malaysia, South Korea or Singapore).¹² China also avoided the worst effects of the

¹² Maddison's GDP growth estimate for China for 1998 differs sharply from that of the official statistical organisation, but the latter was probably too optimistic. It

world economic crisis of 2008–10. However, the countercyclical spending undertaken to offset the latter led to a property boom and substantial non-performing loans on the books of banks that lent money to finance projects, which maintained growth despite the world crisis, but were not able to service their debts. This created the possibility of a major financial crisis. However, if China avoids such a crisis, if its economic growth continues to be substantially in excess of that in Europe and the USA, if it avoids an environmental catastrophe, if it can manage the Lewis turning point,¹³ and if a war between China and the USA can be avoided, then the centre of gravity of the world economy will in the twenty-first century move to China (having moved in the twentieth century from Europe to the USA – which became the world's largest economy in the late nineteenth century).

In 2013 the OECD stated that China was on course to become the world's largest economy around 2016 (measured at purchasing power parity). This would recreate the position that existed in the early nineteenth century (it has been estimated that in 1820 China accounted for about a third of the world's GDP and was by far the world's largest economy). Earlier, Maddison (2007: 20), on the basis of his projection of Chinese economic growth, forecast that China would:

by 2030 account for about a quarter of world GDP. It would have a per capita income like that of western Europe in 1990. Its per capita income would be only one third of that in the United States, but its role in the world economy and its geopolitical leverage would certainly be much greater.

However, these forecasts are based on extrapolation, a notoriously unreliable method of making accurate forecasts.

Conclusion

Capitalist international trade is a mixed benefit. It can bring enormous benefits to some and enormous losses to others. The state-socialist countries attempted to capture the gains from the international division of labour while avoiding the losses.

seems that the official statistics overstate (and smooth) China's GDP growth rate. On the other hand, international comparisons at exchange rates greatly understate the size of the Chinese economy because of the difference between exchange rates and purchasing power parities.

¹³ This is the time when a country ceases to have unlimited supplies of labour.

After World War II, the state-socialist countries attempted to create a socialist world market which rivalled, and was superior to, the capitalist world market. This attempt went through various phases. The socialism in one country model worked for the USSR before 1945 and for China in 1960–76, but was not a model for a small country or a group of countries. The socialist imperialism model came into existence in unique circumstances which soon passed away. The international planning model foundered on the conflict between static comparative costs and the industrialisation of formerly backward countries, and the increased attention in the 1960s to market relations in improving efficiency. The socialist multilateralism model could not be implemented while the USSR adhered to the traditional model internally. The economic integration model, the implementation of which was attempted in the CMEA in the 1970s and 1980s, suffered from a number of limitations. It was a grouping round a hegemonic power which was unable to include a country – China – which was state socialist but not a dependant of the USSR. Hence, it lacked appeal to countries jealous of their national independence. It continued to be characterised by bilateral trade and inconvertible currencies. Dissatisfaction with the model by its members led to the end of the CMEA.

It is erroneous to assume that the USSR aimed at autarchy or that CMEA mutual trade was less than in comparable capitalist countries in integrating groups (such as the then EEC). Both the USSR during the First Five-Year Plan and the CMEA in the 1970s and 1980s fully recognised the benefits that can be derived from international trade.

The policy of strategic integration into the world market, practised by China after 1978, turned out to be very successful. It was a combination of the free market and the developmental state. If China is able to avoid a financial crisis, if its high growth continues, if environmental catastrophe is avoided, if the Lewis turning point is successfully managed, if political stability is maintained, and if war between China and the USA is avoided, then the twenty-first century could see the centre of gravity of the world economy move from the USA to China.

The attempt to create a socialist alternative to the capitalist world market had some limited and temporary successes but ultimately was a failure. However, although the rise of China does not pose a revolutionary systemic change to the global capitalist system, it will, if continued, challenge the position of the USA as the dominant country in that system.

SUGGESTIONS FOR FURTHER READING

Theory

- V. I. Lenin, *Imperialism, the latest stage of capitalism* (numerous editions, first published in Russian in Petrograd in 1917).
- M. Manoilescu, *The theory of protection and international trade* (London, 1931).
- J. Spraos, *Inequalising trade?* (Oxford, 1983).
- A. Boltho, *Foreign trade criteria in socialist economies* (Cambridge, 1971).
- F. Holzman, *Foreign trade under central planning* (Cambridge, MA, 1974).
- Shu-yun Ma, 'Recent changes in China's pure trade theory', *China Quarterly* 106 (1986), 291–305.

Growth strategy

- M. Dohan, 'Foreign trade and Soviet investment strategy for planned industrialization 1928–1938', in R. W. Davies (ed.) *Soviet investment for planned industrialization, 1929–1937* (Berkeley, 1984), pp. 107–35.
- S. Gomulka and J. Sylestrowicz, 'Import led growth; theory and estimation', in F. L. Altmann, O. Kyn and H. J. Wagener (eds.), *On the measurement of factor productivities: Theoretical problems and empirical results* (Göttingen and Zürich, 1976), pp. 539–78.
- P. Hanson, 'The end of import-led growth?', *Journal of Comparative Economics* 6(2) (1982), 130–47.
- Teng Weizao, 'Socialist modernisation and the pattern of foreign trade', in Xu Dixin *et al.*, *China's search for economic growth* (Beijing 1982), pp. 167–92.
- M. R. Dohan, 'The economic origins of Soviet autarky 1927/28–1934', *Slavic Review* 35(4) (1976), 603–35.
- M. R. Dohan and E. Hewett, *Two studies in Soviet terms of trade 1918–1970* (Bloomington, IN, 1973).
- V. P. Gruzinov, *The USSR's management of foreign trade* (New York, 1979).
- I. Birman, 'A note on Soviet foreign trade gains', *Soviet Studies* 38(4) (1986), 586–9.

CMEA

- C. Adler-Karlsson, *Western economic warfare 1947–1967* (Stockholm, 1968).
- R. Rode and H-D. Jacobsen (eds.), *Economic warfare or detente* (Boulder, CO, 1985).
- F. D. Holzman, 'Comecon: A "trade destroying" customs union?', *Journal of Comparative Economics* 9(4) (1985), 410–23.

- S. Ausch, *Theory and practice of CMEA cooperation* (Budapest, 1972).
- A. Abonyi and I. Sylvain, 'CMEA integration and policy options for Eastern Europe: A development strategy for dependent states', *Journal of Common Market Studies* 16(2) (1977), 132–54.
- A. Bergson, 'The geometry of Comecon trade', *European Economic Review* 14(3) (1980): 291–306 (see also A. Bergson, 'The geometry of Comecon trade: A note', *European Economic Review* 16(2) (1981), 233).
- K. Pésci, *The future of socialist economic integration* (New York 1981).
- F.D. Holzman, 'The significance of Soviet subsidies to Eastern Europe', *Comparative Economic Studies* 38(1) (1986), 54–65.
- L. Csaba, 'Joint investments and mutual advantages in the CMEA: Retrospection and prognosis', *Soviet Studies* 27(2) (1985), 227–47.
- 'Exports of manufactures from Eastern Europe and the Soviet Union to the developed market economies, 1965–1981', *Economic Bulletin for Europe* 35(4) (1983), 441–534.
- P. Germuska, 'From commands to coordination: Defense industry cooperation within the member states of the Warsaw Pact, 1956–1965', in R. S. Bush and W. W. Epley (eds.), *Multinational operations, alliances, and international military cooperation* (Washington, DC, 2006), pp. 101–8.

Eastern Europe

- J. Brada, 'The allocative efficiency of centrally planned foreign trade: A programming approach to the Czech case', *European Economic Review* 4(4) (1973), 329–46.
- J. Brada, 'The microallocative impact of the Hungarian economic reform of 1968: Some evidence from the export sector', *Economics of Planning* 13(1–2) (1973), 1–14.
- J-P. Sartre, 'Czechoslovakia: The socialism that came in from the cold', in J.P. Sartre, *Between existentialism and Marxism* (London, 1983), pp. 84–117.
- P. Boot, 'East-West trade and industrial policy: the case of the German Democratic Republic', *Soviet Studies* 39(4) (1987), 651–71.

China

- Chinese Economic Studies* 16 (3 and 8) (1983).
- Fang Shen, 'On the issue of utilizing foreign capital', *Chinese Economy* 18(4) (1985), 101–6.
- China's economy looks towards the year 2000*, vol. 2, section VIII (JEC US Congress, Washington, DC, 1986).
- China: Long-term development issues and options* (Baltimore and London, 1985, for the World Bank), chapter 6.

10 | *An evaluation of socialist planning*

Sixteen per cent of the national income went on armaments. Another 4 per cent went on the MVD [Ministry of the Interior] and KGB [Committee of State Security]. That makes a total of 20 per cent.¹ The highest military expenditures in the world. In no other country does this figure exceed 8 per cent. The country was ruined, the people were kept half starved, agriculture was in a mess, all to have the rockets. And this was called the class approach. If that is socialism it can go to hell.

M. S. Gorbachev, President USSR²

Government should retreat from micromanaging a lot of things the government is incapable of doing ... The government should focus on macro-economic issues, such as setting the rules of the market, on effectively enforcing these rules as administrator and regulator.

Li Lanqing, Vice-Premier PRC³

The purpose of the social state in the society of consumers is, just as it was in the society of producers, to defend society against the 'collateral damage' that the guiding principle of life would cause if not monitored, controlled and constrained. It is meant to protect society against the multiplying of the ranks of 'collateral victims' of consumerism – the excluded, the outcasts, the underclass. Its task is to salvage human

¹ It seems likely that this figure was taken from published CIA estimates. The Gorbachev leadership seems to have had no real estimate of its own of the cost of its military programmes (other than the misleading budget of the Ministry of Defence). Nor did it ever discuss in public (or in private according the memoir literature) the costs of mobilisation planning.

² This is a remark ascribed to Gorbachev by an assistant in an informal discussion explaining his disarmament initiatives. See Shakhnazarov (1993: 49).

³ This quotation can be found in Nee and Oppen (2012: 394). They took it from D. L. Yang (2004: 257).

solidarity from erosion and to keep the sentiments of ethical responsibility from fading.

Z. Bauman, *Does ethics have a chance in a world of consumers?* (2008), p. 143

Modernisation

The state-socialist countries pursued an intensive programme of modernisation, which in some countries and some periods was quite successful. They industrialised; their populations urbanised; education greatly expanded; their death and birth rates generally fell; their female employment rates rose; and in some periods their economic performance compared favourably with that in the capitalist world. In the 1950s, in some respects the decade of the 'Soviet economic miracle' (Khanin 2003b), the Soviet economy grew quickly, its efficiency increased substantially, per capita consumption increased massively, and the Soviet economic system seemed attractive to many people throughout the world.

It was not only then that the system seemed attractive to many. The transition to capitalism adversely effected many people (Ellman 2000a), and led to a widespread mood of nostalgia (Kornai 2006), particularly in the FSU, but not only there, for the former system. According to the Pew surveys, in the FSU experience of capitalism led to a steady decline in its popularity. In the 2011 survey, only 34 per cent of respondents in Ukraine, 42 per cent in Russia and 45 per cent in Lithuania supported the change to a market economy. In Ukraine 54 per cent disapproved, in Russia 45 per cent disapproved and in Lithuania 35 per cent disapproved. Many people compared adversely the insecurity, criminalisation, inequality, corruption and injustice that marked the new capitalist system with the stability, security and greater equality that marked the former system.

The modernisation achieved by state socialism is sometimes referred to as 'conservative' (Brus and Kowalik 1983: 249–51; Brus and Laski 1989: 32–4; Vishnevskii 1998). It was conservative in that it largely copied developments in the capitalist world and perpetually lagged behind. The Polish socialists Brus and Kowalik picked out two specific aspects of this 'conservative modernisation'. The first was the lack of technological innovation and dependence for innovation on imitation or import. The second was the commodity composition of trade with

the advanced capitalist countries. In this trade the state-socialist countries mainly exported primary products and imported machinery. They were unable to develop significant export markets in Western Europe or North America for industrial products (although they did export manufactures, in particular armaments, to many developing countries). Brus and Laski picked out a third aspect of this 'conservative modernisation' – the structure of the economy. This always reflected the past of the capitalist countries and failed to anticipate, or even keep up with, the changes in the structure of the capitalist economies. When the state-socialist countries were still concentrating on steel and heavy engineering, the capitalist economies were developing electronics, plastics, man-made fibres and new pharmaceuticals. Long-term planning was supposed to foresee and pre-empt future trends. However, it failed to do this, and the countries with socialist planning perpetually lagged behind.

The Russian demographer Vishnevskii, reflecting specifically on the situation in the USSR, considered the social, economic, demographic, cultural and political aspects of 'conservative modernisation'. In all of them he found a combination of modernisation and conservatism. In the economic field the modernisation was the successful transition from an agrarian to an industrial society. The conservatism was the failure to develop (Vishnevskii 1998: 418) 'the social mechanisms which provide the self-development of the economic system of an industrial society – private ownership and the market'.

In the more backward parts of the FSU, the description of its modernisation as 'conservative' requires qualification. Compared with neighbouring countries, it was quite radical. For example, Central Asia, despite various problems (see Chapter 7), also experienced one relatively positive result of socialist modernisation. It inherited from the USSR a reasonably effective secular state, which was able to provide important public goods such as public order and internal security. This can be seen clearly in post-Soviet Uzbekistan. The resulting dictatorship had well-known costs. However, it also had benefits, which can be seen by comparing the current situation in Uzbekistan with that in nearby countries such as Afghanistan and Iraq.

Elsewhere, the achievements of state socialism were of a different kind. In more advanced countries, such as the Czech Republic and Estonia, state socialism led to a steadily increasing lag behind neighbouring countries such as Austria and Finland. In Korea it led to an

increasing lag of the North behind the South in height and life expectancy. In China and Vietnam it led to a steady widening of the lag behind both the Asian tigers and the advanced Western countries. Hence, the need in the more advanced countries to 'rejoin Europe', and in China recognition of the need for the 'four modernisations'.

Physical capital

Socialist planning led to the large-scale accumulation of physical capital. Major industrial projects, mines, power plants, power grids, railways and airports were built on a large scale. Although the economic rationality of many of these projects was often limited, and their environmental consequences frequently negative, they did provide some important assets for the future. The oil and natural gas industry that is the basis of the economic prosperity of post-Yeltsin Russia was developed in the Soviet era.⁴ The defence, cosmic and nuclear industries that provided post-Soviet Russia with high-tech exports were also based on physical capital accumulated in the Soviet era. A detailed econometric study (Carlin *et al.* 2013) suggests that the accumulation of physical capital primarily benefited relatively backward countries, and that countries that were more advanced benefited less.

Human capital

The socialist planning system devoted considerable attention to the development of schools and higher education, in particular technical higher education. It produced a large number of engineers and other specialists. Gustafson (2012: 496) has drawn attention to the importance of Soviet human capital formation in creating the Soviet oil and gas industries, and making possible the Putin-era level of production by them. The 'Second Baku' and West Siberian oilfields were not available like goods in a supermarket, but required large numbers of geologists and engineers to find and develop them.⁵ Carlin *et al.* (2013) drew

⁴ As Gustafson (2012: 456) pointed out two decades after the end of the USSR: 'the Russian oil industry has maintained production essentially by working the legacy assets discovered and developed in Soviet times'.

⁵ 'The Soviet Union developed excellent schools of geology and engineering. It encouraged mapping of natural resources and systematic exploration of the mineral base of the country. It developed pioneering techniques for exploration and

attention to the positive effects of socialist planning on secondary school enrolments, and the benefits that this brought, especially for poor countries. Although socialist planning did not produce the specialists required in a market economy (finance, marketing, advertising, modern accounting, etc.), it did eliminate mass illiteracy and produce many highly qualified people. Evidence of this is the large number of mathematicians and physicists who were trained in the USSR, and were able to take up positions in US and European universities after the collapse of the USSR made emigration possible. This raising of the intellectual level of the population was an important contribution to the development of those countries which experienced socialist planning, in particular the poor ones.

The efforts which the state-socialist countries made to develop their human capital made a deep impression on the rest of the world. The mainstream Cambridge economist Pigou (1937: 137–8), under the influence of the Great Depression, real facts about the USSR, the lies propagated by the Soviet authorities,⁶ and the favourable picture of the USSR painted by the Webbs and others, wrote that: ‘If it were in the [present] writer’s power to direct his country’s destiny ... He would take a leaf from the book of Soviet Russia and remember that the most important investment of all is investment in the health, intelligence and character of the people.’ This view, that Soviet experience showed the desirability of the state ensuring adequate medical care and education for all, was one of the factors leading to the worldwide adoption of this proposition in the decades following World War II. In this way, the Soviet experience made an important contribution to the spread of medical care and education to the poor throughout the world. It emphasised the role that the state could play in these spheres and how important this was.

A less attractive feature of the system was the negative selection of cadres (Hayek 1944: chapter 10; Brus 1975: 200; Egorov and Sonin

production. In short, the basis for today’s Russian oil and gas legacy was definitely a “created” knowledge industry, and it is in large part because such a base existed that the Russian oil industry was able to recover so quickly from the trauma of the 1990s and to return to nearly the Soviet level of production in the 2000s.’

⁶ For example, the official information provided about mortality in the 1930s was false. Stalin’s 1930 statement about mortality then, and the data about mortality in 1935 published in 1936, were both false, as was the official result of the 1939 census. The huge mortality in the famine of the early 1930s was also denied. The real data on mortality in the 1930s did not become publicly available until the collapse of the USSR.

2011). This ensured that many managers and administrators were selected because of their loyalty, sycophancy and obedience. Competent people were often not wanted because they could not be relied on to support the boss at all times. Khanin (2003b: 1201–2) noted that:

The major achievements in a number of spheres of Soviet science and technology in the 1950s should not obscure the fact that in other areas development was slow, encountering the barriers of enterprises' and ministries' unreceptiveness to scientific and technical progress and bureaucratic organisation of research, leading to its monopolisation by particular groups (or clans) with little creative ability who cultivated servility and mediocrity around themselves.

As a result of the negative selection of cadres, many of the managers and administrators were inefficient and contributed more to bureaucratisation than to the efficient and businesslike management of the sector entrusted to them. This naturally lowered the performance of the system. It was a price the economy – and society – paid for the dictatorship. The negative selection of cadres was enforced by the top leader, who personally selected many senior officials,⁷ the *nomenklatura* system, bureaucratic logic, and the role of the state security forces in personnel selection and promotion.

Social capital

There is some evidence which suggests that state socialism in Eastern Europe and the USSR had a negative effect on trust, both social (in other people) and institutional (in public institutions). For example, surveys in Germany showed (Rainer and Siedler 2009) that just after reunification, social trust in the former East Germany was significantly less than in the former West Germany. They also showed that, even a decade after

⁷ One example of this is the replacement in 1940 as Head of Soviet military intelligence of I. I. Proskurov by F. I. Golikov. The former provided honest and accurate estimates of German intentions. The latter provided the (misleading) estimates that it was known the boss wanted to receive. These misleading estimates ensured that military intelligence supplied the leadership with erroneous estimates of the war danger in 1941. However, although he was bad at his work, which had disastrous consequences for the USSR, Golikov was better at palace politics than Proskurov. Golikov became a Marshal of the Soviet Union and died a natural death, whereas Proskurov was arrested, and shot by Soviet state security in 1941. For further details see see Murphy (2005).

reunification, there was still substantially less trust in the legal system and in the police in the former East Germany than in the former West Germany. Similarly, surveys in Russia have shown low levels of trust in market and legal institutions (Polishchuk 2013: 209–12). These results are significant, and negative for capitalist economic development, since social capital can complement formal institutions, and hence contribute to economic development. On the other hand, the World Values Surveys for China for 1990 and 1995 showed levels of trust higher than in OECD countries (Raiser *et al.* 2001: 7). Similarly, Minkov and Hofstede (2012) calculated an index of Long-term Orientation for thirty-eight countries, using data from the World Values Survey. South Korea, Japan and China (in that order) had the highest scores, and (non-East Asian) OECD countries had much lower ones.

Economic geography

The violation of Zipf's law (Chapter 5) and the development of remote regions for defence reasons (Chapter 4) were striking results of socialist planning. The former hampered the attempt to make a transition to a market economy, and the latter was cost-increasing and partially or wholly abandoned after the end of socialist planning.

The environment

Socialist planners perceived the environment as something to be tamed and mastered, and adapted to human needs. They did not see that it was a resource which needed to be cared for and cherished, and that human survival depended on its proper treatment.

The USSR took a number of early measures to protect the environment. Even during the Civil War, Lenin supported the idea of developing a network of nature reserves (the creation of nature reserves had begun in the Russian Empire). The first Soviet nature reserve was established in 1919 and a second one also in 1919. In 1926 a State Committee for the Protection of Nature was created. However, 88 of the 128 nature reserves with about 90 per cent of their area were liquidated in 1951 and their territory transferred to the Ministry of Forestry, which was interested in chopping their trees down. Some reserves were reopened in 1956–60. However, in 1957 three of the reserves were converted to elite hunting facilities, and in 1961 there

was once again a large-scale liquidation of reserves which led to a loss of about 36 per cent of their area. After the fall of Khrushchev the number of nature reserves once more increased.

Furthermore, only four years after the end of World War II, and long in advance of the national governments of most capitalist countries, the USSR Council of Ministers issued a Resolution on Air Pollution and created a Chief Administration for Sanitary-Epidemiological Supervision to ensure its observance (Feshbach and Friendly 1992: 43). The *norms* for permissible levels of toxic substances in the air were strict. However, actual *observance* of the air pollution norms was very lax.

Soviet practice was dominated by grandiose projects for transforming nature and the priority of the defence-industry complex. Production plans for heavy (and frequently very polluting) industry took priority over environmental factors. A particularly important polluter was the defence-industrial complex, with its nuclear tests, nuclear submarines (Josephson 2005: 142–5), plants for producing enriched uranium and plutonium, inadequate processing and storage of nuclear waste, and a wide range of other hazardous and polluting research, production and storage facilities. Notorious examples are the nuclear test site at Semipalatinsk and the biological warfare installations on a peninsula (formerly Vozrozhdenie island) in the Aral Sea. Natural resources were seen as things to be used to accelerate the development of the defence-industry complex, and the building of socialism, rather than assets essential for the survival of life on earth. Hence, by the end of the USSR its environmental situation was grave, and air, water and soil pollution often a major hazard to the health of humans, domestic animals and wildlife. The three main reasons for this sad state of affairs were: the Marxist-Leninist goal of using nature to serve mankind; the priority of the production plans and of the defence-industrial complex; and the very limited role (until the late Gorbachev period) which NGOs were able to play in defending the environment and protecting public health from pollution.⁸

⁸ Some field biologists and geographers, and organisations such as the All-Russian Society for the Protection of Nature, the Moscow Society of Naturalists, the All-Union Botanical Society and the Moscow branch of the Geographical Society of the USSR, did pursue an environmental agenda for decades before perestroika. A central role in these organisations was played by the Zoological Museum of Moscow State University. As a result of their activities, in the late 1930s measures were taken to protect polar bears, and other threatened and endangered species. In the immediate post-World War II years, a successful effort was initiated to

A similar situation existed elsewhere in the state-socialist world. In China during the Maoist period the notion of natural constraints on human possibilities to change the world was decisively rejected. Mao himself was an extreme voluntarist, with immense ignorance about environmental limits on human activity. Unfortunately, he had the power to impose his ideas on the whole country. He even rejected Stalin's argument that humanity is unable to change the laws of astronomy and geology. According to Mao (1977a: 137): 'This argument is wrong. Human knowledge and the capability to transform nature have no limit.' Hence a 'war against nature' was embarked on. 'Battles' were fought to build irrigation and hydropower projects. Big dams often required large numbers of people to leave their homes (which were flooded) and move to less fertile land elsewhere. Hastily and poorly constructed dams often subsequently collapsed, sometimes causing large numbers of deaths. The Great Leap Forward (GLF) itself, intended to show what human will, mass enthusiasm and the 'war on nature' could produce, ended up in widespread starvation.

During the GLF, official policy supported close planting (to get more plants on a given patch of land), deep ploughing, backyard steel furnaces and the elimination of sparrows (Shapiro 2001: 67–93). However, close planting simply led to the death of the plants concerned. Deep ploughing was an effort to make the soil more fertile, but in reality, despite taking much time and effort, it was unnecessary or counter-productive. To support the campaign for deep ploughing, photos were published of a Hunan field with grain so thick that children were able to sit or stand on top of it. This was supposed to be evidence of the great success of deep ploughing. Actually it was just a fraud – the children were supported by a hidden bench. The campaign for backyard furnaces not only led to the loss of many useful household utensils but also led to deforestation, as trees were cut down to provide fuel for the furnaces. The campaign to exterminate sparrows (which were a pest because they ate grain) ignored the fact that sparrows also eat grain-consuming

preserve the European bison. However, the massive public criticism of the pollution of Lake Baikal failed to prevent the two much-criticised factories adjacent to it from going ahead (one began production in 1966 and the other in 1967). In the changed political circumstances of 1986, when Gorbachev was the USSR's leader, opposition by academics and writers did manage to prevent the implementation of the plan to divert northern and Siberian rivers to make them flow south. This was a remarkable victory over gigantomania. For an excellent account of environmentalism in the USSR, see Weiner (1999).

insects, so that the decline in sparrow numbers did not bring a net benefit (and possibly brought a net loss). During the Cultural Revolution too, there were well-meaning but ecologically harmful campaigns intended to increase production (Shapiro 2001: 95–137). These foolish attempts to conquer nature, as if nature were an enemy, simply showed the ecological ignorance of Mao Zedong and the harmful effects of such a person having so much power.

The post-Mao Chinese leaders abandoned Mao's extreme voluntarist approach, and recognised the importance of environmental issues. However, the emphasis they gave to economic growth, and their success in achieving it, also had adverse environmental effects. The very important and much-admired increase in agricultural production in China and Vietnam following their decollectivisation also had important impacts on the quality of agriculture's basic input – land (Heerink, Spoor and Qu 2007: 31–40). (Soil erosion, salinisation and grassland degradation were serious problems.) At the beginning of the second decade of the twenty-first century, China's capital was perhaps best known for its air pollution. Nolan (2008: 149–50) has drawn attention to the negative effect of environmental problems (soil erosion, desertification, deforestation, water shortage, CO₂ emissions) on China's future, and even on its much-admired high economic growth. As he noted, 'Recent Chinese provincial-level studies of "Green National Product" estimate that "real output growth" reduces to negligible levels when destruction of the natural environment is taken into account.'

Health care

The state-socialist countries set out to provide health care for all their citizens. The USSR was very successful in the post-World War II period in reducing infectious diseases. However, it failed to enter the second stage of the health transition, which began in the advanced capitalist countries with the cardiovascular revolution of the 1970s, and from the early 1970s Soviet life expectancy steadily worsened relative to the advanced capitalist countries (Denisova and Shapiro 2013). The Maoist policy of providing basic health care in the villages also had favourable results (which were partly lost with the decollectivisation of agriculture). Whereas at the beginning of the twentieth century the expectation of life at birth in China was only about 25, in the early years of the PRC the crude death rate dropped sharply, and by 1957 average life expectancy at

birth had reached about 50. This resulted from: the end of civil and international war; vigorous programmes of epidemic control; state redistribution of grain, and the retraining of midwives in modern midwifery. By the late Maoist period life expectancy at birth had reached about 60.⁹ This was high relative to its income per head. International comparisons generally showed that the state-socialist countries, especially the poor ones, compared favourably in health indicators such as life expectancy and infant mortality¹⁰ with capitalist countries with similar incomes per head. The failure of the USSR to adapt a medical system concerned with preventing and controlling infectious diseases, to one capable of coping also with new challenges was only fully understood years after the collapse of the USSR. The image of successful socialist health care, and to some extent its reality, had a considerable impact throughout the world in forcing governments to ensure that entire national populations would have access to medical care.

The role of the state in the economy

The appropriate role of the state in the economy has been a matter of debate for centuries. In the twentieth century in most capitalist countries

⁹ This trend of increasing life expectancy continued in the reform and capitalist periods. By 2010 China's life expectancy at birth had reached 74 for men and 77 for women. In Russia in 2011, the expectation of life at birth was only 64 for men and 76 for women. In this crucial index of human welfare, Russia had fallen behind China. (Precise figures for life expectancy in both countries vary between sources since there are official estimates, and various adjustments made to them by individual demographers and research organisations.)

¹⁰ For the USSR, the official Soviet statistics of infant mortality give too favourable a picture. There are two reasons for this. First, the USSR used a definition of 'birth' different from the WHO one (Chapter 8, pp. 321–2). The percentage increase in the infant mortality rate caused by switching from the Soviet definition to the WHO one seems to have ranged from 13 per cent in Moldova to 40 per cent in Latvia. In Poland, which has a much larger population than the two previously mentioned countries, it was about 21 per cent. Secondly, there seems to have been significant under-registration of deaths, particularly in certain regions, such as Central Asia and Azerbaijan. Estimates of 'true' infant mortality in 1987–2000 show very high increases over the official figures in Central Asia, Azerbaijan, Albania, Romania and Bulgaria. In Russia – which was supposed to have adopted the WHO definition of 'birth' in 1993 and where under-registration is much less than in Central Asia or Azerbaijan – in 1987–2000 the estimated increase of the official figures to measure 'true' infant mortality is 26.5 per cent (Aleshina and Redmond 2005: 46).

this role expanded significantly. A large proportion of the national income was spent or redistributed through the state budget. Fiscal, monetary, banking and innovation policies played an important role in managing the economy. A number of key sectors were state-owned or regulated by state agencies. Public provision of physical and knowledge infrastructure was very important. Social insurance and regulation of employment conditions became widespread. State provision (or regulation of private provision) of education and medical care spread all over the world. State stimulation of technical progress (via support for knowledge institutions such as universities and research institutes, and via the provision of finance from the defence budget or tax concessions for business firms) became increasingly important.

However, in the capitalist economies a large part of economic activity was left to non-state actors (individuals, families, firms, third-sector organisations). In some countries in some periods this had favourable effects on living standards and technical progress. It also gave considerable freedom to all citizens. It provided freedom for entrepreneurs to establish and develop businesses, allowed non-state actors ranging from the self-employed to giant global corporations to exist and flourish, allowed individuals to choose where to live and work, and ensured that it was always possible to buy everyday goods.¹¹ On the other hand, under socialist planning the non-state sector was suppressed. Experience showed that, despite some positive aspects, this could lead to militarisation, enserfment, starvation, the dictatorship over needs, lack of self-sustaining technical progress, and failure to improve the standard of living of the mass of the population relative to the situation in the capitalist countries. Hence, nearly all the countries that at one time adopted this model have abandoned it. Naturally, this did not lead to the disappearance of the state's economic role, since the state had both to build capitalism and to form a major part of the resulting economic system.

Obviously the size and population of the country, and the importance and nature of its international links, greatly influence the internal role the state can play. Similarly, the political system and the relationship

¹¹ In Solzhenitsyn's book *Rakovy Korpus* (*The Cancer Ward*), part 2: 157–9, one of the characters, in a discussion about the relative merits of the two systems, and influenced by the notorious problems of Soviet retail trade, says: 'there [in the camps] people argued that there is much good in private enterprise. It is easier to live, see? There is always plenty. You always know where to buy things.'

between the state and the society are very important in determining the actual and desirable role of the state in the economy. As Ostrom (2010: 642) pointed out, 'the application of empirical studies to the policy world leads one to stress the importance of fitting institutional rules to a specific social-ecological setting. "One size fits all" policies are not effective.'

The mistake the Bolsheviks made was not in aiming at the modernisation of Russia. That was entirely sensible. Nor was it a mistake to ascribe a major role in the economy to the state. This is quite normal in the modern world. Their mistake was to suppose that successful modernisation required the elimination of the market and of private enterprise. They did not realise the role that the market and private enterprise can play in generating and maintaining self-sustaining economic growth. Looking at all economic activity as if it were a zero-sum game was very one-sided. Furthermore, the Bolsheviks failed to realise that for the state to attempt to micromanage every farm, factory and office is a very inefficient form of management, that wastes information and potential local initiatives and entrepreneurship. Furthermore, coercion tends, in general, to be less effective than market incentives in raising labour productivity, and to be indifferent to human suffering and loss of life (see Chapters 6 and 7).

Central planning

At one time the traditional model was known as 'central planning' and was widely considered the most rational way of organising a national economy. However, detailed study of the model showed that the term 'central planning' was misleading, and the claim to rationality false. On the terminological level descriptions such as 'centrally managed', 'command economy', 'administrative economy', 'bureaucratic economy', 'shortage economy', or 'administrative-command system' were used in the attempt to capture its main characteristics. On the decisive question of its rationality, detailed study of it as an economic system (Chapter 2), and in specific areas, such as investment (Chapter 5) and consumption (Chapter 8), showed plainly the waste it generated, its failure to use resources in the most efficient way, and its difficulties with home-grown innovation. Similarly, study of its application to agriculture (Chapter 6) or labour and incomes (Chapter 7) showed that it generated major social problems. In addition, study of China's post-1978 open door

policy showed the enormous benefits that strategic integration into the world economy could bring (Chapter 9).

Almost a century after the publication of *The ABC of Communism*, we can see that its vision of a planned economy was *unrealisable* and *unattractive*. It was *unrealisable* because its understanding of individual and bureaucratic behaviour was minimal. The Marxist claim for the rationality of socialism was based on the idea that under socialism there would be a fundamental change in economic behaviour. As Brus and Laski (1989: 36) pointed out, '*Homo oeconomicus* had been expected to blend with *Homo socialis* on the basis of ownership of the means of production being perceived as genuinely common, and hence erasing the distinction between principals and agents; rivalry is to be replaced by a spirit of sharing and cooperation.' However, this did not happen for well-known reasons (Brus and Laski 1989: 36–7):

Several thick layers of divergence separate this image from the realities of 'real socialism'. First, the idealized concept of the 'new man' was evidently utopian under any circumstances. Secondly, 'real socialism' emerged under conditions of immaturity, which according to the Marxist theory itself – regardless of the view on the legitimacy of socialist revolution – could not generate the new attitudes for a long time to come. Thirdly, even in cases of indigenous revolutions, at least a substantial minority (and in Russia, judging by the results of the elections to the Constituent Assembly, probably a majority) opposed the new regime, while in Eastern Europe it was received with deep hostility as not only unwanted in itself but in addition imposed from outside. Fourthly, with all political pluralism wiped out, state power was monopolized in the hands of the Communist Party, which could not but be inimical to the idea of state ownership as a common good. Fifthly, despite all this the monopoly, or rather its ruling elite, pushed forward with (by and large) the preconceived design, alienating people even further and resorting even more to coercion.

As Lane (1996: 192) reluctantly concluded: 'It must be conceded that personal and bureaucratic interests have driven these [state-socialist] societies, not completely perhaps but enough to cast in doubt collectivism and cooperation as organising principles.'

It was *unattractive* since it eliminated the possibility of individuals and groups doing their own thing, and created the possibility of excessive resources being devoted to the military and internal security sectors. In team sports and military units it is sometimes necessary to subordinate individual aspirations to the collective good. Similarly,

in households one person may sacrifice their own goals for the welfare of the household as a whole. Furthermore, at times of collective threat such as total war (or a natural disaster) people are – to some extent – prepared to work together for the common good and subordinate their own wishes to this, and it is rational for them to do so. Nevertheless, in normal times the diversity of aims and of individuals/groups makes this unappealing. Bukharin and Preobrazhensky's vision ignores both the logic of bureaucracy, and the fact that some people may not want to play in the orchestra – maybe they prefer some other activity. Moreover, individuals doing their own thing may stimulate innovation and thus living standards (Gorodnichenko and Roland 2010).

In addition, central control over the economy enables the controllers to devote massive resources to military and internal security objectives. These military and security programmes are a major burden on the economy concerned. The priority socialist planning gave to the defence sector, and the role played by mobilisation planning (Chapter 4), meant that resources were permanently diverted away from other sectors. Environmental protection, medical care, education, housing and urban infrastructure, and consumption were all sacrificed to the needs of the defence–industry complex. The need to overcome this was an important reason for the policies of Gorbachev, as explained in the first quotation which heads this chapter.

Furthermore, there were important technical problems undermining the rationality of so-called central planning. The centre was ignorant of many things, and the system created specific forms of ignorance (Chapter 2). In addition, however many details were included in the plan it was always the case that much of the economy (part of the first economy and the second and third economies) was unplanned. Uncertainty about the future (e.g. of the weather, technology, the world economy, demography and the internal political situation) made economic targets for it unreliable. The further ahead the plan target, the greater the margin of error. It was for this reason that a giant multinational such as Royal Dutch Shell long ago switched over to scenarios as a way of providing a framework for its investment decisions. This was recognition that while, in general, it is impossible to forecast precisely the situation five or more years ahead, it is possible to make projections which help decision makers resolve the problems they are confronted with.

Analysis of this system and of the role of the plans in it drew attention to the role of planning as a rationality ritual (Chapter 2).

Motivation

The state-socialist attempt to replace material incentives by moral ones failed (Chapter 7). Even in the Gulag, material incentives proved their value. Although not the only motivating force in an economy, material incentives are important, and attempts to abolish them are likely to have an adverse effect on labour productivity.

Central planning without a Communist party

Central planning, which is normally associated with rule by a Communist party, has also been introduced and applied by non-Communist political parties. In the countries where this has happened, it has been adapted to the concrete circumstances of the country concerned. An example is the United States, where a National Planning Board was established in 1933, as part of the New Deal.¹² This was reorganised several times, becoming the National Resources Planning Board (NRPB) in 1939. Its main activities were as follows. First, to plan and coordinate public works. Secondly, to stimulate city, state and regional planning. (Several of the most important people involved in the NRPB and its predecessors had a background in urban planning. Besides its central office in Washington, DC, the NRPB had eleven regional offices.) Thirdly, to coordinate federal planning activities. Fourthly, to undertake research. It was successful in its research activities, publishing a large number of interesting, relevant and thought-provoking studies. It also played an active role in planning the exploitation of the water resources of the USA. According to Clawson (1981: 117): ‘the Water Resources Committee of the NRPB

¹² In 1934 the National Resources Board (1934: 80) wrote that: ‘Planning is a distinctively American idea. The Constitutional Convention gave us our national plan of Government. Hamilton’s “Plan of Manufactures”, Jefferson’s and Gallatin’s “Internal Improvements”, Clay’s “American System”, the American Homestead Policy, the Conservation Movement, and the economic mobilization of the World War are all examples of national planning. Business planning is similarly a distinctively American idea in the form of “scientific management” and “management engineering”.’

made a major and lasting contribution to the planning of water use and development in the United States'. In addition, it stimulated state and city planning. Moreover, in 1943 the NRPB issued a report, analogous the British Beveridge report, advocating a comprehensive, national, social-insurance system for the USA.¹³

The people who ran the National Planning Board and its successor organisations were aware of the existence of planning in other countries, including the USSR. They declared their willingness to 'learn from lines of progress developed elsewhere' (National Planning Board 1934: 29). However, they strongly rejected dictatorship and coercion, and remained firmly committed to US democratic procedures. Economists who worked for a time for the NRPB included Wassily Leontief, Paul Samuelson, Milton Friedman, J.K. Galbraith, Paul Sweezy and Gardiner Means. The NRPB was abolished by Congress in 1943, a time when the focus of public policy had switched from the New Deal to waging World War II. Senator Taft, who strongly supported the abolition, explained at the time that (Clawson 1981: 231–2):

In my opinion, they [the NRPB reports] are based on two policies and theories. The first is the theory of unlimited public spending and constant increase of the public debt after the war. A policy of deficit spending is implicit in the measures the board proposes and in its attitude towards the spending of government money. In the second place, the board's plans are based on unlimited government interference in and regulation of all business activity, plus a very large amount of government regulation of what is now private industry.

Another example of central planning without a ruling Communist party is Nazi Germany (Temin 1991), whose planning, like that of the USSR in the 1930s, was mainly devoted to the needs of the military sector. Another country which in the 1930s was aware of the value of economic planning in mobilising the economy for war was Kuomintang China. Its National Resources Commission adopted a Three-Year Plan in 1936 which (Kirby 1990: 127):

committed the Chinese government to military–industrial development in preparation for an expected war. This plan could by no means be considered an overall blueprint for national development. But as a soberly conceived

¹³ Much of what in the USA in the New Deal period came under the heading 'planning' would nowadays in the USA come under the heading 'public policy'.

design for state-led industrial development closely linked to the regime's military-political strategy, feasible within the context of available resources, and innovative in attracting foreign technical assistance through barter and counter-trading mechanisms, it set a new standard for government plans.

There is also another type of central planning, not primarily oriented towards war-preparation, which was developed by the Dutch economist Tinbergen, and which has been implemented in the Netherlands (Ellman 1990: 18–20). In the Tinbergenian model of central planning, a plan is a consistent numerical exploration of the future which provides data useful for economic policy. It is not a set of instructions, nor does it have to be fulfilled. It is simply part of the policy-making process in a regulated market economy. This understanding of planning, as a subordinate but useful part of the policy process in a regulated market economy, has been implemented since 1945 by the Netherlands Bureau for Economic Policy Analysis (whose first director was Tinbergen). This body has regularly published annual economic plans and macroeconomic forecasts and also undertaken a wide variety of policy simulations for both the government and independent organisations such as political parties.

The simulations made by the Netherlands Bureau for Economic Policy Analysis make extensive use of econometric model building (den Butter and Morgan 2000). This enables maximum use to be made of statistical methods, the available data and computational techniques; makes the relationship between the conclusions and their causes clear; enables alternative policies to be quickly compared; and makes the procedures and conclusions of the Netherlands Bureau for Economic Policy Analysis seem very authoritative to innumeratees. Tinbergen himself received the Nobel prize for his pioneering contribution to econometric modelling. The theory underlying this type of planning was developed by Tinbergen, building on earlier work by Frisch. The best-known proposition of Tinbergen's theory is that a necessary condition for the achievement of policy goals is that there be at least as many instruments as targets. An important conclusion from the later work of the Netherlands Bureau for Economic Policy Analysis was the view that, in the Netherlands (and also in some other countries) in the mid 1970s, the balanced budget multiplier was negative. Another important conclusion from the later work of the Netherlands Bureau for Economic Policy Analysis was the view that the sharp increase in

unemployment in the Netherlands in the 1970s was of a structural kind which could not be reduced by demand management.

This style of planning can be considered 'socialist' in the Social-Democratic sense that it forms an integral part of an organised civil society in which public policy plays a major role. This public policy is aimed at such goals as the provision of public, or quasi-public, goods (infrastructure, public transport, education and medical care, safe air, water, food and soil); an equitable income distribution; stimulating technical progress and economic growth; and the emancipation of formerly underprivileged groups; etc. The society recognises and protects negative freedom and fully accepts the usefulness and value of market relations and private ownership, but also looks positively on the state as an active element in attempts to achieve public goals.

The role of the Netherlands Bureau for Economic Policy Analysis was not unique to the Netherlands. Similar organisations existed in France (*Commissariat Général du plan*) and Japan (Economic Planning Agency). In 2006 the former was abolished, and much of its work transferred to the *Centre d'analyse stratégique*. In 2001 the Economic Planning Agency in Japan was merged into the Ministry of Economy, Trade and Industry. These changes reflected the discredit into which anything concerning 'planning' had fallen. However, the Netherlands Bureau for Economic Policy Analysis has survived till the present day, since its work is considered a valuable input into the policy process and social-consensus building.¹⁴

The role of the Netherlands Bureau for Economic Policy Analysis is similar in some respects to the public, academic and business policy-analysis and forecasting institutes in other countries. For example, it has certain similarities with the Council of Economic Advisors in the USA. (It dates from the same period – 1945–6 – and shares the goal of helping to attain important social goals such as full employment.)¹⁵

¹⁴ The only concession it has made to the fact that 'planning' has now become very unfashionable concerns the English translation of its name. Its Dutch name, literally translated, is 'Central Planning Office'. Its current official English name, 'Netherlands Bureau for Economic Policy Analysis', is designed to remove the stigma nowadays attached to the term 'planning'. (However, the English name also gives a better impression of what the organisation actually does.)

¹⁵ The Council of Economic Advisors took over some of the functions of the NRPB.

Planning in the market

Although central planning of the Stalinist or Maoist type has been generally abandoned as being a failure in peacetime and in the long run, partial planning, which does not attempt to replace the market economy but which functions within it, has been more successful. There are examples at the corporate, national and international levels.

A major role in the capitalist system is played by the giant corporation. In the globalised economy of the early twenty-first century, it is quite common for a very small number of corporations to dominate the world market for their product. Some data are set out in Tables 10.1 and 10.2.

The data in Tables 10.1 and 10.2 show that the really existing market economy in the capitalist world is dominated by a small number of dominant firms, and that the atomistic market of traditional micro-economics textbooks is far-removed from capitalist reality. The giant corporation not only plans its own activities, but also influences the activities of its suppliers, whose plans have to fit in with the plans of their customers. Nevertheless, despite their often successful internal

Table 10.1 *Global concentration in finished products, 2006–9*

Sector	No. of firms	Global market share (%) ^a
Large commercial aircraft	2	100
20–90 seat commercial aircraft	2	75
Autos	10	77
Mobile telecoms infrastructure	3	77
Smartphones	3	75
Plasma TVs	5	80
Pharmaceuticals	10	69
Construction equipment	4	44
Agricultural equipment	3	69
Elevators	4	65
Beer	4	59
Cigarettes	4	75 ^b

^aThe figures in this column are rough estimates.

^bExcluding China.

Source: Nolan (2012: 18).

Table 10.2 *Global concentration in components, 2006–8*

Sector	No. of firms	Global market share (%) ^a
<i>Large commercial aircraft</i>		
Engines	3	100
Braking systems	2	75
Tyres	3	100
Lavatory systems	1	>50
Windows	1	>50
<i>Autos</i>		
Glass	3	75
Tyres	3	55
Seats	2	>50
Braking systems	2	>50
Steel	5	55
<i>IT</i>		
Micro-processors for PCs	2	100
Integrated circuits for wireless telecommunications	10	65
Database software	3	87
PC operating systems	1	90
Machines to make semiconductors	1	65
<i>Beverages</i>		
Cans	3	57
Glass containers	2	68

^aThe figures in this column are rough estimates.

Source: Nolan (2012: 19).

planning, the situation of the giant international corporations differs fundamentally from that of planning national economies according to the utopia of Bukharin and Preobrazhensky or the traditional model. It also differs fundamentally from the position of economic ministries in the traditional model (although it has some similarities with them, and some Soviet ministries transformed themselves after the end of the traditional model into corporations, e.g. the Soviet Ministry of Gas became the giant Russian corporation Gazprom).

The giant corporations are engaged in fierce oligopolistic competition and have to take account of the market both for their inputs and for

their outputs. On the input side, they have to take account of the markets for finance, labour services and commodities. On the output side, they depend on the market for their product/s and have to devote resources to marketing, innovation and keeping ahead of their competitors. In addition, not only do they spend heavily on R&D but they are usually quick to adopt new technology – if only to keep up with (or ahead of) their rivals. Furthermore, they have frequently replaced medium- and long-term plans by scenarios, in view of the inherent uncertainty of the future. Furthermore, although there are giant corporations which are more than a century old, some giant corporations decline in importance and new ones emerge. Moreover, despite their crucial importance in many sectors and in technical progress, the majority of the working population works in small or medium-sized enterprises, which provide employment, produce useful goods and services, and are subject to the ups and downs of the market economy. In some sectors (e.g. biotech) medium-sized enterprises play an important role in technical progress. A minute proportion of small and medium-sized enterprises grow into new global corporations. In the modern capitalist economy both hierarchies and market relations have useful roles to play (Williamson 1975).

An example of successful national (project) planning was the US plan to put a man on the moon. This prestige project, which was one aspect of the competition of the two systems, was implemented by an agency of the US government (NASA) and succeeded. It was a quasi-military project, which showed that a state which is able and prepared to provide the resources for such a project can realise its goals.

An example of successful international planning was the eradication of smallpox. This was a successful programme, coordinated by the World Health Organization of the UN, to eradicate a disease which had killed hundreds of millions of people in human history and was still killing about 2 million each year in the mid 1960s. By 1980 it had been eradicated throughout the world. This showed what could be achieved by a combination of international cooperation and technology (in this case the 200-year-old technology of vaccination). However, other attempts at international cooperation to provide global public goods, such as stabilisation of the atmospheric concentrations of greenhouse gases (carbon dioxide and methane), have up till now not succeeded, because of the absence of international agreement.

Adaptation

The experience of socialist planning teaches the danger to viability of the long-term concentration of adaptation at the centre. The economic environment is continually changing, as a result of technical progress, demographic changes, international changes, socio-political changes, climatic changes, morbidity changes, etc. Successful social systems have to be able to adapt to changes in their environment. Under capitalism, adaptations are dispersed. Each person has to adapt themselves to changes in the labour market. Each firm has to adapt to changes in its market. Each government has to adapt its institutions (e.g. support for the unfit) to its fiscal situation and the situation on the labour market. Each unit in the system has a strong incentive to adapt. People unable to adapt to changes in the labour market have to leave the labour market. Firms unable to adapt go out of business. Governments unable to adapt lose power.

Under state socialism, the situation is fundamentally different. There adaptation is concentrated at the centre. If the centre fails to adapt, the whole system will get progressively weaker and may eventually collapse. This is what happened in the USSR in the 1960s, 1970s and 1980s. Stalin successfully copied Fordist industrialisation. However, his successors were unable to copy post-Fordist industrialisation and post-industrial economic development. They neither perceived the need to adapt, until it was too late, nor were they able to adapt, rather than destroy, the system Stalin had created.

However, the concentration of initiatives at the centre does not always lead to sclerosis or stagnation. In China after 1978 central initiatives played a major role in adapting China to the global economy. As Kolganov (2012: 581) sensibly observed: 'The Chinese model [of socialism], although it could not withstand the victory of the capitalist world, reacted to this victory not with a spontaneous collapse of the previous system and the triumph of "wild capitalism",¹⁶ but with a managed transition on state-capitalist lines.'

¹⁶ By 'wild capitalism' is meant the disorder and chaos (high inflation, non-payment of wages and pensions, non-payment of inter-firm bills, criminalisation, corruption, impoverishment of many and enrichment of a few) that existed in Russia and the rest of the FSU in the 1990s.

The competition of the two systems

A feature of the world which emerged from World War II was the competition between the two economic systems: socialist planning and capitalism. An important feature of this competition was that it threw into sharp relief the merits of capitalism – its rapid technical progress and its multiplication of cheap commodities. These were the merits to which Marx and Engels (in *The Communist Manifesto*), and Schumpeter, long ago drew attention. It also drew attention to the social problems to which capitalism gives rise, to those whom Bauman in the third quotation which heads this chapter referred to as the ‘collateral victims’ of consumerism. This generated pressure in the capitalist countries to deal with those social problems. Hence, the capitalism which won the competition of the two systems was, as a social system, profoundly different from that capitalism which Marx and Engels criticised, and can be termed ‘capitalism 2.0’. An important example of capitalism 2.0 is the social-market economy / welfare state / Rhineland model implemented in Western Europe after World War II.

The social-market economy / welfare state / Rhineland model developed under the influence of a variety of factors. Particularly important were: democratic political systems with universal suffrage; the political importance of trade unions and Social Democratic and Labour parties; the role of confessional political parties; and the influence of Christianity, as exemplified both by Protestants such as Archbishop William Temple of the Church of England, and by the social teaching of the Roman Catholic Church. However, an additional factor was the need to remove the socio-economic attraction of domestic Communist parties. Bismarck introduced social insurance in nineteenth-century Germany to undermine the political attraction of the Social Democrats. Similarly, after World War II, when Europe was sharply divided on ideological grounds and the survival of capitalism was uncertain, the need to divert voters from the seductions of self-proclaimed ‘people’s democracy’ was an important motivation in creating the social-market economy / welfare state / Rhineland model. In addition, the experience of the USSR showed that, with appropriate institutions and policies, full employment could be attained and maintained, and appeared to show that the free (to the user) public provision of medical care and education was both possible and desirable. Hence socialist planning, its reality and its image, was an important explanation

for the development of the social-market economy / welfare state / Rhineland model in Europe after World War II.

The social-market economy / welfare state / Rhineland model was certainly effective in undermining support for the Communist parties. In addition, very large numbers of people gained benefit from its full employment; housing, health and education policies; income maintenance for the elderly, ill, unemployed, students and parents; and its regulation of the labour market (with protection against dismissal, and minimum wages). However, experience also showed that this system too was not without serious problems (OECD 1981; Ellman 1984).

Socialism

The experience of state socialism has greatly undermined the appeal of socialism. Formerly a utopia, when one variant of it was applied in practice over decades it lost its charms. Although there is still some nostalgia for it in some quarters, it is no longer widely attractive. Those who still advocate it have to adopt the argument that the USSR was not really socialist. For example, the contemporary Russian Marxist Kolganov (2012) adopted a modified Trotskyist position. According to this conception, the USSR was a transitional (or more accurately intermediate) society which combined elements of socialism and capitalism (and also of pre-capitalism) but never reached the stage of socialism. The aim of this argument is to defend the attraction of socialism against arguments based on the experience of the USSR. However, Kolganov's analysis does not distinguish between the scientific and utopian aspects of Marxism. Is a collective, egalitarian, non-market, national economy feasible? Furthermore, if capitalism leads inevitably to socialism, why has (real) socialism not appeared anywhere, whereas capitalism has spread internationally, led to extraordinary technical progress and been phenomenally successful in China? Despite Kolganov and his co-thinkers, Marxism is a small minority movement in modern Russia, and is likely to remain so. It seems that it will be tainted for many years, and possibly permanently, by the experience of the USSR, and undermined by the successes of capitalism.

Because of the experience of state socialism, and of the success of capitalism, as a politically relevant *utopia* socialism has been replaced by such visions as the libertarian idea of a minimal state combined with a

free market, or by the religious idea of communities united by religious beliefs and observances. As a politically relevant attractive *reality*, socialism has been replaced by liberal democracy with its civil society, limited and accountable state, governments replaceable as a result of universal-suffrage elections, and the rule of law.

Nevertheless, the attractions of security, equality, social justice and freedom remain and continue to influence policy in many countries in many ways. Social Democratic parties have not entirely disappeared, but instead of replacing capitalism they now seek to regulate it and achieve social goals (such as security, a reduction of inequality, increased employment and the emancipation of formerly underprivileged groups). In a large number of countries the freedom of many people to live educated and healthy lives and make their own choices is greatly restricted by poverty and inequality, and overcoming this remains a major issue. Although they may have abandoned the aspiration to replace the capitalist system, there is no shortage of social and economic evils for social critics and reformers to tackle.

The Soviet goals of the electrification and industrialisation of Russia were perfectly rational. So were the goals of eliminating illiteracy, and transforming society from one based on the traditional peasant household. These were eminently sensible goals, and massive progress was made in achieving them. However, the Soviet leaders were wrong to suppose that their attainment required the abolition of markets and private enterprise, and that their abolition would lead to a more advanced economic system than that of capitalism. Experience has shown that this is not the case. Significant roles for private property, private entrepreneurship and market relations are essential for the achievement of high income and well-being levels, as the experience of many countries has convincingly shown.

International relations

The USSR and the international Communist movement had an enormous impact on international relations. This impact was very varied, and differed between countries. The USSR provided a model for the Nazis of how to organise a one-party dictatorship. The activities of the German Communist Party, and images of Soviet repression and starvation, played an important part in the coming to power in Germany of

the Nazis.¹⁷ On the other hand, given the Nazi regime, an important result of socialist planning was that, by developing military industry and enabling the USSR to defeat Germany in a conventional war, it obviated the need to use atom bombs in Europe in 1945. The Manhattan project was inspired by refugee European scientists who were concerned that Germany, the country that had produced the world's first nuclear fission reaction, would build an atom bomb first. The obvious target for the first US atom bombs was Germany, but the need for atom bombs to be used in Europe was eliminated by the successes of the Red Army. Hence not only did the USSR play a decisive role in the defeat of Hitler, but it also saved European cities from the fate of Hiroshima and Nagasaki.

The USSR and the international Communist movement also played a role (along with the USA and the economic and military weakness of the European states after World War II) in ending the European colonial empires. However, their influence in much of the post-colonial developing world was negative, with the export of arms, and support for repressive regimes and economic institutions that failed to lead to economic development.

The end of the USSR is often treated as a result of imperial overstretch, that is the use of resources for international power projection to such an extent that the empire itself collapses under the burden of its commitments. That is undoubtedly part, but only part, of the explanation for its collapse. On the other hand, the People's Republic of China, which owes its origin to the international Communist movement, and is still ruled by a Communist party, has up till now pursued defence and foreign policies within its resources. These policies aim at promoting China's national interests and up to the present have been successful in doing this. However, its growing economic power and military strength may lead to dangerous conflicts in the future, and possibly lead to a diversion of resources from domestic social and economic development.

Historical perspective

In the perspective of Russian history, the Communist period was an attempt to modernise Russia and enhance its military potential from

¹⁷ However, these were just part of the explanation for the Nazi climb to power. Also very important was mass unemployment, and the failure of the authorities to deal with it.

above, by mobilisation of the whole country by the central government. This was, as Lenin pointed out in the passage from *'Left wing' childishness and the petty-bourgeois mentality* quoted in Chapter 1, similar to the policies of Peter the Great two and a half centuries earlier. It certainly involved – as Lenin foresaw – using barbarous methods. However, it fell into the same trap as Peter the Great – mobilisation of society from above failed to create a self-sustaining and self-perpetuating process of economic growth. The Bolsheviks, like Peter the Great, were successful in increasing the military strength of the Russian state and winning a major war (in Peter's case the Great Northern War with Sweden, in Stalin's case the Great Patriotic War with Germany). However, both failed to initiate a continuous process of development. The successors of Peter the Great and Stalin were unable, or unwilling, to continue the dictatorial mobilisation model, and the institutions necessary for development as a result of initiatives from below did not exist. As a result, in both cases Russia subsequently once again fell behind the leading countries. After all the Soviet efforts to build up a modern industry, Russia at the beginning of the twenty-first century was as dependent on raw material exports as Russia in 1913.

This failure of conservative modernisation gave rise to renewed attempts at modernisation in Russia in the twenty-first century, in particular under President Medvedev. However, the top-down methods adopted to implement this seemed unlikely to deliver the desired results.

In the perspective of post-World War II Chinese history, the Chinese Communist Party can be seen as the instrument which successfully carried out the policy of the 'four modernisations' advocated by Zhou Enlai and Deng Xiaoping. From a Marxist perspective, the Chinese Communist Party can be seen as the party which successfully implemented the Marxist strategy of permanent revolution (Chapter 1, p. 5). It seized power in a backward country in alliance with the peasantry, and used its power to implement a policy of rapid industrialisation. In a slightly longer perspective of Chinese history, the Chinese Communist Party appears as the instrument which has accomplished what the Qing (Manchu) dynasty – despite its halting first steps – was unable to do, and what the Kuomintang was also unable to do. It has turned China into a state which can defend itself and can no longer be carved up by foreign countries; can successfully compete on the world market; has grown rapidly; has immense overseas investments; and which has attained the goals of wealth and power which officials such

as Feng Guifen and the architects of the Hundred Days' Reform of 1898 aspired to but which they were unable to reach. The Chinese Communist Party, after killing millions of people during land reform, by various terror campaigns, and implementing policies which led to a major famine, and maintaining its dictatorship after the Soviet dictatorship was destroyed, eventually adopted policies and approaches which enabled the long-run dream of attaining wealth and power to be realised.

The 'four modernisations' advocated by Zhou Enlai and Deng Xiaoping have been successfully implemented. The Marx–Engels strategy of seizing power and using it to industrialise has been successfully implemented by Mao Zedong and his successors. However, the collective and egalitarian society that Marx and Engels envisaged has not been realised. The private property, market economy, inequality, social differences, injustice and money-orientation which mark modern China would not have seemed socialist or communist to them. However, although neither the democratic nor the utopian aspects of the Marxist vision have been realised, China has become a very successful competitor on the world market for many goods and is rapidly increasing its provision of quality higher education and of R&D. This will ensure that its policies are much more long-lasting and effective than those of the reformers who inspired, and attempted to implement, the Hundred Days' Reform of 1898, and of the Kuomintang planners of the 1930s. Even if the Chinese Communist Party loses power at some date in the future, the enormous qualitative improvements it has made to the Chinese economy and society would remain.

An important aspiration of the Chinese leaders is to enter the world economy on equal terms with the most advanced countries. That involves not just being the world's major exporter but also having a number of multinationals which can compete successfully with the major Western multinationals. Up till now this has not been achieved. The great majority of the world's leading companies still have their headquarters in the USA, Europe, Japan or South Korea. Western multinationals are very active in China, but Chinese multinationals do not play a major role in the West – a significant asymmetry which the Chinese leaders would like to overcome (Nolan 2012). However, the large-scale investments of Chinese firms in Africa and Latin America, the purchase of US corporations by Chinese corporations and the entry of Chinese corporations into the international nuclear power station

market all show that China is beginning to make progress in this area too. However, it still has a long way to go.

Roads from socialist planning

The countries which abandoned socialist planning did not all arrive at the uniform goal assumed by international economic organisations and some advisors. Their destinations varied from a European-style capitalism with an extensive role for the state in Central Europe, via natural-resource-based capitalism with Russian characteristics in Russia, to developmental-state capitalism with state-socialist features in China and Vietnam. All the countries experienced increased scope for entrepreneurs, an increase in consumption by a large section of society, and increased freedoms of all kinds (where to live, and for whom to work, to travel abroad, and in some countries of religion and the formation of NGOs). They also experienced a variety of social, political and environmental problems. China successfully emulated the rapid economic growth previously experienced by Japan, South Korea and Taiwan. Within a historically short period it became for a time the workshop of the world. An important institution which survived from the socialist planning period – regional decentralisation within an authoritarian and centralised political system – played a major role in realising this. The combination of decentralised entrepreneurial initiatives, and state guidance of the economy, both central and local, played a key role in its growth and structural change.

Conclusion

Socialist planning played a major role in the history of the twentieth century. It stimulated the modernisation of many countries. However, this modernisation was generally of a conservative kind, and failed to enable any of the countries that adopted it to catch up with the capitalist countries in the civilian economy. In the more advanced countries that experienced it, socialist planning led to an increasing lag behind neighbouring countries that retained the capitalist system. The failure of socialist planning to modernise the economy in many respects led China to adopt a road which soon led to a thorough rejection of the Maoist variant of the traditional model. However, within largely market economies, partial planning, at the corporate, national and

international level, has frequently been successful. Partial planning does not attempt to eliminate the market economy and does not attempt to plan all the activities in a national economy. It is just part of a predominantly market economy. In addition, central planning of the very non-Soviet Tinbergenian type still exists in its homeland (the Netherlands).

Socialist planning was successful in rapidly developing physical and human capital. However, some of the physical capital it produced was uneconomic, and some of the human capital it produced was harmful for efficient management and rapid development. In addition, it seems, in Eastern Europe and the USSR, to have had a negative effect on social capital. It shared with capitalism a destructive approach to the natural environment, to the viability of the planet we share with other species. It stimulated the public provision of educational and medical services throughout the world. It was one of the factors contributing to the development in Western Europe (and elsewhere) of capitalism 2.0: for example, the social-market economy / welfare state / Rhineland model. It failed to develop a satisfactory alternative to material incentives for good work. Emerging from socialist planning, but retaining state guidance of the economy, and combining it with substantial freedom for entrepreneurial initiatives, China, the most populous country in the world, repeated the earlier rapid economic growth of Japan, South Korea and Taiwan, and for a time became the workshop of the world.

Experience showed both the dangers of concentrating adaptation to changing circumstances at the centre, and also that this could be advantageous in certain situations. Experience has also shown that, although the state plays an essential role in modern economies, suppression of the non-state sector can lead to some very undesirable outcomes. It also showed that 'central planning' is an inappropriate description of Soviet-type economies; is not a rational economic system; and in many respects not an attractive social model. Furthermore, the competition of the two systems threw into sharp relief both the economic merits of capitalism – rapid technical change, economic freedom, the multiplication of cheap goods, and the ability of those with money to buy them – and the social problems to which it gives rise (unemployment, poverty, failure on its own to meet social needs, inequality), and the desirability and possibility of resolving them. By advertising social rationality but actually offering much less, the much-publicised plans produced under state socialism illustrate the importance of ritual in human society. From the standpoint of international relations, the USSR and the

international Communist movement played a role in the coming to power in Germany of the Nazis. On the other hand, the rapid development of Soviet military industry, and the military preparations produced by socialist planning, made a crucial contribution to the defeat of the Nazis and preventing nuclear weapons being used in Europe in 1945. The international Communist movement (along with the USA and the weakness of the European colonial powers after World War II) also played a role in ending European colonialism in the years following World War II.

Considered historically, the Communist period in Russia was a repetition of the mobilisation-from-above modernisation and war-preparation and war-fighting strategy of Peter the Great. Like its predecessor, it had an important short-term success but was a long-term failure. In China, the Communist Party has been successful in accomplishing the 'four modernisations' (and in implementing the Marxist permanent revolution strategy, but not in achieving its economic, social and political goals). In a somewhat longer historical perspective, the Communist period to date appears – after a shaky, costly and erratic start – as a very successful implementation of a modernisation programme, analogous to that already aimed at by perceptive officials in the late Qing period. However, there is one extremely important difference. Up to now the Communist modernisation efforts have been enormously more effective and long-lasting than those of their late Qing predecessors. Nevertheless, the Communist modernisation effort is not yet completely successful. Whether or not China and Vietnam, like Japan and South Korea before them, will be able to converge with the high-income countries remains to be seen.

SUGGESTIONS FOR FURTHER READING

Modernisation

- A. Vishnevskii, 'Conservative modernization in the Soviet Union', *Problems of Economic Transition* 44(2) (2001), 33–93.
- L. Nahodilova, 'Communist modernisation and gender: The experience of Bulgarian Muslims, 1970–1990', *Contemporary European History* 19(1) (2010), 37–53.
- R. Baum (ed.), *China's four modernizations* (Boulder, CO, 1980).
- Yu Guangyuan (ed.), *China's socialist modernization* (Beijing, 1984).

- V. Sheinis, 'The economic crisis and the challenges of modernization', *Problems of Economic Transition* 53(4) (2010), 17–34.

Socialism

- E. Brainerd, 'The demographic transformation of the post-socialist countries: causes, consequences, and questions', in G. Roland (ed.), *Economies in transition: The long-run view* (Basingstoke, 2012), pp. 57–83.
 Z. Bauman, *Socialism: The active utopia* (London, 1976).
 F. Hayek, *The fatal conceit* (London, 1988).
 A. K. Sen, *Development as freedom* (New Delhi, 2000).

The role of the state in the economy

- P. Deane, *The state and the economic system* (Oxford, 1989).
 H-J. Chang and R. Rowthorn (eds.), *The role of the state in economic change* (Oxford, 1995).
 R. Wade, *Governing the market* (Princeton, 1990).
 D. Acemoglu and J. Robinson, 'Economic backwardness in political perspective', *American Political Science Review* 100(1) (2006), 115–31.
 N. Barr, *The economics of the welfare state* (4th edn, Oxford, 2004).
 J. C. Scott, *Seeing like a state: How certain schemes to improve the human condition have failed* (New Haven, CT, 1998).
 J. Lin, *The quest for prosperity* (Princeton, 2012).
 E. Ostrom, *Governing the commons. The evolution of institutions for collective action* (Cambridge, 1990).
 M. Mazzucato, *The entrepreneurial state* (London, 2013).

National economic planning

- W. Carlin, M. Schaffer and P. Seabright, 'Soviet power plus electrification: What is the long-run legacy of communism?' *Explorations in Economic History* 50(1) (2013), 116–47.
 M. Ellman, 'Socialist planning', in J. Eatwell, M. Milgate and P. Newman (eds.), *Problems of the planned economy* (London, 1990), pp. 13–21.
 A. Nove, 'Planned economy', in J. Eatwell et al., *Problems of the planned economy* (London, 1990), pp. 186–97.
 (Both of these articles were first published in *The New Palgrave Dictionary of Economics*, 1st edn, London, 1987).
 M. Clawson, *New Deal Planning: The National Resources Planning Board* (Baltimore, 1981).
 P. Temin, 'Soviet and Nazi economic planning in the 1930s', *Economic History Review* 44(4) (1991), 573–93.

- W. C. Kirby, 'Kuomintang China's "Great Leap Outward": The 1936 Three-Year Plan for industrial development', in *Essays in the history of the Chinese Republic* (Urbana, IL, 1983), pp. 43–66.
- M. Kimura, 'From fascism to communism: Continuity and development of collectivist economic policy in North Korea', *Economic History Review* 52(1) (1999), 69–86.

USSR/Russia

- Meslé, F. and Vallin, J., 'Historical trends in mortality', in R. G. Rogers and E. M. Crimmins (eds.), *International handbook of adult mortality* (New York, 2011), pp. 9–47.
- L. Graham, *Lonely ideas: Can Russia compete?* (Cambridge, MA, 2013).
- F. Shtilmark, *History of the Russian Zapovedniks 1895–1995* (Edinburgh, 2003).
- M. Harrison and I. Zaksauskiene, *Counter-intelligence in a command economy* (Working Paper 170, CAGE, Warwick University, 2013).
- M. Alexeev and S. Weber (eds.), *The Oxford handbook of the Russian economy* (Oxford, 2013).

China

- V. Nee and S. Opper, *Capitalism from below: Markets and institutional change in China* (Cambridge, MA, 2012).
- T. Wright, *The political economy of the Chinese coal industry: Black gold and blood-stained coal* (London, 2012).
- K. Brown, *Ballot box in China: Grassroots democracy in final major one-party state* (London, 2011).
- K. O'Brien and S. Zhao (eds.), *Grassroots elections in China* (London, 2010).
- 'Dying for development', *China Quarterly* 214 (2013), 243–93.
- T. Rawski, 'Urban air quality in China: historical and comparative perspectives', in N. Islam (ed.), *Resurgent China: Issues for the future* (Basingstoke, 2009), pp. 353–70.
- Y. Chen, A. Ebenstein, M. Greenstone and H. Li, 'Evidence on the impact of sustained exposure to air pollution on life expectancy from China's Huai River policy', *Proceedings of the National Academy of Sciences* 110(32) (2013), 12936–41.
- J. Banister and K. Hill, 'Mortality in China 1964–2000', *Population Studies* 58(1) (2004), 55–75.

Bibliography

Notes

- (1) This bibliography only includes books or articles referred to in the main body of the text. For reasons of space the reading lists at the end of each chapter are not included (unless they are also referred to in the body of the text).
- (2) Books in Russian are published in Moscow unless otherwise stated. Books in English are published in London unless otherwise stated.
- (3) Russian words are transliterated into English according to the system used by *Europe-Asia Studies*, except that when proper names end in 'ii' they are sometimes transliterated by a 'y'.

Abalkin, L. (1987). 'Perestroika sistemy metodov planovogo upravleniya', *Planovoe khozyaistvo* (5).

Abdel-Fadil, M. (1976). *Development, income distribution and social change in rural Egypt (1952–1970)* (Cambridge).

Abonyi, A. and Sylvain, I. (1977). 'CMEA integration and policy options for Eastern Europe: A development strategy for dependent states', *Journal of Common Market Studies* 16(2): 132–54.

Abouchar, A. (1971). *Soviet planning and spatial efficiency* (Bloomington, IN).

Adler-Karlsson, G. (1976). *The political economy of East–West–South cooperation* (Vienna and New York).

Agababyan, E. M. and Yakovleva, Ye. N. (1979). *Problemy raspredeleniya i rost blagosostoyaniya*.

Agriculture statistical yearbook 1986 (1986) (Luxembourg).

Aleshina, N. and Redmond, G. (2005). 'How high is infant mortality in Central and Eastern Europe and the Commonwealth of Independent States?', *Population Studies* 59(1): 39–54.

Alexeev, M. and Gaddy, C. (1993). 'Income distribution in the USSR in the 1980s', *Review of Income and Wealth* 39(1): 23–36.

Amann, R., Cooper, J. M. and Davies, R. W. (eds.) (1977). *The technological level of Soviet industry* (New Haven, CT).

- Anderson, B. and Silver, B. (1986). 'Infant mortality in the Soviet Union: Regional differences and measurement issues', *Population and Development Review* 12(4): 705–38.
- Andrew, C. and Mitrokhin, V. (2000). *The Mitrokhin archive*.
- Arutunian, Yu. (1973). 'The distribution of decision-making among the rural population of the USSR', in M. Yanowitch and W. Fisher (eds.), *Social stratification and mobility in the USSR* (New York), pp. 106–18.
- Ash, R. (2006). 'Squeezing the peasants: Grain extraction, food consumption and rural living standards in Mao's China', *China Quarterly* 188: 959–98.
- Ashton, B., Hill, K., Piazza, A. and Zeitz, R. (1984). 'Famine in China, 1958–61', *Population and Development Review* 10(4): 613–45.
- Ausch, S. (1972). *Theory and practice of CMEA cooperation* (Budapest).
- Bagchi, A. K. (1978). 'On the political economy of technological choice and development', *Cambridge Journal of Economics* 2(2): 215–32.
- Bachman, D. (2013) 'China's defence industrial base in 1985', *China Quarterly* 214: 432–55.
- Bahro, R. (1978). *The Alternative in Eastern Europe*.
- Bailes, K. E. (1977). 'Alexei Gastev and the Soviet controversy over Taylorism, 1918–24', *Soviet Studies* 29(3): 373–94.
- Banister, J. and Hill, K. (2004). 'Mortality in China 1964–2000', *Population Studies* 58(1): 55–75.
- Barber, J. and Harrison, M. (eds.) (2000). *The Soviet defence-industry complex from Stalin to Khrushchev* (Basingstoke).
- Barone, E. (1908). 'The Ministry of Production in the collectivist state', Italian article translated in Hayek (ed.) (1935), pp. 245–90. Partial translation in Nove and Nuti (eds.) (1972), pp. 52–74.
- Barsov, A. A. (1974). 'Nep i vyravnivanie ekonomicheskikh otnoshenii mezhdru gorodom i derevnei', in *Novaya ekonomicheskaya politika: Voprosy teorii i istorii*, pp. 93–105.
- Baryatinskii, M. (2011). *T-34 v boyu. Vsya pravda o legendarnom tanke*.
- Bauer, T. (1978). 'Investment cycles in planned economies', *Acta Oeconomica* 21(3): 243–60.
- (1983). 'The Hungarian alternative to Soviet-type planning', *Journal of Comparative Economics* 7(3): 304–16.
- Bauman, Z. (2008). *Does ethics have a chance in a world of consumers?* (Cambridge, MA).
- Bek, A. (1971). *Novoe naznachenie* (Frankfurt).
- Bell, J. and Rostowski, J. (1995). 'A note on the confirmation of Podkaminer's hypothesis in post-liberalization Poland', *Europe-Asia Studies* 47(3): 527–30.
- Berger, P. (1974). *Pyramids of sacrifice* (New York).

- Bergson, A. (1953). *Soviet national income and product in 1937* (New York).
 (1961). *The Real National Income of Soviet Russia since 1928* (Cambridge, MA).
 (1964). *The economics of Soviet planning* (New Haven, CT, and London).
 Berliner, J. (1957). *Factory and manager in the USSR* (Cambridge, MA).
 (1976). *The innovation decision in Soviet industry* (Cambridge, MA).
 Bernstein, T. (1977). *Up to the mountains and down to the villages* (New Haven, CT).
 (2006). 'Mao Zedong and the famine of 1959–60: A study in wilfulness', *China Quarterly* 186: 421–45.
 Bettelheim, C. (1974). *Cultural revolution and industrial organisation in China* (New York).
 (1986). 'More on the nature of the Soviet system', *Monthly Review* 38(7): 31–40.
 Biessen, G. (1991). 'Is the impact of central planning on the level of foreign trade really negative?' *Journal of Comparative Economics* 15(1): 22–44.
 Birman, I. (1983). *Ekonomika nedostach* (New York).
 Boot, P. (1982). 'The end of predominantly annual planning in the German Democratic Republic', *The ACES Bulletin* 29(3): 63–72.
 (1983). 'Continuity and change in the planning system of the German Democratic Republic', *Soviet Studies* 35(3): 331–42.
 (1984). 'Industrial cycles in the German Democratic Republic and Professor Wiles' thesis', *ACES Bulletin* 26(1): 1–26.
 Borodkin, L. (2008). 'Trud v Gulage: Mezhdru prinuzhdeniem i stimulirovaniem', *GULAG: Ekonomika prinuditel'nogo truda*, pp. 129–56.
 Brada, J. (1986). 'The variability of crop production in private and socialized agriculture', *Journal of Political Economy* 94(3) part 1: 545–63.
 Bramall, C. (2004). 'Chinese land reform in long-run perspective and in the wider East Asian context', *Journal of Agrarian Change* 4 (1 and 2): 107–41.
 Brus, W. (1972). *The market in a socialist economy*.
 (1973). *The economics and politics of socialism*.
 (1975). *Socialist ownership and political systems*.
 (1985). 'The political economy of Polish reforms', *Praxis International* 5(2): 195–208.
 Brus, W. and Kowalik, T. (1983). 'Socialism and development', *Cambridge Journal of Economics* 7(3): 243–55.
 Brus, W. and Laski, K. (1989). *From Marx to the market* (Oxford).
 Bufetova, L. P. and Golland, E. B. (1977). 'Narodnokhozyaistvennaya otsenka tekhnicheskogo progressa v otrasli', *Ekonomika i organizatsiya promyshlennogo proizvodstva* 2: 26–30.
 Bukharin, N. I. (1920). *Ekonomika perekhodnogo perioda*.

- Bukharin, N. and Preobrazhensky, E. (1969). *The ABC of Communism*. (First published in Russian, Petersburg, 1920.)
- Burkett, J. P. (1983). *The effects of economic reform in Yugoslavia* (Berkeley).
- (1985). 'Systemic influences on the physical quality of life', *Journal of Comparative Economics* 9(2): 145–63.
- (1986). 'Stabilization measures in Yugoslavia', *East European Economies: Slow growth in the 1980s* (JEC US Congress, Washington, DC), vol. 3: 561–74.
- Buzlyakov, N. I. (1969). *Metody planirovaniya povysheniya urovnya zhizni*.
- Carchedi, G. (1986). 'Comparative advantages, capital accumulation and socialism', *Economy and Society* 15(4): 427–44.
- Carlin, W, Schaffer, M. and Seabright, P. (2013). 'Soviet power plus electrification: What is the long-run legacy of communism?' *Explorations in Economic History* 50(1): 116–47.
- Chandler, A. (1966). *Strategy and structure* (New York).
- Chang, H-J. (1999). 'The economic theory of the developmental state', in M. Woo-Cummings (ed.), *The developmental state* (Ithaca, NY), pp. 182–99.
- Chavance, B. (1994). *La fin des systèmes socialistes* (Paris).
- Chawluk, A. (1974). 'Economic policy and economic reform', *Soviet Studies* 26(1): 98–119.
- Chen, C. (ed.) (1969). *Rural people's communes in Lien-chiang* (Stanford).
- Chen Jian (1987). 'An effective way to increase employment', *Chinese Economic Studies* 21(1): 43–71.
- Chen Yun (1982). 'An investigation of rural Qingpu', *Chinese Economic Studies* 15(3–4): 155–73.
- Cheung, T. M. (2009). *Fortifying China: The struggle to build a modern defence economy* (Ithaca, NY).
- China (1985). *China: Long-term development issues and options* (Baltimore). Annex 2 to this study is *China: Agriculture to the year 2000* (World Bank, Washington, DC, 1985).
- Cipolla, C. (1965). *Guns and sails in the early phase of European expansion*.
- Clark, C. (1939). *A critique of Russian statistics*.
- Clawson, M. (1981). *New Deal planning: The National Resources Planning Board* (Baltimore).
- Clayton, E. and Richardson, T. (1989). 'Soviet control of city size', *Economic Development and Cultural Change* 38(1): 155–65.
- Cohen, A. (1998). *Israel and the bomb* (New York).
- Collier, I. L. (1985). *Connections, effective purchasing power and real product in the German Democratic Republic* (Berlin).

- (1986). 'Effective purchasing power in a quantity constrained economy', *Review of Economics and Statistics* 68(1): 24–32.
- Cooper, J. (2013). 'From USSR to Russia: The fate of the military economy', in P. Hare and G. Turley (eds.), *Handbook of the economics and political economy of transition*, pp. 98–107.
- Crozier, M. (1964). *The bureaucratic phenomenon* (Chicago).
- Csaba, L. (1985). 'Joint investments and mutual advantages in the CMEA – Retrospection and prognosis', *Soviet Studies* 27(2): 227–47.
- Davies, R. W. (1980). *The socialist offensive: The collectivisation of Soviet agriculture, 1929–1930* (Basingstoke).
- (ed.) (1984). *Soviet investment for planned industrialisation, 1929–1937: Policy and practice* (Berkeley).
- (1993). 'Soviet military expenditure and the armaments industry, 1929–33: A reconsideration', *Europe-Asia Studies* 45(4): 577–608.
- Davies, R. W., Harrison, M. and Wheatcroft, S. G. (eds.) (1994). *The economic transformation of the Soviet Union, 1923–1945* (Cambridge).
- Davies, R. W., and Wheatcroft, S. G. (2004). *The years of hunger: Soviet agriculture, 1931–1933* (Basingstoke).
- Deichmann, U. and Henderson, V. (2000). *Urban and regional dynamics in Poland*, Policy Research Working Paper 2457, World Bank, Washington, DC.
- den Butter, F. and Morgan, M. (2000). *Empirical models and policy-making: Interactions and institutions*.
- Deng Xiaoping (1984). *Selected works of Deng Xiaoping (1975–1982)* (Beijing).
- Denisova, I. and Shapiro, J. (2013). 'Recent demographic developments in the Russian Federation', in M. Alexeev and S. Weber (eds.), *The Oxford handbook of the Russian economy* (Oxford), pp. 800–25.
- Derluguian, G. M. (2000). 'The process and the prospects of Soviet collapse: Bankruptcy, segmentation, involution', in G. M. Derluguian and S. L. Greer (eds.), *Questioning geopolitics: Political projects in a changing world-system* (Westport, CT), pp. 203–25.
- Dido, M. (1971). Article in *L'Espresso* (Rome, 26 September).
- Dikötter, F. (2013). *The tragedy of liberation*.
- Djilas, M. (1962). *Conversations with Stalin*.
- Dmitriev, V. (1898). *Ekonomicheskie ocherki*. The English translation of all three essays is V. Dmitriev, *Economic essays on value, competition and utility* (Cambridge, 1974).
- Dobb, M. (1960). *An essay on economic growth and planning*.
- Dohan, M. (1973). 'Volume, price, and terms of trade indices of Soviet foreign trade 1913–1938', in M. Dohan and E. Hewett, *Two studies in Soviet terms of trade, 1918–1970* (Bloomington, IN), pp. 5–85.

- (1976). 'The economic origins of Soviet autarky 1927/28–1934', *Slavic Review* 35(4): 603–35.
- Domar, E. (1957). 'A Soviet model of growth', in E. Domar, *Essays in the theory of economic growth* (New York), pp. 223–61.
- Donnithorne, A. (1967). *China's economic system*.
- Dorner, P. (1972). *Land reform and economic development* (Harmondsworth).
- Dovgan', L. I. (1965). O *tempakh rosta dvukh podrazdeleniya obshchestvennogo proizvodstva*.
- Downs, A. (1967). *Inside bureaucracy* (Boston).
- Drogichinsky, N. E. and Starodubrovskii, V. G. (eds.) (1971) *Osnovy i praktika khozyaistvennoi reformy v SSSR*.
- Dudochkin, P. (1981). 'Trezvost' – norma zhizni', *Nash sovremennik* 8: 133–45.
- Dzerzhinsky, F. (1926). 'Zaklyuchitel'nogo slovo tov. Dezerzhinskogo', *Leningradskaya Pravda*, 14 February.
- Eatwell, J., Ellman, M., Karlsson, M., Nuti, M. and Shapiro, J. (2000). *Hard budgets, soft states*.
- Ebenstein, A. and Leung, S. (2010). 'Son preference and access to social insurance in rural China', *Population and Development Review* 36(1): 47–70.
- Egorov, G. and Sonin, K. (2011). 'Dictators and their viziers: Endogenizing the loyalty-competence trade-off', *Journal of the European Economic Association* 9(5): 903–30.
- Ellman, M. (1973). *Planning problems in the USSR: the contribution of mathematical economics to their solution 1960–1971* (Cambridge).
- (1975). 'Did the agricultural surplus provide the resources for the increase in investment in the USSR during the First Five Year Plan?' *Economic Journal* 85(340): 844–63.
- (1978). 'The fundamental problem of socialist planning', *Oxford Economic Papers* 30(2): 249–62.
- (1984). 'The crisis of the welfare state – the Dutch experience', in K. Boulding (ed.), *The economics of human betterment*, pp. 191–211.
- (1990). 'Socialist planning', in J. Eatwell, M. Milgate and P. Newman (eds.), *Problems of the planned economy*, pp. 13–21.
- (2000a). 'The social costs and consequences of the transformation process', *Economic Survey of Europe* no. 2/3 UNECE (New York and Geneva), pp. 125–40.
- (2000b). 'The 1947 Soviet famine and the entitlement approach to famines', *Cambridge Journal of Economics* 24(5): 603–30.
- Ellman, M. and Kontorovich, V. (eds.) (1992). *The disintegration of the Soviet economic system*.
- (eds.) (1998). *The destruction of the Soviet economic system* (Armonk, NY).

- Epstein, D. F. (1990). 'The economic cost of Soviet security and empire', in H. S. Rowen and C. Wolf Jr (eds.), *The impoverished superpower* (San Francisco), pp. 127–54.
- Estrin, S. (1984). *Self-management: Economic theory and Yugoslav practice* (Cambridge).
- Evangelista, M. (1997). 'Why keep such an army?' *Khrushchev's troop reductions* Working Paper no.19 CWIHP (Washington, DC).
- (1999). *Unarmed forces: The transnational movement to end the Cold War* (Ithaca, NY).
- Eydelman, M. (1998). 'Monopolized statistics under a totalitarian regime', in Ellman and Kontorovich (eds.), pp. 70–6.
- Faber, M. and Seers, D. (eds.) (1972). *The crisis in planning*.
- Fehér, F., Heller, A. and Markus, G. (1983). *Dictatorship over needs* (Oxford).
- Feiwel, G. (1975). *The intellectual capital of Michal Kalecki* (Knoxville, TN)
- Feldman, G. A. (1928). 'K teorii tempov narodnogo khozyaistva', *Planovoe Khozyaistvo* 11 and 12. English translation in Spulber (ed.) (1964), pp. 174–99, 304–31.
- Feshbach, M. and Friendly, A. (1992). *Ecocide in the USSR*.
- Flaherty, D. (1982). 'Economic reform and foreign trade in Yugoslavia', *Cambridge Journal of Economics* 6(2): 105–43.
- Frank, A. G. (1998). *ReOrient: Global economy in the Asian age* (Berkeley).
- Gabriele, A. (2010). 'The role of the state in China's industrial development: A reassessment', *Comparative Economic Studies* 52(3): 325–50.
- Gaddy, C. G. (1996). *The price of the past: Russia's struggle with a militarized economy* (Washington, DC).
- Gel'man, V. and Marganiya, O. (2010). *Resource curse and post-Soviet Eurasia* (Lanham, MD).
- Genin, V. E. (ed.) (2001). *The anatomy of Russian defence conversion* (Walnut Creek, CA).
- Germuska, P. (2006). 'From commands to coordination: Defense industry cooperation within the member states of the Warsaw Pact, 1956–1965', in R. S. Bush and W. W. Epley (eds.), *Multinational operations, alliances, and international military cooperation* (Washington, DC), pp. 101–8.
- (2008). 'Military-economic planning in socialist Hungary', *Europe-Asia Studies* 60(5): 809–30.
- (2010). 'Military industry versus military-related firms in socialist Hungary: Disintegration and integration of military production during the 1950s and early 1960s', *Enterprise & Society* 11(2): 316–49.
- Gerritse, R. (1982). *The realm of necessity* (PhD thesis, Amsterdam).
- Glazyrina, V. (2000). 'Krasnoiarsk-26: a closed city of the defence-industry Complex', in Barber and Harrison (eds.), pp. 195–202.

- Gordon, L. and Klopov, E. (2000). *Poteri i obreteniya v Rossii devyanostykh*, vol. I.
- Gorodnichenko, Y. and Roland, G. (2010). *Culture, Institutions and the Wealth of Nations*, CEPR Discussion Paper 8013.
- Granick, D. (1973). 'The Hungarian economic reform', *World Politics* 25(3): 414–29.
- (1975). *Enterprise guidance in Eastern Europe* (Princeton).
- (1987). *Job rights in the Soviet Union: Their consequences* (Cambridge).
- Gregory, P. (2004). *The political economy of Stalinism* (Cambridge).
- Gregory, P. and Harrison, M. (2005). 'Allocation under dictatorship: research in Stalin's Archives', *Journal of Economic Literature* 43(3): 721–61.
- Grossman, G. (1963). 'Notes for a theory of the command economy', *Soviet Studies* 15(2): 101–23.
- (1977). 'The "second economy" of the USSR', *Problems of Communism* 26(5): 25–40. Reprinted in V. Tanzi (ed.), *The underground economy in the United States and abroad* (Lexington, MA, 1982), pp. 245–70.
- Guidelines (1972). *Guidelines for project evaluation* (UNIDO).
- Gustafson, T. (2012). *Wheel of fortune: The battle for oil and power in Russia* (Cambridge, MA)
- Hamermesh, D. and Portes, R. (1972). 'The labour market under central planning', *Oxford Economic Papers* 24(2): 241–58.
- Hanson, P. (1974). *Advertising and socialism*.
- (1987). 'Soviet industrial espionage', *Bulletin of the Atomic Scientists* 43(3): 25–9.
- Harrison, M. (2000). 'Wartime mobilisation: A German comparison', in Barber and Harrison (eds.), pp. 99–117.
- Harrison, M. and Markevich, A. (2008). 'Hierarchies and markets: The defence industry under Stalin', in M. Harrison (ed.), *Guns and rubles: The defence industry in the Stalinist state* (New Haven, CT), pp. 50–77.
- Harrison, M. and Simonov, N. (2000). 'Voenpriemka: Prices, costs and quality assurance in interwar defence industry', in Barber and Harrison (eds.), pp. 223–45.
- Hayden, E. (1976). *Technology transfer to East Europe: US corporate experience* (New York).
- Hayek, F. (ed.) (1935). *Collectivist economic planning*.
- (1937). 'Economics and knowledge', *Economica* 4(13): 33–54.
- (1944). *The road to serfdom*.
- (1945). 'The use of knowledge in society', *American Economic Review* 35(4): 519–30.
- (1988). *The fatal conceit*.
- Heerink, N., Spoor, M. and Qu, F. (2007). 'Transition, economic policy and institutional reforms in China and Vietnam: Impact on sustainable land

- use', in M. Spoor, N. Heerink and F. Qu (eds.), *Dragons with clay feet?* (Lanham, MD), pp. 11–46.
- Hegedus, A. (1976). *Socialism and bureaucracy*.
- Hewett, E. (1976). 'A gravity model of CMEA trade', in J. Brada (ed.), *Quantitative and analytical studies in East–West economic relations* (Bloomington, IN), pp. 1–16.
- Hill, F. and Gaddy, C. (2003). *The Siberian curse: How Communist planners left Russia out in the cold* (Washington, DC).
- Hobson, J.M. (2004). *The Eastern origins of Western civilisation* (Cambridge).
- Hoffman, C. (1967). *Work incentive practices and policies in the People's Republic of China* (New York).
- Holloway, D. (1994). *Stalin and the bomb* (New Haven, CT).
- Holzman, F. (1960). 'Soviet inflationary pressures 1928–57: Causes and cures', *Quarterly Journal of Economics* 74(2): 167–88.
- Horvat, B. (1958). 'The optimum rate of investment', *Economic Journal* 68 (272): 747–67.
- (1965). 'The optimum rate of investment reconsidered', *Economic Journal* 75 (299): 572–6.
- (1974). 'Welfare of the common man in various countries', *World Development* 2(7): 29–39.
- Howell, J. (2006). 'Reflections on the Chinese state', *Development and Change* 37(2): 273–97.
- Huberman, L. and Sweezy, P. M. (1969). *Socialism in Cuba* (New York and London).
- Hymer, S. and Resnick, K. (1971). 'International trade and uneven development', in J.N. Bhagwati, R. W. Jones, R.A. Mundell and J. Vanek (eds.), *Trade, balance of payments and growth* (Amsterdam), pp. 473–94.
- Investment* (1965). *Investment appraisal* (National Economic Development Office), 1st edn 1965, 2nd edn 1967.
- Ishikawa, S. (1972). 'A note on the choice of technology in China', *Journal of Development Studies* 9(1): 161–86.
- Jánosy, F. (1970). 'The origin of contradictions in our economy and the path to their solution', *Eastern European Economics* 8(4): 357–90.
- Johansen, L. (1979). 'The bargaining society and the inefficiency of bargaining', *Kyklos* 32(3): 497–522.
- Josephson, P. R. (2002). *Industrialized nature* (Washington, DC).
- (2005). *Red atom* (Pittsburgh).
- Kalecki, M. (1972). *Selected essays on the economic growth of the socialist and the mixed economy* (Cambridge).
- (1986). *Selected essays on economic planning* (Cambridge).

- Kaser, M. (1967). *Comecon*, 2nd edn (Oxford).
- Katz, K. (2001). *Gender, work and wages in the Soviet Union* (Basingstoke).
- Katayev, V. L. (2001). 'MIC: The view from inside', in Genin (ed.), pp. 53–63.
- Ken, O. (2002). *Mobilizatsionnoe planirovanie i politicheskie resheniya* (St Petersburg).
- Khanin, G. (1967a). 'Ekonomicheskii rost i vybor', *Novyi mir* 12: 261–3.
- (1967b). *Nekotorye metodologicheskie voprosy tsentralizirovannogo planirovaniya sotsialisticheskoi ekonomiki*, rejected thesis (Novosibirsk).
- (1998). 'An uninvited advisor', in Ellman and Kontorovich (eds.), pp. 76–85.
- (2003a). *Ekonomicheskaya istoriya Rossii v noveishee vremya*, vol. I (Novosibirsk).
- (2003b). 'The 1950s – the triumph of the Soviet economy', *Europe-Asia Studies* 55(8): 1187–1211.
- Khaustov, V. N., Naumov, V. P. and Plotnikova, N. S. (compilers) (2003). *Lubyanka. Stalin i VChK – GPU-NKVD*.
- Khozyaistvennaya (1968). *Khozyaistvennaya reforma i problem realizatsii*.
- Khrushchev, N. (1956). 'The dethronement of Stalin', full text of the Khrushchev speech (Manchester).
- (1960). *Razoruzhenie – put' k uprocheniyu mira i obespecheniyu druzhby mezhdu narodnami*.
- Kirby, W. (1990). 'Continuity and change in China: Economic planning on the mainland and on Taiwan, 1943–1958', *Australian Journal of Chinese Affairs* 24: 121–41.
- Kirsch, L. (1972). *Soviet wages: changes in structure and administration since 1956* (Cambridge, MA).
- Kirstein, T. (1984). 'The Ural-Kuznetsk Combine', in Davies (ed.), pp. 88–106.
- Klochko, M. (1964). *Soviet scientist in China*.
- Kolganov, A. (2012). *Chto takoe sotsializm? Marksistskaya versiya*.
- Kontorovich, V. (1988). 'Lessons of the 1965 economic reform', *Soviet Studies* 40(2): 308–16.
- (1989). 'Inflation in the Soviet investment and capital stock data', *Soviet Studies* 41(2): 318–29.
- (2001). 'Economists, Soviet growth slowdown and the collapse', *Europe-Asia Studies* 53(5): 675–95.
- (2006). 'The importance of geography', in M. Ellman (ed.), *Russia's oil and natural gas: Bonanza or curse?*, pp. 173–85.
- Kornai, J. (1959). *Overcentralization in economic administration*.
- (1967). *Mathematical planning of structural decisions* (Amsterdam); 2nd edn 1975 (Amsterdam).

- (1971). *Anti-equilibrium: On economic systems and the tasks of research* (Amsterdam and London).
- (1980). *Economics of shortage*, 2 vols. (Amsterdam).
- (1982). *Growth, shortage and efficiency* (Oxford).
- (1985). *Contradictions and dilemmas* (Budapest).
- (1986). 'The Hungarian reform process', *Journal of Economic Literature* 24(4): 1687–1737.
- (1988). 'Individual freedom and reform of the socialist economy', *European Economic Review* 32(2–3): 233–67.
- (1992). *The socialist system* (Oxford).
- (1994). 'Transformational recession: The main causes', *Journal of Comparative Economics* 19(1): 39–63.
- (2006). 'The great transformation in Central Eastern Europe', *Economics of Transition* 14(2): 207–44.
- Kornai, J. and Qian, Y. (2009a). 'Introduction', in Kornai and Qian (eds.), pp. 1–10.
- (eds.) (2009b). *Market and socialism: In the light of the experiences of China and Vietnam* (Basingstoke).
- Kornilov, G. E. (2011). 'Formirovanie sistemy prodovol'stvennoi bezopasnosti naseleniya Rossii v pervoi polovine XX veka', *Rossiiskaya istoriya* 3: 91–101.
- Krasil'nikov, S., Salamatova, M. and Ushakova, S. (2010). *Korni ili shchepki: Krestyanskaya sem'ya na spetsposelenii v Zapadnoi Sibirii v 1930-x – nachale 1950-x gg.*
- Krasovsky, V. P. (1967). *Problemy ekonomiki kapital'nykh vlozhenii.*
- Kritsman, L. (1924). *Geroicheskii period Velikoi Russkoi Revolyutsii.*
- Kueh, Y. Y. (1984). 'A weather index for analyzing grain yield instability in China, 1952–81', *China Quarterly* 97: 68–83.
- Kushnirsky, F. I. (1982). *Soviet economic planning, 1965–1980* (Boulder, CO).
- Lagovskii, A. (1961). *Strategiya i ekonomika*, 2nd edn.
- Lane, D. (1982). *The end of social inequality?*
- (1996). *The rise and fall of state socialism* (Cambridge).
- Lange, O. (1937). 'On the economic theory of socialism', *Review of Economic Studies* 4(2): 127–8.
- Lardy, N. (1983). *Agriculture in China's modern economic development* (Cambridge).
- Ledeneva, A. (1998). *Russia's economy of favours: Blat, networking and informal exchange* (Cambridge).
- Lee, Y. (ed.) [1978]. *Three essays on the new mandarins* (Hong Kong).
- Lehmann, D. (1974). 'Agrarian reforms in Chile, 1965–1972: An essay in contradictions', in D. Lehmann (ed.), *Agrarian reform and agrarian reformism*, pp. 71–119.

- Lenin, V. (1956). *The development of capitalism in Russia*. (First published in St Petersburg in 1899.)
(1965). *Collected works*, vol. XXVII (Moscow) (Translation of 4th Russian edn)
- Leontief, W. (1966). *Input-output economics* (New York).
- Lerner, A. Ya. (1975). *Fundamentals of cybernetics* (New York). (Translation of *Nachala kibernetiki* (1967).)
- Levin, A. I. and Yarkin, A. P. (1976). *Platzhesposbnyi spros naseleniya*.
- Levine, H. (1960). 'The centralised planning of supply in Soviet industry', in *Comparisons of the United States and Soviet economies* (JEC US Congress Washington, DC), pp. 151–76.
- Lewin, M. (1974). "'Taking grain": Soviet policies of agricultural procurements before the war', in C. Abramsky (ed.), *Essays in honour of E. H. Carr*, pp. 281–323.
- Lewis, W. (1954). 'Economic development with unlimited supplies of labour', *The Manchester School* 22(2): 400–49.
- Lewis, J. W. and Xue, L. (1988). *China builds the bomb* (Stanford).
- Lieberman, E. (1950). *Khozyaistvennyi raschet mashinostroitel'nogo zavoda*.
- Liff, A. and Erickson, A. (2013). 'Demystifying China's defence spending: Less mysterious in the aggregate', *China Quarterly* 216: 805–30.
- Lipton, M. (1974). 'Towards a theory of land reform', in D. Lehmann (ed.), *Agrarian reform and agrarian reformism*, pp. 269–315.
- Lippit, V. (1975). *Land reform and economic development in China* (New York).
- Liu, T. C. and Yeh, K. C. (1965). *The economy of the Chinese mainland* (Princeton, NJ).
- Losik, A. and Shcherba, A. (2000). 'The defence-industry complex in Leningrad: the interwar period', in Barber and Harrison (eds.), pp. 173–83.
- Maddison, A. (1998). *Chinese economic performance in the long run* (Paris: OECD).
- (2007). *Chinese economic performance in the long run*, 2nd edn (Paris: OECD).
- Mahalanobis, P. C. (1953). 'Some observations on the process of growth of national income', *Sankhya* 12(4): 307–12.
- Manual (1968–9). Little, I. and Mirrlees, J. *Manual of industrial project analysis in developing countries*, 2 vols. (Paris: OECD).
- Mao Tsetung (1977a). *A critique of Soviet economics* (New York).
- (1977b). *Selected Works*, vol. V (Beijing).
- Marer, P. (1972). *Postwar pricing and price patterns in socialist foreign trade 1946–1971* (Bloomington, IN).

- (1974). 'Soviet economic policy in Eastern Europe', *Reorientation and commercial relations of the economies of Eastern Europe* (JEC US Congress, Washington, DC), pp. 135–63.
- (1985). *Dollar GNPs of the USSR and Eastern Europe* (Baltimore).
- Markevich, A. (2008). 'Planning the supply of weapons: The 1930s', in M. Harrison (ed.) *Guns and rubles: The defence industry in the Stalinist state* (New Haven, CT), pp. 78–117.
- Marrese, M. (1986). 'CMEA: Effective but cumbersome political economy', *International Organization* 40(2): 287–327.
- Marrese, M. and Vanous, J. (1983). *Soviet subsidization of trade with Eastern Europe: A Soviet perspective* (Berkeley).
- Marx, K. (1961). *Capital*, vol. I (Moscow). (First published in German in 1867.)
- Matthews, M. (1975). 'Top incomes in the USSR: Towards a definition of the Soviet elite', *Survey* 21(3): 1–27.
- (1978). *Privilege in the Soviet Union*.
- Mau, V. and Drobyshevskaya, T. (2013). 'Modernization and the Russian economy', in M. Alexeev and S. Weber (eds.), *The Oxford handbook of the Russian economy* (Oxford), pp. 29–50.
- McAuley, A. (1977). 'The distribution of earnings and incomes in the Soviet Union', *Soviet Studies* 29(2): 214–37.
- (1981). *Women's work and wages in the Soviet Union*.
- McAuley, M. (1969). *Settling labour disputes in Soviet Russia* (Oxford).
- McKinnon, R. (1993). *The order of economic liberalization: Financial control in the transition to a market economy*, 2nd edn (Baltimore).
- Medvedev, Zh. (1979). 'Russia under Brezhnev', *New Left Review* 117: 3–29.
- Meshcherskaya, M. and Blazhevich, V. (1997). 'The drought and excessive moisture indices in historical perspective in the principal grain-producing regions of the former Soviet Union', *Journal of Climate* 10(10): 2670–82.
- Mészáros, S. (1994). 'Reform process in Hungarian agriculture: an overview', in J. Swinnen (ed.), *Policy and institutional reform in Central European agriculture* (Aldershot), pp. 77–106.
- Mieczkowski, B. (1975). *Personal and social consumption in Eastern Europe* (New York).
- Mikul'skii, K. I. (1983). *Ekonomicheskii rost pri sotsializme*.
- Mill, J. S. (1891). *Principles of political economy* book I, chapter 9 and book II, chapters 6 and 7.
- Millar, J. (1977). 'The prospects for Soviet agriculture', *Problems of Communism* 26(3): 1–16.
- Minkov, M. and Hofstede, G. (2012). 'Hofstede's Fifth Dimension: New evidence from the World Values Survey', *Journal of Cross-Cultural Psychology* 43(1): 3–14.

- Mises, L. von (1920). 'Economic calculation in the socialist commonwealth', in Hayek (ed.) (1935), pp. 75–91. (First published in German in 1920. Partial English text in Nove and Nuti (1972).)
- Moise, E. E. (1983). *Land reform in China and Vietnam* (Chapel Hill, NC).
- Morrison, C. (1984). 'Income distribution in East European and Western countries', *Journal of Comparative Economics* 8(2): 121–38.
- Murphy, D. (2005). *What Stalin knew: The enigma of Barbarossa* (New Haven, CT).
- Narodnoe khozyaistvo SSSR v 1985g* (1986).
- Narodnoe khozyaistvo SSSR v 1990g* (1991).
- National Planning Board (1934). *Final report 1933–1934* (Washington, DC).
- National Resources Board (1934). *A report on National Planning and Public Works in Relation to Natural Resources and Including Land Use and Water Resources with Findings and Recommendations* (Washington, DC).
- Naughton, B. (1988). 'The Third Front: Defence industrialization in the Chinese interior', *China Quarterly* 115: 351–86.
- (1993). 'Deng Xiaoping: The economist', *China Quarterly* 135: 491–514.
- (1995). *Growing out of the plan* (Cambridge).
- (2007). *The Chinese economy: transition and growth* (Cambridge, MA).
- (2010). 'China's distinctive system: can it be a model for others?' *Journal of Contemporary China* 19(65): 437–60.
- Nee, V. and Oppen, S. (2012). *Capitalism from below* (Cambridge, MA).
- Nelson, R. and Winter, S. (1982). *An evolutionary theory of economic change* (Cambridge, MA).
- Nemtsov, A. (2011). *A contemporary history of alcohol in Russia* (Huddinge, Sweden).
- Nguyen, D. (2006). *Agricultural surplus and industrialization in Vietnam since the country's reunification* (PhD thesis, ISS, The Hague).
- Nolan, P. (2008). *Integrating China*.
- (2012). *Is China buying the world?* (Cambridge).
- Nove, A. (1958). 'The problem of success indicators in Soviet industry', *Economica* New Series 25(97): 1–13.
- (1968). *The Soviet economy*, 3rd edn.
- Nove, A. and Nuti, M. (eds.) (1972). *Socialist economics: Selected readings*. (Harmondsworth).
- Novozhilov, V. V. (1959). 'Izmerenie zatrat i ikh rezul'tatov v sotsialisticheskom khozyaistve', in V. S. Nemchinov (ed.), *Primenenie matematiki v ekonomicheskikh issledovaniyakh*, pp. 42–113. (English translation in A. Nove (ed.), *The use of mathematics in economics* (Edinburgh, 1964), pp. 33–189.)
- Nurkse, R. (1953). *Problems of capital formation in underdeveloped countries* (Oxford).

- Nuti, M. (1971). 'Social choice and the Polish consumer', *Cambridge Review* 92(2203): 218–22.
- (1977). 'Large corporations and the reform of Polish industry', *Jahrbuch der Wirtschaft Osteuropas*, vol. VII (Munich), pp. 345–405.
- (1979). 'The contradictions of socialist economies: A Marxist interpretation', R. Miliband and J. Saville (eds.), *The Socialist Register 1979*, pp. 228–73.
- (1986). 'Hidden and repressed inflation in Soviet-type economies', *Contributions to Political Economy* 5: 37–82.
- Odom, W. (1998). *The collapse of the Soviet military* (New Haven, CT).
- OECD (1981). *The welfare state in crisis* (Paris).
- Ofer, G. (1987). 'Soviet economic growth: 1928–1985', *Journal of Economic Literature* 25(4): 1767–1833.
- Ó Gráda, C. (2013). 'Great Leap, Great Famine: A review essay', *Population and Development Review* 39(2): 333–46.
- Ostrom, E. (2010). 'Beyond markets and states: Polycentric governance of complex economic systems', *American Economic Review* 100(3): 641–72.
- Overy, R. J. (1995). *Why the Allies won*.
- Papkov, S. (2012). *Obyknovennyi terror. Politika stalinizma v Sibiri*.
- Patel, S. (1961). 'Rates of industrial growth in the last century, 1860–1958', *Economic development and cultural change* 9(3): 316–30.
- Perkins, D. and Yusuf, S. (1984). *Rural development in China* (Baltimore).
- Pierson, N. (1902). 'Het waardeprobleem in een socialistische maatschappij', *De Economist* 51(1): 423–56. (English translation in Hayek ed. (1935), pp. 41–85.)
- Pigou, A. (1937). *Socialism versus capitalism*.
- Podkaminer, L. (1982). 'Estimates of the disequilibria in Poland's consumer markets, 1965–1978', *The Review of Economics and Statistics* 64(3): 423–31.
- (1988). 'Disequilibrium on Poland's consumer markets', *Journal of Comparative Economics* 12(1): 43–60.
- Polanyi, K. (1957). *The great transformation* (Boston; 1st edn 1944).
- Polishchuk, L. (2013). 'Institutional performance', in M. Alexeev and S. Weber (eds.), *The Oxford handbook of the Russian economy* (Oxford), pp. 189–220.
- Political economy (1957). *Political economy: A textbook issued by the Institute of Economics of the Academy of Sciences of the USSR* (Moscow). (Translation of the 2nd Russian edn, published in 1956.)
- Pollitt, B. (1971). *Some notes on Soviet economic debate in the 1920s*, Discussion Paper no. 129, Economic Growth Center, Yale University, Appendix A.

- Pomfret, R. (1997). 'Growth and Transition: Why has China's performance been so different?', *Journal of Comparative Economics* 25(3): 422–40.
- Ponchaud, F. (1978). *Cambodia year zero*.
- Portes, R. and Santorum, A. (1987). 'Money and the consumption goods market in China', *Journal of Comparative Economics* 11(3): 354–71.
- Potrebnosti, dokhody, potreblenie* (1979).
- Pryor, F. (1963). *The Communist foreign trade system* (Cambridge, MA).
- (1968). 'Discussion', A. Brown and E. Neuberger (eds.), *International trade and central planning* (Berkeley), pp. 159–65.
- (1973). *Property and industrial organization in communist and capitalist nations* (Bloomington, IN).
- (1977). 'Some costs and benefits of markets: An empirical study', *Quarterly Journal of Economics* 91(1): 81–102.
- Qian, Y. and Xu, C. (1993a). 'Why China's economic reforms differ: The M-form hierarchy and entry/expansion of the non-state sector', *Economics of Transition* 1(2): 136–70.
- (1993b). 'Commitment, financial constraints and innovation: Market socialism reconsidered', in P. Bardhan and J. Roemer (eds.), *Market socialism: The current debate* (New York), pp. 175–89.
- Rainer, H. and Siedler, T. (2009). 'Does democracy foster trust?' *Journal of Comparative Economics* 37(2): 251–69.
- Raiser, M., Haerpfer, C., Nowotny, T. and Wallace, C. (2001). *Social capital in transition: A first look at the evidence* (EBRD Working Paper 61).
- Richman, B. (1969). *Industrial society in Communist China* (New York).
- Rimashevskaya, N.M. (1987). 'Neobkhodimost' novykh podkhodov', *Kommunist* 13: 60–9.
- Roberts, P. (1971). *Alienation and the Soviet economy* (Albuquerque, NM).
- Robinson, J. (1964). 'Chinese agricultural communes', *Coexistence*, May.
- (1977). 'Employment and the choice of technique', in K. S. Krishnaswamy, A. Mitra, J. G. Patel, K. N. Raj and M. N. Srivinas (eds.), *Society and change* (Bombay), pp. 156–69. Reprinted in J. Robinson, *Collected economic papers*, vol. V (Oxford, 1979), pp. 228–40.
- Rockoff, H. (1998). 'The United States: from ploughshare to sword', in M. Harrison (ed.), *The economics of World War II* (Cambridge), pp. 81–121.
- Rossiiskii statisticheskii ezhegodnik 1999* (1999).
- Rossiia v tsifrakh. 2012* (2012).
- Sachs, J. and Warner, A. (2001). 'The curse of natural resources', *European Economic Review* 45(4–6): 827–38.
- Sakharov, A. (1969). *Reflections on progress, peaceful coexistence and intellectual freedom*.

- Samuelson, L. (2000). 'The Red Army and economic planning, 1925–40', in Barber and Harrison (eds.), pp. 47–69.
- Sapir, A. (1980). 'Economic growth and factor substitution: what happened to the Yugoslav economic miracle?', *Economic Journal* 90(358): 294–313.
- Sapir, J. (1996). *Le Chaos russe* (Paris).
- Sau, R. (1978). *Unequal exchange, imperialism and underdevelopment* (Calcutta).
- Schell, O. and Delury, J. (2013). *Wealth and power*.
- Seers, D. (1976). 'A system of social and demographic statistics': A review note', *Economic Journal* 86(343): 595–8.
- Segal, B. M. (1967). *Alkogolizm*.
- Selyunin, V. (1968). 'Vedomstvennyi bar'er', *Ekonomicheskaya Gazeta* 25: 14.
- Sen, A. (1961). 'On optimising the rate of saving', *Economic Journal* 71(283): 479–96.
- (1968). *Choice of technique*, 3rd edn (Oxford).
- (1983). 'Development: which way now? *Economic Journal* 93(372): 745–62.
- Seymour, J. and Anderson, R. (1998). *New ghosts, old ghosts: Prisons and labor reform camps in China* (Armonk, NY).
- Shagalov, G. (1973). *Problemy optimal'nogo planirovaniya vneshnyeekonomicheskikh svyazei*.
- Shakhnazarov, G. (1993). *Tsena svobody*.
- Shanin, T. (1972). *The awkward class* (Oxford).
- Shapiro, J. (2001). *Mao's war against nature* (Cambridge).
- Sheng, Y. M. (1993). *Intersectoral resource flows and China's economic development* (Basingstoke and New York).
- Shlykov, V. (1997). *The crisis in the Russian economy* (Pennsylvania).
- (1998). 'The assessment of enemy capabilities', in Ellman and Kontorovich (eds.), pp. 43–5.
- (2001). 'Does Russia need a General Staff?', *European Security* 10(4): 45–83.
- (2004). 'The economics of defense in Russia and the legacy of structural militarization', in S. E. Miller and D. Trenin (eds.), *The Russian military: Power and policy* (Cambridge, MA), 157–82.
- Shtromas, A. (1977). 'Crime, law and penal practice in the USSR', *Review of Socialist Law* 3(3): 297–324.
- Simatupang, B. (1981). 'Polish agriculture in the 1970s and the prospects for the early 1980s', *European Review of Agricultural Economics* 8(4): 453–73.
- (1988). 'Economic crisis and full employment: The Polish case', *The Journal of Communist Studies* 4(3): 282–300.
- Simonov, N. (1996). *Voennno-promyshlennyi kompleks SSSR v 1920–1950-egody*.
- (2000a). 'New postwar branches (2): The nuclear industry', in Barber and Harrison (eds.), pp. 150–70.

- (2000b). 'Mobpodgotovka: mobilisation planning in interwar industry', in Barber and Harrison (eds.), pp. 205–22.
- Singh, A. (1993). *The plan, the market and evolutionary economic reform in China* (UNCTAD Discussion Paper no. 76, Geneva).
- (1995). *How did Asia grow so fast?* (UNCTAD Discussion Paper no. 97, Geneva).
- Sirc, L. (1979). *The Yugoslav economy under self-management. The Sixth Five-Year Plan of the People's Republic of China for Economic and Social Development (1981–1985)* (1984) (Beijing).
- Skorobogatkin, K. F. et al. (1968). *50 let Vooruzhennykh Sil SSSR*.
- Smekhov, B. M. (1968). 'Khozyaistvennaya reforma i stabil 'nost' planov', in B. M. Smekhov (ed.), *Problemy sovershenstvovaniya planirovaniya*.
- Smil, V. (1986). 'Food production and quality of diet in China', *Population and Development Review* 12(1): 25–45.
- Spechler, D. and Spechler, M. (2009). 'A reassessment of the burden of Eastern Europe on the USSR', *Europe-Asia Studies* 61(9): 1645–57.
- Spulber, N. (ed.) (1964). *Foundations of Soviet strategy for economic growth* (Bloomington, IN).
- Stalin, J. (1954). *Works*, vol. XI (Moscow).
- (1955a). *Works*, vol. XII (Moscow).
- (1955b). *Works*, vol. XIII (Moscow).
- (1972). *Economic problems of socialism in the USSR* (Peking). (First published in Russian in 1952.)
- Standard (1978). 'Standard methodology for calculations to optimize the development and location of production in the long run', *Matekon* 15(1): 75–96.
- Statistical abstract of the United States 1984* (1983) (Washington, DC).
- Statistical yearbook of China 1985* (1985) (Beijing and Hong Kong).
- Statistical yearbook of China 1986* (1986) (Beijing and Hong Kong).
- Steinbruner, J. D. (1974). *The cybernetic theory of decisions* (Princeton).
- Stone, D. (2005). 'The First Five-Year Plan and the geography of Soviet defence industry', *Europe-Asia Studies* 57(7): 1047–63.
- Streeten, P. and Lipton, M. (eds.) (1968). *The crisis of Indian planning* (Oxford).
- Strumilin, S. (1924). 'Khozyaistvennoe znachenie obrazovaniya', *Planovoe khozyaistvo* 9–10. Reprinted in S. Strumilin, *Problemy ekonomiki truda* (1957), pp. 143–85.
- (1931). 'Nauka i proizvoditel'nost' truda', reprinted in S. Strumilin, *Problemy ekonomiki truda* (1957), pp. 587–601.
- Sukhanov, L. (1992). *Tri goda s El'tsinym* (Riga).
- (2011). *Kak El'tsin stal prezidentom*.
- Szelenyi, I. (1976). 'The housing system and social structure in Hungary', in B. L. Faber (ed.), *The social structure of Eastern Europe* (New York), pp. 301–29.

- Temin, P. (1991). 'Soviet and Nazi economic planning in the 1930s', *Economic History Review* 44(4): 573–93.
- Ticktin, H. (1973). 'Towards a political economy of the USSR', *Critique* 1: 20–41.
- Toranska, T. (1987). *Oni: Stalin's Polish puppets*.
- Tremblay, V. (1982). *Alcohol in the USSR: A statistical study* (Durham, NC).
- (1997). 'Soviet and Russian statistics on alcohol consumption and abuse', in J. L. Bobadilla, C. A. Costello and F. Mitchell (eds.), *Premature death in new independent states* (Washington, DC), pp. 220–38.
- Tsipko, A. (1998). 'The collapse of Marxism–Leninism', in Ellman and Kontorovich (eds.), pp. 169–86.
- Trotsky, L. D. (1930). *Permanentnaya revolyutsiya* (Berlin).
- Turcan, J. R. (1977). 'Some observations on retail distribution in Poland', *Soviet Studies* 29(1): 128–36.
- Vacić, A. M. (1986). 'Why the development of Yugoslavia deviated from the socialist self-management market economy' *Eastern European economics* 25(2): 3–21.
- Val'tukh, K. K. (1977). 'Intensifikatsiya proizvodstva i sovershenstvovanie planirovaniya', *EKO* 2.
- van Brabant, J. (1973). *Bilateralism and structural bilateralism in intra-CMEA trade* (Rotterdam).
- (1974). *Essays on planning, trade and integration in Eastern Europe* (Rotterdam).
- van den Doel, H. (1979). *Democracy and welfare economics* (Cambridge).
- van Ree, E. (2013). 'Marxism as permanent revolution', *History of Political Thought* 34(3): 540–63.
- Viola, L. (1996). *Peasant rebels under Stalin* (New York).
- (2007). *The unknown Gulag: The lost world of Stalin's special settlements* (Oxford).
- Vishnevskii, A. (1998). *Serp i rubl': Konservativnaya modernizatsiya v SSSR*.
- (2006). *Demograficheskaya modernizatsiya Rossii 1900–2000*.
- Vogel, E. (2011). *Deng Xiaoping and the transformation of China* (Cambridge, MA).
- Vortmann, H. (1979). 'Incomes', in R. Pohl (ed.), *Handbook of the economy of the German Democratic Republic* (Farnborough, UK), pp. 198–210.
- Voslensky, M. (1984). *Nomenklatura: Anatomy of the Soviet ruling class*.
- Warriner, D. (1969). *Land reform in principle and practice* (Oxford).
- Watson, A. (1975). *Living in China*.
- Watson, J. (ed.) (1984). *Class and social stratification in post-revolution China* (Cambridge).
- Weiner, D. R. (1999). *A little corner of freedom* (Berkeley).

- Weitzman, P. (1974). 'Soviet long-term consumption planning: distribution according to rational need', *Soviet Studies* 26(3): 305–21.
- Wheatcroft, S., Davies, R. and Cooper, J. (1986). 'Soviet industrialization reconsidered'. *Economic History Review* 39(2): 264–94.
- White book* (1951). *White book on aggressive activities by the governments of the USSR, Poland, Czechoslovakia, Hungary, Rumania, Bulgaria and Albania towards Yugoslavia* (Belgrade).
- Whyte, L. (1977). 'Deviance, modernization, rations and household registers in urban China', in A. Wilson, S. Greenblatt and R. W. Wilson (eds.), *Deviance and social control in Chinese society* (New York), pp. 151–72.
- Wiles, P. (1962). *The political economy of Communism* (Oxford).
- (1968). *Communist international economics* (Oxford).
- (1974). *Distribution of income: East and West* (Amsterdam).
- (1982). 'Are there any Communist economic cycles?', *ACES Bulletin* 24(2): 1–20.
- (1992). 'Capitalist triumphalism in Eastern Europe, or the Economics of Transition: an interim report', in A. Clesse and R. Tokes (eds.), *Preventing a new East-West divide: the economic and social imperatives of the future Europe* (Baden-Baden), pp. 389–407.
- Williamson, O. (1975). *Markets and hierarchies* (New York).
- Witkin, Z. (1991). *An American engineer in Stalin's Russia* (Berkeley, CA).
- Wright, T. (2012). *The political economy of the Chinese coal industry: Black gold and blood-stained coal*.
- Xiao He (1991). 'A dialogue on the "Great International Cycle" – interview with comrades Wang Jian and Pei Xiaolin, authors of the theory of the "Great International Cycle"', *Chinese Economic Studies* 25(1).
- Xu Dixin (1982). *China's search for economic growth* (Beijing).
- Xue Muqiao (1981). *China's socialist economy* (Beijing).
- (1983). 'An inquiry into the problems concerning the reform of the economic system', *Chinese Economic Studies* 17(2): 3–30.
- (1986). *China's socialist economy*, 2nd edn (Beijing).
- Yang, D. L. (2004). *Remaking the Chinese Leviathan: Market transition and the politics of governance in China* (Stanford, CA).
- Yang, D. T. (2008). 'China's agricultural crisis and famine in 1959–1961: A survey and comparison to Soviet famines', *Comparative Economic Studies* 50(1): 1–29.
- Yang, J. (2012). *Tombstone: The great Chinese famine, 1958–1962* (New York). (Abbreviated translation of a two-volume work first published in Chinese in Hong Kong in 2008.)
- Yasin, Ye. (1998). 'How the Chinese path of reform failed in the USSR', in Ellman and Kontorovich (eds.), pp. 168–9.

- Zaloga, S.J. (2002). *The Kremlin's nuclear sword: The rise and fall of Russia's strategic nuclear forces, 1945–2000* (Washington, DC).
- Zaleski, E. (1980). *Stalinist planning for economic growth in the Soviet Union, 1933–52* (Chapel Hill, NC).
- Zielinski, J. (1967). 'On the theory of success indicators', *Economics of Planning* 1: 1–29.
- (1973). *Economic reforms in Polish industry*.
- Zolotarev, V. A. (ed.) (2000). *Istoriya voennoi strategii Rossii*.
- Zubkov, A. (1979). *Toplivno-syrevaya problema v usloviyakh sotsialisticheskoi ekonomicheskoi integratsii*.
- Županov, J. (1983). *Marginalia o društvennoj krizi* (Zagreb).