

Macroeconomics After the Financial Crisis

A Post-Keynesian perspective

**Edited by Mogens Ove Madsen
and Finn Olesen**

ROUTLEDGE FRONTIERS OF POLITICAL ECONOMY

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Macroeconomics After the Financial Crisis

How should Europe cope with the negative and still unfolding economic consequences of the current economic crisis? And why does Europe seem to be more conservative than the USA in dealing with the crisis?

Since the outbreak of the current international economic crisis in 2008, the USA and many of the European countries have been tormented by high levels of unemployment and low levels of inflation, interest rates close to zero and fiscal policies of austerity. As such, the modern economic mainstream has been challenged by these empirical facts. Today, several years after the outbreak of the international economic crisis, supply side effects do not seem to be increasing employment as the modern mainstream claimed they would. Aggregate demand has to play a more important role in macroeconomic analysis than hitherto. That is, there is a need for alternative explanations of how a modern macro economy is expected to function and how the macroeconomic outcome could be manipulated by the right economic policy proposals. As expressed by the contents of the present book, a Post-Keynesian understanding proposes such an alternative theoretically, methodologically and in terms of policy measures.

This book will present new materials and approaches, especially new evidence and new views on the potential problems of public debt, the European Union and the present crisis, Central Banking, hysteresis in an agent based framework, the foundations of macroeconomics and the problems of uncertainty.

Mogens Ove Madsen is Associate Professor at the Department of Business and Management, Aalborg University, Denmark.

Finn Olesen is Professor at the Department of Business and Management, Aalborg University, Denmark.

Contributors

Eric Berr, Professor at University of Bordeaux, France

James Galbraith, Professor at the University of Texas at Austin, USA

Claude Gnos, Professor at University of Burgundy, France

Joachim Güntzel, Professor at Baden-Wuerttemberg Cooperative State University, Germany

Jesper Jespersen, Professor at Roskilde University, Denmark

Mogens Ove Madsen, Associate Professor at Aalborg University, Denmark

Tom Neugebauer, Research Assistant at University of Münster, Germany

Finn Olesen, Professor at Aalborg University, Denmark

Jonathan Perraton, Professor at University of Sheffield, UK

Peter Skott, Professor at University of Massachusetts Amherst, USA, and Aalborg University, Denmark

Engelbert Stockhammer, Professor at Kingston University, UK

Ulrich van Suntum, Professor at University of Münster, Germany

Lars Pålsson Syll, Professor at Malmö University, Sweden

1 The Great Recession

An introductory view

Mogens Ove Madsen and Finn Olesen

When the economic crisis materialized in 2008, caused by the ongoing financial crisis, hardly anyone from the modern macroeconomic mainstream expected it to be a persistent crisis. Many argued that, this time, it would be a rather short-lived period with only minimal negative economic setbacks. However, as we know now, that was unfortunately not the case. As such, the macroeconomic system showed beyond any kind of dispute that problems of instability are not randomly determined. Rather, instability might be systemic and might be caused by built-in malfunctions in the financial sector (see, for example, Leijonhufvud, 2014).¹ Furthermore, you have to remember that such malfunctions were one of the main results of a process of financial deregulation in the USA as well as in Europe. As such, mature economies have undergone a general process of ever-increasing financialization for years – a process whereby financial markets, financial institutions and financial elites gain greater influence over economic policy and economic outcomes.

That is, the setbacks were of such a magnitude that many economies had tremendous problems maintaining a high enough level of effective demand resulting in negative GDP growth rates, massive unemployment and huge budget deficits. These effects were devastating to such a degree that it seems right to term this crisis the ‘Great Recession’.

Internationally, Europe seems to have been hit harder than the USA. Presently, recovery is ongoing with certainty in the USA while real recovery is still to be seen within the European Union (EU) – not least because of differences in how fiscal and monetary policies are conducted in the USA and in the EU.

As such, many important questions need an answer. For instance, why does European economic policy – addressing the conduct of fiscal and monetary policy within the EU – seem to be more conservative than in the USA in dealing with the crisis, the latter having generally been more demand-oriented than has been the case for the EU?² In particular, many members of the EU have felt the restrictions of the fiscal policies of austerity keeping their economies in the trap of permanent recession.³ The outcome of such a fiscal policy strategy has been one of massive unemployment, budget deficits that would not come down, increasing public debt positions and an inflation regime of, at best, zero inflation and, at worst, even one of deflation. That is, the European process of integration has not

been a successful one in recent years. Rather than bringing prosperity to its members it has delivered the opposite. As such, the Great Recession has highlighted the inadequacies of the institutional set-up of the European and Monetary Union (EMU), actually reinforced by the tightening of the Stability and Growth Pact in 2012.

More surprisingly, the huge negative economic consequences of such a devastating fiscal policy strategy could easily have been foreseen, as explained by Truger (2013); as he points out, that follows from careful textbook reading of standard macroeconomic theory together with an eye on available empirical results. Monetarily speaking, the strategy has, in general, traditionally been to follow a Taylor rule-based interest policy. Nevertheless, such a strategy breaks down when the nominal interest rates set by central bankers hit a floor of zero. In such a situation, conventional monetary policy has no probability of success.⁴ Furthermore, with deflationary tendencies such a 'zero-bound' scenario only makes the real interest rate to go up, which, of course, further decreases the investment demands of firms and consumption demands of households. That is, the modern macroeconomic mainstream has been seriously challenged by empirical facts.

Today, more than seven years after the outbreak of the international economic crisis, effects of the supply side policy do not seem to be able to combat the recessive tendencies in Europe by themselves. That is, changes in relative prices are not effective enough to make a disequilibrium situation of excess supply in the goods and labour market go away and put the macro economy back on track on its long-run optimal equilibrium path, as stated by the mainstream, with their dynamic stochastic general equilibrium (DSGE) models – models that, with their 'Lucasian foundations had less and less relation to reality' (Skidelsky, 2014: 223).

Therefore, macroeconomics is not only a story of aggregate supply, low inflation rates, full employment and structural budget deficits of around zero. Presently, as was the case in the 1930s with the Great Depression, macroeconomics is also still a story of lack of effective demand, existence of involuntary unemployment and the need for the right fiscal and monetary policy to be pursued to stimulate GDP growth rates. When there is an economic crisis, uncertainty presents an urgent problem. That is, to some degree the future is truly unknown. By the actions of today, households and firms, together with government, are partners in creating what eventually will become the economic environment – the economic institutional set-up – and thereby determine the macroeconomic output of the future (see, for example, Dow, 2015).

Seen from a Post-Keynesian perspective, there is no room for a representative agent with rational expectations. Processes of intertemporal consumption optimization – the quest for first best solutions – is a fantasy that is not empirically supported by facts. Rather, such a statement has been falsified by evidence. In general, we have to accept that the micro foundation of macroeconomics is not one of perfection, as argued by most mainstreamers. Rational economic behaviour can be different from that which lies behind the actions of the rational economic man. Due to the existence of uncertainty, epistemologically as well as

ontologically, the economic behaviour of real-life households and firms is conducted in a manner that is characterized by a kind of bounded rationality. Mistakes occur, and these are not only of a stochastic nature; rather, errors in real-life economic processes are often at least to some degree of a systematic nature. That is, the macroeconomic system is not a closed deterministic functioning – ergodic – system. Rather, it is an open, social dependent and changeable system – in essence, it is a path-dependent system that works in a non-ergodic way (see, for example, Lawson, 1997; Davidson, 2003–4, 1984; Chick and Dow, 2005).

As such, there is a need for an alternative macroeconomic understanding. In correspondence with real-life phenomena, macroeconomics has to be able to address the right way for economic processes to unfold. Likewise, macroeconomics needs to change its views on economic policy. Fiscal policy, as well as monetary policy, conducted the right way has a very important role to play in trying to achieve the best macroeconomic outcome possible. That is, in general, economic policy should focus on employment problems and not follow a strategy of austerity; when creating more employment, both the problems of budget deficits and public debt and deflationary tendencies go away by themselves. Seen from a Post-Keynesian perspective, one way of pursuing economic policy in the right manner could be to follow the strategy suggested by Hein (2013–14: 348), which is built on three pillars:

the reregulation of the financial sector in order to prevent future financial excesses and financial crises, the reorientation of macroeconomic policies toward stimulating and stabilizing domestic demand... and the reconstruction of international macroeconomic policy coordination and a new world financial order, so as to rebalance the world and regional economies.

As expressed by the contents of this book, a Post-Keynesian understanding proposes such an alternative to the modern macroeconomic mainstream theoretically and methodologically, as well as economic policy wise, in accordance with the above-mentioned statements. Furthermore, following such an alternative strategy, ‘the world we live in would be a more prosperous and civilized economic society’ as pointed out by Davidson (2015: 382).

Economic policy aspects of real life

In [Chapter 2](#), James Galbraith addresses the importance of the General Theory. As in physics, where the Newtonian mechanics had been taken over by Einstein and his theory of relativity, Keynes’s main achievement with his General Theory was to break away from the old understanding of Euclidean economics and bring light to a more modern, non-Euclidean world of economics. In such a new world, the theoretical focus had to be put on an economic system where the financial sector in a crucial manner interacts with the processes of production. As such, the determination of employment is dependent on the economy as a whole and on the level of effective demand. However, this was, in general, not how the messages

of Keynes were interpreted. Rather, he was 'simplified, modified, he was undermined, he was forced into the intellectual coffin of equilibrium analysis. His vision was obliterated,' as Galbraith tells us. In modern times, this meant the appearance of new Keynesianism, with its focus on trying to give an explicit micro foundation for macroeconomic theory; that is, a story of intertemporal optimizing agents using rational expectations. Policy wise, the rephrasing of Keynes might seem appropriate. However, mainstreamers, in general, have had a rather naive perception of the still ongoing crisis. It was perceived as just a matter of getting more fuel on the tank – bringing back the economy to its equilibrium trend. Unfortunately, the crisis is more severe than can be portrayed by a fuel tank analogy. The crisis could be one of secular stagnation. But we need more than this. We have to incorporate institutional matters as well, Galbraith argues. As such, economists should take at least four questions into consideration: 1) the limitation of the use of resources, 2) the potential lack of a stabilizing hegemonic power, 3) the effect of technological change on employment and 4) the role of bank money in creation booms and bobbles.

Chapter 3, by Peter Skott, addresses the important question of the interplay between public debt and the case of stagnation. Furthermore, he also puts forward a modern view on functional finance. As such, he argues that fiscal policy and public debt may be required to maintain full employment and avoid secular stagnation. This conclusion emerges from a range of different models, including overlapping generations (OLG) specifications and stock-flow consistent (Post-) Keynesian models. One of the determinants of the required long-run debt ratio is the rate of economic growth. Therefore, according to Skott, low growth leads to high debt, and empirical correlations between growth and debt may reflect this causal effect of growth on debt, rather than a negative effect of debt on growth. Based on this result, Skott draws a very important conclusion regarding austerity policies: the level of government consumption and the structure of taxation influence the required debt ratio and, paradoxically, austerity policies are counterproductive on their own terms: cuts in government consumption lead to an increase in the required level of debt.

In **Chapter 4**, the Euro crisis and contradictions of neoliberalism in Europe are discussed by Engelbert Stockhammer. In general, he finds that neoliberalism has not given rise to a sustained profit-led growth process, but to a finance-dominated accumulation regime in which growth relies either on financial bubbles and rising household debt ('debt-driven growth') or on net exports ('export-driven growth'). The financial crisis that began in the market for derivatives on the US subprime mortgage market has translated into the worst recession since the 1930s. In Europe the crisis has been amplified by an economic policy architecture (the Stability and Growth Pact) that aimed at restricting the role of fiscal policy and insulating monetary policy and central banks from national governments. The crisis has thus led to a sharp economic divergence between core and peripheral countries. As such, the EU has been hit hard by the Great Recession. That is, the European process of integration has not been one of prosperity for most members in recent years.

In [Chapter 5](#), Jonathan Perraton discusses the fate of the Nordic social democratic model. The recent crisis has generated renewed interest in more cooperative national arrangements. As such, many contributions have focused almost exclusively on the labour market and largely accepted mainstream economics explanations of economic performance. Nevertheless, Perraton states, the post-war success of corporatist economies, notably in Nordic countries, rested on high rates of investment, particularly in internationally tradable industries. This was seen by both policy-makers and scholars as central to generating prosperity throughout the economy and sustaining living standards and government expenditure. Maintaining the profit rate in the tradable sector was seen as central to sustaining growth and welfare in these economies. However, modern mainstream contributions miss the capital side of the bargain. The neglect of corporatism's disciplining effect on business and the investment response in the 1990s is to miss a key part of the story of corporatism. From a Post-Keynesian perspective, capital accumulation is crucial to determining employment levels, as well as growth and prosperity, and there is clear evidence among Nordic economies, as elsewhere, that investment plays a key role in determining employment. This is the main conclusion drawn by Perraton.

In [Chapter 6](#), Jesper Jespersen addresses the problem of low growth rates in Europe. With an empirical focus on EU(15), he is able to depict three crucial macroeconomic relationships which, since 1970, have undergone declining development, making the macroeconomic environment of Europe a more pessimistic one. First, the ratio of real investment/GDP has come down from a level of approximately 26 per cent to around 18 per cent. Second, he establishes with a high degree of statistical significance the negative relationship between the real investment ratio and the rate of unemployment: the higher the level of private investment the lower the rate of unemployment becomes. Third, as such, low investment rates seem to influence labour productivity negatively. Based on these empirical facts, Jespersen concludes that it is essential to get the causality right: a higher level of investment has positive employment consequences, which reduces both the level of unemployment and the public budget deficit. Or, stated alternatively, with a keen eye, economically and politically, on maintaining a high level of employment, potential problems with budget deficits go away by themselves. That is, the European austerity policy is, in general, the wrong way to try to achieve a higher level of economic prosperity within the member countries of the European Union.

The foundation of macroeconomics

In [Chapter 7](#), Finn Olesen discusses if and how important macroeconomic events change macroeconomic thinking. Historically speaking, as a consequence of the Great Depression in the 1930s, the then mainstream economic understanding was seriously challenged by empirical facts, theoretically as well as methodologically. As such, the Great Depression gave way to what was later termed the 'Keynesian Revolution', which for decades came to dominate the scene of macroeconomics

almost totally. Still later, the understanding of macroeconomics once again became classical at its core as the Keynesian understanding was questioned by, for instance, the monetarists. Nowadays, modern macroeconomic mainstream is characterized and benchmarked by the use of DSGE models. These models are populated with agents who perform a process of intertemporal consumption optimization using rational expectations in an economic environment which might be affected by exogenous shocks. However, in the longer run, the economy is brought back to its equilibrium path with certainty. Due to the economic crisis of recent years – the Great Recession – the mainstream macroeconomic understanding is once again challenged (both theoretically and methodologically). However, this time, it is debatable if the criticism raised against the mainstream core theoretical elements, based on the present economic crisis, will launch the making of a new revolution in macroeconomics, as was the case in the 1930s. In general, the macroeconomic mainstream, despite the empirical falsification of recent years, seems to be deaf to criticism from non-mainstreamers such as Post-Keynesians, as pointed out by Olesen. Macroeconomic theory will probably undergo some changes, but change is not going to be of a fundamental kind. Somehow, it is going to be business as usual.

In the 1950s and 60s a few economists in Cambridge (UK), especially Joan Robinson, questioned the way neoclassical economists used to quantify economic variables. The critique undermined the macro production function. Paul Samuelson, who was a forceful advocate of macro functions, acknowledged the relevance of the critique. Nonetheless, he decided to disregard it, and so did his followers. The fact is that the scope of this critique may look overstated with respect to neoclassical economics that is mainly concerned with micro economic behaviours, and propounds micro founded models. [Chapter 8](#), written by Gnos, aims at closing this loophole: he shows that neoclassical micro economic theory is actually affected by the Cambridge critique, and cannot overcome the latter unless it is macro founded. To make the point, Gnos focuses on money prices determination. He argues that, logically, money prices cannot result from the interplay of supply and demand, except if the purchasing power of money predates the latter, as a result of the monetary conditions of the process of production. This means that supply and demand equations cannot be solely founded on micro behaviours; there is also a macro process at work that has to be taken into consideration.

In [Chapter 9](#), Pålsson Syll discusses various aspects of microfoundations for macroeconomic theory. The modern mainstream seems to subscribe to a methodological individualist view, according to which the only ‘rigorous’, ‘acceptable’, ‘well-grounded’ or ‘secure’ way to do macroeconomics is to somehow reduce it to microeconomic analysis, he tells us. Implementing a microfoundationalist programme, these economists believe that macroeconomics is both dispensable and/or basically reducible to microeconomics. That is, macroeconomic facts are to be explained only in terms of facts about individual agents. But, as many economists, philosophers, historians and methodologists have forcefully argued, there exist overwhelmingly strong reasons for being critical and doubtful

regarding methodological individualism and reductionism and the urge for microfoundations of macroeconomics. Microfoundations today, as Pålsson Syll argues, mean, more than anything else, trying to reduce macroeconomics to microeconomics by building macroeconomic models assuming ‘rational expectations’ and hyper-rational ‘representative agents’ optimizing over time. Both are highly questionable assumptions as they are totally out of sync with empirical evidence. Modern macroeconomic models of today are based on rational expectations microfoundations, basically assuming that people, on average, hold expectations that will be fulfilled. This makes the economist’s analysis enormously simplistic, since it means that the model used by the economist is the same as the one people use to make decisions and forecasts of the future. That is, micro founded macroeconomic models that are not able to pass a ‘smell test’ run the risk of being taken as relevant quite uncritically when addressing real world issues. Rather than assuming that people usually have the same expectations, someone like Keynes, for example, would argue that people often have different expectations and information, and that this constitutes the basic rational behind macroeconomic needs of coordination – something that is rather swept under the rug by the extreme simple-mindedness of assuming rational expectations in representative agents models. But if all actors are alike, why do they transact? Who do they transact with? The very reason for markets and exchange seems to slip away with the sister assumptions of representative agents and rational expectations, Pålsson Syll points out.

In [Chapter 10](#), van Suntum and Neugebauer present a stock-flow consistent overlapping generation macro model of a closed economy, which combines aspects of both Austrian and Keynesian theory. As such, they argue that the interest theories of Böhm-Bawerk and Keynes are both valid and ideally complement each other, as they both accept that the interest rate is determined by real and monetary factors. In particular, it is demonstrated that, with stable money, the interest rate cannot become negative as a result of excess savings because of the lower zero bound. However, expansionary monetary policy can, indeed, turn the interest rate negative even with stable money, with private households then becoming borrowers rather than lenders.

Macroeconomics and methodology

In [Chapter 11](#), Eric Berr addresses, with respect to present-day economies, some socio-economic philosophical aspects of Keynes’s understanding which had a lasting impact on his views on economics, theoretically as well as methodologically. As such, Berr argues that Keynes’s economic analysis remains perfectly relevant today. Most of his ideas and policy recommendations are still of a peculiar importance, especially in times of crisis. Keynes’s main concerns, in the historical context of the first half of the twentieth century, are about how to correct monetary and financial imbalances, to fight against mass unemployment, or, more generally, to implement an international environment aiming to favour peace and economic prosperity. In such a context, Keynes appears to be more

than just an economist, giving us, in his writings, the foundations of a socio-economic philosophy. The core ideas of such a philosophy are summarized in chapter 24 of *The General Theory*, where Keynes provides us with central elements as regards unemployment, inequality, uncertainty and the role of the state. That is, he gives us the key to understand the failure of the present neoliberal prescriptions – whether concerning developed or developing countries – while giving a very interesting analysis of globalization, economic crisis and their consequences. Thus, we can show that behind his economic understanding hides a model of society which seems to be compatible with sustainable development. Undoubtedly, also in this respect, Keynes appears to be in advance on his time – his ideas are still fruitful for the twenty-first century, Berr concludes.

In [Chapter 12](#), Joachim Güntzel highlights the crucial role of uncertainty, suggesting it plays a vital role in Post-Keynesian macroeconomics. Furthermore, there should be a focus on time aspects as economic processes unfold, acknowledging that time is irreversible and the future is unknowable. The kind of ontological uncertainty is a fundamental one, and there is no way, however mathematically sophisticated it may appear, to enable us to reduce this fundamental characteristic of the world in which we are living to a calculable risk. Uncertainty is like a veil, lying impenetrable between us and the future, Güntzel tells us. Last, but not least, the term ‘Animal Spirits’, which was used by Keynes in [chapter 12](#) of *The General Theory*, has received new attention in recent years due to the need for a fresh understanding of human economic behaviour after the financial crisis of 2008. But this notion is sharply contrasted by the impression that there exists a certain gap between this newly recurring interest in the Post-Keynesian concepts mentioned above, and a thorough theoretical investigation and – most of all – integration of these concepts within a concise theoretical frame. That is, how should we conceive ‘Animal Spirits’ more precisely and how can this concept be connected with Keynes’s understanding of probability and uncertainty? The chapter by Güntzel tries to make a contribution in order to fill this gap.

In [Chapter 13](#), Mogens Ove Madsen has his focus on the concept of path dependence. Generally, it is treated as a universal term without social and historical content. As such, according to Madsen, there is still no clear analytical framework for evaluating, integrating or developing the concept of path dependence. Although there are some interesting features that can be observed by the use of the concept in economics, this work should be seen in relation to much of the work done in other social sciences. Within the New Institutional Economics, for instance, ‘Qwerty-nomics’ describes a specific lock-in of a technological development to a case of increasing returns and institutional reproduction. In the Post-Keynesian case, there is room for institutional hysteresis, cumulative causation and technological lock-in. In other social sciences the concept of path dependence is much more nuanced in both focus and tracing sequences. As such, the key question is, as pointed out by Madsen, whether it is possible to introduce a new and more satisfying kind of understanding of path dependence in economics.

Notes

- 1 As Leijonhufvud (2014: 763) points out about what had happened in the financial sector: 'So the boom ended in 2007 with leverage ratios at historic highs, risk premia at historic lows and maturity mismatches all around.'
- 2 However, concerning other aspects, e.g. labour-relations and the distribution of income, the progressivism of the US policies is not that self-evident.
- 3 A thorough examination of such an austerity strategy, including social, political and economic aspects seen in a historical perspective, is given by Konzelmann (2014).
- 4 Finally, at last, the ECB started – just as the case has been for the FED for some years now – to conduct a more unconventional monetary policy (the QE strategy), in the hope of getting long-run interest rates to come down somewhat, which should stimulate effective demand within the EU area – thereby making unemployment problems less severe.

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2 Keynes ‘in the twenty-first century’

Tradition, circumstance, fad and pretence in the wake of the Great Crisis

James Galbraith

My title is ‘Keynes “in the twenty-first century”’, with quotation marks carefully placed around ‘in the twenty-first century’. It is both a reference and a wisecrack. A book by that title might have potential, but I think I won’t write it.

The great economic crisis of the twentieth century began in 1930. ‘The world has been slow to realize,’ John Maynard Keynes wrote, ‘that we are living through one of the greatest catastrophes of modern economic history’ (1930b). In point of fact, though, in the UK the mechanisms that launched the Depression had been put in place years before, and many of the policy proposals that would later come to be thought of by most people as Keynesian had already been made. They had been made in the Liberal Party programme, ‘We Can Conquer Unemployment’, on which Keynes collaborated in the campaign of David Lloyd George in 1929, and they had been made in Keynes’s own pamphlet, ‘Can Lloyd George do it?’ Some of the concepts also, including the employment multiplier which Richard Kahn had developed, were already in place. They were novel for most people, but they were certainly in the back or even in the front of Keynes’s mind.

The task of reconstructing economics for the economists could proceed on a slower schedule. Perhaps it wasn’t as urgent; certainly it wasn’t as urgent. It wasn’t until 1936 that *The General Theory* appeared; that was three years already into the New Deal. By that time to contemporaries – and this is a point which has been very substantially forgotten, glossed over, neglected or got wrong, including by many prominent Keynesians – the Great Depression in the USA was already over. Contemporaries thought of the Great Depression as the years from early 1930 to the start of 1933. From March, 1933 through 1936 the USA had already enjoyed what are still the most rapid rates of economic growth in peacetime history. The success of those years was demonstrated by the fact that Franklin Roosevelt was re-elected in 1936 with a crushing majority that included every state except Maine and Vermont.

What *The General Theory* did – to revert to some parallels between economics and physics – was to take a discipline that had been modelled after Newtonian mechanics, with money playing the role of absolute time but with no active role in the order of things, and it reconfigured that discipline in the spirit of (at least) special relativity. The choice of title, *The General Theory of... x, y and z*, was not incidental. It was, as Keynes (1936, p. 16) appreciated his contemporaries

would know, a direct reference to Einstein and, in case you didn't get it, there is in the [second chapter](#) a specific passage – 'the classical theorists resemble Euclidean geometers in a non-Euclidean world' – to drive the point home. There was, in short, to be an economics universal whole and entire, where space would tell matter where to go and matter would tell space how to curve. 'Monetary production' was the title of lectures that Keynes gave in 1933. Monetary production was Keynes's analogue to space-time; that is to say, the linking together of two concepts that had previously been held as distinct. It was a phrase coined to underscore that we live in a monetary and credit world and that the monetary processes cannot be separated from the processes of production. This was what came to be known as macroeconomics.

In macroeconomics, the determination of employment does not happen in an isolated market called the labour market. The purpose of [chapter 2](#) of *The General Theory* was to get rid of the concept of a supply curve of labour – to abolish it like the axiom of parallels – and to place the determination of employment firmly in the context of the economic universe as a whole. Employment is to be determined by total spending, which in turn is to be determined by the summing up of the elements of total effective aggregate demand.

In the six or seven decades following this moment, and starting with the interpretation of Keynes by his early reviewers as a fix-wage theorist – as just another version of the Treasury View of 1929 – this insight into the structure of Keynes's thought was lost. Keynes was simplified, modified, he was undermined, he was forced into the intellectual coffin of equilibrium analysis. His vision was obliterated. It was a defeat as thorough as that of Malthus by Ricardo.

Microfoundations and rational expectations conquered economics as the Holy Inquisition had conquered Spain. Controversy ceased. The great puzzle of effective demand disappeared once again, and John Maynard Keynes himself was exiled to the underworld of Karl Marx, Major Douglas and Silvio Gesell.

And then a doctrine with the vile, reprehensible name of 'new Keynesianism' appeared. It bore no relationship to Keynes or his theory. It was not enough in the end to kill the man and bury the body. In a manoeuvre straight from the pages of Orwell, the anti-Keynesians went into the graveyard and stole the name from the headstone over the tomb.

I don't think this was accidental. That act of theft, of name-robbing, helped to create an environment in which recovery of the original thoughts and the analysis rooted in them became much more difficult than before. To have read Keynes, and to have understood him, has become not merely eccentric. To be Keynesian is not merely heretical. Rather, Keynes has become practically incomprehensible. The old pre-Keynesian view now parades under his name, so that even a 'Keynesian revival' has anti-Keynesian overtones.

And, of course, the great declaration of consensus around these positions was made at the most exquisite of all possible moments. In early 2008 the American Economic Association held a session at its annual meetings on 'How the world achieved consensus on monetary policy'. The collapse, by that point, was already underway – it had been ongoing since August 2007.

When the collapse occurred, we were fortunate that there still walked among us, at that point, a few distinguished veterans of the earlier battles. And they took the chance to attempt to bring back the Keynes that they knew and whose spirit and ideas continued to have a bearing on the circumstances because, in fact, they continued to capture the essence of the issues. Robert Skidelsky and Paul Davidson both rose to this task. We can see now that theirs was a brave but not a successful effort. It proved much more difficult to bring back Keynes in the intellectual climate of the Great Crisis than it was to advance his ideas in the first place, in the original crisis of the 1930s, when he was, first of all, himself, but, second, when the defences against his ideas had not been so effectively prepared.

Another effort, more successful in the public realm at least for a time, was the invocation of Keynes's name in support of the policy measures, to stabilize the economies of the USA and other wealthy countries. These measures and reflexes, as I said before, pre-date *The General Theory* and while they took reinforcement and support from *The General Theory* they did not actually depend on it. They were policy measures – public works and relief – of the same type that in the early 1930s had been already supported by people like A.C. Pigou.

The initial purpose of 'stimulus' was to assist a process of economic recovery, of return to normal, to speed the re-establishment of the previously existing, alleged-to-be-expected economic conditions. This programme partook of some phrases and metaphors that Keynes himself had used at various points. For instance, Paul Krugman liked to quote Keynes from *Essays in Persuasion*, on the question of magneto trouble: 'we have magneto trouble' – a small mechanical problem. We have drivers who do not know the rules of the road. As Keynes said, 'It is appropriate to the problem that the solution should be found in a device' (1931, Vol. IX, p. 129). But if you examine the substantial content of the programmes advanced by people who advocated stimulus, their underlying apparent diagnosis is even simpler. It's not mechanical difficulty at all. It's an empty fuel tank or a battery that has run out of charge. Power it up, turn the ignition and off we go. Yet, six years later we find the vehicle has not moved very far, and this does invite the riposte, which we have heard many times from those corners, which is, 'Well they should have listened to me. More gas in the tank, a better charge on the battery and we could have been much further ahead.'

This line is very hard to refute. Perhaps the one-note 'Keynesians' of the early post-crisis period were right. But as a political matter, the refrain 'they should have listened to me' is not a winning one. After a while it begins to wear on people's nerves. And I think the advocates of that position six years ago, particularly in the USA, to some degree sensed this. And so we have seen a move on their part to adopt a somewhat stronger, but also more pessimistic analysis.

The initiative here was taken by Larry Summers, with Paul Krugman coming quite quickly to his support. And that was to revive and invoke the doctrine of secular stagnation. That doctrine goes back not to Keynes but to Alvin Hansen and John Hicks; it is a vision drawn substantially from an investment-saving (IS)–liquidity preference–money supply (LM) framework, but with a flat LM

curve bounded at zero by the institutional nature of the interest rate, alongside a collapse of animal spirits affecting the IS curve.

The invocation of secular stagnation gives a more coherent description of what has happened in the last six years than the previous argument, which had held that a cure could be based upon measures which were – to take another famous phrase from six years ago – ‘timely, targeted and temporary’. It makes more sense to recognize the psychological and institutional-financial obstacles that exist to full recovery, than simply to invoke measures that would reanimate a system which had been interrupted by an exogenous shock.

So we are moving from an analysis of a healthy system distracted momentarily by outside events – an asteroid theory of crisis – to an understanding that there are internal forces that have to be confronted. And yet the internal forces admitted are not very tangible. They are essentially psychological; they could be overcome. In his recent interventions Summers has become a full-throated fiscal Keynesian. He argues that the obstacles can be overcome by animating the public sector to do the investment which is needed at this point and which the private sector is not interested in taking on. So thought is moving. But I would suggest that thought is not moving quickly or far enough.

Keynes himself had a friendly correspondence – a letter or two anyway – with John R. Commons; let me suggest that it is not anti-Keynesian at this point to invoke a certain amount of *institutionalism* in thinking about the situation that we face. Let me therefore invoke the particular Keynes text which I often use to introduce students to him, and which anybody who knows his work must recognize as a document of extraordinary power. *The Economic Consequences of the Peace* combined an already-present macroeconomic insight, especially about the interdependence of countries, with a very direct and topical – *institutional* – analysis of the political and economic situation of the hour. That is what we need today.

Without trying to remain too strictly within this framework, let me bring up four institutional questions that I would urge economists to take into account. They are questions that, in many cases, have engaged the attention of some economists already. But we need to integrate them into a joint and common framework for thinking about the question of the crisis and its aftermath.

First, there is the matter of resources. Resources include the ultimate resource of the atmosphere, but, especially (for our purposes), the direct problem of the cost of fundamental raw materials, in particular energy. In the 1930s, especially in North America, energy was cheap. Oil was the American fuel; 1930 was the year when the East Texas oil field came online. And although an older generation of technologies was in crisis, a newer generation was on the way and had been since the First World War. The constraint of resource cost was not, therefore, much of an issue for Keynes – although the situation was different in certain parts of the European continent at that time.

After 1970 and again after 2000 resources became expensive. In the run-up to the Great Crisis in 2008, the price of oil reached \$148 a barrel before it collapsed. That little aspect of history was quickly forgotten but it had, of course, an income effect that contributed to the strong reaction of spending to later events.

What's the situation now? The present situation is characterized by, in the first place, uncertainty about the outlook. When I first started trying to call attention this in the summer of 2008, we did not have a clear picture of the scale of natural gas from hydrofracking. It's now clear, that whether you like this or not, it's a vast phenomenon. What is not clear is how long it will last. That's what the geophysicists are working on. But they do not know and they probably can't know until it starts to run out, at which point it will be a little late to have made the discovery. So it goes.

A second point about resource costs is that, in contrast to previous eras, they are now heavily financialized. And, therefore, they have an instability associated with the capacity of the financial markets, speculators and hoarders to hold them back when demand is rising, driving up the price. This is something we may call the choke chain effect. It has a dual effect on investment. If you are an energy user you have to worry the price may be too high. If you are a producer of alternative or renewable fuels you have to worry that it may be too low. That's a problem and it hasn't been overcome.

For the post-war period up to the 1970s and also for the generation afterwards, the problem of access to resources was at least modified and mitigated by a world system in which you had a stabilizing hegemonic power. Initially, a system achieved a certain stability and balance between the East and the West in the Cold War. After the decline and fall of the Soviet Union a system arose which sought to be guaranteed by a single hegemonic power, the USA, with its centre of force projected onto the Persian Gulf and Middle East. It is fair to say, as a general rule, that no sensible person now has a lot of confidence in the long-term future of that system.

A system of stabilization where power relies on a single country and in part on its military force depends upon global confidence in the sensible governance of that country. It depends on restraint in the use of power. And it depends on a belief in the effectiveness of the military force. The USA has not done a very good job of inspiring confidence on the first point. On the second, the effectiveness of modern military force has actually been tested in the last decade, tested in open country and in urban settings in Iraq, and then in the mountainous terrain in Afghanistan. It did not prove durably effective in either place. The result, in my judgement, is that many military professionals in the USA would be quite content if they never deployed south of the Rio Grande or across an ocean again.

It's plain, furthermore, that the world is not a self-governing place and so a great deal of future instability will follow upon the disappearance of the stabilizing framework, whatever you may have thought of it at the time.

The third area concerns the effect of technological change on employment. Schumpeter taught us that technological revolutions have a creative and a destructive phase. The creative phase comes first when the ideas are being developed and when there is a rush of investment activity in this pursuit of large prizes, which, in the nature of things, only a few people can gain – but the fact is many people seek them and make investments, and their effort is an overall source of economic growth. It was the source of the information technology boom that

brought the USA to full employment for four solid years in the late 1990s. So, technical revolutions have a creative and an expansive phase.

But once the technologies are established and they spread, they also have a destructive phase. They undermine and ultimately destroy a vast array of previously existing activities, and that is plainly what is happening in the digital age. The digital revolution has been underway for quite a long time, and the destructive phase is now the dominant one.

Economists tend to approach this issue from an econometric rather than a theoretical point of view. That is a risk because one can show that the relationship between GDP and jobs hasn't changed all that much, so it's not a question of capital-labour substitution in the neoclassical sense. And the great loss of jobs is post-crisis, not before, so one can make the argument that the shortfall of jobs is due to deficient demand rather than changes in the climate of employment. But this is *post hoc ergo propter hoc* – a risky way to argue.

Let me argue that the timing and the substance cannot really be separated. That is, one cannot use the (post-crisis) timing to make a definitive statement about the substance of the cause of disappearing jobs. What actually happens in the world is that businesses do not lay off their workers until they have to. Change is costly; businesses like to go with their present business models. But when they are hit by a major slump they do cut their staff. And in the aftermath, when things get a little better, they have to choose: do we hire them back or do we look for a less expensive way to operate? And the less expensive way to operate is available in many, many cases. It's available because the technologies replace both capital and labour. It's cheaper all around to adopt the new approach, in part because of the low cost of technology and in part because the tax structures favour equipment over employment. And this explains why the GDP/employment ratio doesn't change that much, even though there are many fewer jobs than before.

There's something else going on here. I don't have an estimate of its empirical significance, but there are plenty of things which the statisticians will be the last to know. And that is, if you look at the internal combustible engine revolution or the electrical power revolution of the last century, it's plain that having replaced the horse – which was actually very bad for employment among the horses – the motor vehicle created a large train of secondary occupations. Cars and trucks have to be maintained, they have to be repaired, they require fuel, the roads have to be built and maintained, the whole body of infrastructure depended upon this particular technology, which created a lot of secondary jobs, outside the car or the haulage industries proper. Also, electrical appliances displaced people from the household to the market. From both these causes, for a long period you have an increment to GDP that comes from the fact that what were previously household activities are being marketized.

Do the digital technologies have the same effect? I think not. Repair and maintenance are a much smaller part of the picture than they were in transportation. Infrastructure (in the form of fibre optic cable, for instance) is long-lasting and cheap. There is at least a plausible case that we are going through a period in which previously existing market activities are becoming de-marketized.

Communication and information, all of which once occurred on a variable cost basis, now occurs on a fixed cost basis: you pay once and get the incremental units for nothing. That ought to give us a cumulatively lower level of measured output.

For one example, a friend who is an economist for Federal Express tells me that smartphones are having a bad effect on the airfreight business between Asia and the USA. Now why do you suppose? Any thoughts? The answer is straightforward: these things are very small. You can put a lot of them into a large aeroplane. They replace fax machines, cameras, televisions – God knows what – that previously went on those aeroplanes. So the aeroplanes are sitting idle. It's good for the environment. It's good for efficiency. It's not so good for the pilots or the ground crews.

Finally, Keynes, in his *Treatise on Money* (1930a), makes clear that there are two sources of money creation: government and the banks. There's government money and there's bank money. Particularly in the last generation, it has been bank money that has driven our economy forward in periodic bursts of ever-declining underlying credit quality. There was the saving-and-loan boom, followed by the information technology boom, followed by a real estate finance boom – interrupted only, in the USA, by a brief period of military spending using old-fashioned government money.

Can we have another credit boom? In order for such a thing to happen again, banks have to have in view profitable employment-generating activity that they wish to finance. They have to have clients to whom they wish to lend. And the problem with really major credit busts is that the clients tend to disappear. They tend to disappear for a long time because the value of their collateral, which is either business expectations or the value of real estate and housing, falls below previously established levels of debt and bankers become very worried.

And on top of that you have the problem of fraud. The general model of bank-financed, credit market-financed activity in the run-up to the Great Crisis was suffused with criminal behaviour. When it becomes clear that all of the major institutions with which one has to deal – the commercial banks; the investment banks; the ratings agencies; the regulators – are part of, complicit in, or accessories to a vast criminal conspiracy, then there is a tendency to lose trust in such people and in the system as a whole. Which means that people who have financial resources are also extremely wary of deploying them outside the safest instruments, which, of course, in the modern world are US Treasury bonds and the paper of other governments that are not going to collapse: Germany, France, UK, Japan. It's not a very large set.

The banks were saved in the aftermath of the crisis on the alleged hypothesis that they would reanimate credit, get credit flowing again, restore confidence. The underlying assumption was that the arbiters of the credit market were the judges of morality and worthiness for everyone else. And that the real problem lay with the borrowers, with the inept mortgage-takers in the USA (abetted by a well-meaning but feckless government) and, of course, with the reckless Mediterranean peoples in Europe.

But even that's not the full story. We saved the banks, but to what end and with what result? If you want an analogy to the modern banking system in the USA and Europe, it's the machinery ministries of the late-period USSR, which absorbed about 40 per cent of total output in the last years of that country and produced nothing useful. Banks at their peak paid about 10 per cent of all wages in the USA and earned 40 per cent of the profits, so the Soviet comparison is not entirely out of scale. It is a big problem when you have to support large institutions – in this case by the differential between the interest you get on deposits and the interest you pay on loans – and when they don't do anything in return.

There is an additional institutional complication, which, of course, afflicts Europe and is distinctive to it. That is the confederacy that was created under the various European treaties. A confederacy is a system of quasi-sovereign states that do not act in mutual support of each other. So the constituent states operate on the voluntary extension of credit and voluntary repayment.

In the USA, the debt problem is a problem largely of private debts, of household debts. And the thing about households is that they either default on their debts, or they pay them down, or they die. And therefore, over time, household debts after a crisis tend to diminish. The burden they place on overall activity goes down over time, regardless of what the lenders do.

Sovereign debts in the Eurozone don't have that property. Instead, they persist until they are negotiated away, and to negotiate them away you have to have a negotiation, which means an agreement between the creditors and the debtors. The alternative is a series of cumulating Ponzis, or the *de facto* monetization of the debts by the central bank. These expedients may defer the crisis, but they act as a massive contingent tax or an actual tax on the crisis regions, and they are an absolute obstacle to economic recovery. This is a formula for an eventual confrontation.

These are complex questions; to come to the second part of my subtitle, 'pretence and fad in the wake of the Great Crisis'. In certain quarters these questions trigger a customary response, which is simple-minded utopian extremism. This response has two important dimensions. One is the assertion of a very simple framework for the problem. That framework – which I note with a twinge of regret because I have been working on this topic for twenty years – is clearly *inequality* as a broad abstract idea. It is a framework capable of mobilizing a certain political sensibility and of a certain level of abstract modelling. But if you resolve everything to a Gini coefficient or the share of the top 1 per cent of the top 1 per cent in income as recorded in income-tax filings, and if you treat those phenomena as the fundamental realities of all economic systems, what you are doing is sweeping everything else under the rug. This saves an enormous amount of intellectual effort and spares the need for a very large amount of historical and institutional knowledge.

And this feeds into the second part of the problem, which is a tendency to advance extreme and impractical measures either in ignorance of how extreme and how impractical they are, or in full knowledge of that, in order to incite the naive.

We have before us these days the proposition of a *global annual tax on the market capitalization of wealth in all of its marketable forms*. As an employment policy it's an act of genius. It would take a vast army of accountants to assess the capital value of outstanding financial wealth on the minute-to-minute basis that would be required. There would never be a shortage of work under this system. Enough said about that. More generally, one can see the phenomenon of the sweeping fad warmly received in certain corners of the mainstream, which can serve very effectively as a political diversion.

What's the alternative? The alternative is a certain kind of hardworking modesty. I'm the co-author, with Yanis Varoufakis and Stuart Holland, of a proposal we call the *Modest Proposal*. I'm not going to lay that out as the one true text, but the word 'modest' is important. It's a double irony. Obviously it's a reference to Jonathan Swift, with his eating of the Irish babies. But it's an irony on top of that because our proposal really is modest. It has elements addressed to specific identifiable problems within the framework of existing European institutions, charters and treaties. It would deal with the debt; deal with the banks; get an investment programme going; a jobs programme; it would set up a system of social insurance and solidarity that provide basic protections which certain parts of the European confederation now lack. These measures would buy time to have an un-panicked discussion of institutional arrangements. They would buy time to begin to refocus attention on the issues that we all know have to be dealt with if we wish to avoid disaster in the longer run and, in particular, the problem of global warming.

This is not easy stuff. It's the hard way to proceed. But it is, let me suggest, the path of common sense. And a diligent economist should be a common sense economist. An economist should be someone who knows a particular area and is capable of expressing, with some clarity and depth of knowledge in a persuasive way, the best way to proceed. It's an old and a Keynesian idea, for it was Keynes who wrote that we should rise to the level of dentists if we can. And it was Keynes who, in specific reference to the greatest problem that he faced which was mass unemployment, wrote, the idea that it is 'financially "sound" to maintain a tenth of the population in idleness for an indefinite period, is crazily improbable – the sort of thing which no man could believe who had not had his brain fuddled by nonsense for years and years' (1972, p. 90).

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3 Public debt, secular stagnation and functional finance¹

Peter Skott

Introduction

An influential study by Reinhart and Rogoff (2010) claimed to have shown that a rise in the ratio of public debt to GDP above 90 per cent is associated with sharp declines in economic growth. This finding was used repeatedly by policy-makers as a justification for strict austerity policies. House Budget Committee Chairman and former Republican vice-presidential candidate Paul Ryan declared that '[e]conomists who have studied sovereign debt tell us that letting total debt rise above 90 percent of GDP creates a drag on economic growth and intensifies the risk of a debt-fueled economic crisis'.² Meanwhile, on the other side of the Atlantic, European Commissioner Olli Rehn claimed that 'it is widely acknowledged, based on serious research, that when public debt levels rise about 90% they tend to have a negative economic dynamism, which translates into low growth for many years. That is why consistent and carefully calibrated fiscal consolidation remains necessary in Europe.'³

The Reinhart and Rogoff numbers were wrong. When Thomas Herndon, a graduate student at the University of Massachusetts, tried to replicate the study, he discovered simple spreadsheet errors and a peculiar weighting scheme (Herndon *et al.*, 2014). The corrected figures still show a negative correlation between economic growth and the debt ratio. But there is no cliff and this undermines the argument for austerity in the middle of a deep recession; if there is no cliff, the debt problem – if it is a problem – can be addressed when the economy has recovered, even if this postponement implies a temporary rise in debt.

More importantly, correlation does not imply causation. The policy argument against debt relies on the explicit or implicit assumption that high debt causes low growth. The causation, however, could go the other way – or a third factor could explain both low growth and high debt, or the correlation could be completely spurious. Reinhart and Rogoff do not make strong claims about causality in their paper, but interviews and comments on the results paint a different picture. In the words of Matthew O'Brien (2013), 'R–R whisper "correlation" to other economists, but say "causation" to everyone else.'

One may try to address the causation issue empirically and, doing that, Irons and Bivens (2010), Basu (2013), Dube (2013) and Ash *et al.* (2015) all find

evidence that slow growth tends to precede the rise in debt. This, indeed, is what one would expect from a short-run perspective: tax revenues fall and deficits widen in a recession, leading to a rise in the debt ratio. Results about short- and medium-run Granger causality, however, have no direct implications for the existence of possible long-run causal links between debt and growth. Theory is needed to help sort out long-run causation.

In line with contemporary macroeconomic theory, policy discussions usually assume that employment rates are unaffected by aggregate demand policy in the long run. Demand policy plays a useful role in short-run stabilization but the preferred instrument is monetary policy, complemented by automatic fiscal stabilizers. Discretionary fiscal policy is seen as redundant for stabilization, if not directly harmful, and fiscal policy should be geared towards attaining a target debt ratio (Schmitt-Grohe and Uribe 2007, Kirsinova *et al.* 2009). These conclusions, I shall argue, are quite fragile. More specifically, in this chapter I want to make three main points.⁴

Fiscal policy and public debt, first, may be required to maintain aggregate demand at levels consistent with full-employment growth. This result – which emerges from a range of different models, including overlapping generations model (OLG) specifications and stock-flow consistent (post-)Keynesian models – sheds light on ‘secular stagnation’ and the discussions that followed Summers’s (2013) intervention.

The presence of long-run aggregate demand problems, second, suggests a ‘functional-finance’ approach (Lerner, 1943). Following this approach, monetary policy may be used for short-run stabilization, but variations in interest rates take place around a level that induces the desired capital intensity (the desired choice of technique). This assignment for monetary policy leaves fiscal policy to ensure a long-run trajectory of aggregate demand that is consistent with full employment. The approach differs from analyses of debt dynamics in which the primary budget deficit is taken as exogenous. There is no good reason to assume exogenous deficits, and arbitrary policies typically produce bad results. The results of this kind of analysis therefore say little about the potential benefits of a sensible fiscal policy.

Both the rate of economic growth and the share of government consumption in total income, third, are among the determinants of the required long-run debt ratio. A low growth rate causes high debt, with clear implications for the interpretation of the observed empirical correlations between growth and debt: there are good theoretical reasons to expect a long-run causal effect of growth on debt. Austerity policies – reductions in government consumption – also increase the required debt ratio. Thus, austerity policies are counterproductive on their own terms. Changes in the structure of taxation, finally, have implications for debt. A standard recommendation has been to reduce the tax incidence on capital income; changes of this kind increase the debt ratio.

The focus throughout the chapter is on closed economies with debt denominated in a fiat currency controlled by the central bank. Full employment is assumed to be well-defined, the growth rate of the labour force is exogenously

given, and the policy question concerns how to maintain full employment using fiscal and monetary policy. Given these ‘domain’ assumptions, the analysis clearly does not apply directly to debt problems in Greece (that does not control its own currency) or employment problems in Brazil (with large amounts of hidden unemployment). Before addressing open-economy and dual-economy complications, however, it may be useful to consider a closed economy without large informal sectors and hidden unemployment. It should be noted also that I take as given the many non-fiscal and non-monetary policies that may influence aggregate demand. Rising inequality, for instance, is likely to affect both aggregate demand and household financial behaviour, and income distribution is itself affected by, *inter alia*, industrial and financial regulation and labour market policy. These interactions between income distribution and aggregate demand may have been critical for macroeconomic developments over the last 30 years. The focus in this chapter, however, is on fiscal and monetary policy.

Section 2 outlines a simple model of functional finance. Section 3 describes some possible extensions, discusses the relevance of some key assumptions and relates the analysis to contemporary macroeconomic theory, including the Krugman–Summers rediscovery of secular stagnation. Section 4 summarizes the main conclusions.

Functional finance

Lerner’s principle of functional finance,

prescribes, first, the adjustment of total spending (by everybody in the economy, including the government) in order to eliminate both unemployment and inflation ... second, the adjustment of public holdings of money and of government bonds, by government borrowing or debt repayment, in order to achieve the rate of interest which results in the most desirable level of investment; and, third, the printing, hoarding or destruction of money as needed for carrying out the first two parts of the program.

(Lerner, 1943, p. 41)

The short-run policy problem can be illustrated using a simple model with an investment-saving (IS) condition for the goods market and a central bank that sets the interest rate. Thus, let

$$Y = C(Y, T, r; W) + I(Y, r; K) + G \quad (1)$$

In equation (1), consumption C depends on (pre-tax) income Y , taxes T the real rate of interest r and the stock of household wealth W ; investment I depends on income, the interest rate and the stock of capital K ; government consumption G is exogenous. The stocks of wealth and capital are predetermined in the short run.⁵

If current inflation is already at the target, the policy problem becomes particularly simple: choose fiscal and monetary instruments to achieve full employment and the desired level of investment. If current inflation deviates from the target, temporary deviations from full employment may be desired. The details will depend on the determination of inflation – the specification of the Phillips curve – and the precise intertemporal welfare criterion. These complications are irrelevant for present purposes, and I shall take the targets Y^* and I^* as given. Thus, we need

$$I(Y^*, r; K) = I^* \quad (2)$$

$$Y^* = C(Y^*, T, r; W) + I^* + G \quad (3)$$

Equation (2) pins down the interest rate, and equation (3) can be met by using taxes T or government consumption G as the instrument.

The stock variables W and K evolve over time, but desirable full-employment trajectories typically converge to a steady-growth path with a constant output–capital ratio. (Some of) the long-run policy issues can, therefore, be addressed by examining the fiscal and monetary requirements for steady growth at the ‘natural growth rate’ (the rate of growth of the labour force in efficiency units). An obvious limitation of this kind of steady-growth analysis is that it leaves stability questions unanswered; the stability question will be considered briefly in section 3.

In steady growth the share of investment in income is determined by the capital intensity of production and the growth rate. Putting it differently, investment determines the evolution of the output–capital ratio, and achieving Lerner’s most ‘desirable level of investment’ translates into achieving the ‘most desirable capital intensity’ in the long run. As a particular example, if it is decided that social welfare calls for the maximization of sustainable consumption per worker (in efficiency units), the ‘golden rule’ stipulates that, with a well-behaved production function, the net marginal product of capital must be equal to the growth rate of the labour force (in efficiency units). If the marginal product were less than the growth rate, the economy would be ‘dynamically inefficient’: the capital intensity would be too high and a Pareto improving trajectory with higher consumption at all times would be feasible.

A comment on the capital controversy may be in order here. The controversy highlighted the difficulties of constructing an aggregate production function and demonstrated, in particular, how theories that rely on movements along a smooth production function face intrinsic problems and contradictions. But the insights from the capital controversy do not imply that only one technique is available; nor do they invalidate the long-run identification of a desirable path of investment with a desirable choice of technique or the influence of the cost of finance on the choice of technique. Even in the absence of a smooth aggregate production function, any given cost of finance is associated with a particular technique.⁶

Having fixed the real rate of interest and the output–capital ratio $(Y/K)^*$, and assuming that output, capital and employment (in efficiency units) all grow at the natural rate n , the equilibrium condition for the goods market can be written

$$\left(\frac{Y}{K}\right)^* = \frac{C}{K} + \frac{I}{K} + \frac{G}{K} = \frac{C}{K} + (n + \delta) + \gamma \quad (4)$$

where δ is the rate of depreciation and γ the ratio of government consumption to capital. The need for schools, bridges, police officers, etc. will typically depend on the size of the economy, and for present purposes it seems reasonable to treat the long-run ratio of government consumption to the capital stock as exogenously given. The appropriate size of government is fiercely contested, of course, but the different positions on this issue are largely tangential to questions of how to maintain full employment.

Turning to consumption, a simple specification assumes that private consumption depends on disposable income and private sector wealth,

$$C = (1-s)Y^D + \sigma W \quad (5)$$

$$Y^D = Y + rD - T \quad (6)$$

$$W = K + D \quad (7)$$

C , Y^D and W denote consumption, disposable income and wealth, and $(1-s)$ and σ the consumption propensities out of income and wealth (equation 5). Pre-tax private income is given by Y plus the interest on government debt rD , and disposable income is found by subtracting taxes T (equation 6). Disregarding incentive effects and assuming a homogeneous household sector, it is of no importance whether taxes are lumpsum or levied on a particular type of income (wages or capital income). The tax incidence, however, can be important for the debt dynamics if households differ in the saving behaviour (Ryoo and Skott, 2013; see also section 3 below). Total private wealth is the sum of fixed capital K and government debt D (equation 7).

Equations (4)–(7) can be combined with a standard accounting equation for the evolution of public debt. The result is a one-dimensional differential equation with a globally stable stationary solution (see [Appendix](#)),

$$\left(\frac{D}{Y}\right)^* = \frac{s[(\frac{Y}{K})^* - \gamma] - \sigma - n - \delta}{[(1-s)n + \sigma](\frac{Y}{K})^*} \quad (8)$$

Equation (8) gives the required debt ratio (which can be positive or negative, depending on parameters). One of the determinants of the ratio is the rate of economic growth. By assumption, the growth rate is exogenously given in this model and causation is clear: low growth causes high debt. This inverse relation

between growth and government debt is quite intuitive. Deficits are needed if households want to save ‘too much’, and the threshold defining ‘too much’ depends on the growth rate: a higher growth rate implies more investment which means that a smaller deficit is required to maintain the overall balance between investment and total (private and public) saving. Thus, the debt ratio should be high in economies like Japan with a high saving rate s and low population growth n .

A second result relates directly to austerity policies. Cuts in government consumption reduce aggregate demand and, to maintain full employment, private consumption must take up the slack. For this to happen, taxes have to fall more than the fall in government consumption (the balanced budget multiplier in reverse), the government deficit rises and there is an increase in the long-run debt ratio; austerity policies are counterproductive on their own terms.⁷

Aside from their intrinsic importance, third, changes in income distribution will influence aggregate demand and the required fiscal policy: an increase in inequality is likely to raise the saving rate and thereby the required debt ratio. A reduction in the real rate of interest, finally, may increase the capital intensity and reduce $(Y/K)^*$.⁸ A lower output–capital ratio, in turn, implies a decline in the debt ratio.

Discussion

Robustness

The model in section 2 has an old Keynesian flavour, and the results are clearly at odds with Ramsey-type models. But it is the Ramsey model that represents the extreme case. Market economies do not automatically produce full-employment growth with an optimal capital intensity, even in a world of perfect competition, ‘rational’ behaviour and perfect foresight (whatever one may think about these assumptions as an approximation to real-world economies). The key assumption behind the results in section 2 is simply that consumption depends on taxation and the level of debt. This rejection of Ricardian equivalence does not depend on irrational household behaviour.

Consider a neoclassical OLG setting with optimizing households and perfect foresight. It has been known at least since Diamond (1965) that the real interest rate required to maintain full employment may be low, even negative, in OLG models, and that public debt becomes desirable if this happens and the economy becomes dynamically inefficient. More generally, even if the economy is dynamically efficient in the absence of public debt, it will not – except by a fluke – generate a socially optimal capital intensity. Public debt – positive or negative – can be used, however, to achieve the desired intensity and the associated real rate of interest.

Empirically, the rate of return on capital exceeds the growth rate. This finding has been interpreted as evidence that actual economies are dynamically efficient (Abel *et al.*, 1989), and in a dynamically efficient economy the socially optimal

debt may well be negative: impatient households may save too little and the economy will not get to the desired capital intensity without additional saving by the public sector. The standard efficiency criterion, however, is based on an assumption of perfect competition and does not apply without modification in more realistic cases with imperfect competition: in the absence of perfect competition, high rates of profits may be due to monopoly rents rather than to a high ‘marginal product of capital’. This imperfect-competition argument is quite general but the issue can be seen most clearly if the production function is Leontief: profit-maximizing firms that maintain some degree of excess capital capacity and set prices as a markup on marginal cost can show a positive rate of return, even though with excess capacity the marginal product is zero (Ryoo and Skott, 2014a).

A neoclassical OLG model assumes full employment at all times, and household saving automatically translates into investment. In a Keynesian setting, by contrast, the saving and investment decisions are separated. Households save, but firms make the investment decisions, and a low (expected) return discourages investment. As a result, high saving rates can lead to aggregate demand problems rather than dynamic inefficiency. Returning to the illustrative Leontief case, firms will only want to expand their capital stock at a constant rate (a steady-growth requirement) if the capital stock is being utilized at the desired rate. If firms consider the utilization rate too low (too high), they will want to reduce (raise) accumulation until the desired rate has been reached; thus, the economy would not be in steady growth.⁹ In the absence of a public sector and with a given growth rate of the labour force, this steady-growth condition on the utilization rate defines a unique saving rate for goods market equilibrium.¹⁰ If households wish to save at a higher rate, public sector deficits are needed to solve the aggregate demand problem and avoid secular stagnation (Skott and Ryoo 2014b).

The analysis in section 2 can be extended in another direction. The model included two assets, fixed capital and government bonds. Fixed capital, however, does not enter households’ portfolios directly in a corporate economy. Households may be the ultimate owners, but the ownership is mediated through financial assets in the form of equity. Moreover, it may be reasonable to include ‘money’ as a financial asset in addition to equity and government bonds. Ryoo and Skott (2013) analyse a post-Keynesian stock-flow consistent specification along these lines. The results are qualitatively similar to those in section 2 and those derived for OLG models: the long-run debt ratio is decreasing as a function of both the growth rate and the share of government consumption.

Ryoo and Skott (*ibid.*) also examine the effects of changes in the structure of taxation, showing that functional finance can produce unstable debt–income dynamics in some cases. The stability of the debt ratio in section 2 derives from two feedback effects. An increase in debt raises consumption both via the wealth effect and because of the rise in interest payments associated with an increase in debt. Functional finance calls for a rise in taxes to offset this stimulus to aggregate demand; distribution effects, however, can weaken the magnitude of the required tax increase and the stabilizing effect, if saving rates differ across households.

A small tax increase on workers with a low saving rate may be sufficient to offset the demand effect from interest payments that go to high-saving rentiers. Consequently, an increase in debt can lead to a rise in the deficit, and the debt dynamics can become explosive. The remedy is straightforward: use taxes on capital income as the fiscal instrument, instead of taxes on wage income.¹¹

Staying with traditional Keynesian concerns, the steady-growth path may be unstable. Monetary policy rules – Taylor rules – can contribute to the stabilization of an unstable economy but may not be sufficient, even when interest movements are not constrained by the zero lower bound (Franke, 2015; Ryoo and Skott, 2015). Interactions between fiscal and monetary policy complicate the picture: Taylor rules that are stabilizing for low debt ratios can become destabilizing if the debt ratio exceeds a certain threshold. Instability, moreover, may arise from a combination of fiscal and monetary policy rules which separately would stabilize the system (Ryoo and Skott, 2015).¹²

Relevance

The doctrine of functional finance may not have been widely embraced in its pure form, but something close to it had widespread support within the profession during the heyday of Keynesian economics from the 1950s to the 70s. Tobin (1986) commented that in ‘almost every recession prior to the most recent pair of 1979–82, fiscal stimulus, temporary or permanent, was deliberately applied to promote recovery’ (p. 7) and, criticizing the Reagan–Volcker policy mix, commented that the tight-money-easy-budget combination ‘runs counter to long-run growth because it encourages present-oriented uses of GNP relative to future-oriented ones’ (p. 12). The policy mix, in other words, created too little investment, thereby deviating from functional finance.

Macroeconomic theory swung away from Keynesian ideas in the late 1970s, but aggregate demand still influences fiscal policy, both via automatic stabilizers and discretionary policy. The stimulus package in 2009 may be the most prominent US example of demand-motivated fiscal policy from this period, but the Bush tax cuts in 2001 and 2003 were also in part motivated (or at least presented as being motivated) by the weakness of aggregate demand at the time.

In OLG models an exogenous rise in public debt will be associated with a fall in the capital stock and an increase in the return on capital. In this way – by raising interest rates and crowding out investment in fixed capital – public debt can hurt future generations. The link between debt and interest rates does not exist under functional finance: debt is only allowed to increase if an increase is necessary to maintain both full employment and the interest rate associated with the optimal capital intensity. The current obsession with austerity should be a reminder, of course, that fiscal policy is not always conducted in accordance with the principles of functional finance. But if governments pursue policies of ‘imperfect functional finance’ – that is, if there is a tendency for fiscal policy to become more expansionary when unemployment is high – a plot of interest rates against the public debt ratio will show variations around a horizontal line. In the stylized

model of perfect functional finance the real interest rate is constant and all observations fall on the horizontal line. Fluctuations around the line arise if variations in interest rates are used for short-run stabilization and/or if there are variations in the value of r that is deemed optimal.

Figure 3.1 shows a scatter plot of the real interest rate on three-month treasury bills against the debt–GDP ratio for the USA, 1939–2014.¹³ The evidence fails to support crowding out. The USA has seen large variations in the debt ratio but the correlation with interest rates is, if anything, negative. This lack of support for crowding out is confirmed by more detailed studies. In the words of Engen and Hubbard (2005, p. 83), ‘some economists believe there is a significant, large, positive effect of government debt on interest rates, others interpret the evidence as suggesting that there is no effect on interest rates’. Bohn (2010, p. 14) makes a similar statement about the difficulty of finding significant interest rate effects of debt. He goes on to suggest that a ‘leading explanation is Ricardian neutrality’. Imperfect functional finance, however, would seem a more plausible explanation.

The relevance of functional finance can be questioned from another angle: policy-makers may, it is suggested, be unable to control the real rate of interest on public debt. Chalk (2000, p. 319) argues that some OECD countries ‘have seen an explosion in their indebtedness to such an extent that the solvency of the public sector is brought into question’, and Collard *et al.* (2015, p. 382) ‘take it as the starting point for our analysis that maximum debt is determined by lenders: a country can only borrow as much as lenders are willing to provide’. It is clearly correct that countries with debt in foreign currency can face solvency problems and may be unable to control the interest rate on their debt. But there is no indication in these (and many other) papers that the argument is restricted in this

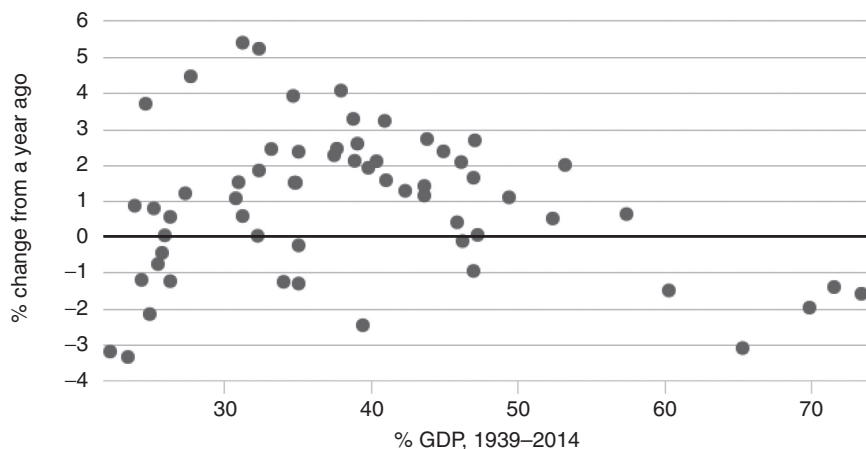


Figure 3.1 Real interest rates on three-month treasury bills and the debt–GDP ratio

Note: x axis shows Gross Federal Debt held by the public as % GDP; y axis shows Secondary Market Rate–Consumer Price Index for all urban consumers.

way to a particular group of countries (like Greece or other Eurozone countries). Chalk discusses the US economy and Collard *et al.* calculate their sustainable debt levels using the same criteria for the USA and Korea (with debt in their own currencies) and Greece and Ireland (whose situation is closer to that of a city like Detroit).

How can a sovereign state become insolvent if its debt obligations are denominated in a currency that it can print at will? By the same token, it is unclear how high debt can force a country to pay high interest rates; Japan has a gross debt ratio that exceeds 240 per cent – almost all of it in yen-denominated obligations – and the interest rate on its ten-year bonds is below 0.5 per cent. A country that controls its own currency always has the possibility of monetizing the debt. A standard counterargument suggests that the inflationary implications of monetization rule out this policy. Inflation, however, is caused by excess demand pressures in goods and labour markets, and under functional finance an overheating economy calls for contractionary policy. To be persuasive, the inflation argument would need to show that high debt erodes the ability of policy-makers to implement contractionary demand policies to counteract overheating. Otherwise the inflation arguments, like the sustainability arguments, merely point to the possibility of unhappy consequences from bad policy: Chalk and Collard *et al.* succeed in showing how strange results may follow when arbitrary policies are combined with various ad hoc assumptions about, *inter alia*, growth prospects and default risks.

Secular stagnation and structural liquidity traps

Since the 1970s macroeconomists have been obsessed with the need for ‘micro-economic foundations’. Inspired by the Lucas critique (Lucas, 1976), a generation of macroeconomists has preached the flimsiness of statistical correlation and the imperative of grounding all policy analysis in optimizing behaviour. Yet, on the issue of public debt, the same profession largely seemed to embrace Reinhart and Rogoff’s bivariate correlations as indicative of causal links. This conflict between the ruling theoretical paradigm and the nature of the policy debate is sharpened by the irrelevance of the level of public debt in the benchmark Ramsey model with Ricardian equivalence.

Recent interventions by Summers and Krugman (among others) become particularly interesting from this perspective. In his presentation at an IMF conference, Summers (2013) brought up the dangers of ‘secular stagnation’. The argument was somewhat tentative, but the mere fact that someone of Summers’s stature raised the issue at an IMF forum caused a stir. Summers (2015) elaborates on the argument and concludes that ‘finding ways to increase the demand to spend, no matter how counterintuitive, is likely to be an important part of the way forward’ (p. 65). Krugman has been making similar points in his discussions of liquidity traps and the lessons from Japan (e.g. Krugman, 2013a).

The rediscovery of ideas with a continuous history in heterodox circles should be welcomed. But the unawareness (or deliberate neglect) of the work that has

been done outside the mainstream is disappointing. Godley (1999) observed that the growth of the 1990s had ‘come about only as a result of a spectacular rise in private consumption *relative to income*’ and that ‘if, as seems likely, private expenditure reverts to its normal relationship with income, there will be, given present fiscal plans, a severe and unusually protracted recession’ (p. 1, italics in original). He went on to argue that fiscal policy ‘is much too restrictive to be consistent with full employment *in the long run*’ (p. 9, italics in original). Wray (2000), along similar lines, suggested that unsustainable increases in consumer indebtedness had been masking the underlying demand problems. Palley (2002, pp. 28–9) argued that the adverse demand effects of a worsening income distribution had been kept at bay by mechanisms – including household borrowing and the stock market boom – that were ‘approaching exhaustion’, and that ‘the US economy is entering a period when systemic demand shortage is likely to be the major difficulty’. Skott (2001, p. 134) argued that ‘the maintenance of sufficient aggregate demand to keep the economy at full employment’ may require fiscal intervention or a negative real interest rate (and hence a positive, lower bound on the rate of inflation). Along similar lines, Nakatani and Skott (2007, p. 307) used a formal (post-)Keynesian model to argue that Japanese stagnation since the 1990s was caused by a ‘structural liquidity trap’; the proximate problem was ‘one of aggregate demand, but the demand deficiency is structural’. More generally, the importance of income inequality for aggregate demand – with derived effects on the growth rate and/or the level of employment – has been a constant theme in the post-Keynesian and neo-Marxian literature.

It is not just a matter of acknowledging the existence of previous contributions. The non-mainstream work has not been superseded by a more complete and satisfactory account by Summers, Krugman and others. Summers’s (2015) analysis remains quite sketchy and has as its centrepiece the notion that ‘equilibrium real rates of interest’ have fallen. At best this seems unclear. The Euler equation may pin down an equilibrium rate of interest in a rarefied world of infinitely lived households and Ramsey optimization. Outside this world, however, fiscal policy and public debt are among the determinants of the equilibrium interest rate associated with long-run full employment. The implicit argument may be that shifts in the natural rate of growth or in factors (like increased inequality) that affect saving require a fall in interest rates (a rise in capital intensity) or a more expansionary fiscal policy. If this is the argument, it would seem that Summers is groping towards the story outlined above in section 2.

Krugman has argued forcefully that the slump is not the time to cut the debt.¹⁴ This argument is fully in line with functional finance, but Krugman also suggests that ‘the United States has a long-run budget problem’ that must be addressed at some point.¹⁵ The nature of the long-run debt problem is not made clear, however. This is not to say that there can be no adverse consequences of high public debt. But these consequences have to be specified and balanced against the benefits.

DeLong (2015) discusses fiscal policy in the medium run, arguing that the public sector needs to expand because of an increasing share of goods that are subject to some kind of market failure. This is an important point, but the analysis

that follows is based on the premise that in the medium run ‘the economy is not at the zero lower bound’ and that ‘monetary policy can adequately handle all of the demand-stabilization role’ (p. 1).

DeLong also suggests that an increase in public debt may be desirable in the USA because the interest rate on public debt has been below the growth rate. From a functional-finance perspective, however, the interest rate on public debt is itself a policy variable. Given any chosen level of government consumption, fiscal and monetary policy can be adjusted to control both aggregate demand and the interest rate, with public debt emerging as a relatively unimportant consequence of the chosen policy combination. Policy-makers could aim for a higher interest rate, but why finance the optimal level of government consumption (whatever determines this level) in a way that leads to higher interest payments? Is the aim to affect other interest rates that are also deemed too low? Are private investment and capital intensity too high? Alternatively, DeLong’s implicit assumption may be that, in the medium and long run, additional government spending must come at the cost of higher debt and a rise in interest rates. This assumption is at odds with the analysis in section 2: an increase in the share of government consumption in income is compatible with an unchanged interest rate, and it produces a long-run fall, rather than a rise, in the debt ratio.

To me, these (and many other) examples illustrate the continued relevance of the macroeconomic work that has been exiled from the ‘big’ journals since the 1980s. Some of that work is very applied and policy oriented; some of it theoretical and mathematically rigorous. Thus, it is not correct when Eggertsson and Mehrotra (2014, p. 1) suggest – undoubtedly in good faith – that there have been no earlier attempts ‘to write down an explicit model in which unemployment is high for an indefinite amount of time due to a permanent drop in the natural rate of interest’.

Conclusion

Statistical regularities may break down if there are changes in the economic environment, including policy regimes; the Lucas *critique*, in other words, is valid.¹⁶ But the attempted Lucas *solution* – the route that economics took from the late 1970s – represents a failed detour.¹⁷ And an immensely costly one. Following a period of reckless deregulation and rising inequality, economies have been devastated by misguided austerity policies.

Fiscal measures, according to the principle of functional finance, should be judged by their implications for employment, inflation and investment, not by moralistic notions of sound finance and the intrinsic virtues of balanced budgets; there is no special virtue in balancing the budget ‘over a solar year or any other arbitrary period’ (Lerner, 1943, p. 41). But perhaps it is not the objectives of functional finance that are controversial, at least in academic circles. Economic analysis of monetary policy looks for ‘optimal’ policies (or policy rules), given a welfare function that includes employment and inflation and a model of the economy; a growing mainstream literature approaches fiscal policy in the same way.

The important conflict concerns not the objectives of policy, but the description and understanding of the economy in which the policies are meant to operate. Unlike the functional-finance tradition, most of the recent literature considers a world in which there can be no aggregate demand problem in the long run and in which market mechanisms automatically produce full employment and an optimal choice of technique. This setting represents a poor approximation to the world in which we live. Thus, it is hard to disagree with Summers's (2015, p. 60) opening statement: 'The events of the last decade should precipitate a crisis in the field of macroeconomics.'

Abandoning the infinitely lived representative agent and Ricardian equivalence, robust results from a range of models show that fiscal policy can be essential for the management of demand, also in the long run. They show that low growth calls for a high debt ratio, that the required debt ratio increases if government consumption is squeezed, and that by raising the saving rates, an increase in inequality will also need to be compensated by more expansionary policies and an increase in the debt ratio.

Appendix

The government budget deficit – and hence the change in debt – is given by

$$\dot{D} = rD + G - T \quad (9)$$

Now let ε denote the budget deficit as a share of income,

$$\varepsilon = \frac{\dot{D}}{Y} = \frac{rD + G - T}{Y} \quad (10)$$

We want to derive time path of ε (and hence D) that is consistent with growth at full employment.

Using the definition of ε , disposable income can be expressed as $Y^D = (1 + \varepsilon)Y - G$ and the consumption–capital ratio becomes

$$\begin{aligned} \frac{C}{K} &= \frac{(1-s)[(1+\varepsilon)Y - G] + \sigma W}{K} \\ &= (1-s)(1+\varepsilon) \left(\frac{Y}{K} \right)^* - (1-s)\gamma + \sigma \frac{K+D}{K} \end{aligned} \quad (11)$$

Combining equation (11) and the equilibrium condition (4) we can solve for ε ,

$$\varepsilon = \frac{s((\frac{Y}{K})^* - \gamma) - \sigma - n - \delta}{(1-s)(\frac{Y}{K})^*} - \frac{\sigma}{1-s} \frac{D}{Y} \quad (12)$$

This expression shows the deficit–income ratio that is *required* in order to achieve full employment. Notice that both a higher debt ratio and a higher ratio of government consumption to income reduce the required deficit.

By definition, $\dot{D} = \varepsilon Y$ and it follows that

$$\begin{aligned} \frac{d}{dt} \left(\frac{D}{Y} \right) &= \frac{D}{Y} (\dot{D} - \dot{Y}) \\ &= \frac{D}{Y} \left(\varepsilon \frac{Y}{D} - n \right) \\ &= \frac{s((\frac{Y}{K})^* - \gamma) - \sigma - n - \delta}{(1-s)(\frac{Y}{K})^*} - \left(\frac{\sigma}{1-s} + n \right) \frac{D}{Y} \end{aligned} \quad (13)$$

This one-dimensional differential equation has a globally stable stationary solution,

$$\left(\frac{D}{Y} \right)^* = \frac{s((\frac{Y}{K})^* - \gamma) - \sigma - n - \delta}{[(1-s)n + \sigma](\frac{Y}{K})^*} \quad (14)$$

Notes

- 1 This chapter is based on a keynote address at the Third Nordic Post-Keynesian Conference, Aalborg, 22–23 May 2014. I wish to thank Michael Ash, Tom Michl, Greg Hannsgen, Finn Olesen, Arslan Razmi and Soon Ryoo for helpful comments and suggestions.
- 2 <http://thinkprogress.org/economy/2013/04/16/1875541/11-republicans-who-cited-a-flawed-study-to-push-for-drastic-spending-cuts/>
- 3 http://ec.europa.eu/commission_2010-2014/rehn/documents/cab20130213_en.pdf
- 4 The analysis draws on work over the last 15 years, including Skott (2001), Nakatani and Skott (2007), Ryoo and Skott (2013, 2015) and Skott and Ryoo (2014a, 2014b). Similar positions have been presented by a number of (post-)Keynesian writers, including Schlicht (2006), Godley and Lavoie (2007), Wray (2000), Palley (2002, 2012), Michl (2013), Nersisyan and Wray (2010), Arestis and Sawyer (2010).
- 5 Changes in interest rates lead to capital gains and losses on long-term assets, and wealth will not be predetermined. Thus, for simplicity, it is assumed that all financial assets are short term.
- 6 For simplicity, I take the cost of finance to be equal to the real rate of interest. Skott (1989, [chapter 5](#)) and Skott and Ryoo (2014b) discuss the choice of technique.
- 7 Schlicht (2006) derives these results for changes in the growth rate and government consumption in a closely related model.
- 8 As we know from the capital controversy, this need not happen.
- 9 The notion of desired utilization has been the subject of intense debate in the post-Keynesian literature. ‘Kaleckians’ have suggested that there is no well-defined desired rate or, alternatively, that the desired rate is subject to path dependency (e.g. Dutt 1997, Hein *et al.* 2012). A classical/Marxian/Harrodian position views the desired utilization rate as largely structurally determined; there may be some indeterminacy or path dependency, but the range of variation is quite narrow (e.g. Committeri 1986, Kurz 1986, Skott, 2012).
- 10 If u^* denotes the output–capital ratio at the desired utilization rate, steady growth at the natural rate n requires that

$$n + \delta = \dot{K} = \frac{I}{Y} u^*$$

or, in equilibrium,

$$s = \frac{S}{Y} = \frac{I}{Y} = \frac{n + \delta}{u^*}$$

- 11 In Lerner's formulation, 'if for any reason the government does not wish to see private property grow too much (whether in the form of government bonds or otherwise) it can check this by taxing the rich ... The rich will not reduce their spending significantly... By this means the debt can be reduced to any desired level and kept there' (Lerner, 1943, p. 49).
- 12 Other recent papers have analysed stabilization policy in unstable economies, including Asada *et al.* (2010), Hannsgen (2014), Costa Lima *et al.* (2014), Franke (2015) and Jayadev and Mason (2015).
- 13 The picture is qualitatively similar for other interest rates.
- 14 E.g. <http://www.nytimes.com/2008/10/17/opinion/17krugman.html>
- 15 'Yes, the United States has a long-run budget problem. Dealing with that problem is going to require, first of all, sharply bending the curve on Medicare costs; without that, nothing works. And second, it's going to require some combination of spending cuts and revenue increases, amounting to at least 3 percent of GDP and probably more, on a permanent basis' (<http://krugman.blogs.nytimes.com/2010/07/21/notes-on-rogo-off-wonkish/>).
- 16 The novelty of the Lucas critique should not be exaggerated. Similar points had been made by others, including Lerner (1943, p. 48), who argues that the introduction of Keynesian policy rules will affect expectations and change private sector behaviour: 'since one of the greatest deterrents to private investment is the fear that the depression will come before the investment has paid for itself, the guarantee of permanent full employment will make private investment much more attractive, once investors have got over their suspicions of the new procedure. The greater private investment will diminish the need for deficit spending.' 'Goodhart's law' is another example: 'Any observed statistical regularity will tend to collapse once pressure is placed upon it for control purposes' (Goodhart, 1975).
- 17 The dominant strand of post-Keynesian economics also has shortcomings (Skott, 2012, 2014). An alternative 'behavioural and structuralist' approach is outlined in Skott (2015).

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4 Neoliberal economic policy, growth models and the crisis in the Euro area¹

Engelbert Stockhammer

Introduction

The financial crisis began in the USA in the market for derivatives of subprime mortgages and has turned into the worst recession since the 1930s in all advanced economies. However, seven years after the crisis began the economic situations in Europe and the USA differ sharply. While the USA has had a weak recovery, the crisis has escalated in Europe. Here the crisis has mutated into a sovereign debt crisis of the Southern European Euro member states. In these countries the recession has caused devastation comparable to that of the Great Depression. This chapter offers a post-Keynesian analysis of the crisis that puts neoliberalism at the very heart of the problem – both as a cause of the imbalances at its root and as an economic policy regime that has turned the financial crisis into a sovereign debt crisis.

Neoliberalism has given rise to an unstable finance-dominated accumulation regime (Stockhammer, 2008; Hein, 2012). It has not led to a sustained profit-led growth process, but to two complementary growth models that rely either on financial bubbles and rising household debt ('debt-driven growth') or on rising export surpluses ('export-driven growth'). In Europe, their emergence is closely linked to the process of European integration along neoliberal lines. European economic policy has fostered financial deregulation and, as a consequence, financial flows that fuelled the housing bubbles in Spain and Ireland. It has also fixed exchange rates and created an economic policy regime that has allowed the German ruling classes to pursue an aggressive neo-mercantilist strategy by suppressing wage growth in the wake of German unification.

The European Monetary Union (EMU) came with an economic policy package that has downward flexible wages or 'internal devaluation' as the core adjustment mechanism. This creates a deflationary bias in the case of shocks. It also has constrained national fiscal policies from counteracting the recession and the European Central Bank has been refusing to play the role of lender of last resort (LOLR) for governments and thereby paved the way for sovereign debt crises.

This chapter is structured as follows. Section 2 discusses neoliberalism and the EMU's economic policy regime. Section 3 analyses the export-driven and debt-driven growth models in Europe. Section 4 highlights how the neoliberal

European economic policy regime has amplified the crisis and discusses the dialectics of public and private debt. Section 5 discusses the costs of neoliberal policies. Section 6 concludes by outlining a Keynesian alternative.

European neoliberalism

There is an extensive debate on the nature of neoliberalism (Foucault, 2008; Harvey, 2005; Duménil and Lévy, 2004; Glyn, 2006).² Foucault (2008) highlights that markets are regarded as a desirable form of social organization, but they are not seen as natural and self-regulating. Institutions and competition policy play a critical role creating and maintaining markets. Neoliberalism is thus, in a certain sense, interventionist, but at the same time posits the superiority of market relations. Government intervention is then pursued on a rule-based and technocratic form (to counteract populist and opportunistic impulses of politicians and the electorate), including an inflation target and a monetary policy rule for central banks.

Neoliberalism can mean different things in different places (Fourcade-Gourinchas and Babb, 2002) and give rise to dysfunctionalities. For the macroeconomic purpose of this chapter the key characteristics of the ‘neoliberal mode of regulation’ are the weakening of labour, internal and external financial deregulation and the EMU economic policy regime (Stockhammer, 2008).

In Anglo-Saxon countries neoliberalism came with an outright attack on organized labour. The miners’ strike in the UK and the air traffic controllers’ strike in the USA marked bitter defeats for labour. In continental Europe the organizational strength of labour was eroded more gradually by decades of high unemployment, welfare state retrenchment and globalization. The effects of these developments on income distribution have been profound (Atkinson *et al.*, 2011; Stockhammer, 2013b).

Financial deregulation has two dimensions: liberalization of international capital flows and the deregulation of domestic financial systems. This has led to fundamental changes in the financial landscape. At the international level, capital flows have been liberalized; domestically, changes in the financial framework have given rise to a rapid pace of financial innovation and, indeed, speculation. Both developments have strengthened the influence of the financial sector. Real interest rates rose well above the growth rates of real GDP. Financial ratios such as stock market capitalization, derivatives turnover or cross-border lending have soared. Overall, the income shares of financial capital have increased considerably. Moreover, the influence of financial investors on non-financial businesses has increased substantially under the so-called shareholder value revolution (Lazonick and O’Sullivan, 2000). These structural changes have been summarily called financialization and shape the structure of accumulation (Stockhammer, 2013a; Hein, 2012).

In continental Europe neoliberalism is closely related to the specific forms of European integration. The free trade agreements of the Single European Act, competition policy and the services directive reflect the liberal orientation. The Maastricht Treaty and the Stability and Growth Pact combined an

anti-inflation priority of monetarism with restrictions on fiscal policy that are more ordoliberal in character. Crucially, this policy package did not provide adjustment mechanisms for imbalances or shocks.

The economic policy regime in the Euro area is enshrined in the Maastricht Treaty, the Stability and Growth Pact and the Lisbon Treaty. Recent changes due to the Treaty for Stability, Coordination and Governance in the Economic and Monetary Union (TCSG) will be discussed below. The basic structure can be summarized as follows. First, fiscal policy is essentially national policy. The EU budget, restricted to 2 per cent of GDP, is too small and too inflexible to serve a macroeconomic function. It is simply not designed to provide a counter-cyclical stimulus in case of crisis. Second, national fiscal policies are restricted in the short term as the budget deficit must not exceed 3 per cent of GDP (except in severe recessions) and they must aim at a balanced budget in the medium term. Third, monetary policy is centralized at the EU level and it is effectively inflation targeting, with the independent European Central Bank (ECB) having set the inflation target close to or below 2 per cent. Fourth, financial markets are liberalized, internally as well externally. Thus the EU foregoes instruments of controlling credit growth or allocating credit. Fifth, there was a no bail-out clause stating that neither other national governments nor the ECB will support individual countries which are facing problems in financing themselves (this is the only area where we will see fundamental changes in the policy setup). Sixth, labour markets are supposed to be flexible. The European Commission (EC) and the ECB regard wage flexibility as the cure to economic imbalances. By this they mean *downward* wage flexibility (they have not called for higher wages in Germany). But this anti-labour bias should not hide the fact that within the economic policy regime of EMU there is an economic logic to the argument: with fiscal policy restrained, exchange rate policy abolished and monetary policy centralized, the standard economic policy tools are all paralysed. The burden of adjustment has thus to be carried by the labour market and wage policy.

The EU policy package should be regarded a form of neoliberalism. It is characterized by a strong belief in the efficiency of the market system, a distrust of state activity and an anti-labour bias. Interestingly, Huerta de Soto (2012) offers a neo-Austrian defence of the Euro on the grounds that it constrains government intervention. The policy package was criticized sharply by Keynesian economists (Arestis *et al.*, 2001; Bibow, 2007; Hein and Truger, 2005; Hufschmidt, 2005; Stockhammer, 2011a): first, they predicted, reliance on labour market flexibility in the adjustment will not generate full employment. Keynes (1937, chapter 19) had argued in *The General Theory* that wage flexibility in a crisis is likely to make things worse: wage cuts will lead to shrinking consumption demand and to deflation, which may depress demand further in a debt-burdened economy as the real (inflation-adjusted) value of debt increases. Second, the EU policy system would create a deflationary bias. In the case of imbalances within the EU, with some countries running trade deficits and others running trade surpluses, the burden of adjustment would effectively fall on the country with trade deficits. This creates a deflationary bias. The adjustment of the surplus countries would be

inflationary and growth-oriented, whereas the adjustment of the deficit countries would be deflationary. They would have to dampen demand (to decrease imports) and lower their prices and wages (to restore competitiveness). The exclusive reliance on wages as the adjusting variable would create a downward pressure on wages and result in prolonged unemployment without solving the EU's problems.

Much of what the EU has done has been about imposing constraints on the scope of economic activity of nation states. The aim was not to abolish the nation state, but to change it. This policy has a class bias and has weakened nation states. The fiscal rules have restricted their abilities to react in the face of a crisis and the loss of monetary sovereignty has meant that national governments have lost national LOLRs. In times of sovereign debt crisis this can lead to a fundamental weakening of the state. Together, these two measures undermine the ability of nation states to stabilize economic activity. They lose the ability to forge social compromise and to create stability. The Stability and Growth Pact and the ECB charter were meant to circumscribe the abilities of nation states. But they have also proved to be profoundly dysfunctional as they effectively impose pro-cyclical policies in the event of a crisis.

The sources of imbalances: debt-driven growth in the periphery and export-driven growth in the north

Neoliberalism has given rise to a polarization of income distribution expressed in rising profits and top incomes, but that has nowhere translated into an investment boom. Keynesians have long viewed the investment decisions of capitalists as driven by animal spirits and demand. This still seems an accurate description. Neoliberal economic reforms have, thus, not resulted in the establishment of a profit-led growth regime, but rather economic growth has relied on external demand stimulation. It has resulted in two distinct growth models, which are both unstable: a debt-driven growth model and an export-driven growth model. The interaction of these models has given rise to the imbalances that are at the root of the crisis.

The post-Keynesian macroeconomic framework is capable of explaining these developments (Lavoie and Stockhammer, 2013). Bhaduri and Marglin (1990) proposed a macro model that allows for wage-led, as well as profit-led demand regimes. Simply put, in a wage-led economy higher wages will have expansionary effects as workers have a higher consumption propensity than capitalists. In a profit-led economy, profits get reinvested and thus drive the growth process. More technically, a rise in the wage share has a negative effect on investment (higher profits do lead to higher investment), a positive effect on consumption (because capitalists save more than workers) and a negative effect on net exports (because the higher wage share implies a loss of competitiveness). The net effect – that is, whether an actual economy is wage-led or profit-led – will depend on the relative size of the partial effects and may differ by country and time period.

This model has given rise to a substantial empirical literature (Bowles and Boyer, 1995; Stockhammer and Onaran, 2004; Naastepad and Storm, 2006–7;

Barboso-Filho and Taylor, 2006; Hein and Vogel, 2008; Stockhammer and Stehrer, 2011, Onaran and Galanis, 2012). The majority of empirical studies find that private domestic demand is wage-led. The size of the export effects will critically depend on the geographical unit that is analysed: for individual countries, in particular for small open economies, they will be substantial, whereas for the world economy overall they play no role. This is important in the European context. Individual European countries may well be profit-led because of exports, but the Euro area overall is a relatively closed economy and empirical evidence suggests that demand is wage-led (Stockhammer *et al.*, 2009; Onaran and Galanis, 2012).

If the world economy is in a wage-led demand regime, the question is: how have economies grown at all in an area of worsening income distribution? It is important to realize that in the neoliberal era growth has *not* been driven by business investment. Where we observe growth it has not been the result of a profit-led growth regime. Rather, two different growth models have emerged. On the one hand, the Anglo-Saxon countries developed a debt-driven growth model, which was driven by increasing household debt, strong consumption demand and, in some cases, a residential investment boom. On the other hand Germany, China and Japan adopted an export-driven growth model, where domestic demand is weak and growth relies on export surpluses. Germany pursued this strategy particularly aggressively, with average real wages stagnating in the decade prior to the crisis and the sharpest increase in wage inequality among advanced economies (OECD, 2008). Hein and Mundt (2012) offer an empirical classification of the growth models of G20 countries.

The peripheral European countries also followed a debt-driven growth model. While the level of household debt has been traditionally low, the increase in household debt, which is the variable relevant for consumption expenditures, has grown rapidly. Indeed, Table 4.1 shows that the increase in household debt in the Southern European countries was not only above the increase in the Northern European countries (with the exception of the Netherlands), but it also exceeded that of the USA and the UK. The rapid expansion of credit was made possible to a significant extent through European financial integration. The EC's policy (namely the Financial Services Action Plan) aimed at creating a single financial

Table 4.1 Increase in household debt (% GDP), 2000–8

<i>Northern European countries</i>		<i>Anglo-Saxon countries</i>		<i>Southern European countries</i>	
Germany	–11.3	USA	26	Ireland	62.7
Netherlands	32.8	UK	28.1	Greece	35.5
Austria	7.9			Spain	33.8
France	15.8			Portugal	27.4

Source: Eurostat, except USA: FoF

market for Europe (Grahl, 2009). In theory, this means uniform interest rates across Europe and, in practice, it most of all meant massive capital flows from Germany, France and the UK to the peripheral European countries. While this initially fostered manufacturing investment (as in the case of Spain and Ireland), it soon fuelled an unsustainable property boom.

At the same time the Southern European countries experienced substantially higher price and wage inflation. As a consequence the south lost competitiveness. This is illustrated in Table 4.2, which gives the growth in unit labour costs (ULCs), a standard measure of cost competitiveness, for 2000–8. The Southern European countries all had a growth of more than 24 per cent, compared to a Euro area average of 16 per cent and Germany at 3 per cent. Together with fast economic growth in many southern countries, this resulted in substantial current account deficits, which were mirrored by export surpluses in the north. These surpluses were recycled as private credit flows back to the Southern European countries, where they financed property bubbles and rising household debt.³ In fact, the situation differed by country, but a massive increase in *private* household debt (in Southern European countries) is the hallmark of this growth. With the exception of Greece, public debt was declining.

Stockhammer and Wildauer (2015) provide a neo-Kaleckian framework to analyse the effects of distribution and wealth on aggregate demand and its components by extending the Bhaduri–Marglin model to include personal income inequality as well as measures of property and financial wealth and private debt. They estimate this model for a panel of 18 OECD countries for the period 1980–2013. They use their panel results to explain the growth performance in different country groups. They provide an empirical assessment of the relative growth contributions of these effects for four different country groups: Anglophones (Australia, Canada, the UK and the USA), Euro-North (Austria, Belgium, Germany, Finland and the Netherlands), Euro-South (Spain, Italy and Ireland) and non-Euro-North (Denmark, Switzerland, Norway and Sweden).

It turns out that changes in debt and property prices explain most of the differences between country group performances. Changes in personal and functional income inequality have had comparably small effects. Changes in property prices, stock prices and debt explain a rise in consumer spending of 12.8 per cent, 10.2 per cent and 20.4 per cent for the Anglo-Saxon, non-Euro-North and Euro-South groups. For investment these asset variables explain 11.9 per cent and

Table 4.2 Increase in unit labour costs (%), 2000–8

Northern European countries		Southern European countries	
Germany	3	Ireland	33
Netherlands	19	Greece	26
Austria	9	Spain	30
Euro area (12)	16	Italy	27
		Portugal	24

11.4 per cent for Anglo-Saxon and non-Euro-North while they did not affect or even diminished investment spending in the other two groups. Taking into account the multiplier mechanism, asset effects contributed almost 20 per cent to GDP growth in the Anglo-Saxon economies and 13 per cent in Euro-South, but only 1.4 per cent in Euro-North and 3 per cent in non-Euro-North. Property prices and household debt played the dominant role in explaining growth prior to the crisis.

The crisis amplified by the EU policy regime

The Global Financial Crisis began in the US subprime sector. In the early phase (2008–9) the crisis hit debt-driven and export-driven economies equally hard. Thereafter, the export-driven economies were quicker to recover because they were not suffering from a debt overhang. But there are also important differences in economic policy. The USA pursued moderate counter-cyclical fiscal policy paired with aggressive monetary policy in the form of so-called quantitative easing (QE), with the Federal Reserve System (Fed) increasing its balance sheet by around 20 percentage points of GDP. The USA thus experienced a weak recovery. Economic policy in Europe was less anti-cyclical in orientation, certainly after 2009. Most countries adopted stimulus packages in 2008–9, but fiscal policy turned to austerity more quickly than in the USA and, to make matters worse, it became most restrictive in those countries where the crisis hit hardest. The GIIPS countries (Greece, Ireland, Italy, Portugal and Spain) ran the most restrictive fiscal policies despite the fact that they would have been most in need of stabilization. But Europe also pursued a very different monetary policy and, more importantly, its effects were different from those in other countries. Monetary policy in the EU tried to avoid QE, as long as it could. However, as the Euro crisis spiralled out of control, the ECB did begin to expand its balance sheet, but more hesitantly than in the Anglophone countries. Overall, we get a seemingly paradoxical picture where the crisis began in the USA, but turned into a depression only in Europe. Moreover, we observe sharply different performances across Europe: a fragile recovery in the north and a depression in the Southern European countries.

While the crisis vindicated Keynesian criticisms of orthodox policies, the EU's policy package has become more rigid and doctrinaire. The TSCG has tightened the grip on fiscal policy (Grahl, 2012). Constitutional debt breaks are to be introduced in the Euro member states; there will be an automatic obligation to austerity if public debt exceeds the 60 per cent target (the 1/20 rule) and the European Commission will be involved in the national budget process (the European Semester). The only policy area where there has been some change in direction is with respect to the no bail-out clause. The EU has, belatedly, set up a collective fund for member states that have lost access to market finance (European Financial Stability Fund, EFSF, European Monetary Fund, EMF), which effectively undermines the no bail-out provision.

Two comments are in order. First, loans by these funds have misleadingly been called 'rescue packages'. But these 'rescue packages' have in no case reduced

public debt. For example, in the case of Greece public debt has increased from 113 per cent in 2008 to 160.6 per cent in 2012, in Ireland from 44.2 per cent to 116.2 per cent (according to the EC's 2012 spring forecast). Greece has not received financial aid, but rather public loans at rates well above the market rates of Germany. These loans are used to repay private lenders. Essentially, the 'rescue packages' have been gigantic machineries to transform private debt into public debt. Credit Suisse estimates that the second Greek rescue package reduced the private sector share in the holding of Greek government debt from 62 per cent to 30 per cent (Credit Suisse Economics Research, 2012).

The crisis has illustrated the strong interdependence of the government sector and the financial system. More theoretically put, the crisis has highlighted the tension between the public and private nature of money. The crisis thus raises interesting questions about the nature of money and the state. Economic theory is divided on the theory of money. Mainstream economics regard money as emerging from private transactions. In classical economics gold can become money because it has value as a commodity. By contrast, post-Keynesian theory and other heterodox traditions stress that debt relations and, in particular, government debt and the ability of governments to collect taxes in their own currency are the foundation of money (Goodhart, 1998; Graeber, 2011, [chapters 2 and 3](#)). Ingham (2004) stresses the state origin of money, but highlights that the social mode of production of credit money is through private banks. Money, thus, is a contested field that has sovereign power as a constituent element, but private institutions are critically involved. This is also reflected in central banks. Most central banks were originally founded in order to strengthen state finances and later acquired bank supervision functions. Central banks were first LOLRs for the state and only later became LOLR for private banks. Most countries' central banks are public-private hybrids, often with commercial bank representation on the crucial decision-making bodies. However, as part of EMU, central bank independence was strengthened and the ECB was forbidden to fund governments directly. That is, by design it was meant to be a LOLR for the private sector only. Money and monetary policy was to be insulated from the political process.

While these debates on the nature of money may appear academic, closely related issues surface in the present crisis in how public and private debt are related. Public debt is a private asset. Most government bonds are held by private banks and pension funds. Public debt is essential for the working of the private financial sector. It forms the most important collateral used on money markets and repo markets (Gabor, 2014; Mehrling, 2011). The credibility of public debt is thus essential for the functioning of private debt markets. A sovereign debt crisis also poses a mortal threat to the respective country's banks, as they usually lose access to the private financial markets. In the Euro area this is amplified by contagion effects as the credibility of one country's sovereign debt calls into question the quality of another country's assets. But this dialectic between private and public debt goes further. The credibility of public debt depends, in many cases, on the assessment of private financial institutions. In the case of Spain and Italy, debt levels were clearly sustainable at the interest levels prior to the crisis. After the financial

crisis, interest spreads on Southern European countries increased sharply; essentially the banks started speculating against the governments that had rescued them (Weeks, 2014). There clearly will be some interest rate (and the 7 per cent rate that is frequently used as a benchmark seems plausible) where debt levels are unsustainable (in the sense of unserviceable).

From the autumn of 2008 central banks in the USA, the UK and the Euro area aggressively expanded their balance sheets. The orders of magnitude are impressive: central bank balance sheets tripled in size, expanding from some 6 per cent of GDP to more than 20 per cent. Central banks initially focused on buying private assets, but from spring 2009 the Fed and the Bank of England (BoE) increasingly bought government bonds in support of government policy. The ECB was much more hesitant in the early phase of the financial crisis. It started QE later, expanded its balance sheet less and has hardly bought government bonds. At the same time (like its American and British counterparts), it has expanded the range of credit to private financial institutions (Pisani-Ferry and Wolff, 2012). In short, the ECB is playing the role of LOLR for the financial sector, but – in contrast to the Fed and the BoE – not for the government sector. Only in August 2012, when the Greek sovereign debt crisis escalated and threatened to bring down other Euro member states as well, did the ECB commit to buying government bonds (under the condition that those countries submitted to the conditionality of the bail-out packages – the so-called Outright Monetary Transactions, OMT, programme). For several European countries the situation is now similar to that of developing countries which have debts in a foreign currency.

Assessing the damage due to neoliberal policies

The crisis is an outcome of the fact that Europe has built half a European state, while at the same time seriously damaging the ability of nation states to counter an economic crisis and to underwrite social compromises. This is not an accident. The *ordo-liberal* design of European economic policy was designed to restrain nation states. In terms of its class politics this could be read as the outcome of a strategy of European national capital classes to use European integration to undermine excessively corporatist and Keynesian nation states. The incapacitation of nation states has several dimensions. The restrictions on fiscal policy directly impede governments on the expenditure side. In particular it has forced those countries most desperately in need of expansionary fiscal policies to pursue austerity. The loss of monetary sovereignty means that countries cannot set interest rates and, more importantly in times of sovereign debt crisis, they don't have the LOLR facility to support fiscal policy. This effectively turns what would have been (under the European Monetary System, EMS, regime) an exchange rate crisis into a sovereign debt crisis, with a great deal of similarity to a crisis with foreign debt. Third, the set of rules effectively leaves few policy variables at the states' availability and encourages a wage policy that aims at competitive devaluation.

Stockhammer and Sotiropoulos (2014) estimate the costs of rebalancing via internal devaluation. This economic policy strategy tries to achieve a reduction of

ULCs in the deficit countries. Stockhammer and Sotiropoulos take an old Keynesian approach to identify the costs involved. They calculate the output loss necessary to eliminate the current account deficit (of 2007) of the GIIPS countries by estimating three macroeconomic equations for the panel of Euro area member states for the Euro period (1999–2011). First, they estimate the current account as a function of domestic demand and of ULC. Second, they estimate a wage Phillips curve, which explains ULCs by unemployment, import prices and lagged ULCs. Third, they estimate an Okun's Law relation that links changes in unemployment to changes in growth. Combining the effects of these equations, they identify direct as well as indirect effects of demand on the current account balance. The direct effect is that a decrease in demand will reduce imports and thereby improve the current account. The indirect effect is that the decrease in demand will lead to an increase in unemployment, which reduces wage inflation and thus price inflation. Their results indicate that the economic costs of this adjustment to the GIIPS countries, which are those that ran current account deficits before the outbreak of the crisis, are equivalent to the output loss of the Great Depression.

They find that in order to eliminate the average current account deficit of the GIIPS group, a GDP reduction of 47 per cent is needed. Based on a sample of recession years only, they get an estimate of a required 23 per cent reduction in GDP to balance current accounts. This is still an enormous number. These costs are so large that there is only one conclusion – deflationary adjustment in the deficit countries will have devastating economic and social effects. If European rebalancing is to be achieved without strangulating the deficit countries, the surplus countries will have to do a much larger part of the adjustment.

There are two ways of rebalancing: a deflationary and an inflationary one. Inflationary adjustment involves higher wage growth and expansionary policies in the surplus countries. An adjustment of the surplus countries would increase growth and it would come with higher inflation, but it would allow rebalancing without a Great Depression in parts of Europe. Europe desperately needs inflationary adjustment.

So how bad has actual performance been in European countries? [Table 4.3](#) lists annual growth rates for the decades prior to the crisis, the growth performance since the crisis (2008–14) and the deviation from pre-crisis trend growth. Taking the pre-crisis decade as trend growth is somewhat arbitrary, but it is worth pointing out that that period did not see particularly high inflationary pressures by historic standards. Therefore the growth process was consistent with supply-side constraints. The growth rate of that period can therefore be regarded as a conservative estimate of trend growth. The gaps between actual output and trend output are enormous. For the Euro area (EA18) overall it is 14.7 per cent for the European Union (EU28) it is almost identical at 14.6 per cent. While Germany has a substantial gap of 6.3 per cent, France has a gap of 10.9 per cent and Italy 15.3 per cent. The gaps become epic in the Southern European countries and Ireland, with Spain 29.6 per cent, Ireland 34.8 per cent and Cyprus 37.9 per cent. These countries have lost around one third of their

Table 4.3 Output gaps in major European countries (%), 2014

	<i>Annual growth 1998–2008</i>	<i>Cumulative growth 2008–14</i>	<i>Gap 2014: deviation from pre-crisis trend</i>
European Union (28)	2.3	0.2	14.6
Euro area (18)	2.1	–1.5	14.7
Germany	1.6	3.5	6.3
France	2.0	2.0	10.9
Italy	1.2	–7.7	15.3
Spain	3.6	–6.2	29.6
Ireland	5.1	0.2	34.8
Greece	3.5	–25.2	48.2
Cyprus	4.1	–10.5	37.9

Note: Gap is defined as difference between actual output and trend output. Trend output is calculated as output if growth had continued at the 1998–2008 rate

income relative to trend. For Greece the gap is 48.2 per cent – that is, Greece’s GDP is about half of what it would have been if growth had continued at the pre-crisis rate. These numbers illustrate the enormous cost that the European economic policies have imposed on member states.

There is an alternative

This chapter tells a rather gloomy story. Europe now faces several challenges. It has to rebalance its trade flows and cost and price levels. It has to deal with high private as well as public debt. In principle, the cost imbalances can be dealt with by inflationary adjustment (that is, adjustment in the surplus countries to increase prices and output) or by deflationary adjustment in the deficit countries. The latter is presently being pursued under the name of ‘internal devaluation’. The high levels of debt, when considered unsustainable, can be dealt with by letting economic units go bankrupt, by debt restructuring or by bail-outs.

A Keynesian economic strategy aims for an inflationary adjustment strategy (simply put: higher wage growth in Germany and expansionary fiscal policy across Europe). For short-term crisis management, ECB intervention on public debt markets is essential, but Europe needs a complete overhaul of its economic policy mix, one that thoroughly breaks with neoliberalism.

First, there needs to be a rethink of wage policy. The present policy regime preaches wage flexibility and has led to declining wage shares across Europe. Instead, Europe needs a system of transnationally coordinated wage bargaining that takes into consideration issues of equity and trade balances. This would imply a strengthening of collective bargaining structures and ought to be complemented by a European system of national minimum wages (as many countries, including now Germany, have substantial segments of workers that are not covered by collective bargaining agreements; Schulten and Watt, 2007). The macroeconomic aim of European wage coordination ought to be higher wage growth in the trade surplus countries, which would help prevent imbalances.

Simply put, Southern European countries need much higher wage growth in Germany – or else they have to go into deflation.

Second, there needs to be a rethink on how to treat finance. Debt-driven growth in consumption is unsustainable. Bankruptcy is economically disruptive. Debt restructuring will in some cases be necessary to make debt manageable, but, in general, the Keynesian strategy aims at raising income rather than deleting debt. An inflationary environment would greatly facilitate reducing the debt level. To counteract the regressive distributional effects of bank rescues, a substantial wealth tax would have to be introduced. At the same time the bail-out of financial institutions would have to come with proper socialization to ensure change in management practices. A financial sector dominated by not-for-profit institutions would be desirable. Speed bumps on national as well as international financial transactions would have to be implemented in the form of macroprudential policy (that aims at controlling the growth of credit) and/or by a financial transactions tax and asset-based reserve requirements that counteract the self-reinforcing loop between asset prices and credit.

Third, there needs to be a robust mechanism of redistribution across regions that does not rely on generosity and bail-outs. There is a simple solution to this: a European social security system. A European tax on profits that finances social expenditures, say unemployment benefits, would redistribute income from prosperous to depressed regions without increasing debt levels. This would build what Europe needs: a system of funding financial flows to deficit units that does not create rising liabilities for either the private or the public sector. It will, no doubt, be difficult to institute this mechanism and there are good reasons why various institutions of the labour movement have so far been opposed to transferring social policy competences to the European level: the European level has typically been more prone to pro-capital lobbying than national institutions. A European social security system would thus have to come with institution-building that guaranteed a role for labour organizations (or more broadly labour and capital) in the administration and funding decisions of the institution.

Fourth, the Keynesian policy package frees fiscal policy from the shackles of the present regime. In principle, fiscal policy has to be used to ensure that aggregate demand is at a level to ensure full employment. This implies a strong anti-cyclical component. Part of this can be delivered by automatic stabilizers like unemployment benefits and a progressive income tax, but a substantial part will be discretionary policy. States need to be able to react if their economy is facing a recession or high unemployment. Specifically, this means that the Southern European countries should see a large increase in government spending as their output level is well below capacity. In that situation budget deficits are desirable. Ideally, these expenditures would come out of a European budget.

Effectively, these measures would amount to the creation of a European welfare state. This could give new life to the project of European integration. And it would make economic sense.

Notes

- 1 Acknowledgements. This chapter builds on and uses material from Stockhammer (2016), Stockhammer and Sotiropoulos (2014) and Stockhammer and Wildauer (2015). An earlier version of the paper was presented at the Nordic Post Keynesian Conference 2014, Aalborg.
- 2 The debate on the nature of neoliberalism is also a debate on its definition (Boas and Gans-Morse, 2009).
- 3 Two qualifications are in place. First, actual trade relations are more complex. For example, Germany's largest export surpluses are with Austria and with France. Austria has had export surpluses itself. France's export position was balanced in the first half of the 2000s and deteriorated thereafter. Both countries had surpluses with Southern European countries. Second, financial flows are quite independent of trade imbalances. In particular French and British banks have had strong exposure to Southern European banks, reflecting their positions as financial centres.

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5 Corporatism and capital accumulation

The fate of the Nordic model

Jonathan Perraton

Introduction

The recent crisis of Anglo-Saxon capitalism has generated renewed interest in more cooperative national arrangements, partly in view of the relative resilience of Nordic economies. Katzenstein (1985) introduced the term ‘social corporatism’ to characterize the post-war regimes of a number of European countries, particularly, but not exclusively, Nordic ones. These economies combined coordinated wage bargaining systems with strong welfare states and during the 1970s and 80s were largely able to achieve low levels of unemployment. However, recent studies have claimed that developments in these economies mean that social corporatism is no longer able to deliver low unemployment and strong economic performance. This chapter first provides a critical analysis of such claims, arguing that they are effectively based on mainstream non-accelerating inflation rate of unemployment (NAIRU) analysis and focus exclusively on adjustment in the labour market. Section 2 argues that such claims are not supported by the evidence; rather than supply-side developments worsening the underlying performance of Nordic economies, much of the evolution of their unemployment rates can be explained in terms of aggregate demand factors. Further, in contrast to earlier literature on social corporatism, these accounts neglect the capital side of social corporatism. There is clear evidence that in Nordic economies (and elsewhere), over the medium term, unemployment rates are strongly influenced by investment levels and historically strong investment levels were seen as underpinning their success. Section 3 draws upon an earlier literature to examine how far Nordic economies have been able to sustain high levels of capital accumulation through social corporatist arrangements in the light of changes in these arrangements since the 1980s. Section 4 concludes.

This analysis may have wider implications in the current climate. Baccaro (2014) notes that, latterly, there has been an unexpected emergence of corporatist arrangements through social pacts in some European economies that had previously been regarded as lacking the institutional conditions for such arrangements. However, in contrast to earlier social corporatist arrangements, these pacts are notable for being inequalitarian, largely unable to extract gains for labour from the state in terms of greater welfare provision and to have resulted in pay settlements

below the productivity growth rate. Furthermore, such arrangements have come under increasing strain and some have effectively been bypassed under post-crisis austerity programmes (Culpepper and Regan, 2014). This chapter examines the viability of social corporatism as exemplified by post-war Nordic economies.

Wage bargaining systems and macroeconomic performance

Since Calmfors and Driffill (1988), there has been a well-known literature on the potential for coordinated wage bargaining systems to achieve relatively low levels of unemployment. Nordic economies were emphasized in such accounts as having strong coordinated systems (along with Austria; Denmark was typically characterized as having a less coordinated system than other Nordic countries). Their economic arrangements were seen as having enabled these economies to have avoided the worst unemployment effects of the downturns after the post-war golden age (*c.* 1950–73, the era of sustained growth and low unemployment). More recent literature in this field has typically been more critical, to some extent paralleling developments in these economies themselves. Some critical analysis is a straightforward application of new consensus macroeconomics, highlighting alleged rigidities in these economies and particularly in their labour markets. A complementary critique of Nordic models has also been advanced from a political economy of social democracy, derived from the ‘varieties of capitalism’ approach.

A key issue here has been classification of countries’ bargaining systems. There were key similarities and important differences in the post-war wage bargaining systems of Nordic economies, although these will be broadly characterized as social corporatist here. The clearest attempt to formalize arrangements was through the Rehn–Meidner model in Sweden, but more broadly the Swedish EFO model came to be known as the ‘Scandinavian model of inflation’. Wage bargaining was to be driven by the competitive tradable sector, reflecting the evolution of world prices (with these small open economies assumed to be effectively price takers) and productivity growth in that sector (assumed to be the most technologically dynamic); coordinated bargaining was designed to ensure that wage settlements throughout the economy were set by these rates validated by external competitiveness. Investment was seen as central to ensuring continued growth of the tradable sector, even if its dynamics within this model were not clearly specified. More broadly, social corporatism in these economies entailed coordinated wage bargaining systems and social partnership between labour, firms and the government. Vartiainen (2011) argues that the degree of coordination was exaggerated in post-war accounts, but also that there are both clear similarities between Nordic countries’ bargaining systems and clear continuity in aspects of them over time. They have become more flexible, while preserving cooperative bargaining arrangements, but that this is not simply reducible to single variables that can readily be used in cross-country estimations. Sweden did see a clear decline in centralized wage bargaining arrangements from 1990, but for the other three there remains strong continuity (*ibid.*; Woldendorp, 2011). Denmark’s wage

bargaining arrangements were less centralized than in other Nordic countries, but they remained sufficiently coordinated to deliver wage moderation during the expansion after the early 1990s downturn. Finnish and Norwegian wage bargaining systems have remained strongly coordinated.

Numerous studies have attempted to test the Calmfors–Driffill (1988) hypothesis that there is a hump-shaped relationship between unemployment and the degree of coordination and/or centralization of wage bargaining. Aidt and Tzannatos (2008) survey tests of this, noting that results are often stronger for the 1970s and 80s than for subsequent periods. Overall, it has not proved possible to obtain definitive results for this hypothesis. This is hardly surprising: there are problems common to cross-country studies of unemployment, essentially an over-fitted model with few data points and many potential explanatory variables. Although some countries' bargaining systems have undergone significant changes, institutional arrangements of this form are typically persistent – estimating their impact on economic performance over shorter time periods is likely to yield inconsistent results. The results that are obtained are largely driven by cross-section variations and often provide little basis for explaining evolution of unemployment rates over time. Further, as noted, there are particular problems in devising variables to proxy for the degree of wage bargaining coordination. Studies of countries with broadly corporatist wage bargaining emphasize the multi-dimensional nature of these systems and their evolution over time.

Several recent studies do find evidence that coordinated wage bargaining systems remain effective at delivering low unemployment (cf. Baker *et al.*, 2004; Storm and Naastepad, 2012; Sturn, 2013). Since the onset of the 2008 financial crisis, labour markets in Nordic economies have held up relatively well; further, whereas other countries with relatively good post-crisis employment experience, notably Germany, appear to have achieved this through short-time working, Nordic labour markets remain dynamic – job separations have been high, but job creation rates have remained relatively high.

Although the relative worsening of Nordic unemployment performance since the 1980s has been attributed to various developments, there are two main lines of explanation. The first is the orthodox economics explanation in terms of supply-side rigidities, represented in particular by regular OECD country reports. On the OECD's summary measures of employment protection legislation (EPL), by the eve of the financial crisis EPL was below developed country average levels in Denmark and Sweden, around average for Finland and a little above average for Norway (about the same level as post-Hartz Germany); moreover, both Denmark and Sweden had seen clear declines in EPL on these scores over the 2000s (Venn, 2009). The effects of domestic product market regulations are repeatedly emphasized in these reports – as is often the case with such discussions, the location of these economies within the highly competitive framework of the Single European Market is overlooked.¹ Further, specific concerns have been raised regarding the effects of tax levels and public sector provisions on incentives. In general, this approach fails to demonstrate a clear relationship between changes in these factors and changes in unemployment. Baker *et al.* (2004) review key studies of the

determinants of unemployment levels among OECD countries, finding that results for the conventional supply-side explanatory factors are not robust and do not support the strong policy conclusions drawn from them. They indicate that coordinated wage bargaining systems continued to be associated with lower unemployment levels throughout the 1990s, although they caution that the implied effects from regression analysis are implausibly large and are probably picking up other country-specific effects.

A parallel approach to explaining developments in these economies has emerged from political economy work on corporatist wage bargaining systems (Iversen, 1999; Iversen *et al.*, 2000). The key shifts in this analysis are central banks' policy stance towards non-accommodation of inflation and changes in economic structure. If central banks accommodate inflationary wage increases by allowing prices to rise then the costs of inflationary wage bargaining can be partially externalized; this was part of the Calmfors–Driffill (1988) result. However, if instead central banks place a high weight on controlling inflation they would not accommodate inflationary wage increases leading instead to unemployment. Rational wage setters will incorporate this into their behaviour. In some versions this reverses the expected relationship between wage bargaining systems and inflation/unemployment. Initially higher levels of bargaining lead to superior outcomes but these now peak at intermediate bargaining levels where labour would not rationally push for inflationary wage increases because of non-accommodation. However, at high levels of labour organization if unions use their power to pursue solidaristic wage bargaining in support of equality objectives this is likely to lead to wage inflation pressures. This will particularly be the case if there is wage drift among the most productive workers which is anticipated and incorporated into wage claims by low productivity workers. Public sector unions may play a key role here: sheltered from competition, public sector unions may push for higher wages and if, by analogy, the fiscal authorities accommodate their demands then this can lead to higher unemployment through higher taxes and/or upward pressure on wage demands. Structural change in these economies has led to a fall in employment in the exposed manufacturing sector and a rise in public sector employment. Iversen (1999), in particular, predicts that solidaristic wage bargaining will now have a greater adverse impact on employment since it will inhibit the growth of relatively low-productivity private services jobs that have provided much of the increase of employment in Anglo-Saxon economies. Further, solidaristic wage bargaining provides incentives for the most skilled workers to defect from coordinated arrangements to the extent that such arrangements hold back their wage rises by reducing firms' discretion to offer higher wages. Both employers and skilled employees, therefore, have a common interest in undermining centralized bargaining systems. This political economy account appears to offer an explanation for why strongly corporatist systems appear to have become less successful at delivering low unemployment together with an explanation for shifts away from centralized bargaining systems.

There were common shifts in monetary policy among developed economies, initially among these economies with the adoption of hard currency policies

followed by the general shift towards inflation-targeting independent central banks. This trend can be observed among the Nordic economies. Finland and Sweden both abandoned fixed exchange rate regimes in 1992 after the European exchange rate crises and moved to an inflation-targeting framework with the central banks later being granted formal independence. In both cases this followed a programme of rapid financial liberalization and openness that led to a credit boom and subsequent bust. Norway also abandoned a fixed exchange regime in 1992 and after a period of managed floating has operated inflation targeting since 2001. Denmark has operated a fixed exchange rate regime since 1982 and now pegs the krona to the euro. Finland joined the Eurozone at its inception. All four countries have made their central banks constitutionally independent; earlier in the post-war period these countries' central banks were relatively politically dependent by developed country standards, although there were important variations between them in this regard (Pekkarinen, 1989).

Nevertheless, this political economy analysis falls short in explaining the evolution of unemployment in these economies. Fundamentally it is based on the (at least pre-crisis) new consensus macroeconomics and is, in effect, a new Keynesian model explaining unemployment in terms of real wage flexibility. Iversen's (1999) analysis predicts that with non-accommodating monetary policy the traditional 'hump-shaped' relationship between unemployment and wage bargaining coordination would be reversed and flattened, but not only is the evidence of reversal of this relationship not clear, also the dispersion of unemployment rates has largely persisted through the 1990s. In particular, in order to explain worsening of employment performance of these countries it needs to be able to demonstrate that the periodization is consistent with shifts in macroeconomic policy and structural change. Available evidence does not indicate that wage structures have significantly inhibited the growth of services employment in these countries (Galbraith and Garcilazo, 2005; Glyn *et al.*, 2007).

Instead, the evolution of unemployment in these economies is consistent with more general evidence that shows that aggregate demand factors, and particularly the evolution of monetary policy, explain much of the evolution of unemployment in these developed economies from the 1980s (cf. Ball, 2009). There are a number of similarities in the evolution of their unemployment rates; generally, strong unemployment performance during the 1970s and 80s was followed by a sharp worsening in the early 90s under the impact of financial crisis, particularly in Finland and Sweden, and spikes in real interest rates. Unemployment rates fell thereafter and have held up relatively well since the onset of the global financial crisis. Analysis of the Nordic economies specifically indicates that there is no clear evidence of rising equilibrium unemployment rates; rather, demand-side factors are central to explaining unemployment over time, rising with the early 1990s and recoveries thereafter (Holden and Nymoen, 2002; Nymoen and Rødseth, 2003).

Unlike other Nordic economies, Danish unemployment was relatively high in the 1980s; it then spiked in the early 1990s and has fallen back thereafter.

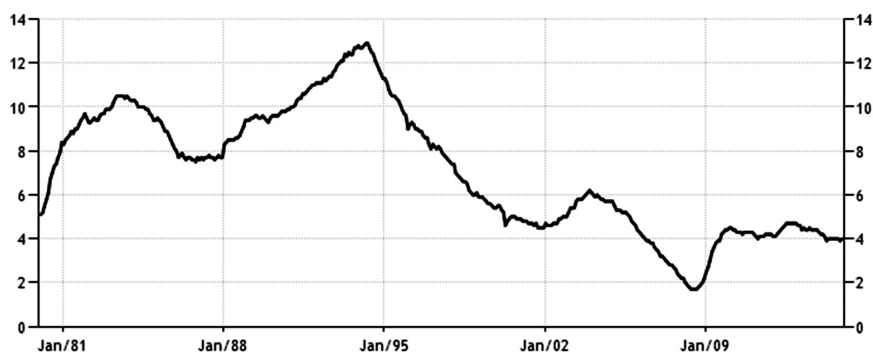


Figure 5.1 Denmark unemployment rate (% of labour force)

Source: www.tradingeconomics.com

Bredgaard *et al.* (2006) show how a relatively flexible labour market regime has been combined with active labour market policy and relatively generous unemployment benefits in the Danish ‘flexicurity’ model. Much of the recent literature on Danish flexicurity has emphasized active labour market policy, but this is insufficient alone to explain the evolution of unemployment. Jespersen and Lang (2006) provide detailed evidence of the role of aggregate demand factors in explaining employment developments in Denmark. Restoration of profitability in the 1990s permitted expansion of employment in response to improving macroeconomic conditions; the wage bargaining system ensured coordinated moderation of wages in response, with the export sector leading wage settlements.

The Finnish experience was clearly strongly affected by its early 1990s crisis. Kiander and Pehkonen (1999) found that around half the rise of Finnish unemployment in the 1990s was due to the rise in real interest rates. Honkapohja and Koskela (1999) also find aggregate demand factors to have been central and question how far underlying unemployment rates rose in Finland over this period; they find some evidence that equilibrium unemployment rose as a result of heavily indebted firms increasing their mark-ups even in the face of declining market share.

In the Norwegian case, the early 1990s crisis effects were less severe. Akram (2005) found evidence for two unemployment equilibria at 2.3 and 5.1 per cent, respectively, for Norway from the 1980s with movements between the two from either one large shock or a series of smaller ones (although in the latter case, the cumulative impact needs to be larger to effect a shift). Barkbu *et al.* (2003) utilize time series on institutional conditions in Norway and Sweden to test the impact of wage bargaining structures on unemployment. They find that although the two countries’ bargaining systems appear similar, centralized wage bargaining in Sweden may have had an adverse impact on profitability and unemployment.

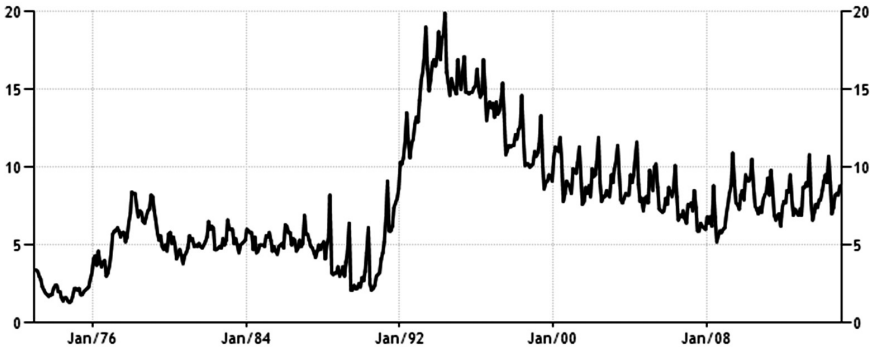


Figure 5.2 Finland unemployment rate (% of labour force)

Source: www.tradingeconomics.com

Overall Barkbu *et al.* (ibid.) find that Norway's coordinated bargaining system has been more consensual and this may be a key reason why it has persisted whereas Sweden's has become more decentralized

Similar to the Finnish case, Swedish unemployment fell to very low levels during the 1980s boom following financial liberalization. The economic crisis of the early 1990s led to a sharp rise in unemployment which fell back later in the decade but remained above earlier levels. As noted, there is some evidence that the Swedish wage bargaining system did have a negative impact on employment at this time. The system had come under strain and this led to decentralization of wage bargaining as earlier corporatist arrangements were undermined by employers' organizations effectively withdrawing from them by the early 1990s.

Thus, overall, arguments that structural and institutional changes in Nordic economies have rendered their policies and arrangements unsuitable for

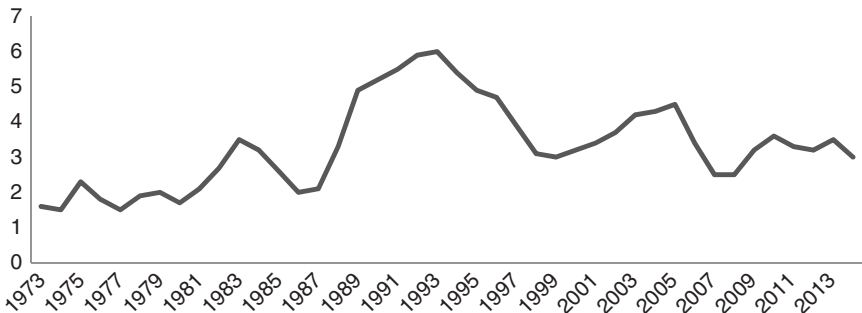


Figure 5.3 Norway unemployment rate (% of labour force)

Source: EU macroeconomics database

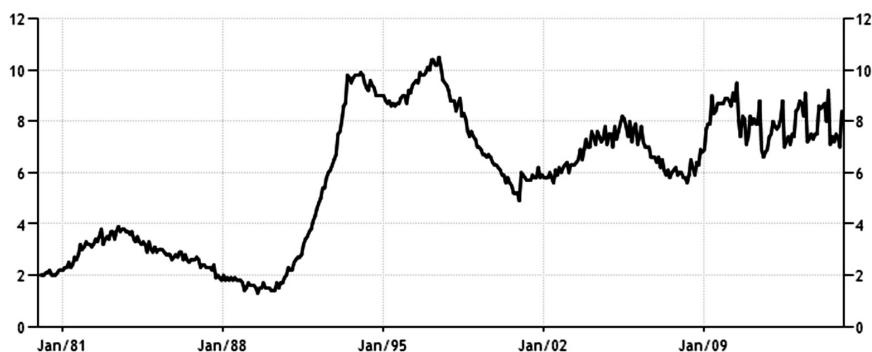


Figure 5.4 Sweden unemployment rate (% of labour force)

Source: www.tradingeconomics.com

generating high levels of employment do not find support in the evidence. These economies were hit by the early 1990s slowdown, with Finland and Sweden experiencing major financial crises. Unemployment fell back thereafter before the 2008 global financial crisis and employment rates were relatively high. Nordic economies have also displayed relatively strong employment performance since the onset of the 2008 crisis. There were particular issues in Sweden, which did lead to undermining of its post-war social corporatist arrangements – Erixon (2010) provides a detailed analysis of these developments; among the other Nordic economies there are clear signs of continuity in these arrangements.

Social corporatism and capital accumulation

It is not simply that studies of Nordic economies based on new consensus macroeconomics fail to provide an adequate explanation for their unemployment trends and other evidence indicates that aggregate demand factors remain important in explaining unemployment trends. Varghese (2001, p. 720) also notes of the political economy studies of social corporatism: ‘What mars... and what also distinguishes them from earlier treatments of social democracy is their complete silence on how the supply and content of private capital and investment can be channeled in such a way as to further an egalitarian project.’ Landesmann and Vartiainen (1992, p. 210n) also criticized such an approach:

The short-term approach adopted in most economists’ discussions of the experience of social corporatist economies seems to us to be seriously flawed. To illustrate this point, consider the fact that in discussions about centralization of wage bargaining ... the benefits of corporatism are almost without exception seen to accrue through the moderation of wages.... However, if

that was all that mattered in corporatism, we should expect social democratic corporatist economies gradually to become low-wage economies relying on labour-intensive, backward techniques.

This is a clear contrast with the NAIRU models considered in the previous section. Social corporatist arrangements are not primarily conceived as devices to achieve sufficient wage flexibility to ensure high employment for a given capital stock, as assumed in standard NAIRU models. New consensus macroeconomics approaches to unemployment through NAIRU models typically rule out by assumption any relationship between capital accumulation and unemployment. However, evidence from developed economies, including Nordic ones, indicates that capital accumulation does have a significant impact on unemployment (Karanassou *et al.*, 2008; Stockhammer and Klär, 2010). For an older literature on social corporatism, coordinated wage bargaining systems in these countries were not, from the point of view of labour at least, simply designed to achieve high levels of employment through real wage flexibility – decentralized bargaining in principle can achieve that. Nor is it simply a device to ensure wage restraint and adjustment without major increases in wage inequality. For organized labour, in particular, the aim here of corporatist strategies was to achieve full employment through high productivity/high wage employment, especially in the tradable sector. This older literature on social corporatism emphasized capital accumulation in Nordic economies in the post-war period and noted its ability to achieve negotiated adjustment limiting a profits squeeze and thereby helping to preserve employment and investment after the end of the post-war golden age.

Organized cooperative social bargains can, in principle, lead to relatively high levels of investment. In the presence of organized labour, capitalists' investment may be below socially optimal levels since *ex post* labour may be able to bargain away some or all of the returns on investment. Earlier literature on social corporatism examined whether it could lead to higher levels of investment as a cooperative solution to key dilemmas. In some models this is essentially an investment coordination problem; in others, though, it has the character of a non-cooperative game where both sides have incentives to defect, so the socially optimal solution cannot be assumed to arise for repeated bargaining. Lancaster (1973) first formalized the dynamic analysis of the workers' and capitalists' dilemmas when workers have bargaining power over real wages and capitalists determine investment: the workers' dilemma is that if they do not exercise wage restraint and forgo current consumption they will be unable to realize future increases in income from investment, but they have no guarantee that wage restraint would result in sufficient investment to bring about higher future incomes. The capitalists' dilemma is that if they invest they cannot guarantee that they will be able to realize their expected returns: organized labour may be able to use its bargaining power to appropriate the gains from sunk investment. Although much of the subsequent literature focused on wage bargaining, Lancaster notes that there may also be indirect means through which workers

may appropriate returns from investment, notably through any political influence over government taxation and expenditure. The combination of these dilemmas leads to sub-optimal capital investment; Lancaster (*ibid.*) claimed this sub-optimality result was robust. Some extensions found that with indefinite bargaining it may pay for unions to develop a reputation for cooperative behaviour and, under certain conditions, coordinated unions with wide coverage could lead to cooperative solutions with higher capital accumulation and thereby higher growth of incomes over the medium to long term (Haurie and Pohjola, 1987; Van der Ploeg 1987). In infinite games, memory strategies can produce a perfect equilibrium where the two sides play a trigger strategy, cooperating unless and until the other side cheats; this creates clear incentives to maintain cooperation. Such solutions would, therefore, not require outside agencies to enforce any agreements, but, in general, it cannot be assumed that repeated games will lead to optimal solutions – repeated interaction may lead to higher capital accumulation, although such bargains are likely to be fragile. If labour can credibly pre-commit to not doing so, then higher levels of investment and thus income can be achieved. A cooperative solution would thus require organized labour to accept greater wage moderation than they would otherwise choose in return for capital delivering higher levels of investment relative to profits than capitalists would otherwise choose. Other conditions, particularly through economic policy, may buttress this and help maintain investment levels. Side payments by the state to induce cooperation may be made to labour in the form of provision of a social wage and to capital in the form of support for investment and other industrial policy measures. State involvement in bargaining would not necessarily induce cooperative solutions, though: as noted, taxation and expenditure policies could be used by labour indirectly to appropriate gains from investment and provision of a social wage could reduce labour's incentive to cooperate. Public sector employment may provide an outside option for labour, so public sector wage levels may be key.

It is difficult to test these hypotheses directly, but available evidence is broadly consistent with social corporatist arrangements leading to high investment in Nordic economies over the post-war period. Chowdhury (1994) tested for a Calmfors–Driffill relationship for capital accumulation for a U-shaped relationship between centralization of wage bargaining and investment from 1960–90. Landesmann and Vartiainen (1992, p. 234) note that for the 1960–85 period ‘these economies seem to be able to maintain comparable or even higher investment activity compared to other OECD economies while showing significantly lower rates of return or profit shares in national income’. Bengtsson (2014a) found that although higher union density was associated higher wage shares in the post-war period the Nordics were an exception to this; even here, though, Sweden saw a squeeze of the profit share over the 1950s and 60s and a rise in the profit share from 1980 (Bengtsson, 2014b). These arrangements were never quite as smooth or consensual as the models imply, with post-war Sweden, for example, seeing fluctuations in profit shares and investment levels rather

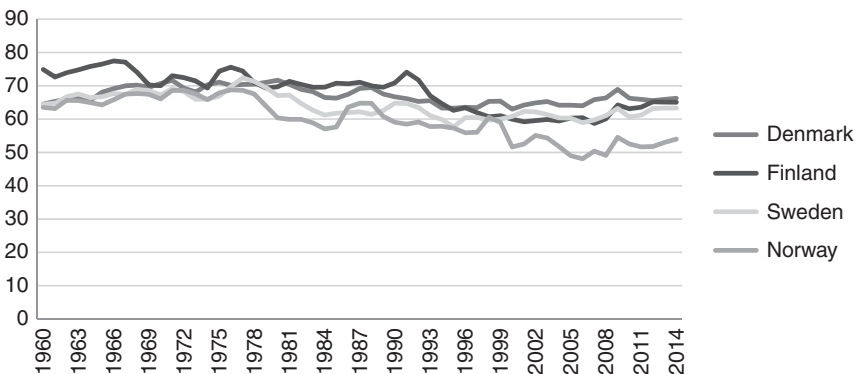
than an entirely orderly exchange of wage moderation for high investment (Martin, 1985).

At the end of the post-war golden age, rates of capital accumulation slowed down in developed economies under the impact of a profits squeeze and then the 1980s rise in real interest rates. Nordic economies initially appeared relatively successful at managing these developments. Henley and Tsakalotos (1991) found that Nordic economies during the 1970s and 80s were able to achieve negotiated adjustment which ameliorated the profit squeeze, while investment remained relatively resilient to fluctuations in profit levels.

It is the period since then that is key here. Across developed economies investment has generally been lower since the end of the golden age, but some economies experienced a boom in ICT investment, particularly during the 1990s; the 2000s saw investment falling back and the corporate sector moving into surplus in many OECD countries. The slowdown in investment has persisted even after the high real interest rates of the 1980s have fallen back and there has been a clear rise in the profit share of national income. Barba and Pivetti (2012) highlight these developments for advanced economies, arguing that the slowdown in investment reflects sluggish growth in aggregate demand as a result of this shift in income distribution.

These developments, common across developed economies and particularly in Europe, can be observed among the Nordic economies. [Figure 5.5](#) shows clearly that although there was some tendency for the wage share to rise in the 1970s (albeit less pronounced than other European economies), it has fallen from the 90s in these economies.

The recovery in profitability is even more clearly shown in [Figure 5.6](#) for profit rates, rising from the 1990s to rates that are comparable to those during the post-war golden age or, for Denmark and Norway, even higher.



[Figure 5.5](#) Adjusted wage share (%)

Source: EU macroeconomics database

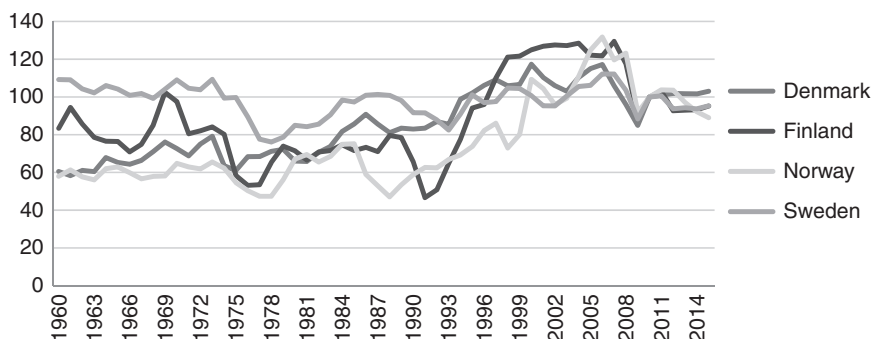


Figure 5.6 Net returns on net capital (2010 = 100)

Source: EU macroeconomics database

Overall the evidence is consistent with wage restraint leading to recovery of profit rates and shares to levels comparable with or greater than those that held during the post-war golden age. However, as elsewhere, this did not lead to a commensurate rise in investment.

The context has changed significantly with the related shifts towards financial openness and liberalization – under earlier relatively closed economies national savings and investment rates were strongly related and opportunities for accumulation of financial assets more limited. From the 1980s these countries liberalized their previously strongly regulated financial systems and opened up their capital accounts. This potentially changes the investment climate in two fundamental respects: interest rates are effectively set by the world interest rate and the outside options for capital increase. Financial liberalization and integration, by increasing the exit possibilities for capital, has acted to weaken the social bargain underwriting this investment effort. While corporate governance systems in these economies have not simply converged to Anglo-Saxon systems, stock market capitalization has risen and pressures to maximize shareholder value have risen (Peters, 2011). All four economies have typically had net outflows of foreign direct investment (FDI, investment overseas by multinational corporations from these countries) from the 1990s. Governments have become increasingly

Table 5.1 Annual growth rate of real capital stock, 1961–2010

	1961–73	1974–85	1986–90	1991–95	1996–2000	2001–5	2006–10
Denmark	3.1	2.1	2.2	0.8	1.8	1.6	1.7
Finland	5.2	3.7	3.5	0.4	1.7	1.9	1.8
Norway	4.5	4.4	2.6	1.4	2.6	2.1	3.2
Sweden	5.0	2.9	3.1	1.7	1.6	1.7	2.0

Source: EU macroeconomics database

constrained in making side payments to either group and in their ability to use macroeconomic policy to ensure effective demand. Thus, the conditions underlying the corporatist bargains for capital accumulation have been significantly undermined since the early 1980s.

Before the 1980s there key similarities among these economies in their savings and investment patterns (Kosonen, 1992). Household savings rates were typically low by developed country standards. Regulated financial systems in the context of economies that were relatively closed financially, combined with often relatively cautious fiscal stances, enabled the authorities to keep real interest rates low. Tax treatments of investment were also relatively generous. Some degree of credit rationing may have operated and companies often relied heavily on own resources for investment, together with bank lending. National savings and investment were strongly related (as elsewhere at the time); this should not be taken as implying that savings determined investment, but it did imply a broadly balanced external position. Since then corporations' domestic investment out of retained profits has fallen sharply; funds have effectively been channelled into other uses and outward FDI has grown. Turning now to the individual country experiences illustrates these trends.

Denmark

During the golden age, Denmark differed somewhat from the trends sketched above. As with other Nordic economies, household savings were very low, public net saving had been positive over the golden age; however, corporate savings appear to have been relatively low and Denmark largely ran external deficits over the period 1960–90, with a consequently deteriorating net external position (Nielsen and Søndergaard, 1991). Since then Denmark has achieved sustained current account surpluses, reflecting strong export performance in a range of medium- and high-technology industries; as with Norway, Denmark also has strong exports of oil and gas. In terms of macroeconomic balances, [Figure 5.7](#) shows that while the



Figure 5.7 Denmark: net saving/borrowing (% of GDP)

Source: EU macroeconomics database

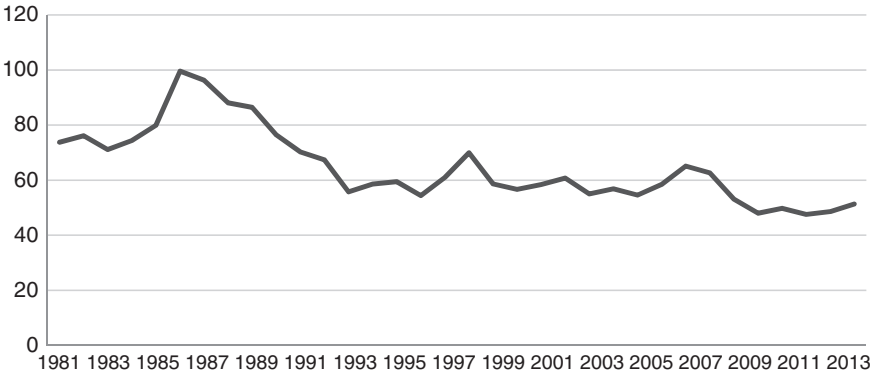


Figure 5.8 Denmark: investments/profits

Source: EU macroeconomics database

corporate sector had been in approximate balance over the 1980s it has shifted into surplus since; taken with frequent government surpluses, this has more than offset net borrowing by the household sector.

This shift in Danish corporate savings and weak investment by Danish companies can be seen in [Figure 5.8](#): whereas earlier decades saw strong investment from retained profits and some further borrowing, investment out of profits (measured as corporations' gross capital formation as a percentage of corporations' operating surplus) has fallen sharply since.

Finland

Finland shows a similar pattern; in the 1970s and 80s the corporate sector was typically a net borrower. The early 1990s recession saw strong corporate consolidation, while the public sector position deteriorated sharply. The 1990s and early

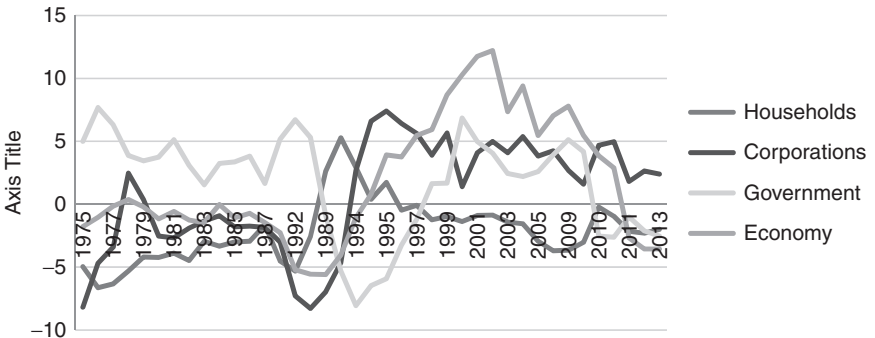


Figure 5.9 Finland: net saving/borrowing (% of GDP)

Source: EU macroeconomics database

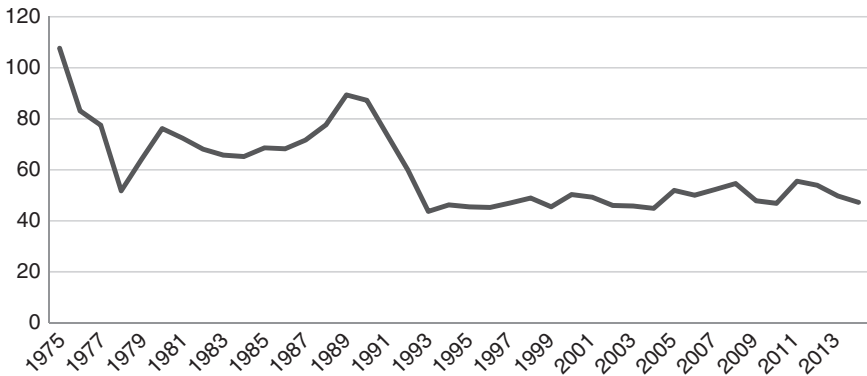


Figure 5.10 Finland: investments/profits

Source: EU macroeconomics database

2000s saw a sustained current account surplus, reflecting a strong position in electronics as well as traditional areas such as forestry; latterly, though, its position in electronics has declined sharply.

Corporate consolidation from the early 1990s was virtually inevitable, given the outstanding corporate debt position then. Nevertheless, crucially from our perspective here, since the economy has recovered corporate investment out of profits has remained at the lower levels it fell to during the early 1990s downturn, as Figure 5.10 indicates.

Norway

The Norwegian position has historically been similar here, with low household savings (although this position has improved from the 1990s) and a corporate sector that had been in approximate balance or been a net borrower. From the 1990s the corporate sector has more typically ran a small surplus; the evolution

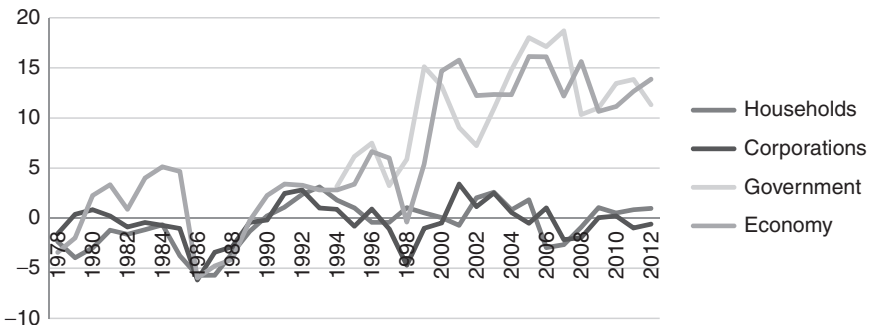


Figure 5.11 Norway: net saving/borrowing (% of GDP)

Source: EU macroeconomics database

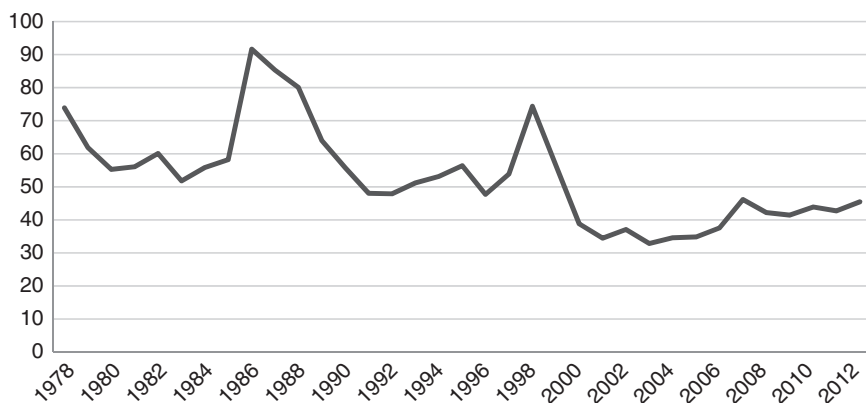


Figure 5.12 Norway: investments/profits

Source: EU macroeconomics database

current account (and budget) position has been strongly influenced by the oil industry.

The investment trends of the corporate sector are less pronounced than in other Nordic economies. Nevertheless, [Figure 5.12](#) shows that the 1990s and 2000s saw falls in the propensity to invest out of profits relative to earlier post-war experience.

Sweden

Sweden during the golden age period typically had net public sector savings, so although the private corporate sector was typically a net debtor, with corporate borrowing and very low household savings, this could be funded without recourse to foreign borrowing (Erixon, 2004). [Figure 5.13](#) shows the evolution of these balances since then. The economy has shown persistent current account surpluses in this century, reflecting strong performance in high-technology manufactures and, latterly, skill-intensive services exports. The evolution of corporate balances is similar to Finland, reflecting a similar experience in the early 1990s financial crisis and recession – corporate consolidation is evident in response to the debt overhang.

As with the Finnish experience, although corporate consolidation in the early 1990s is only to be expected, since then investment out of profits remains at lower levels than during previous periods. There has only been a modest recovery in the propensity to invest since the early 1990s downturn.

The experience of Nordic economies individually since the end of the post-war golden age bears out the general characterization that changes in these economies have led to the corporate sector shifting to a position as a net lender and the propensity to invest out of profits declining.

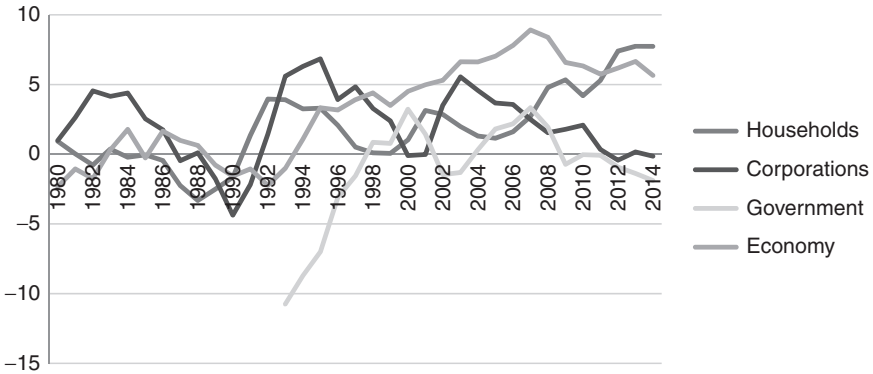


Figure 5.13 Sweden: net saving/borrowing (% of GDP)

Source: EU macroeconomics database

Conclusions

In the post-war period, Nordic economies developed social corporatist coordinated wage bargaining systems that underpinned their economic performance, combining low unemployment with low levels of inequality. Much recent literature has questioned whether such arrangements continue to be viable in the light of worsening unemployment performance in the 1990s; however, such analyses viewed these as mechanisms to achieve real wage flexibility and were effectively based on NAIRU models. Analysis does not bear out this interpretation, and the evolution of unemployment rates can largely be explained in terms of aggregate demand. Much of the discussion focused on Sweden, where post-war bargaining

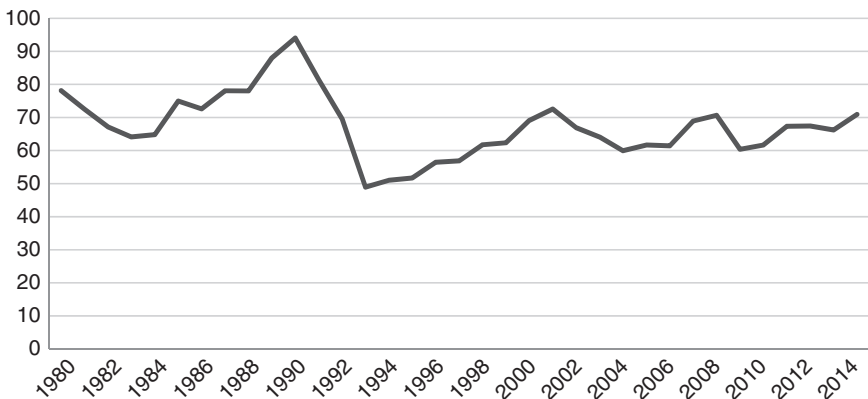


Figure 5.14 Sweden: investments/profits

Source: EU macroeconomics database

systems had come under increasing strain and key aspects of them appeared to have been eroded; in other Nordic economies there has been strong continuity in these systems. In this sense, social corporatist systems remain viable.

This chapter also argued that recent analyses of social corporatism ignored the capital side of the bargain, following the neglect of capital accumulation in NAIRU models. Earlier analysis of social corporatism, by contrast, saw this as central – that organized labour operates wage restraint in the expectation that the resulting profits would be invested, leading to growth over the medium to long term, particularly in the tradable sector. To some extent this has been maintained, Nordic economies having achieved current account surpluses from the 1990s; even here, though, Denmark, Finland and Sweden have been losing market share and the Finnish export experience has worsened markedly. More generally, this chapter has shown that – despite recovery of profit shares from the 1980s, indicative of wage restraint, and rising profit rates – these economies have not seen a return to the rates of capital accumulation seen during the golden age. Instead, the corporate sector has typically shifted to a net lending position, and investment out of profits has fallen. For much of the post-war period Nordic economies had relatively limited financial systems and relatively closed external capital accounts. Financial liberalization from the 1980s has increased the outside options for capital, while changes in corporate governance have increased pressures to maximize shareholder value. These developments have undermined the social corporatist bargain that had previously led to high investment.

Note

- 1 Norway's membership of the European Economic Area effectively incorporates it into the Single European Market.

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6 Structural budget deficits

Getting causality right¹

Jesper Jespersen

Introduction: fiscal rules have become the norm within the EU

The European Union has a number of built-in predetermined public sector budget rules, which are codified in the Stability Pact and the Fiscal Compact and reinforced by the strict inflation targeting policy of the European Central Bank and the single currency adopted by 19 member countries. Originally, the required convergence criteria and the Stability Pact related to becoming members of the European Monetary Union and focused on the public sector budget (3 per cent of GDP) and, to a minor extent, on the size of the public sector debt (60 per cent of GDP). But, as a reaction to the excessive budget deficits, which occurred during the present crisis, one more requirement related to the structural public budget was suggested by the German government.

Germany had herself passed a constitutional law, which set a balanced public sector budget as a legal binding target and is only allowed to be violated in exceptional cases. This new instrument is meant to ensure that weak (or selfish) politicians do not undertake 'irresponsible' discretionary expansion of public expenditures during a down-swing of the business cycle. This idea of an extra fiscal control was presented by the orthodox economists (and the German government) as an act of 'sound' public finance dressed up in a set of mutually binding rules under the name Fiscal Compact. The major requirement is a strict limit to the so-called *structural budget*, which, in theory, is an indicator of the size of discretionary fiscal policy. In principle, the structural budget is a calculation of the budget balance corrected for the impact of automatic stabilizers. One sees it often characterized as the budget without business cycle effects.

The Fiscal Compact restricts active fiscal policy. Independently of where in the business cycle the economy happens to be, the structural deficit is limited to half a per cent of GDP. Hence, signing the Fiscal Compact meant, in practice, a denouncement of the use of any expansionary fiscal policy. This amputated fiscal policy has left EU member states that have adopted the euro to the mercy of the European Central Bank with regard to any expansionary demand management policy.

Surprisingly, the Fiscal Compact was adopted not only by the euro countries, which were forced to do it, but also by seven EU countries outside the Eurozone

(only UK and the Czech Republic wanted to be self reliant with regard to public finance). Consequently, I asked myself (and colleagues from the department of politics), how can it be that an overwhelming number of democratically elected heads of government voluntarily gives up their right to undertake an active fiscal policy. It is a surrender of national sovereignty to the market forces and to the German way of thinking politics? Furthermore, this loss of control of national fiscal policy was not counterbalanced by a commitment from the EU Commission to take counter-weighting measures when unemployment prevails.²

The present economic development with very little or no GDP growth for more than six years in most Eurozone countries, except for Germany, has evidently demonstrated that there is a (structural) deficit in mainstream macroeconomic thinking and related policy recommendations. Hence, this chapter will analyse some of the real-world consequences of a focus at structural public sector deficits with regard to macroeconomic imbalances not only during the present economic crisis, but also in a longer-term perspective. Fixed budget rules for the entire EU/euro area might destabilize even a seemingly self-adjusting macroeconomic system, if disturbances are (partly) unforeseeable and asymmetrical.

Two different views on macroeconomics

Within macroeconomic literature we find two fundamentally different methodological approaches of modelling: neoclassical closed model analysis (general equilibrium) and the post-Keynesian (real-world) open system analysis (path dependent). They have two opposing views on 'how to do macroeconomics in theory and practice'. Their views on causality are antagonistic. Accordingly, the derived policy recommendations with regard to 'rules vs discretion' are also strikingly different.

The neoclassical (German ordo-liberal) ideal economy

The neoclassical (German ordo-liberal) ideal is quite similar to the mainstream general equilibrium theory (and models). Here it is taken as an indisputable and fundamental assumption that the private sector market economy is reasonably well behaved and can be analysed as a self-adjusting equilibrating system, if left on its own. However, even within this system business cycles are unavoidable, partly caused by exogenous shocks and partly due to endogenous rigidities. But, according to the theory within a (brief) adjustment period the private sector will establish a new self-equilibrated optimum. Fiscal rules are set (mainly) to prevent politicians from interfering with this market process by the requirement of public sector budget balance. Within this model the private sector equilibrium is secured by (predetermined) wage and price flexibility, efficient financial market hypothesis (which equalizes private savings and real investments at full employment) and 'rational expectations'. As a *deductive* consequence of this assumed private sector structural (medium-term) equilibrium the public sector *structural* budget has to be balanced to secure stability throughout a full business cycle. If the

structural budget is not balanced it might cause instability and maladjustment of resources within the private sector (according to the model). Hence, as a logical implication the best policy (recommendation) is a fixed rule of permanent structural public sector budget balance.³

With regard to the automatic budget stabilizers, the analysis concludes that during the adjustment period they should be allowed to work their way through the market economic system, although this might prolong the adjustment period. At least a symmetrical business cycle will not add to public debt. But, within this model there is a trade-off between the size of the output gap and the length of the adjustment period, which is an empirical matter to evaluate. The important point with regard to automatic budget stabilizers is that given a balanced, structural budget, consequences for public debt will iron out during a business cycle if they are symmetrical around the growth trend. In reality, business cycles are seldom symmetrical; usually the negative output gap is longer and deeper than the boom. Therefore, it has become a legal requirement within the EU to set an upper limit of 3 per cent of GDP for the public sector budget deficit at any time and for all member countries, irrespective of the differences with regard to characteristics of national welfare systems.

This closed (i.e. predetermined) general equilibrium model (GEM) analysis is the frame of reference when the economic rationale behind the Stability Pact and the Fiscal Compact is presented by neoclassical/ordo-liberal economists to decision-makers. According to this model, the aim of fiscal policy should be to secure a balanced public sector budget over a full business cycle and stable public debt–GDP ratio. It is easily demonstrated within the model that an unbalanced budget is a disturbing factor which prevents the private sector from adjusting, leaving the economy as a whole in an sub-optimal position.

Some stylized empirical facts

The major problem with general equilibrium analysis of the longer-term development of the European economies is that it is detached from reality!

Below you will find, in [Figure 6.1](#), the historical long-term development in unemployment, as the main indicator of equilibrium/disequilibrium. What you see is a rising rate of unemployment. Of course, business cycles are visible, but the tendency is upward. The trough of a new business cycle is higher than the previous, except for 2007. It is hard to believe that what we see is a medium-term equilibration process going on in the labour market. And if so, the external disturbances must have had a magnitude and a character which, in the historical period, have prevented the equilibrium process manifesting itself – that is, they were too weak to stabilize the system by themselves!

Another (or supplementary) explanation could be that the private sector is not an inherent self-adjusting market system. The answer to this question is not only related to the labour market. It also depends on the interrelated process of private savings and investment. What are the mechanisms which secure that financial savings and real investment equalize at full employment? We know, from *The General Theory*, these two macroeconomic variables can, in principle,

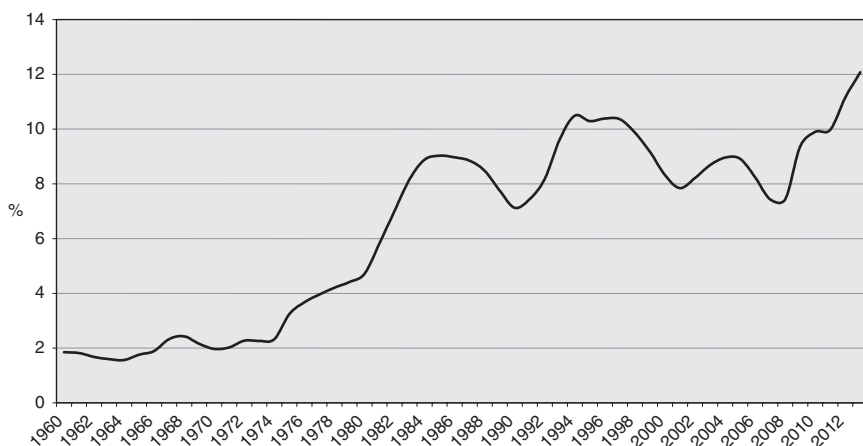


Figure 6.1 Euro area, rate of unemployment (1960–2013)

Source: OECD, Economic Outlook, No. 90 and 93

equalize at any level of employment. As firmly argued by Basil Moore (2006) it is the development of real investment, which determines (within a model without foreign trade) employment. Are there reasons to believe that real investment within the private sector of EU15 should settle at full employment?

Let us have a look at the development in real investment (as a share of GDP). Numbers came to me as a real eye-opener. Look at [Figure 6.2](#) and you will see a falling rate from the early 1970s (26 per cent of GDP) until the present day's low level of only 18 per cent of GDP. The ratio has fallen by nearly one third during this period, which must have had a significant impact on the macroeconomic dynamics of Europe. One should also observe that this falling rate of investment started long before the euro was introduced to continental Europe. Furthermore, the business cycles generated by the private sector (optimism and pessimism) are also visual, with the characteristic of troughs being deeper and longer than tops – once again with 2007 as an exception.

My hypothesis is that the European imbalances, the reduced growth rates, the rising unemployment *and* crisis of public finances to a large extent can be explained by this falling ratio of real investment (see [Figure 6.3](#)).

Furthermore, the falling rate of real investment may have had a significantly negative effect on the macroeconomic performance – not only by increasing unemployment in the short run, but also by lowering the rate of productivity gains, making the *potential* GDP grow more slowly in the longer run. This underperformance of the macroeconomic system thus has consequences for public finances, as long as they are directed by a hypothesis of medium-term full employment and longer-term growth rate of 2–3 per cent per annum. If economic policies, instead, had been directed to productive real investment (private and

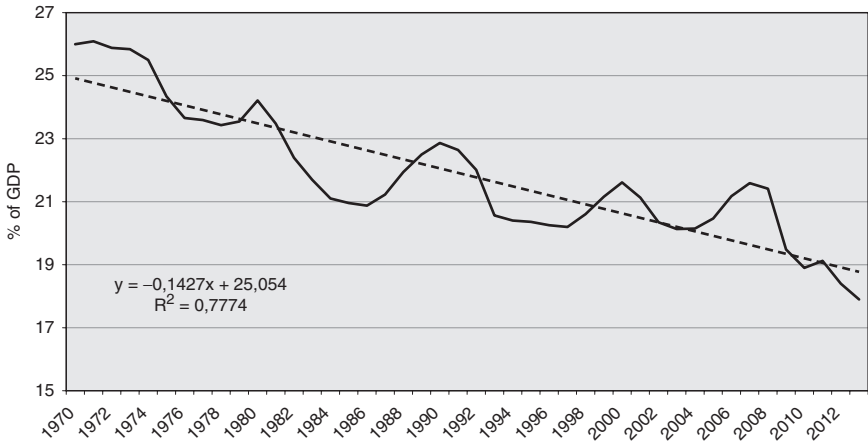


Figure 6.2 Euro15: real investment/GDP ratio (1970–2013)

Source: OECD, Economic Outlook, no. 90 and 92

public) during the period 1974–2013 the macroeconomic landscape of Europe could have been much more healthy, even with regard to public finances.

Figures 6.1–6.3 should, at this stage of the analysis, only be considered as a survey of the macroeconomic landscape to get inspiration for further research according to the procedure described in Jespersen, 2009. But two observations seem to be difficult to dispute: 1) the labour market has not, in any reasonable understanding of the word, been self-adjusting and 2) one reason for this lack of

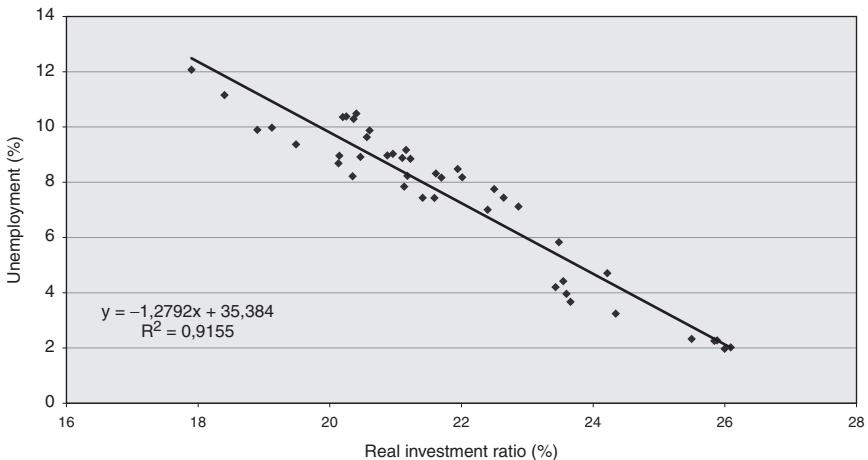


Figure 6.3 EU15: real investment rate and rate of unemployment (1970–2013)

adjustment seems to be a falling trend in real investments during the period under consideration.

These observations leave the analysis based on a GEM in trouble with regard to giving a plausible explanation of ‘what has happened’ and, even worse, policy recommendations derived from such a model of the kind ‘what to do in the present crisis to stabilize the private sector and resume growth’ will be misleading. In this case, where an open system analysis seems more appropriate and the private sector has considerably excess financial savings, we find that the ‘structural deficit of the public sector’ is indeterminate (and irrelevant), which makes it inappropriate in any respect to be a guide to a stabilizing policy.

Hence, we have to search for another policy by using an open analytical framework.

The other view on macroeconomics

Post-Keynesian macroeconomics aims at explaining reality like that illustrated in [Figures 6.1–6.3](#). For that purpose an *open system analysis* is needed; such an approach is methodologically quite different from a GEM because its *focus is on explaining the ‘real world’*. Seemingly, the European economies looked upon as a whole have not been self-adjusting, in any reasonable understanding of the word, for the last 40 years. Quite the contrary one would say, looking at the numbers. Ever since the early 1970s unemployment has been on an upward trend looking at the Eurozone as a whole. Furthermore, within the Eurozone the development in different countries has been remarkably uneven. In Southern Europe the rate is unprecedentedly high (causing social collapse), whereas in Northern Europe (and in EU countries with their own currency) unemployment is still considerable, but below the European average. Similar conclusions are reached when the balance of payments is considered: in the North (and South) it is difficult to combine the word equilibrium and self-adjustment with a persistent German surplus of more than €100 billion/year, which has its counterpart in balance of payments deficits in Southern Europe ranging, for a while, as high as 10–15 per cent of GDP.

Hence, ‘real-world’ unemployment, as shown in [Figure 6.1](#), has stayed high due to lack of effective demand (lack of aggregate demand and/or insufficient profit margin) within the private sector and without any sign of reduction, when the EU15 is analysed as a whole.

The important theoretical implication is that the private sector has a structural financial surplus in Europe, which causes persistent unemployment. The causal implication is – leaving the balance of payments aside for a while – that the public sector has an equivalent structural deficit! The private sector is saving too much to create full employment by itself, leaving the public sector with a structural deficit at full employment.

Looking at Europe as a whole (especially the Eurozone with a shared external floating exchange rate vis-à-vis the dollar, pound and yen) the balance of payments is due to a floating exchange rate close to zero. The implication of the

external overall (approximate) saving/investment balance is that, within the Euro-zone, any balance of payments surplus in one euro-country (excess of export of goods and services) has a balance of payments deficit of equal (nominal) size as the counterpart. The private sector might reduce its employment deficit by exporting, but at the expense of another euro member increasing its import and causing more unemployment there. Within the Eurozone (and to a rather large extent also within the EU, due to highly integrated real economies) it is the aggregate structural balances within the private sector in the EU (as a whole) which determines the level of unemployment – how it is shared among the member countries is mainly a matter of different/relative unit labour cost.

As a consequence of the present private sector structural surplus, there will be an equivalent public sector structural deficit. If, then, the requirement of a balanced public sector structural budget is executed, as it has been at least partly since 2011, one consequence of such a fiscal policy strategy has been a deflationary policy consisting of budget cuts and higher taxes – in fact, a discretionary fiscal policy which, in principle, runs counter to the overarching idea of fixed rules aiming to stabilize private sector expectations.

From a real-world perspective it is important to understand that the private sector does not by itself settle at full employment, and even if it did, there are no mechanisms securing a balance between private sector financial savings and real investment i.e. a balanced budget (closed economy). Quite the contrary, when real numbers are looked at. Hence, economic policies have to be conducted specifically in each particular case, which pre-fixed rules cannot help.

A critical view on mainstream fiscal rules

The idea of using the structural budget balance⁴ as a guide for fiscal policy comes from the GEM. Within this model the macroeconomic market system is attracted by the predetermined private sector full structural employment with real investment being equal to private financial saving. This model builds on the axiomatic foundation of a ‘natural’ structural balance in the private sector. Hence, by seemingly indisputable logic the conclusion is formulated that the public sector budget ought to be balanced.

Real-world economics follow, as mentioned above, another kind of logic: our knowledge of the macroeconomic system is limited and uncertain, and due to empirical observations the axiom of general equilibrium is dismissed. As such, any macroeconomic development can only be analysed adequately by using an open model system, which covers the ‘economy as a whole’. It is not meaningful to look at one sector/market in isolation, such as the public sector – assuming *ceteris paribus* for all other markets. Hence, only a general model makes sense, but not necessarily a GEM. The difference – to spell it out – is crucial, because GEMs have, as an untested axiom, that a perfect competitive market system is self-adjusting and establishes by pure market forces a ‘general equilibrium’: this is, in fact, also the outcome of the German ideal model!

Three important implications follow from this. First, the structural budget balance cannot be observed and the outcome of an attempt to quantify it depends

on the quality (and relevance) of the underlying macroeconomic model. The epistemological conclusion is: we cannot know the actual size of the structural deficit (Morgan, 2013). Second, even if we could establish a reasonably reliable model, it is not possible a priori for economists to judge what the politically recommendable balance is between the private and the public sector with regard to consumption, real investment, income distribution and working time. In the real political world there is no answer to this for as long as it is unknown how to balance the structural budget in accordance with private sector behaviour and political aspiration (Galbraith, 1958). And, finally, without knowing the magnitude or the optimal (warranted) size of the public sector a pre-fixed structural budget rule may be destabilizing from a macroeconomic and a political point of view (Koo, 2011). Looking at EU today it seems likely that the macroeconomic imbalances are caused by the collapse of private investment, deteriorated international competitiveness, excess ‘private’ savings and/or political prodigality – all factors causing persistent deviation from full employment.

Getting causality right is essential for economic policies

Countries with decreasing private real investments have experienced excess private financial savings, causing higher unemployment and a public sector deficit. Automatic budget stabilizers secure that the financial surplus in the private sector is (partly) mirrored as a deficit in the public sector. In some countries (among others Germany) the private surplus has its major counterpart in a rising balance of payments surplus. But for Europe as a whole, which is pretty much a closed economy, one finds a near one-to-one relationship between the private sector financial surplus and the public sector deficit. One direction of causality runs from lower private investment via increased unemployment to a deterioration of the public sector’s budget (Palley, 2010).

Another chain of causality runs in reverse from austerity policy (cuts in public expenditures and tax rates increases), via higher unemployment, to a reduction in public sector deficit; but it also reduces private investments and increases the private structural budget surplus. This causal mechanism is weaker, in the short run, because of higher unemployment activating counterpoising social expenditures and tax shortfalls and, in the longer run, due to lower productivity for a number of reasons. Austerity policy may have a negative impact on private investment. The latter effect is a serious concern because the public sector budget will only improve if the financial excess savings in the private sector is reduced (so that private savings are reduced more than private investment is reduced) – as long as the balance of payments is unchanged (Radice, 2014).

Although this private/public sector imbalance and mutual interrelationship is apparent in reality, they are not present in conventional GEMs used by most economists advising governments in EU countries and in Brussels. The analysis of a reduction of a public sector deficit within these models is conducted by considering the public sector budget balance as an exogenous variable, which can change without any consequences for unemployment. In the labour market private

employment substitutes public employment frictionless. Within those models public investments are not seen as a policy instrument, which can counterbalance a shortfall in private investment. Contrary to this view, public investment is in competition with private investments sharing a given amount of savings. Hence, in GEMs there is a high degree of ‘crowding out’ because the private and public sector compete for a given amount of limited and scarce resources. Within the Stability Pact public investment is not separated from public consumption; both categories reduce private investment – a view which hardly makes sense with regard to the impact of the growth process in the real world, where public investment adds to the overall productivity. The outcome of this 3 per cent limit of public sector budget balance has been a fall in public investments in most countries. When austerity policies are undertaken, it is, in practice, much easier for a government under pressure to cut public investment than public consumption.

This lack of awareness of the important roles of public investment as a constructive complement to private investments is unfortunate for many reasons. Taking into consideration that the main cause of the present crisis is excess *private* financial savings, there is a lack of real investment projects to absorb the excess of finance within the private sector. In fact, private pension funds would probably be more than happy to be asked to participate in the financial prospects of specific public investment projects. To attract private pension funds for this kind of public investment governments have a number of options, in the form of sticks and carrots (Truger, 2015).⁵

The present chapter does not discuss whether the growth process in Europe (considered as a whole) is wage- or profit-led. However, the literature seems to be quite clear on this question – see Stockhammer *et al.* (2009). Allow me to quote a recent survey by Lavoie and Stockhammer (2012), p. 21:

All these studies face challenges in identifying the direction of causality [between real wage and productivity] and the distinction between short-run and long-run effects, and more research is certainly needed. Indeed, simple national growth accounting makes clear that faster productivity growth should be associated with faster real wage growth, thus bringing about the problem of reverse causality.⁶

With regard to the development in potential output in the future, productivity is pivotal. The investment ratio and productivity increases seem to be strongly positively correlated. The implication is that a smaller investment ratio reduces increases in potential output and effective demand at the very same time.

The implications of adopting a real-world perspective and its view on causality

Getting causality right is essential to conduct economic policy right. Within the GEM this is a non-issue because in equilibrium the time dimension has disappeared and causality is suspended. Everything happens at the very same time. The only

discrepancy is an initial change of one or more exogenous variables. If the public budget is an exogenous variable then it comes first and causes the private sector to adjust; the private sector is a set of endogenous variables derived from optimizing individual agents with given preferences, which adjust to the exogenous variables.

In the path-dependent real-world model private real investment can be assumed to be exogenous – or at least to have a significant exogenous element for reasons not explicable by money incentives (animal spirit). In this case the public sector balance due to automatic stabilizers has to adjust – the public budget becomes an endogenous variable.

The continuous fall in the real investment ratio has had a negative effect on real GDP for (at least) three reasons: 1) demand-side contraction expanded by the income multiplier effect, 2) decreased wage share due to fall in real wage and employment (often) spills over into lower private consumption (partly compensated by increase in net export, but export ratio for the EU15 as a whole is rather small) and 3) less private investment means smaller expansion of real wealth, which might have a negative effect on the propensity to consume.

In this case, higher unemployment may originate from an imbalance in the private sector, when financial savings exceed real investment. The increased public sector deficit is a mirror image of the change in the private sector behaviour. The causality runs from private sector activities to the budget outcome of the public sector. Hence, an improvement of public sector finances is better initiated from the private than the public sector. Here, monetary policy could be instrumental, but is outside the reach of the national governments within the Eurozone.

As long as unemployment is high in Europe policies should be directed towards how to increase real investment ratio. Here, we are in need of a thorough investigation of what factors determine real and productive private investments. But, even more important, European politicians could start to consider their own aspirations with regard to ‘the future of Europe: what society do we want for ourselves, our children and grandchildren?’ and suggest an investment policy in accordance with these expressed intentions. Seemingly, a sustainable society does not come by itself: education, research, private and public savings and investments, social structures and environmental issues have to be guided towards a prosperous future. I leave this for another chapter.

Concluding remarks

What are the implications of having adopted a set of fixed public sector budget and debt rules? Within a macroeconomic model characterized by uncertainty about the structural form, unstable macroeconomic behaviour and lack of knowledge about future fixed rules might cause instability and further uncertainty. As we have seen many times in the past, the public sector budget and debt limits have been violated in a number of countries because following the rules would have destabilized the economic development⁷ which have caused political frustration for two reasons: 1) trust in EU institutions is undermined and 2) policies

to restore public finances have, in many cases, increased the overall macroeconomic imbalance.

Furthermore, the rules which are applied to individual countries have a different impact, depending on the macroeconomic development in the other EU countries. The IMF (among many other research institutes) has recalculated the size of the national fiscal multipliers taking the development in the European Union as a whole, the global economy as a whole and the negative business cycle into consideration. During the great recession the GDP-multipliers are substantially larger than one, especially when the interrelationship between the EU countries is taken into consideration. Previously, the multipliers were calculated for each country in isolation – assuming that the situations in other countries remain the same, which is obviously unrealistic (Blanchard and Leigh, 2013).

Looking through the lenses of the real-world model fixed public sector budget and debt rules are a destabilizing strategy when disturbances originate from the private sector. But they make sense in the GEM, if the only disturbances are public sector activities. In addition, much more attention should have been devoted to the balance of payments. An external deficit is much more difficult to finance than a public sector deficit. Once again, there is, in the real world, no guarantee that the balance of payment current account is balanced at full employment. This is a matter of international competition between the participating member countries within the Eurozone, as long as the floating exchange rate secures balance of payments equilibrium at any level of employment.

Summing up the arguments, causality is key when macroeconomic imbalances are to be corrected. They can originate from many different sources within the private, the foreign or public sector and none of them can be guided by fixed rules. Economists (and policy-makers) should, rather, take a view on the economy as a whole and identify the disturbing factors and the causal effects before suggesting any correcting measures. Discretionary policies are always to be preferred when the economic system is path dependent.

Notes

- 1 I have received very valuable and constructive comments from the editors, without, of course, any commitment for them to the end product.
- 2 Perhaps, at least to some degree, this fiscal strategy could also be explained by the dominance of the modern macroeconomic mainstream – the new neoclassical synthesis – in economics departments and in governmental administrations.
- 3 And even better as a constitutional fixed rule because this analytical result is considered as invariant through time: these models are, without hesitation, used for projections 50 years (or even more) into the future!
- 4 Take the usual definition of ‘public sector structural budget’ as the ‘full employment budget balance given a particular fiscal programme (current tax and spending policies)’, Snowdon and Vane (2002), p. 285. The usual calculation of structural budget balance implies that private (real) investment is increased up to the point of full employment. This calculation is purely hypothetical: how is this private sector investment boom realized? Only in the GEM it is assumed to come by itself! In real-world economics the calculations rely on what kind of adjustment mechanisms (if any?) are assumed to generate full employment.

- 5 If public investments were exempted from the requirement of public sector budget balance, it would not be necessary to make all kinds of circumventions by setting up private–public partnerships, with a government guarantee attached, which is not counted as a public liability according to the Maastricht budget criteria.
- 6 The paper goes on, arguing that the causality most likely runs from higher wage to increased productivity. I hope to investigate this matter more thoroughly at a later stage.
- 7 One may recall that in the year 2004 – when Germany and France broke the Stability Pact – the chairman of the EU Commission Romani Prodi used, in an interview with *Financial Times*, the expression ‘stupid’ to characterize the rigid rules of the pact.

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7 The making of a revolution

How important are economic crises?¹

Finn Olesen

Introduction

Even since the days of Adam Smith and, especially, David Ricardo and the Marginal Revolution, economics has had a focus on optimality questions as a more and more important first priority as *the* core theoretical question. However, as evidence from economic history tells us, real-life economics is seldom about optimal outcomes. At the microeconomic level, households and firms are typically struggling to make the most of the second-best solutions in place as an actual economic outcome (be it temporarily or intertemporarily). Likewise, at the macroeconomic level, historical evidence is a story primarily of fluctuations in aggregate demand and aggregate production.²

As such, core theoretical statements of mainstream economics have often been in conflict with real-life phenomena. In fact, with a philosophy of science perspective coloured by falsification – the critical rationalism of Karl Popper – actually, many core theoretical statements of economics have been erroneous.³ Especially, this seems to be the case with macroeconomic theory.

In the history of economic thought, the mainstream understanding has often been challenged by more non-mainstream views. For instance, Karl Marx and the German Historical School confronted the classical paradigm with its lack of realism, theoretically as well as methodologically. Later on, the neoclassical theory was criticized by, among others, Thorstein Veblen and John Maynard Keynes. Nowadays, where many economies are characterized by depressive economic conditions in the still ongoing economic crisis, the modern macroeconomics – the ‘new neoclassical synthesis’ – with its dynamic stochastic general equilibrium (DSGE) base-line model is confronted with many critical statements from many economists (Post Keynesians as well as non-Post Keynesians).

As we all know, the Great Depression in the 1930s finally resulted in the defeat of the neoclassical theory as the Keynesian Revolution overtook the scene of macroeconomics. That is, in this particular case, the strength of the economic depression of the 1930s was so strong and persistent that phenomena of real life not only made it necessary but also actually called forward a revolution in the mainstream macroeconomic understanding as shown in the next section. Today, however, as discussed in the third and fourth section, it might be

questionable if the present economic crisis is able to launch a new revolution in macroeconomics.

As such, the primary aim of the present chapter is to discuss some aspects of how important economic crises are in changing the content of mainstream macro-economic thinking because, as stated by Laidler (2015, p. 1),

Macroeconomics is prone to ‘revolutions’ – episodes of rapid change in majority opinion about how the economy functions, what policy can do about it, and, more fundamentally, about what analytic and empirical methods should be used to address these questions. As such episodes unfold, certain ideas, sometimes groups of ideas, disappear for a while, only to reappear later.

Then in the 1930s: the Great Depression

As stated elsewhere, see Olesen (2010), the writings of John Maynard Keynes can be seen as a lifelong struggle to try to get economic theory to correspond better to real-life phenomena than the mainstream understanding of his time did. Ever since the publication of his *Economic Consequences of the Peace* in 1919, Keynes argued in almost all of his writings that the possible macroeconomic outcome of a modern monetary production economy need not be one of optimality. Rather, as documented by empirical facts, such an outcome could certainly be (and often had been) one of less than full employment.

As we all know, Keynes finally succeeded, theoretically as well as methodologically, in giving a new macroeconomic framework that came to revolutionize the understanding of how the processes of a macro economy unfold themselves with the publication of *The General Theory* in February 1936 (see, e.g., Davidson, 2007).⁴ Based on the messages in this book, the Keynesian Revolution almost totally took over the scene of macroeconomics for decades to come.⁵

That is to say, the economic crisis of the 1930s – the Great Depression – was severe enough to trigger a revolution in macroeconomics. The old understanding had to give way to an understanding that offered answers to questions of theoretical, empirical and conceptual anomalies that the old understanding had failed to present convincingly. As such, at least five main achievements became the result of the Keynesian Revolution.

First, of course, macroeconomists got a new view on the role played by the level of aggregate demand. Now the importance of aggregated demand had to be incorporated in macroeconomics as they acknowledged the necessity of having a focus on how the level of aggregated output was determined and how it could be manipulated through economic policy. That is, macroeconomists became concerned with how the processes of income determination could be expected to unfold, given various impediments to the economy – perhaps especially with a bias towards a situation where the economy was in a situation of less than full employment.

Within the classical and neoclassical theory, aggregate demand played in general a very passive role in determining the level of aggregate output. The outcome at

the macroeconomic level of the economy was, in principle, determined by the strength and effectiveness of the market forces at the microeconomic level. Supply-side effects dominated the economic processes – in essence the battle between supply and demand on every single market in the economy – which always ended with a market clearing result at the market level. As such, the classical and, especially, the neoclassical theory are, in fact, all about how an economy resulting from the market mechanism is going to get to equilibrium position, at the market level as well as at the macro level, and this is fundamentally governed by changes in relative price relationships.

Stated alternatively, classical and neoclassical theory is a story about the validity of Say's Law. Of course, the economy was not always necessarily immediately in a position of equilibrium in the very short run. However, a given disequilibrium position would not be that far away from the equilibrium position (only small deviations in prices and output levels were allowed) and, at the same time, in normal circumstances, a disequilibrium position could not be in existence for a very long period. In general, phenomena of disequilibrium were short run in nature.

With *The General Theory*, Keynes told quite a different story. In [chapter 3](#), he presented his macroeconomic model: 'the principle of effective demand'. By use of this model, Keynes was now able to show how an economy could be locked in a disequilibrium position with less than full employment for a prolonged period indeed. This kind of disequilibrium was not explained by stating inflexibility in the wage and price settlement; rather, it was lack of sufficient effective demand in the economy that made such a situation prevail.⁶ This is not to say, however, that supply-side effects were not important to Keynes. Quite the contrary; an economic story could not be told the right way without attention being paid to both the demand side and the supply side of the economy (just read chapter 21 of *The General Theory*).

As a consequence of this understanding, even today, we still teach students in basic macroeconomic courses how to do an economic analysis within the framework of the 45° diagram, the investment–saving/liquidity preference–money supply (IS/LM) model and the aggregate demand/aggregate supply (AD/AS) model manipulating the level of aggregate demand by use of economic policies to get a macroeconomic outcome of full employment. That is, the focus of basic macroeconomics is on the output gap, be it positive or negative.

Second, macroeconomists got a new view on how to conduct monetary policy. In the old understanding, monetary policy had to do with how to achieve stability in the price level (the inflation level). This was the concern of the management of the central banks. Potential problems with the aggregate level of output and employment were, in general, left for the market mechanism to solve. If the economic situation was rather atypical, some help from government by limited use of fiscal policy could be accepted. However, with Keynes and *The General Theory*, bankers were now told primarily to look after the level of total output – fluctuations in aggregate income and employment became very important and were now a concern of bankers too.⁷ As such, the central bank should no longer

be seen as an independent agency. Rather, monetary policy should, in general, be coordinated with other aspects of the general economic policy (especially fiscal policy). As such, central bankers came under the control of the government.

Third, macroeconomists got a new view on how to conduct fiscal policy. Away with the classical view on fiscal policy stating that the budget should always be balanced. Potential crowding out effects were no longer that important if the economy functioned at a level less than full employment. Budget deficits – as well as a public debt – could be acceptable. That is, from now on, the use of fiscal policy had to be evaluated according to the purposes for which it was designed (the principle of functional fiscal policy).⁸

Furthermore, Keynes had illustrated in his *General Theory* that, in a particular case, monetary policy had no effect at all on real economic variables. The level of the interest rate could be so low that nobody in the economy would expect the interest rate to fall below the present level. In such a situation where the liquidity trap is present in the economy, politicians are forced to use fiscal policy if they want to make an ongoing economic recession less severe.

Fourth, macroeconomists got a new view on international affairs: that countries should operate internationally in coordination and not in conflict with each other (as laid down by the treaty of the Bretton Woods System). The principle of income determination was not only in action nationally, but, of course, also internationally. Therefore, economic policy changes during troublesome economic times, at least to some extent, should be coordinated between countries.

Fifth, macroeconomists began doing econometrics. Thereby, they gave the politicians a vital instrument at their disposal when they had to decide what to do economic policy-wise when they tried to minimize the fluctuations in aggregate demand and output (the policy of ‘stop and go’ demand management).

Now in the 2010s: the Great Recession

Later on, after a period with monetarism, new classical and new Keynesian theory, a synthesis emerged in macroeconomics. The modern macroeconomic mainstream is now in general a story about the new neoclassical synthesis (NNS) with DSGE modelling as a base-line model. Within this framework, some (most) of the main achievements resulting from the Keynesian Revolution have been discredited.

It is now common to talk about policy neutrality. To be sure, that is the case in the longer run. In the short run, however, a change in economic policy might make a difference, if such a change is going either to improve the flexibility of price and wage settlement in the goods and factor (especially labour) markets or to minimize market imperfections in general. That is, fiscal policy is primarily designed to ensure that sustainability is achieved, at least in the longer run, while monetary policy is conducted according to guidelines given by the Taylor Rule. In other words, demand-side effects may have a role to play in the short run, but normally the dominant effects in modern macroeconomics have to do with supply-side effects. As such, changes in relative prices would usually do the trick: to get actual total output and employment to become closer to that of full employment. As such,

the modern macroeconomic mainstream assumes that the forces of the market mechanism are very strong and effectively present in real-life economic behaviour and phenomena of modern economies. The vision of many (most) macroeconomists is characterized by the statement that 'more market is better than less market' (concerning private as well as public activities).

However, in 2008–9, most countries were hit by an international financial crisis as many of the financial-created bubbles burst. Later on, as we all know, this crisis led to the present Great Recession of many countries. Because of this, the modern macroeconomic mainstream came under attack as many became more and more critical of the virtues of this understanding with its base-line modelling of DSGE models. Somehow, these models seem to tell a macroeconomic story that is too theoretically perfect to be able to capture some very important aspects of real economic life to an acceptable degree. Therefore, perhaps it is time to revolutionize macroeconomics once again.

But, at present, it is more than questionable if a shift in the macroeconomic paradigm is just around the corner. We are unlikely to witness the birth of a new revolution in economics in the years to come. Rather, it seems most probable that the modern macroeconomic mainstream will react to the criticism by making at least two important revisions.

First, it seems time so say goodbye to the hypothesis of rational expectations and, probably, to a large extent, also to the representative agent in macroeconomics. As expressed by a leading mainstream macroeconomist of the NNS, the assumption of rational expectations is:

a strong one, and one may wonder if it should be relaxed, especially when considering relatively short-run responses to disturbances, or the consequences of newly adopted policies that have not been followed in the past – both of which are precisely the types of situations which macroeconomic analysis frequently seeks to address.

Furthermore:

the assumption that an economy's dynamics must necessarily correspond to an RE equilibrium may seem unjustifiably strong... It makes sense to assume that expectations should not be completely arbitrary, and have no relation to the kind of world in which the agents live; indeed, it is appealing to assume that people's beliefs should be *rational*, in the ordinary-language sense, though there is a large step from this to the RE hypothesis.

Therefore:

We should like... to replace the RE hypothesis by some weaker restriction, that nonetheless implies a substantial degree of conformity between people's beliefs and reality – that implies, at the least, that people do not make *obvious* mistakes.

Taken literally, hardly any post Keynesian could argue against the above view, which has been put forward by Michael Woodford.⁹

Second, it seems as if the modern macroeconomic mainstream, finally, has acknowledged that financial aspects matters. That is, financial aspects may indeed have very important real economic consequences. They could dramatically disturb the outcome of total output and employment. As stated by Romer (2011, p. 358), for example:

The crisis of 2008–2009 has made it clear that non-Walrasian features of credit markets have important macroeconomic consequences. Disruptions in credit markets can cause large swings in economic activity, and credit-market imperfections can have large effects on how other shocks affect the macro economy.

Or as pointed out by Laidler (2015, p. 20), the NNS did not, in general, focus on the important question of how the transmission mechanism of monetary policy changes actually worked. Therefore:

The DSGE models that lay at its theoretical heart had nothing to say about a ‘residue of things’... including financial crises and their real consequences. But in 2007, an example of this residue, potentially as serious as the Great Contraction that had helped provoke the Keynesian Revolution, became the central problem that macroeconomics needed to deal with.

Moreover, the need to know about this transmission mechanism was highlighted by the ‘zero-bound’ scenario that became the reality some years later after the outbreak of the Great Recession. Seen from a European perspective, the combination of near zero interest rates set by the European Central Bank and rates of inflation within the European Union coming down also to near zero, and for some countries even below zero, might question the appropriateness of a target value of 2 per cent as the proper level of inflation within the EU. With the danger of deflationary tendencies, the real interest rate is too high to create enough effective demand to close the present output gap.¹⁰ So what should we do with monetary policy?¹¹ What advice can we get from the DSGE models? Sadly, none whatsoever.

Furthermore, what about the method of the macroeconomic mainstream? Is it time to abandon DSGE modelling? Probably not. The principle of ‘there is no alternative’ (TINA) seems still to govern how to do macroeconomics. As Woodford (2008, pp. 2 and 13) stated, without hesitation:

While the problems of the field have hardly all been resolved, there are no longer such fundamental disagreements among leading macroeconomists about what kind of questions one might reasonably seek to answer or what kinds theoretical analyses or empirical studies should even be admitted as contributions to knowledge [and this is done by using DSGE models]... there are really no longer alternative approaches to the resolution of macroeconomic issues.

However, some mainstreamers express themselves a little less fundamentally (perhaps due to empirical facts of recent years):

First, despite the models' complications, there is a great deal they leave out. For example, until the recent crisis, the models' treatment of credit-market imperfections was generally minimal. Second, the microeconomic case for some important features of the models is questionable. Most notably, the models include assumptions that generate inertia in decision making... [which] is mainly motivated not by microeconomic evidence, but by a desire to match macroeconomic facts.

(Romer, 2011, p. 361)

Actually, a less fundamentalist view than that of Woodford might come in handy, as DSGE modelling has been empirically falsified. Just to mention some important aspects:

1. Although the DSGE models can cope with random exogenous events, events or shocks need not be random or exogenous – often disturbances are endogenous in nature rather than exogenous.¹² That is, an initial shock might trigger some endogenous processes within the private sector of the economy as households, as well as firms to some degree, start changing their actual economic behaviour.
2. Macroeconomic patterns in real-life economics are not only patterns of unique steady states paths – real-life phenomena are also seldom ergodic. Phenomena of hysteresis or path-dependencies in general are empirical facts of ordinary economic daily life. As such, it should be remembered that too tight a fiscal policy – the austerity view of the EU – designed to get a long-run kind of sustainability concerning fiscal policy in place, in itself reduces the likelihood of exactly that being fulfilled, as the outcome of the austerity policies could be a permanent higher level of unemployment in the long run.
3. DSGE models try to include aspects of uncertainty; however, DSGE models only allow for uncertainty of an epistemological kind – there is no room in DSGE modelling for a kind of uncertainty that is ontological (which is, of course, the more troublesome of the two mentioned kinds of uncertainty), probably the kind that is most important in times of economic crises.
4. Of course, economic behaviour is dependent on expectations; however, in real life, households and firms do not act economically based on perfect rational expectations. From real-life behaviour, we know that households as well as firms make mistakes not only of a stochastic nature, but also, and much more importantly, of a systematic nature. They try to behave appropriately, but, in general, do not attain an outcome of optimality.
5. Likewise, of course, households and firms make decisions of an intertemporal kind; however, these intertemporal decisions are not characterized by perfect optimality; rather, decisions are often (always) of a second-best kind as aspects of the future are bound to be unknowable in the present.

6. In the beginning of the 1930s, Keynes argued that the financial sector of the production economies of his time had grown to such an extent that financial aspects had an important role to play in households' and firms' decisions about what to do economically. Since then, financial aspects have come to play an even more crucial role. In present-day societies, 'money matters' more than ever before. As such, it is a fundamental weakness of DSGE modelling in general that it does not include analyses of a financial kind.
7. Finally, methodologically, the 'hypothetical-deductive method' used by DSGE modelling is not the most relevant method when you acknowledge that 'unlike atoms or cells, individuals are free and, so, unpredictable, because they learn and change their behavior; because institutions also change their behavior; and because a general uncertainty permeates individual behavior and economic analysis' (Bresser-Pereira, 2012, p. 9).

To sum up, it seems certain, that modern macroeconomic understanding is currently undergoing some revisions. However, as stated by Palley (2013), the modern macroeconomic mainstream apparently seems to be changing but, actually, mainstreamers are not making really important changes to their macroeconomic understanding.¹³ Therefore, seen from a post Keynesian perspective, it is more than questionable if these revisions will be sufficient to enable mainstreamers to perform a macroeconomic analysis that, in a relevant way, copes with the essential concepts of: *time*, *money*, *expectations* and *uncertainty*. Unfortunately, it seems most likely that mainstreamers will continue to do macroeconomic analyses that are only ergodic in nature.

Some post Keynesian remarks

In accordance with the views given by Paul Davidson in many of his writings, the behaviour of the individual household or firm has never been characterized as identical to the behaviour of *the rational economic man*. Both households and firms are operated by human beings, which are able – at least to a large extent – to change their minds about what to do up to the very last moment. Also very importantly, these economic agents have to act in an economic environment of uncertainty, both of an epistemological and an ontological kind. Because of this fact, their behaviour is based on expectations. However, these expectations are not 'rational' in the modern understanding of the term. Economic behaviour is not only characterized by mistakes of a stochastic nature; rather, such behaviour – as, probably, all human behaviour – is also characterized, at least to some degree, by mistakes of a more systematic nature.

Furthermore, as Davidson repeatedly has argued, due to the existence of an ontological kind of uncertainty, money has never been neutral – neither in the long run nor in the short run. This is to say that almost all of the economic behaviour of modern households and firms hinges on financial aspects (restrictions) of some kind. Due to this fact, economic decisions are often carried out in real life by making contracts. In addition, you have to remember, these contracts are nominated in money terms. That, in itself, is clear evidence that money and, in general, financial aspects matter.

As shown in the above, modern macroeconomic understanding is probably going to make at least two necessary revisions of a more fundamental kind. First, it has to accept that modern economies are financially dominated economies. Without a thoroughly understanding of the crucial interaction between the real and the financial sector of the economy, macroeconomists are never going to get the right answers when they pose complex questions. There is more behind the processes of a modern macroeconomic system – which develops through time in a path-dependent and, to some degree, unforeseeable way – than changes in relative price relationships can explain (as is the case with modern mainstream understanding).

Second, it has to give up using rational expectations in the strict meaning of the term. As Woodford (2013) stated, the economic behaviour we model has to depict, to some degree, what we know about actual economic behaviour. Unfortunately, households and firms often make mistakes not only stochastically, but, unfortunately, also of a more fundamental systematic nature. In fact, their expectations never conform to what we understand by the term ‘rational expectations’. This is, however, not the same as saying that households and firms do not make rational choices – or try to do so. Rather, it suggests that both can behave rationally accordingly to other rules than those given by the economic term (and the notion of the *rational economic man*). In real life, it can be rational to go with the best of, perhaps, many possible second-best solutions (as stated, for example, by the representatives of the Bounded Rationality school). That is, there is more than one way to define a microeconomic foundation for macroeconomic theory.¹⁴

As a non-mainstream economist, you have to give credit to the modern macroeconomic mainstream for relaxing the assumptions on the above-mentioned two aspects. In doing so, they are gaining a better correspondence between the theoretical framework and the facts of real life. However, it remains to be seen if these changes are of such a fundamental kind as to ensure room for the non-neutrality of money and financial aspects in general in mainstream macroeconomic theory.

Furthermore, as long as mainstream understanding avoids incorporating the existence of an ontological kind of uncertainty as a core element in its theoretical models, it is doubtful that mainstreamers are going to get things right when they try to explain what is currently going on in the economy – not to mention the problems they have foreseeing an unforeseeable future.

You have to remember, as stated by Paul Davidson, that Keynes broke away from the mainstream of his time by not accepting three classical axioms, that: 1) money is neutral; 2) gross substitution exists;¹⁵ and, iii) the economic system is of an ergodic nature.¹⁶ At present, it seems more than questionable if the modern macroeconomic mainstream could ever wholeheartedly accept the rejection of these three classical axioms.

Concluding remarks

As stated by Davidson (2007, p. xiii), the macroeconomic framework given by Keynes is a ‘most apt description of our market-oriented, money-using entrepreneurial economy’. Based on this framework, economists of today should try to

give way to a modern macroeconomic understanding that is in better accordance with the facts of real life than existing thinking, which is based on the construction of the basic DSGE base-line model. A relevant macroeconomic theory should also be able to handle economies working outside the optimal outcome of full employment. If macroeconomics wants to be a progressive science, it has to be able to deal successfully with important problems of a conceptual, empirical and theoretical nature. Theory must always somehow depict a thorough understanding of phenomena of real life (see, for example, Davidson, 1996). If it does not, theory has to develop and undergo relevant changes.¹⁷

This time, however, we are probably not going to get a new revolution in macroeconomics, as was the case in the 1930s; all there is room for are revisions of the theoretical framework of modern mainstream (important as these are). Methodologically, mainstream itself seems not to accept any changes: DSGE modelling is *the* only way to do macroeconomics. Unfortunately, mainstreamers limit themselves to analyses that are ergodic in nature. The non-ergodic view on economics is, regrettably, only accepted by the post Keynesian understanding, as non-mainstreamers have hitherto had *no* influence at all on the modern macroeconomic NNS.

But, as pointed out by Laidler (2015, p. 21), we know from the history of economic thought ‘that serious empirical and policy problems are not enough to overthrow a well-entrenched orthodoxy’. There must also be an alternative theory that macroeconomists can turn to. Post Keynesianism gives such an alternative. That is, there is still a vital role for a post Keynesian understanding to play on the macroeconomic scene. The need for a revolution in macroeconomics according to post Keynesian arguments is pre-eminent, now and for the years to come.

Notes

- 1 I am grateful to Jørgen Drud Hansen for comments on an earlier draft of this chapter, but absolve him of any errors, and the many omissions, which remain in what follows.
- 2 For instance, see Skidelsky (2009).
- 3 This fact made Blaug (1997, pp. 3, 4 and 5) to state: ‘Modern economics is sick. Economics has increasingly become an intellectual game played for its own sake and not for its practical consequences for understanding the economic world. Economists have converted the subject into a sort of social mathematics in which analytical rigour is everything and practical relevance is nothing... much of modern microeconomics might be fairly described as a kind of geography that consists entirely of images of cities but providing no maps of how to reach a city either from any other city or from the countryside... in recent years even macroeconomics has fallen prey to empty formalism.’
- 4 ‘Keynes freed his mind from the binds of the classical analysis that was the conventional wisdom of economists of his (and our) time. He was able to reorient economic analysis in his mind towards a realistic analysis of the economic world in which we actually live,’ Davidson (2007, p. 3).
- 5 Although it is an unquestionable fact that there is a huge gulf in understanding between the core elements of the economics of Keynes and those of traditional or old Keynesianism, we are not going to discuss this important aspect further in the present chapter.

- 6 In such a situation, you could argue that the entrepreneurs at the microeconomic level were in a position of optimality as they had been able to maximize their level of expected profit. However, at the macroeconomic level, this microeconomic outcome in aggregate was one of inoptimality as the economy as whole experienced less than full employment; that is, the macroeconomic outcome was characterized by the existence of involuntary unemployment.
- 7 As, for instance, stated by Jørgen Pedersen in 1933, who was a very famous early Danish Keynesian economist; see Olesen (2001): 'The object is therefore to find a phenomenon, the stabilization of which by general consent will be found desirable, no matter how the price level may behave. Such a phenomenon is, I think, economic activity, meaning by this a state of affairs in which the productive resources of individuals or economic units may find normal employment, i.e. a state of economic equilibrium... In fact, the object of the national monetary policy should be, not the stabilization of exchange rates, as under the gold standard system, but the stabilization of economic activity and the level of money income,' Pedersen (1975, pp. 11 and 20).
- 8 Although the credit for this principle in general is given to Abba Lerner's contribution from 1943, it was actually the Dane Jørgen Pedersen that first introduced the principle in 1937. In this paper he writes: 'Whether a public debt is to be repaid depends upon the expected effect on production and distribution and other political factors measured in terms of given political goals, and these of course will vary from case to case... We may then conclude that the question of public debts or, what is the same thing, the question of a surplus or a deficit in the public budget is a question of economic policy and consequently it is only possible to answer the question under particular assumptions about economic policy,' Pedersen (1975, p. 33).
- 9 See Woodford (2013, p. 304), emphases original.
- 10 Therefore, it might be time to change the ECB's target value of inflation upwards (e.g. from 2 per cent to 4 per cent). Unfortunately, right now such a change in the target value would not in itself bring about a most needed stimulus to current real economic activity within the EU. Nevertheless, it could be an important lesson learnt from the still ongoing crisis concerning future actions of central banks.
- 11 As we know from real life, central banks had to try to come up with an unconventional kind of monetary policies.
- 12 With Stiglitz (2012, p. 32): 'In most models, the disturbances to the tranquillity of the economy were exogenous, but historically – as now – the important shocks are endogenous.'
- 13 Palley defines the modern macroeconomic mainstream as 'Gattopardo economics'; mainstreamers act as if they take 'on board ideas developed by critics of mainstream economics, but it does so in a way that ignores the thrust of the original critique and leaves mainstream analysis unchanged. Gattopardo economics makes change more difficult because it deceives people into thinking change has taken place. By masquerading as change, it crowds-out space for real change... Gattopardo economics is one of the mechanisms for blocking intellectual change. It works by muddying the water and appearing to offer change when in fact it keeps everything the same,' Palley (2013, pp. 2 and 26).
- 14 As Keynes did in his *General Theory* – behind all of his macroeconomic statements you find microeconomic arguments, although Keynes's microeconomic foundation of his macroeconomic understanding is different from the modern one used by the DSGE modelling.
- 15 With Davidson (1984, pp. 567 and 568–9), 'a basic axiom of Keynes's logical framework is that nonproduced assets that can be used to store savings are not gross substitutes for produced assets in savers' portfolios... In the absence of the axiom of gross substitution, income effects (e.g., the Keynesian multiplier) predominate and can swamp any hypothetical neoclassical substitution effects. Consequently, relative price changes via a flexible pricing mechanism will not be the cure-all "snake-oil" medicine

usually recommended by many neoclassical doctors for the unfortunate economic maladies that are occurring in the real world.'

- 16 See, for example, Davidson (1984, p. 572 and 2003–4, p. 253): 'Keynes (1936, Ch. 12) rejected this view that past information from economic time series realizations provides reliable, useful data which permit stochastic predictions of the economic future... Keynes's nonergodic uncertainty and animal spirits concepts... means that although we can have perfect hindsight, there is no lens that can provide corrected vision regarding the future. Entrepreneurial vision of the future is not faulty, but is, instead, based on dreams or nightmares.'
- 17 Just to mention one case from the history of economic thought, this is exactly what happened when Friedman, together with others in the late 1960s, argued that the original Phillips Curve Diagram had to incorporate evidence of expectations concerning future rates of inflation. As such, the old diagram developed into its more modern representation with PC_{SR} and PC_{LR} .

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8 The need for macro foundations for microeconomic theory

Claude Gnos

Introduction

In the 1950s and 60s a few economists in Cambridge questioned the way neoclassical economists quantify economic variables, especially the stock of capital goods available in the economy as a whole. The critique undermined the macroeconomic production function, by which income distribution can be explained through the determination of the marginal productivity of the factors of production. In Joan Robinson's words, this function 'has been a powerful instrument of miseducation' (1953–4, p. 81). Even P.A. Samuelson (1962), who was a forceful advocate of macro functions, acknowledged the relevance of the critique. Nonetheless, he decided to disregard it, and so did his followers, so that 'The economic literature published since shows that, strangely enough, it (the production function) still is [an instrument of miseducation]' (Kurz and Salvadori, 1995, p. 445).

The fact is that the scope of this critique may look overstated with respect to neoclassical economics that is mainly concerned with microeconomic behaviours and propounds micro-founded models. As Blaug noted,

Members of the so-called Cambridge School have gone on ever since equating neoclassical economics with the aggregate John-Bates-Clark version of marginal productivity theory, virtually ignoring the Walrasian tradition of general equilibrium analysis which neither invokes or implies *aggregate* production functions, or, for that matter, the existence of the aggregate capital stocks as an economic variable.

(Blaug, 1997, p. 448, emphasis original)

The present chapter aims at showing that neoclassical microeconomic theory is actually affected by the Cambridge critique. To make my point, I will focus on price determination. I will argue that prices cannot result from the interplay of supply and demand in markets, except if the physical quantities of goods that are supplied and demanded get an economic valuation previously in the process of their production. This means that supply and demand functions cannot be solely founded on micro behaviours; there is also a macro process at work. Section 2

checks the indeterminacy of prices in neoclassical theory. Section 3 puts forward macro foundations for income and price determination. Section 4 concludes.

The indeterminacy of prices in neoclassical theory

The Cambridge critique emphasized that it is impossible to conceive of a quantity of capital measured in terms of prices that should feature in a macroeconomic production function, which is supposed to allow for the determination of the same prices. The prices to be determined should be known beforehand. The neoclassical reasoning is then caught in a vicious circle. Prices are undetermined.

However, neoclassical theory cannot be reduced to the search for a causal relationship between the marginal product of capital and its price. More generally, it is grounded in Walrasian general equilibrium system that replaced the older concept of cause and effect with mutual determination. ‘Thus, for example, to argue that, in equilibrium, the wage rate equals the marginal product of labour is *not* to argue that one is the cause of the other, or that one determines the other’ (Harcourt, 1972, p. 21). Does that mean that general equilibrium theory delivers an unquestionable theory of prices?

To answer this question, let us consider the exchange of two commodities for each other. Namely, in Walras’s view, the theory of production is just an extension of the theory of exchange. Let us assume, as Walras does (1926, pp. 84–91), that the exchange of two goods (A and B) for each other takes place in a competitive marketplace where an auctioneer cries prices, which are defined as ratios of exchange between A and B. A given quantity of good A is held by economic agents who are ready to exchange part of it for a given quantity of good B, while others hold a given quantity of B they are ready to exchange for A.

According to Walras, when crying a price the auctioneer will probably witness an excess demand for one good (let us say, A). Since economic agents cannot demand one good except if they supply another good, to the excess demand for A will correspond an excess supply of the other good (B). To reduce the excess demand for A and simultaneously the excess supply of B, the auctioneer will raise the price of A in terms of B (or, conversely, lower the price of B in terms of A). In this way, he will finally determine an equilibrium price – that is, a price at which supply and demand for each good will be equal. Mathematically, this means that there is only one independent equation of supply and demand available to determine the relative price (price of A in terms of B or price of B in terms of A) of the two goods. Is the equality between the number of equations and the number of unknowns a necessary and sufficient condition for the existence of a solution? This point has been extensively discussed in the economic literature. We will not consider it anew. Instead, we will consider an argument recently made by Schmitt (2012) and still little known, by which the number of independent equations is actually larger than the number of unknowns. Thus, it will turn out that the system of equations does not allow for a solution.

Except if we consider the basic scheme of a barter economy, we cannot stick to prices expressed in terms of goods. In actual economies, prices are numerical, expressed in monetary terms that are pure numbers. As Walras put it, ‘the word *franc* (denoting a standard of value) is the name of a thing which does not exist’ (1926, p. 188). He thus distinguishes between money as standard of value and money as medium of exchange. In his view, as a standard of value or prices, money identifies with the *numéraire* – that is, a commodity to which a pure number may be attached and in terms of which the (relative) value of other commodities is expressed.

The *numéraire* is to be chosen among the goods available in the market. Then, expressing values in numerical terms apparently leaves the number of independent equations of supply and demand and the number of unknowns unchanged. As emphasized by Schmitt (2012, p. 23), neoclassical economists have no doubt about this, but they are wrong.

Let us assume that agents, in the marketplace, agree to exchange four physical units of A at a total price of eight, when the auctioneer cries a price of two for one physical unit of this good. The *numéraire* is the good B, the price of which is arbitrarily set to one. According to Walras’s argument, this means that buyers and sellers *ipso facto* agree to exchange eight units of B at the total price of eight. In Schmitt’s words: ‘That is nonsense’ (2012, p. 23).

Walras’s argument would be relevant if we considered barter. In that case, unit prices have no actual meaning. Buyers and sellers agree to exchange, for example, four units of A for eight units of B. Full stop. As soon as a *numéraire* is introduced this way of reasoning becomes irrelevant. At a given relative price expressed in terms of the *numéraire*, and with reference to their preferences, the agents present in the marketplace may well agree to demand and supply equal quantities of each good without complying with the equality of the total prices of the goods A and B supplied and demanded. The latter equality becomes an equilibrium condition. This is so because the introduction of a *numéraire* defines unit prices of goods A and B. The unit price of good B is arbitrarily assumed to be equal to number one, and the unit price of A is assumed to be a multiple of the latter. Agents decide how many units of A or B they will supply or demand with reference to these (relative) unit prices. In a situation of barter, when four units of A exchange for eight units of B, strictly speaking, there is no price except the exchange of four units of A for eight units of B.

Consequently, in an exchange economy endowed with a *numéraire*, there are three independent equations representing:

1. the equality of supply of and demand for good A
2. the equality of supply of and demand for good B
3. the equality of total prices of the quantities of the goods exchanged.

In conclusion, there are ‘[t]hree independent equations for the determination of a single relative price, a truly hellish conjuncture for neoclassical thinkers’ (Schmitt, 2012, p. 26).

Macro foundations for income and price determination

Although Walras's theory of relative prices still inspires a majority of economists, it is not the whole story. Shortly after the publication of the last edition of Walras's *Éléments d'Economie Politique Pure* (1926), Keynes (1930, 1936) propounded a return to macro-founded principles, which had been the rule in classical economics. General equilibrium may be considered a macroeconomic concept, since it is supposed to account for the way the economy as a whole works. It is micro-founded, however, insofar as the determination of economic magnitudes is supposed to be the outcome of individual behaviours. Not so in Keynes's view. The way the economy as a whole is organized and works is crucial. Economic agents are not simply individuals supplying and demanding goods and services (including productive services) in accordance with their utility curves and the quantities possessed. In Keynes's view, the actual economy is not the 'real exchange economy' described by the neoclassical school (he called it 'classical'). It is 'a monetary economy of production' that he also labelled a 'money-wage or entrepreneur economy' (Keynes, 1933a, 1933b).

In the Walrasian real exchange economy, the entrepreneur, wearing his entrepreneurs' hat (as a person he is on the same footing as other workers), is merely an intermediary between the market for productive services and the market for manufactured goods. The volume of output and its distribution are simultaneously determined by supply and demand in markets, given the productivity of each factor and individual preferences. The equilibrium position of markets is reached when supply and demand are equal for each productive service and product, and when 'the selling prices of the products [are] equal to the cost of the services employed in making them' (Walras, 1926, pp. 253–4). As already mentioned, the theory of production is just an extension of the theory of exchange.

In Keynes's view, production does not amount to real exchanges between productive services and produced goods. On the one hand, Keynes dismisses Walras's threefold distinction between the productive services of labour, capital and land that would be currently exchanged for goods. A production economy is monetary; this notably means that we have to abstract from the physical conditions of production in dealing with the main economic concepts. He thus emphasizes that the notion that capital would be productive is irrelevant: a financial asset provides a yield that is dependent not on the actual efficiency of the corresponding capital goods in the physical process of production, but on the scarcity of capital and the rate of interest on money. Consequently, he may argue:

I sympathise, therefore, with the pre-classical doctrine that everything is *produced by labour*, aided by what used to be called art and is now called technique, by natural resources which are free or cost a rent according to their scarcity or abundance, and by the results of past labour, embodied in assets, which also command a price according to their scarcity or abundance.

(Keynes, 1936, p. 213, emphasis original)

On the other hand, he emphasizes that an actual economy of production involves a monetary and hierarchical relationship between workers and firms, which leaves no room for the notion that firms are mere intermediaries in exchanges. Firms employ workers to whom they pay money wages. When spending their wages, workers obtain a fraction of the output, depending on the prices of the goods they buy. Symmetrically firms earn profits generated by the mark-up defined by the excess of prices over the production cost they paid out, allowing entrepreneurs, their dependents and creditors to appropriate the complementary part of the output. In Keynes's words: 'The firm is dealing throughout in terms of sums of money. It has no object in the world except to end up with more money than it started with. That is the essential characteristic of an entrepreneur economy' (Keynes, 1933b, p. 89).

The successive spending and recovering of the money spent for a given volume of employment, and the correlated search for profit, are thus central in the conception of the principle of effective demand introduced in *The General Theory*. As Keynes puts it, 'entrepreneurs endeavour to fix the amount of employment at the level at which they expect to maximize the excess of the proceeds over the factor cost' (Keynes, 1936, pp. 24–5).

We may observe that this renewed analysis of the production process involves a renewed approach to output and the way to quantify it. Namely, Keynes was then in a position to 'make use of only two fundamental units of quantity, namely quantities of money-value and quantities of employment' (*ibid.*, pp. 41–3). We know that this proposal puzzled his followers (cf. Hicks, 1975) and was, finally, ignored. However, we can show that it is relevant, provided we bring some clarification.

Despite the reference to the 'pre-classical doctrine', Keynes's statement has not much in common with the latter. When elaborating the labour theory of value, classical writers considered that the quantity of labour spent on goods, as measured in time units, was an adequate standard for measuring its 'value in exchange'. An intractable problem resulted from the fact that labour is not homogeneous. Namely, one hour of skilled labour is not comparable to one hour of simple labour. In Keynes's view, the wage bills (E) paid out by firms – that is, $E = N \times W$, where N is the quantity of employment and W the wage unit (Keynes, 1936, p. 41) – provide a measurement of the output of the economy as a whole. There is no question of measuring any specific, economic dimension of the goods produced. Money units are units of account – that is, pure numbers. What is at stake, actually, is the fact that when firms spend a given amount of money on wage bills, whatever the pay rates may be, they have to get their money back in the sale of the produced goods and earn a profit.

If 1000 money units (m.u.) are spent on wage bills to get, say, 100 physical units of a given good be produced, these goods are 1000 m.u.-worth, and each physical unit of them is 10 units'-worth. If 500 money units are paid to workers who produce another type of good, the whole output is 1500 m.u.-worth. These 1500 money units, which represent a cost for firms, simultaneously form the income of the workers employed. This income is earned by workers in the payment of

their wage bills, and spent by them when they buy the goods produced. As already mentioned, depending on the actual price of the goods, the spending of their income will allow them to get only a variable part of the output. This means that profits are incomes transferred from workers to firms, they are not additional to the wages paid out by firms (cf. Gnos, 2006, pp. 91–2). Profits, in their turn, are redistributed in the form of dividends, interest and rents. They are, finally, spent on the goods workers could not buy: firms' beneficiaries spend part of workers' income in place of them. Although a physical unit of a given good worth 10 may be sold for 12 m.u., in the final analysis it will be paid at its production cost – that is, 10 m.u.; the excess 2 m.u. are simply transferred from the pockets of workers into the pockets of firms' beneficiaries. It may be, as well, that firms sell goods at a loss. Let us assume that they sell the same physical unit of good at a price of 8 m.u.; does that mean that 2 units of wages will not be spent? No, for sure. Firms have to cover their losses out of their profits (if any) or by borrowing the money needed. That is what we mean when we say that the output is 1500 m.u.-'worth': 1500 m.u. is the exact amount of money income formed and to be spent on the purchase of the produced goods.

All in all, we may conclude that the wage bills form a macroeconomic income – that is, the income of the economy as a whole. The subsequent formation of profits and their distributive parts is a microeconomic process, in the sense that it does not add to the macroeconomic income defined beforehand. This statement brings us back to our main argument that microeconomics needs macro foundations. Profits cannot be defined but with reference to the wage bills paid out. Moreover, the fact that the money units paid on wage bills defines the exact amount of money income that will be necessarily spent on the produced goods forms the point of reference that is needed to allow supply and demand to determine prices on markets. On the one side, there are firms that endeavour to maximize the excess of prices over production cost; on the other side, there are consumers who endeavour to obtain as many goods as they can for each money unit they earned. This applies to the total output and to each unit of good produced as well. Prices are not relative they are 'absolute', defined in money units on each physical unit of the goods produced.

Conclusion

The idea that the older concept of cause and effect should be replaced with mutual determination is certainly appealing. In Walras's view, it had the merit of allowing for a mathematical representation of the economy, by which factor cost and prices would be simultaneously determined by supply and demand, on the basis of individual preferences and skills. His followers have been confident about it and have developed mathematically sophisticated models in the same vein, without considering that Walras might have been mistaken when generalizing a way of reasoning relevant to a barter economy to the case of an exchange economy.

Actually, supply and demand are unable to determine the numerical prices prevailing in actual economies, except if the factor cost of the goods brought to

market is predetermined in the process of their production. The aim, in this chapter, has been to rekindle interest in Keynes's monetary theory of production, which provides the macro foundations needed for the interplay of supply and demand to play its part in price determination and, more generally, in microeconomic phenomena.

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9 Microfoundations

On the use and misuse of theories and models in economics

Lars Pålsson Syll

The most important recent development in macroeconomic theory seems to me describable as the reincorporation of aggregative problems such as inflation and the business cycle within the general framework of ‘microeconomic’ theory. If these developments succeed, the term ‘macroeconomic’ will simply disappear from use and the modifier ‘micro’ will become superfluous. We will simply speak, as did Smith, Ricardo, Marshall and Walras, of *economic* theory.

Robert Lucas, *Models of Business Cycles*, 1987

Introduction

Most new classical and ‘new Keynesian’ macroeconomists today seem to subscribe to a methodological individualist view, according to which the only ‘rigorous’, ‘acceptable’, ‘well-grounded’ or ‘secure’ way to do macroeconomics is to somehow reduce it to microeconomic analysis. Implementing a microfoundationalist programme, these economists believe that macroeconomics is both dispensable and/or basically reducible to microeconomics. Adhering – consciously or not – to a methodological individualist stance, macroeconomic facts are to be explained only in terms of facts about individual agents. Only when we have arrived at explaining macroeconomic phenomena by deriving them from explanatory primary microeconomic ‘deep parameters’, like preferences, tastes, aspirations and beliefs of individuals, have we got adequate explanations.

But as economists, philosophers, historians and methodologists – such as, for example, John King (2012), Alan Nelson (1984), Roy Bhaskar (1989), John Searle (1996), Tony Lawson (1997), Wim Meeusen (2011), James Hartley (1997) and Kevin Hoover (2001, 2009, 2010a, 2010b) – have forcefully argued, there exist overwhelmingly strong reasons for being critical and doubtful regarding methodological individualism and reductionism and the urge for microfoundations of macroeconomics. In this chapter I want to elaborate on a couple of them.

Microfoundations today – on the history, significance and interpretation of earlier microfoundationalist programmes, cf. Weintraub (1979), Janssen (2006), Pålsson Syll (2011), King (2012) and Hoover (2010b, 2013) – means more than anything else trying to *reduce* macroeconomics to microeconomics by building macroeconomic models assuming ‘rational expectations’ and hyper-rational

‘representative agents’ optimizing over time. Both are highly questionable assumptions. That a specific theory/method/approach has been established as *the* way of performing economic analysis in the economics community is not a proof of its validity, as we will see.

The concept of rational expectations was first developed by John Muth (1961) and later applied to macroeconomics by Robert Lucas (1972). Those macroeconomic models building on rational expectations microfoundations that are used today, among both new classical and new Keynesian macroeconomists, basically assume that people, on average, hold expectations that will be fulfilled. This makes the economist’s analysis enormously simplistic, since it means that the model used by the economist is the same as the one people use to make decisions and forecasts of the future.

Rather than assuming that people, on average, have the same expectations, someone like Keynes, for example, would argue that people often have different expectations and information, and that this constitutes the basic rationale behind macroeconomic needs of coordination – something that is rather swept under the rug by the extreme simple-mindedness of assuming rational expectations in representative-agent models. But if all actors are alike, why do they transact? Who do they transact with? The very reason for markets and exchange seems to slip away with the sister assumptions of representative agents and rational expectations.

Microfoundations: when microeconomic modelling becomes the message

Macroeconomic models building on rational expectations microfoundations impute beliefs to the agents that are not based on any real informational considerations, but simply stipulated to make the models mathematically-statistically tractable. Of course, you can make assumptions based on tractability, but then you do also have to take into account the necessary trade-off in terms of the ability to make relevant and valid statements on the intended target system. Mathematical tractability cannot be the ultimate arbiter in science when it comes to modelling real-world target systems. One could, perhaps, accept macroeconomic models building on rational expectations microfoundations if they had produced lots of verified predictions and good explanations. But they have done nothing of the kind. Therefore, the burden of proof is on those macroeconomists who still want to use models built on these particular unreal assumptions.

Using models in science usually implies that simplifications have to be made. But it comes at a price. There is always a trade-off between rigour and analytical tractability, on the one hand, and relevance and realism, on the other. Modern Walrasian macroeconomic models err on the side of rigour and analytical tractability. They fail to meet Einstein’s ‘not more so’ criterion – thereby making macroeconomics less useful and more simplistic than necessary. Models should be as simple as possible – but ‘not more so’.

If you want the model to fit reality this ought to be rather self-evident. However, when confronting modern Walrasian macroeconomic model builders

with this kind of critique, a common strategy used is to actually deny that there ever was any intention of being realistic – the sole purpose of the models are to function as *bench-marks* against which to judge the real world we happen to live in. For someone devoted to the study of economic methodology it is difficult not to express surprise at this unargued and nonsensical view. This is nothing but a new kind of *Nirvana fallacy* – and why on earth should we consider it worthwhile and interesting to make evaluations of real economies based on abstract imaginary fantasy worlds? It's absolutely unwarranted from a scientific point of view. It's like telling physiologists to evaluate the human body from the perspective of unicorns – they wouldn't take you seriously. And it is difficult from a critical realist point of view to come up with any reason whatsoever why we should judge these macroeconomic model builders differently.

In macroeconomic models building on rational expectations microfoundations – where agents are assumed to have complete knowledge of all of the relevant probability distribution functions – nothing really new happens, since they take for granted that people's decisions can be portrayed as based on an existing probability distribution, which by definition implies the knowledge of every possible event (otherwise it is, in a strict mathematical-statistical sense, not really a probability distribution at all) that can be thought of taking place.

But, in the real world, it is not possible to just assume that probability distributions are the right way to characterize, understand or explain acts and decisions made under uncertainty. When we simply do not know, when we have not got a clue, when genuine uncertainty prevails, macroeconomic models building on rational expectations microfoundations simply will not do. In those circumstances it is not a useful assumption. The main reason being that under those circumstances the future is not like the past and, henceforth, we cannot use the same probability distribution – if it exists at all – to describe both the past and future.

The future is not reducible to a known set of prospects. It is not like sitting at the roulette table and calculating what the future outcomes of spinning the wheel will be. We have to surpass macroeconomic models building on rational expectations microfoundations and instead try to build economics on a more realistic foundation – a foundation that encompasses both risk and genuine uncertainty.

Macroeconomic models building on rational expectations microfoundations emanates from the belief that, to be scientific, economics has to be able to model individuals and markets in a stochastic-deterministic way. It's like treating individuals and markets as the celestial bodies studied by astronomers with the help of gravitational laws. Unfortunately, individuals, markets and entire economies are not planets moving in predetermined orbits in the sky.

To deliver macroeconomic models building on rational expectations microfoundations the economists have to constrain expectations on the individual and the aggregate level to be the same. If revisions of expectations take place, they typically have to take place in a known and pre-specified precise way. This squares badly with what we know to be true in **the** real world, where fully specified trajectories of future expectations revisions are non-existent.

Further, most macroeconomic models building on rational expectations micro-foundations are time-invariant and *a fortiori* give no room for any changes in expectations and their revisions. The only imperfection of knowledge they admit to is included in the error terms, error terms that are standardly assumed to be linearly additive and to have a given and known frequency distribution, so that the models can still fully pre-specify the future even when incorporating stochastic variables into the models.

In the real world there are many different expectations and these cannot be aggregated in macroeconomic models building on rational expectations micro-foundations without giving rise to inconsistency. This is one of the main reasons for these models being modelled as representative-agent models. But this is far from being a harmless approximation to reality. Even the smallest differences of expectations between agents would make these models inconsistent, so when they still show up they have to be considered 'irrational'.

It is not possible to adequately represent individuals and markets as having one single overarching probability distribution. Accepting that does not imply that we have to end all theoretical endeavours and assume that all agents always act totally irrationally and only are analysable within behavioural economics. Far from it. It means we acknowledge diversity and imperfection, and that macroeconomics has to be able to incorporate these empirical facts in its models.

Most models in science are representations of something else. Models 'stand for' or 'depict' specific parts of a 'target system' (usually the real world). A model that has neither surface nor deep resemblance to important characteristics of real economies ought to be treated with *prima facie* suspicion. How could we possibly learn about the real world if there are no parts or aspects of the model that have relevant and important counterparts in the real-world target system? The burden of proof lays on the macroeconomists thinking they have contributed anything of scientific relevance without even hinting at any bridge enabling us to traverse from model to reality. All theories and models have to use sign vehicles to convey some kind of content that may be used for saying something of the target system. But purpose-built assumptions, made solely to secure a way of reaching deductively validated results in mathematical models, are of little value if they cannot be validated outside of the model. Assuming away problems – rather than solving them – is not a scientific approach. As Kevin Hoover (2010a, p. 346) writes:

The idea that macroeconomics not only needs microfoundations, but that microeconomics can replace macroeconomics completely is the dominant position in modern economics. No one, however, knows how to derive empirically relevant explanations of observable aggregate relations from the precise individual behaviors that generate them. Instead, the claims to have produced microfoundations are typically fleshed out with representative-agent models in which a single agent treats the aggregates as objects of direct choice, playing by rules that appear to follow the logic and mathematics of microeconomics...

I accept idealization as a strategy of model building. But legitimate idealization requires that the idealized model capture the essence of the causal structure or underlying mechanisms at work. It is only on that basis that we can trust the model to analyse situations other than the data to hand... Yet, the trick of using models appropriately is that we should either be able to set aside these particularities in reasoning or show that the results of interest are robust to the range of particular forms that we might reasonably assume...

The essence of the criticism of the common strategies of reducing microeconomics to macroeconomics is that it is based in model building that mixes legitimate idealizations with non-ideal, particular modelling assumptions and then relies on those assumptions at critical junctures in providing the derivation of the macroeconomic relationships from microeconomic behaviours.

All empirical sciences use simplifying or unrealistic assumptions in their modelling activities. That is no longer the issue – as long as the assumptions made are not unrealistic in the wrong way or for the wrong reasons.

Theories are difficult to directly confront with reality. Economists therefore build models of their theories. Those models are *representations* that are *directly* examined and manipulated to *indirectly* say something about the target systems. But being able to model a world that somehow could be considered real or *similar* to the real world is not the same as investigating the real world. Even though all theories are false, since they simplify, they may still possibly serve our pursuit of truth. But then they cannot be unrealistic or false in *any* way. The falsehood or unrealisticness has to be qualified.

Microfounded macromodels should enable us to posit counterfactual questions about what would happen if some variable was to change in a specific way (hence the assumption of structural invariance that purportedly enables the theoretical economist to do just that). But do they? Applying a ‘Lucas critique’ on most microfounded macromodels, it is obvious that they fail. Changing ‘policy rules’ cannot just be presumed not to influence investment and consumption behaviour and *a fortiori* technology, thereby contradicting the invariance assumption. Technology and tastes cannot live up to the status of an economy’s deep and structurally stable Holy Grail. They too are part and parcel of an ever-changing and open economy.

Without export certificates, models and theories should be considered unsold. Unfortunately, this understanding has not informed modern neoclassical economics, as can be seen by the profuse use of representative-agent models. For quite some time now, it has been a common feature of modern neoclassical macroeconomics to use simple dynamic stochastic general equilibrium (DSGE) models, where representative agents are supposed to act in a world characterized by complete knowledge, zero transaction costs and complete markets.

In these models, the actors are all identical. This has, of course, far-reaching analytical implications. Situations characterized by asymmetrical information – situations most of us consider to be innumerable – cannot arise in such models. If the aim is to build a macro-analysis from microfoundations in this manner, the

relevance of the procedure is highly questionable – Robert Solow (2010) even considered the claims made by protagonists of representative-agent models ‘generally phony’.

One obvious critique – cf. Pålsson Syll (2001) – is that representative-agent models do not incorporate distributional effects – effects that often play a decisive role in macroeconomic contexts. Investigations into the operations of markets and institutions usually find that there are overwhelming problems of coordination. These are difficult, not to say impossible, to analyse with the kind of Robinson Crusoe models that real business cycle theorists, for example, employ and which exclude precisely those differences between groups of actors that are the driving force in many non-neoclassical analyses.

The choices of different individuals have to be shown to be coordinated and consistent. This is obviously difficult if the macroeconomic models don’t give room for heterogeneous individuals (this lack of understanding the importance of heterogeneity is perhaps especially problematic for the modelling of real business cycles in DSGE models). Assuming away the heterogeneity that exists at an individual level by using representative-agent models is certainly more manageable; however, from a realist point of view, these models are also less relevant and have a lower explanatory potential. As Kevin Hoover (2009, p. 405) writes:

The irony of the program of microfoundations is that, in the name of preserving the importance of individual intentional states and preserving the individual economic agent as the foundation of economics, it fails to provide any intelligible connection between the individual and the aggregate. Instead, it embraces the representative agent, which is as close to an untethered Hegelian World (or Macroeconomic) Spirit as one might fear in the microfoundationist’s worst nightmare.

Or, as Robert Gordon (2009, pp. 25–6) has it:

In the end, the problem with modern macro is that it contains too much micro and not enough macro. Individual representative agents assume complete and efficient markets and market clearing, while the models ignore the basic macro interactions implied by price stickiness, including macro externalities and coordination failures. In an economy-wide recession, most agents are not maximizing unconditional utility functions as in DSGE models but are maximizing, i.e., trying to make the best out of a bad situation, under biting income and liquidity constraints. Perceptive comments by others as cited above reject the relevance of modern macro to the current cycle of excess leveraging and subsequent deleveraging, because complete and efficient markets are assumed, and there is no room for default, bankruptcy, insolvency, and illiquidity.

Both the ‘Lucas critique’ and Keynes’s critique of econometrics argued that it was inadmissible to project history on the future. Consequently, an economic

policy cannot presuppose that what has worked before will continue to do so in the future. That macroeconomic models could get hold of correlations between different ‘variables’ was not enough. If they could not get at the causal structure that generated the data, they were not really ‘identified’. Lucas himself drew the conclusion that the problem with unstable relations was to construct models with clear microfoundations, where forward-looking optimizing individuals and robust, deep, behavioural parameters are seen to be stable even to changes in economic policies.

The purported strength of new classical and new Keynesian macroeconomics is that they have firm anchorage in preference-based microeconomics, and especially the decisions taken by intertemporal utility maximizing ‘forward-looking’ individuals. To some of us, however, this has come at too high a price. The almost quasi-religious insistence that macroeconomics has to have microfoundations – without ever presenting either ontological or epistemological justifications for this claim – has turned a blind eye to the weakness of the whole enterprise of trying to depict a complex economy based on an all-embracing representative agent equipped with superhuman knowledge, forecasting abilities and forward-looking rational expectations. It is as if – after having swallowed the sour grapes of the Sonnenschein–Mantel–Debreu theorem – these economists want to resurrect the omniscient Walrasian auctioneer in the form of all-knowing representative agents equipped with rational expectations and assumed to somehow know the true structure of our model of the world. How that could even be conceivable is beyond imagination, given that the ongoing debate on microfoundations, if anything, shows that not even we, the economists, can come to agreement on a common model.

Microfoundations: Walrasian ‘Santa Claus’ economics trying to get around Sonnenschein–Mantel–Debreu

Almost a century and a half after Léon Walras founded neoclassical general equilibrium theory, economists still have not been able to show that markets *move* economies *to* equilibria. What we do know is that unique Pareto-efficient equilibria *do exist*.

But what good does that do? As long as we cannot show, except under exceedingly unrealistic assumptions, that there are convincing reasons to suppose there are forces which lead economies to equilibria, the value of general equilibrium theory is next to nil. As long as we cannot really demonstrate that there are forces operating – under reasonable, relevant and at least mildly realistic conditions – at moving markets to equilibria, there cannot really be any sustainable reason for anyone to pay any interest or attention to this theory. A stability that can only be proved by assuming ‘Santa Claus’ conditions is of no avail. Most people do not believe in Santa Claus any more. And for good reasons.

Simply assuming the problem away or continuing to model a world full of agents behaving as economists – ‘often wrong, but never uncertain’ – and still not being able to show that the system under reasonable assumptions converges to equilibrium, is a gross misallocation of intellectual resources and time.

Here's what a leading microeconomist – Alan Kirman (1989, p. 129, emphasis original) – writes on the issue:

Starting from 'badly behaved' individuals, we arrive at a situation in which not only is aggregate demand a nice function but, by a result of Debreu, equilibrium will be 'locally unique'. Whilst this means that at least there is some hope for local stability, the real question is, can we hope to proceed and obtain global uniqueness and stability?

The unfortunate answer is a categorical no! [The results of Sonnenschein (1972), Debreu (1974), Mantel (1976) and Mas Collé (1985)] shows clearly why any hope for uniqueness or stability must be unfounded... There is no hope that making the distribution of preferences or income 'not to dispersed' or 'single peaked' will help us to avoid the fundamental problem.

The idea that we should start at the level of the isolated individual is one which we may well have to abandon... we should be honest from the outset and assert simply that *by assumption* we postulate that each sector of the economy behaves as one individual and not claim any spurious microjustification...

Economists therefore should not continue to make strong assertions about this behaviour based on so-called general equilibrium models which are, in reality, no more than special examples with no basis in economic theory as it stands.

Kenneth Arrow (1968, p. 382) argues in a similar vein against the kind of reductionism implied in the microfoundationalist attempts at redirecting economics:

The economy is irreducible... in the sense that no matter how the households are divided into two groups, an increase in the initial assets held by the members of one group can be used to make feasible an allocation which will make no one worse off and at least one individual in the second group better off.

It is perhaps interesting to observe that 'atomistic' assumptions concerning individual households and firms are not sufficient to establish the existence of equilibrium; 'global' assumptions... are also needed (though they are surely unexceptionable). Thus, a limit is set to the tendency implicit in price theory, particularly in its mathematical versions, to deduce all properties of aggregate behaviour from assumptions about individual economic agents.

Getting around Sonnenschein–Mantel–Debreu using representative agents may be – as noted by Meeusen (2011) – very expedient from a purely formalistic point of view. But from a scientific point of view it is hardly relevant or realistic. As Rizvi (1994, p. 363, emphasis original) maintains:

The impact of SMD theory is quite general... Its chief implication, in the author's view, is that the hypothesis of individual rationality, and the other assumptions made at the micro level, gives no guidance to an analysis of macro-level phenomena: the assumption of rationality or utility maximisation is not enough to talk about social regularities. This is a significant conclusion

and brings the microfoundations project in GET [General Equilibrium Theory] to an end... a theory based on micro principles or on appeals to them and which purports to analyse micro-level regularities *must* deal with aggregation; not doing so is not an option.

In microeconomics we know that (ideal) aggregation really presupposes homothetic identical preferences, something that almost never exist in real economies – if they do, it means that you and multi-billionaire Richard Branson have the same preferences and that, even after a 99 per cent pay cut, we would still spend the same proportion of our incomes on, for example, bread and butter, as before the massive income reduction.

To illustrate – following Nelson (1984) and Hoover (2001) – assume we have a very simple economy consisting of two consumers (i) trying to optimally choose consuming two commodities (c^i_1 and c^i_2) in two time periods by maximizing a logarithmic Cobb–Douglas utility function of the form $u^i = c^i_1 + a^i c^i_2$, given the (always satisfied) budget constraint $y = c^i_1 + p c^i_2$ (where y is income and p the price of commodity 2 in terms of the *numéraire*, commodity 1). Demand for commodity 1 is

$$c^i_1 = y^i / (1 + a^i). \quad (1)$$

Aggregating (indicated by upper-case letters) the demand for commodity 1 we get

$$\begin{aligned} C_1 &= Y / (1 + a) = c^1_1 + c^2_1 = y^1 / (1 + a^1) + y^2 / (1 + a^2) \\ &= [y^1 / (1 + a^1) + y^2 / (1 + a^2)] / [(1 + a^1) / (1 + a^2)] \\ &= [Y + a^1 y^1 + a^2 y^2] / [(1 + a^1)(1 + a^2)], \end{aligned} \quad (2)$$

where the last equality follows from $Y = y^1 + y^2$. As can easily be seen, (1) and (2) are only of an identical form if all consumers have identical preferences – that is, $a^1 = a^2 = a$ – and homothetic utility functions yielding linear Engel curves, as, for example, the Cobb–Douglas utility function.

If these requirements are fulfilled, ideal aggregation from micro to macro can take place. Why? As Hoover (2001, p. 79) puts it:

In such circumstances, for a fixed aggregate income, redistributing that income among the individual consumers will not affect demands for individual goods and, therefore, will not affect relative prices... and we can add up individual quantities to form economy-wide aggregates without loss of information.

However, if these patently unreal assumptions are *not* fulfilled, there is no guarantee of a straightforward and constant relation between individuals (micro)

and aggregates (macro). The results given by these assumptions are *a fortiori* not robust and do not capture the underlying mechanisms at work in any real economy. And, as if this impossibility of ideal aggregation was not enough, there are obvious problems also with the kind of microeconomic equilibrium that one tries to reduce macroeconomics to. Decisions of consumption and production are described as choices made by a single agent. But then, who sets the prices on the market? And how do we justify the assumption of universal consistency between the choices? Models that are critically based on particular and odd assumptions – and are neither robust nor congruent to real-world economies – are of questionable value.

And is it really possible to describe and analyse all the deliberations and choices made by individuals in an economy? Does not the choice of an individual presuppose knowledge and expectations about choices of other individuals? It probably does, and this presumably helps to explain why representative-agent models have become so popular in modern macroeconomic theory. They help to make the analysis more tractable.

One could justifiably argue that one might just as well accept that it is not possible to coherently reduce macro to micro and, accordingly, that it is perhaps necessary to forswear microfoundations and the use of rational-agent models all together. Microeconomic reasoning has to build on macroeconomic presuppositions. Real individuals do not base their choices on operational general equilibrium models, but rather use simpler models. *If macroeconomics needs microfoundations, it is equally necessary that microeconomics needs macrofoundations.*

On the impossibility of microfoundational reductionism

Alan Kirman (1992) maintains that the use of representative-agent models is unwarranted and leads to conclusions that are usually both misleading and false. It's a fiction basically used by some macroeconomists to justify the use of equilibrium analysis and a kind of pseudo-microfoundations. Microeconomists are well aware that the conditions necessary to make aggregation to representative agents possible are not met in actual economies. As economic models become increasingly complex, their use also becomes less credible.

Already, back in the 1930s, Keynes (1939) held a similar anti-reductionist view:

I have called my theory a *general* theory. I mean by this that I am chiefly concerned with the behaviour of the economic system as a whole, – with aggregate incomes, aggregate profits, aggregate output, aggregate employment, aggregate investment, aggregate saving rather than with the incomes, profits, output, employment, investment and saving of particular industries, firms or individuals. And I argue that important mistakes have been made through extending to the system as a whole conclusions which have been correctly arrived at in respect of a part of it taken in isolation...

Quite legitimately we regard an individual's income as independent of what he himself consumes and invests. But this, I have to point out, should

not have led us to overlook the fact that the demand arising out of the consumption and investment of one individual is the source of the incomes of other individuals, so that incomes in general are not independent, quite the contrary, of the disposition of individuals to spend and invest; and since in turn the readiness of individuals to spend and invest depends on their incomes, a relationship is set up between aggregate savings and aggregate investment which can be very easily shown, beyond any possibility of reasonable dispute, to be one of exact and necessary equality. Rightly regarded this is a banale conclusion.

Actually, Keynes way back in 1926 (1972, p. 262) more or less buried any ideas of microfoundations:

The atomic hypothesis which has worked so splendidly in Physics breaks down in Psychics. We are faced at every turn with the problems of Organic Unity, of Discreteness, of Discontinuity – the whole is not equal to the sum of the parts, comparisons of quantity fail us, small changes produce large effects, the assumptions of a uniform and homogeneous continuum are not satisfied. Thus the results of Mathematical Psychics turn out to be derivative, not fundamental, indexes, not measurements, first approximations at the best; and fallible indexes, dubious approximations at that, with much doubt added as to what, if anything, they are indexes or approximations of.

Where new Keynesian and new classical economists think they can rigorously deduce the aggregate effects of the acts and decisions of consumers and firms with their reductionist microfoundational methodology, they actually have to turn a blind eye to the emergent properties that characterize all open social and economic systems. The interaction between animal spirits, trust, confidence, institutions etc., cannot be deduced or reduced to a question answerable on the individual level. Macroeconomic structures and phenomena have to be analysed on their own terms.

Contrary to the microfoundational programme of Lucas *et al.*, Keynes didn't consider equilibrium as the self-evident axiomatic starting point for economic analysis. Actually, it was the classical idea of equilibrium that had made economics blind to the obvious fact that involuntary outcomes, such as unemployment, are a common feature of market economies – and Keynes wanted to develop a more realist alternative, breaking with the conception of economics as an equilibrium discipline.

Even if economies naturally presuppose individuals, it does not follow that we can infer or explain macroeconomic phenomena solely from knowledge of these individuals. Macroeconomics is, to a large extent, emergent and cannot be reduced to a simple summation of micro phenomena. Moreover, as we have already argued, even these microfoundations aren't immutable. Lucas and the new classical economists' deep parameters – 'tastes' and 'technology' – are not really the bedrock of constancy that they believe (pretend) them to be.

For Alfred Marshall, economic theory was 'an engine for the discovery of concrete truth'. But where Marshall tried to describe the behaviour of a typical

business with the concept ‘representative firm’, his modern heirs don’t at all try to describe how firms interplay with other firms in an economy. The economy is rather described ‘as if’ consisting of one single giant firm/consumer/household – either by inflating the optimization problem of the individual to the scale of a whole economy, or by assuming that it’s possible to aggregate different individuals’ actions by a simple summation, since every type of actor is identical. But it would most probably be better if we just faced the fact that it is difficult to describe interaction and cooperation when there is essentially only one actor – instead of sweeping aggregation problems, fallacies of composition and emergence under the rug.

Those who want to build macroeconomics on microfoundations usually maintain that the only robust policies and institutions are those based on rational expectations and representative agents. But there is really no support for this conviction at all. On the contrary – if we want to have anything of interest to say on real economies, financial crisis and the decisions and choices real people make, it is high time to redirect macroeconomics away from constructing models building on representative agents and rational expectations microfoundations. Since representative-agent-rational-expectations (RARE) microfounded macroeconomics has nothing to say about the real world and the economic problems out there, why should we care about it? The final court of appeal for macroeconomic models is the real world, and as long as no convincing justification is put forward for how the inferential bridging *de facto* is made, macroeconomic model building is little more than hand-waving that gives us rather little warrant for making inductive inferences from models to real-world target systems. Even though equilibrium according to Lucas (Snowdon and Vane, 1998, p. 127) is considered ‘a property of the way we look at things, not a property of reality’, this is hardly a tenable view. Analytical tractability should not be transformed into a methodological virtue. If substantive questions about the real world are being posed, it is the formalistic-mathematical representations utilized to analyse them that have to match reality, not the other way around.

Given that, I would say that macroeconomists – especially ‘Keynesian’ ones – ought to be even *more* critical of the microfoundations dogma than they are. If macroeconomic models – no matter of what ilk – build on microfoundational *assumptions* of representative agents, rational expectations, market clearing and equilibrium, and we *know* that real people and markets cannot be expected to obey these assumptions, the warrants for supposing that conclusions or hypotheses of causally relevant mechanisms or regularities can be bridged are obviously non-justifiable. Incompatibility between actual behaviour and the behaviour in macroeconomic models building on RARE microfoundations shows the futility of trying to represent real-world economies with models flagrantly at odds with reality.

In the conclusion to his book *Models of Business Cycles* Robert Lucas (1987, pp. 66–108) (in)famously wrote:

It is remarkable and, I think, instructive fact that in nearly 50 years that Keynesian tradition has produced not one useful model of the individual unemployed worker, and no rationale for unemployment insurance beyond the

observation that, in common with countercyclical cash grants to corporations or to anyone else, it has the effects of increasing the total volume of spending at the right times. By dogmatically insisting that unemployment be classed as ‘involuntary’ this tradition simply cut itself off from serious thinking about the actual options unemployed people are faced with, and hence from learning anything about how the alternative social arrangements might improve these options...

If we are honest, we will have to face the fact that at any given time there will be phenomena that are well-understood from the point of view of the economic theory we have, and other phenomena that are not. We will be tempted, I am sure, to relieve the discomfort induced by discrepancies between theory and facts by saying the ill-understood facts are the province of some other, different kind of economic theory. Keynesian ‘macroeconomics’ was, I think, a surrender (under great duress) to this temptation. It led to the abandonment, for a class of problems of great importance, of the use of the only ‘engine for the discovery of truth’ that we have in economics.

Thanks to latter-day Lucasian new-classical-new-Keynesian-RARE-microfoundations-economists, we are supposed not to – as our ‘primitive’ ancestors – use that archaic term ‘macroeconomics’ any more (with the possible exception of warning future economists not to give in to ‘discomfort’). Being intellectually heavily indebted to the man who invented macroeconomics – Keynes – I firmly decline to concur.

Microfoundations – and *a fortiori* rational expectations and representative agents – serve a particular theoretical purpose. And, as the history of macroeconomics during the last thirty years has shown, the Lucasian microfoundations programme for macroeconomics is only methodologically consistent within the framework of a (deterministic or stochastic) general equilibrium analysis. In no other context has it been considered *possible* to incorporate this kind of microfoundations – with its ‘forward-looking optimizing individuals’ – into macroeconomic models.

This is, of course, not by accident. GET is basically nothing else than an endeavour to consistently generalize the microeconomics of individuals and firms on to the macroeconomic level of aggregates. *But it obviously doesn’t work.* The analogy between microeconomic behaviour and macroeconomic behaviour is misplaced. Empirically, science-theoretically and methodologically, neoclassical microfoundations for macroeconomics are defective. Tenable foundations for macroeconomics really have to be sought elsewhere.

Microfounded DSGE models: spectacularly useless and positively harmful

Economists working within the post Keynesian tradition have always maintained that there is a strong risk that people may find themselves unemployed in a market economy. And, of course, unemployment is also something that can take

place in microfounded DSGE models – but the mechanism in these models is of a fundamentally different kind.

In the basic DSGE models the labour market is always *cleared* – responding to a changing interest rate, expected life-time incomes, or real wages, the representative agent maximizes the utility function by varying her labour supply, money holding and consumption over time. Most importantly, if the real wage somehow deviates from its ‘equilibrium value’ the representative agent adjusts her labour supply, so that when the real wage is higher than its ‘equilibrium value’ labour supply is increased, and when the real wage is below its ‘equilibrium value’ labour supply is decreased. In this model world, unemployment is always an optimal choice in the face of changes in labour market conditions. Hence, unemployment is totally voluntary. To be unemployed is something one optimally chooses to be.

Although this picture of unemployment, as a kind of self-chosen optimality, strikes most people as utterly ridiculous, there are also, unfortunately, a lot of neoclassical economists out there who still think that price and wage rigidities are the prime movers behind unemployment. What is even worse is that some of them even think that these rigidities are the reasons John Maynard Keynes gave for the high unemployment of the Great Depression. This is, of course, pure nonsense. For, although Keynes in *General Theory* devoted substantial attention to the subject of wage and price rigidities, he certainly *did not* hold that view. That’s rather the view of microfounded DSGE modellers, explaining variations in employment (and *a fortiori* output) by assuming nominal wages to be more flexible than prices – disregarding the lack of empirical evidence for this rather counterintuitive assumption.

Since unions/workers, contrary to classical assumptions, make wage-bargains in nominal terms, they will – according to Keynes – accept lower real wages caused by higher prices, but resist lower real wages caused by lower nominal wages. However, Keynes held it incorrect to attribute ‘cyclical’ unemployment to this diversified agent behaviour. During the Depression, money wages fell significantly and – as Keynes noted – unemployment still grew. Thus, even when nominal wages are lowered, they do not generally lower unemployment.

In any specific labour market, lower wages could, of course, raise the demand for labour. But a general reduction in money wages would leave real wages more or less unchanged. The reasoning of the classical economists was, according to Keynes, a flagrant example of the *fallacy of composition*. Assuming that since unions/workers in a specific labour market could negotiate real wage reductions via lowering nominal wages, unions/workers in general could do the same; the classics confused micro with macro.

Lowering nominal wages could not – according to Keynes – clear the labour market. Lowering wages – and possibly prices – could, perhaps, lower interest rates and increase investment. But to Keynes it would be much easier to achieve that effect by increasing the money supply. In any case, wage reduction was not seen by Keynes as a general substitute for an expansionary monetary or fiscal policy. And even if potentially positive impacts of lowering wages exist, there are

also more heavily weighing negative impacts – management–union relations deteriorating, expectations of ongoing lowering of wages causing delay of investments, debt deflation etc.

So, what Keynes actually did argue in *General Theory*, was that the classical proposition that lowering wages would lower unemployment and ultimately take economies out of depressions was ill-founded and basically wrong. To Keynes (1936, pp. 7–16), flexible wages would only make things worse by leading to erratic price fluctuations. The basic explanation for unemployment is insufficient aggregate demand, and that is mostly determined *outside* the labour market:

The classical school [maintains that] while the demand for labour at the existing money-wage may be satisfied before everyone willing to work at this wage is employed, this situation is due to an open or tacit agreement amongst workers not to work for less, and that if labour as a whole would agree to a reduction of money-wages more employment would be forthcoming. If this is the case, such unemployment, though apparently involuntary, is not strictly so, and ought to be included under the above category of ‘voluntary’ unemployment due to the effects of collective bargaining, etc...

The classical theory... is best regarded as a theory of distribution in conditions of full employment. So long as the classical postulates hold good, unemployment, which is in the above sense involuntary, cannot occur. Apparent unemployment must, therefore, be the result either of temporary loss of work of the ‘between jobs’ type or of intermittent demand for highly specialised resources or of the effect of a trade union ‘closed shop’ on the employment of free labour. Thus writers in the classical tradition, overlooking the special assumption underlying their theory, have been driven inevitably to the conclusion, perfectly logical on their assumption, that apparent unemployment (apart from the admitted exceptions) must be due at bottom to a refusal by the unemployed factors to accept a reward which corresponds to their marginal productivity...

Obviously, however, if the classical theory is only applicable to the case of full employment, it is fallacious to apply it to the problems of involuntary unemployment – if there be such a thing (and who will deny it?). The classical theorists resemble Euclidean geometers in a non-Euclidean world who, discovering that in experience straight lines apparently parallel often meet, rebuke the lines for not keeping straight – as the only remedy for the unfortunate collisions which are occurring. Yet, in truth, there is no remedy except to throw over the axiom of parallels and to work out a non-Euclidean geometry. Something similar is required today in economics. We need to throw over the second postulate of the classical doctrine and to work out the behaviour of a system in which involuntary unemployment in the strict sense is possible.

People calling themselves ‘new Keynesians’ ought to be rather embarrassed by the fact that the kind of microfounded DSGE models they use cannot incorporate such a basic fact of reality as involuntary unemployment. Of course, working

with representative-agent models, this should come as no surprise. The kind of unemployment that occurs is voluntary, since it is only adjustments of the hours of work that these optimizing agents make to maximize their utility.

Kevin Hoover (2001, pp. 82–6) – who has been scrutinizing the microfoundations programme for more than 25 years, now – writes:

Given what we know about representative-agent models, there is not the slightest reason for us to think that the conditions under which they should work are fulfilled. The claim that representative-agent models provide microfoundations succeeds only when we steadfastly avoid the fact that representative-agent models are just as aggregative as old-fashioned Keynesian macroeconomic models. They do not solve the problem of aggregation; rather they assume that it can be ignored. While they appear to use the mathematics of microeconomics, the subjects to which they apply that microeconomics are aggregates that do not belong to any agent. There is no agent who maximizes a utility function that represents the whole economy subject to a budget constraint that takes GDP as its limiting quantity. This is the simulacrum of microeconomics, not the genuine article...

[W]e should conclude that what happens to the microeconomy is relevant to the macroeconomy but that macroeconomics has its own modes of analysis... [I]t is almost certain that macroeconomics cannot be euthanized or eliminated. It shall remain necessary for the serious economist to switch back and forth between microeconomics and a relatively autonomous macroeconomics depending upon the problem in hand.

Alternatives to microfoundations

Defenders of microfoundations – and its concomitant rational expectations equipped representative agent's intertemporal optimization – often argue as if sticking with simple representative agent macroeconomic models doesn't impart a bias to the analysis. It's difficult not to reject such an unsubstantiated view.

Economists defending the microfoundationalist programme often also maintain that there are no methodologically coherent alternatives to microfoundations modelling – economic models based on the choices and acts of individuals is the only scientific game in town. That allegation is, of course, difficult to evaluate, but, as argued in this chapter, the kind of microfoundationalist macroeconomics that new classical economists and new Keynesian economists are pursuing is certainly *not* methodologically coherent. And that ought to be rather embarrassing for those macroeconomists to whom axiomatics and deductivity are the hallmark of science *tout court*.

The fact that Lucas introduced rational expectations as a consistency axiom is not really an argument for why we should accept it as a satisfactory assumption in a theory or model purporting to explain real macroeconomic processes. And although virtually any macroeconomic empirical claim is contestable, the same goes for microeconomics.

Of course, there are alternatives to neoclassical general equilibrium microfoundations – behavioural economics and Frydman and Goldberg's (2007) 'imperfect knowledge' economics being two noteworthy examples that easily come to mind. And for those who have not forgotten the history of our discipline – and who have not bought the sweet-water nursery tale of Lucas *et al.* that Keynes was not 'serious thinking' – it can easily be seen that there exists a macroeconomic tradition inspired by Keynes that has precious little to do with any new synthesis or new Keynesianism.

Its ultimate building-block is the perception of genuine uncertainty and that people often 'simply do not know'. Real actors can't know everything and their acts and decisions are not simply possible to sum or aggregate without the economist risking succumbing to the fallacy of composition. Instead of basing macroeconomics on unreal and unwarranted generalizations of microeconomic behaviour and relations, it is far better to accept the ontological fact that the future, to a large extent, is uncertain and, rather, conduct macroeconomics on this fact of reality.

Microfoundations and the necessity of a real-world filter

Assumptions in theories and models are often based on (mathematical) tractability (and so necessarily simplifying) or more or less self-evidently necessary theoretical consistency reasons. But that only shrinks the assumptions set minimally – still necessary to decide on which assumptions are innocuous and which are harmful, and what constitutes interesting/important assumptions from an ontological and epistemological point of view (explanation, understanding, prediction). Especially so if you intend to refer your theory/model to a specific target system (the real world).

One always has to remember that assumptions are selected for a specific purpose, so selection-arguments put forward have to be judged against that background to check if they are warranted. Given the dismal track record of Friedmanite instrumentalism, it is hard to take that stand seriously. A more Bourbaki kind of argument could, of course, be raised (De Vroey, 2004, p. 18):

Economic theory is concerned with fictitious parables. The premises upon which it is based have the advantage of allowing tractable, rigorous theorizing, but the price of this is that important facts of life are excluded from the theoretical universe. Non-chosen outcomes is one of them... Drawing conclusions from this sphere about the real world would be a mistake. No jumps should be made from the world of theory to the real world, or vice-versa.

However, it is hard to be impressed by this rather defeatist methodological stance. Is it really a feasible methodology for economists to make a sharp divide between theory and reality, and then treat the divide as something recommendable and good? I think not.

Models and theories – if they are to be of any real interest – should have to look to the world. Being able to construct ‘fictitious parables’ or build models of a ‘credible world’ is not enough. Science has to have higher aspirations. Insisting – like De Vroey – that ‘no jumps should be made from the world of theory to the real world, or vice-versa’ is an untenable methodological position.

It is not at all unusual to run into the following kind of fallacious ‘bootstrap’ argumentation: to ‘explain’ A , one assumes α to hold, and then since A has been ‘shown’ to be well founded, we can conclude that α is the case. But what if A is just a theoretical proposition that doesn’t tell anything about the real world? Then it is obvious that this ‘reverse engineering’ does not work at all. You need an export licence, since you need to show that both A and α apply to the real world. To do this one arguably has to apply a *real-world filter* in the form of a *smell test*: is the theory/model reasonable given what we know about the real world? If not, why should we care about it?

Unfortunately, it is a widespread misapprehension that (deductive) validity is all we can demand of theories. I would rather argue that – at least in empirical sciences – we also have to demand soundness (i.e. that the premises also have to be shown true). The representative agent, ergodicity, probabilistic risk, market–market clearing – are all assumptions that are contradicted by what we already know. They do not pass the smell test and so should be discarded.

When people take a theory from the neoclassical theory library and apply it to the real world, one should start by running it through the real-world filter; if it passes one can then proceed with empirical and econometric testing. If it doesn’t pass the filter, then, again, it should be discarded.

Microfounded DSGE models standardly assume rational expectations, Walrasian market clearing, unique equilibria, time invariance, linear separability and homogeneity of both inputs/outputs and technology, infinitely lived intertemporally optimizing representative household/consumer/producer agents with homothetic and identical preferences, etc., etc. At the same time the models standardly ignore complexity, diversity, uncertainty, coordination problems, non-market clearing prices, real aggregation problems, emergence, expectations formation, etc., etc.

Behavioural and experimental economics – not to speak of psychology – show beyond any doubts that ‘deep parameters’ – peoples’ preferences, choices and forecasts – are regularly influenced by those of other participants in the economy. And how about the homogeneity assumption? And if all actors are the same – why and with whom do they transact? And why does economics have to be exclusively teleological (concerned with intentional states of individuals)? Where are the arguments for that ontological reductionism? And what about collective intentionality and constitutive background rules?

These are all justified questions – so, in what way can one maintain that these models give workable microfoundations for macroeconomics? They are not models *tout court* showing X , but rather highly idealized-axiomatic-deductive models omitting lots of things we know are important for understanding/explaining/predicting things in the real world. So – to be accepted they have to consciously be argued for in terms of relevance – and the first step in doing that is passing the smell test.

If microfounded models do not pass a set of smell test questions, the risk is they are uncritically taken as being relevant (which happens often since there seems to be a kind of ‘tacit agreement’ not to apply the smell test in ‘modern’ economics). If we do not filter unrealistic and manifestly silly assumptions, the risk is they add noise and confusion on real world issues. It is not enough to be able to tell a ‘story’; one has to explicitly argue that the mechanisms at work in the model also exist in the real world – and how to test the model.

Assumptions, theories and models blatantly contradicting what we know and observe around us, do not warrant being taken seriously, and their usefulness may rightfully be in *prima facie* doubt. Hence, the advantages claimed for microfounded macroeconomics are not convincing. Hand-waving and wishful thinking in the form of ‘as if’ stories is not enough – they also have to pass the smell test. Assumptions based on mathematics, precision, rigour, elegance, simplicity, tractability, etc., may be OK – but they should never be allowed to be the prime movers in developing economic theories unless they also apply to the real world and pass the smell test. Defending microfounded models by saying ‘All models are abstractions,’ ‘We have to make idealized reductions and build our models on simplifying assumptions,’ ‘All models are false,’ ‘Models should only be evaluated by the predictions they make,’ ‘This is just a first approximation,’ will not do – as long as we can’t show that our models and theories pass the smell test and hence are able to bridge to the real world.

Conclusion

Henry Louis Mencken once wrote that ‘there is always an easy solution to every human problem – neat, plausible and wrong’. Assuming instant and unmodelled market clearing and/or approximating aggregate behaviour with unrealistically heroic assumptions of intertemporally optimizing rational-expectations-representative-agents just will not do. The assumptions made, surreptitiously eliminate the very phenomena we want to study: uncertainty, disequilibrium, structural instability and problems of aggregation and coordination between different individuals and groups. Reducing macroeconomics to microeconomics, and microeconomics to refinements of hyper-rational Bayesian deductivist models is not a viable way forward. It will only sentence to irrelevance the most interesting real-world economic problems. Murder is probably the only way of reducing biology to chemistry – and disregarding Sonnenschein–Mantel–Debreu and trying to reduce macroeconomics to Walrasian general equilibrium microeconomics basically means committing the same crime.

Commenting on the state of standard modern macroeconomics, Willem Buiter (2009) argues that neither new classical nor new Keynesian microfounded DSGE macro models have helped us foresee, understand or craft solutions to the problems of today’s economies:

Most mainstream macroeconomic theoretical innovations since the 1970s ... have turned out to be self-referential, inward-looking distractions at best. Research tended to be motivated by the internal logic, intellectual sunk

capital and aesthetic puzzles of established research programmes rather than by a powerful desire to understand how the economy works...

Both the New Classical and New Keynesian complete markets macroeconomic theories not only did not allow questions about insolvency and illiquidity to be answered. They did not allow such questions to be asked...

Charles Goodhart, who was fortunate enough not to encounter complete markets macroeconomics and monetary economics during his impressionable, formative years, but only after he had acquired some intellectual immunity, once said of the Dynamic Stochastic General Equilibrium approach which for a while was the staple of central banks' internal modelling: 'It excludes everything I am interested in'. He was right. It excludes everything relevant to the pursuit of financial stability.

Buiter's verdict is a worrying confirmation of neoclassical mainstream macroeconomics becoming more and more a 'waste of time'. Why do these economists waste their time and efforts on it? Besides aspirations of being published, Frank Hahn (2005) probably gave the truest answer, when interviewed on the occasion of his 80th birthday, he confessed that some economic assumptions didn't really say anything about 'what happens in the world', but still had to be considered very good 'because it allows us to get on this job'.

The real macroeconomic challenge is to accept uncertainty and still try to explain why economic transactions take place – instead of simply conjuring the problem away by assuming uncertainty to be reducible to stochastic risk and disregarding the obvious ontological and methodological problems inherent in the individualist-reductionist microfoundations programme. That is scientific cheating. And it has been going on for too long now.

The Keynes-inspired building-blocks are there. But it is admittedly a long way to go before the whole construction is in place. But the sooner we are intellectually honest and ready to admit that modern neoclassical macroeconomics and its microfoundationalist programme has come to way's end – the sooner we can redirect our aspirations to more fruitful endeavours.

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10 Böhm-Bawerk meets Keynes

What does determine the interest rate, and can it become negative?

*Ulrich van Suntum and
Tom Neugebauer¹*

Introduction

A hundred years after Böhm-Bawerk's death and 70 years after the death of Keynes, there is still a fundamental disagreement about the factors that determine the interest rate in the long run. While economists in the Austrian tradition see it as solely driven by real phenomena (Block and Caplan, 1999; Rothbard, 2004; Huerta de Soto, 2006), Keynesian authors mainly stress monetary factors (Keynes, 1930, 1936; Woodford, 2003; Eggertsson and Krugman, 2012). Likewise, prominent economists explain the current phase of low interest rates differently. While many economists blame the central bank's expansive monetary policy for the low interest rate (Bracke and Fidora, 2012; Barro, 2014; Taylor, 2014), others favour the savings glut hypothesis which points to the excess capital supply in aging industrial states (Belke and Gros, 2010; Bernanke *et al.*, 2011; von Weizsäcker, 2014). In Germany, this controversy has led to an intensive email debate between German economists which became public recently. On more than 100 pages they have vividly discussed the possibility of a negative interest rate and its rationale.²

In the following, we argue with the help of a small-scale macroeconomic model that low or even negative interest rates may be explained by a combination of both the theories of Böhm-Bawerk and Keynes. In particular, we show that a change in the money supply by the central bank disturbs the optimal size and composition of households' wealth and, thereby, affects the interest rate, even in the long run. Furthermore, our model does not support the view that an interest rate which is below the growth rate can emerge in any other way than by expansionary monetary policy. According to our results, the savings glut hypothesis can be excluded as a cause for negative interest rates in a stationary economy with stable money.

Our model is similar to that in van Suntum (2013), and thus both fully micro-founded and stock-flow consistent. Pioneering work on stock-flow models has been done by Tobin (1969), Godley and Lavoie (2007, 2012) and E Silva and Dos Santos (2011). Unlike dynamic stochastic general equilibrium (DSGE)-models, stock-flow consistent models allow for general steady state results since all flows which may become stocks are considered and vice versa, and are, thus,

presentable in terms of the System of National Account (see Papadimitriou and Zezza, 2012). However, they are less applicable for the analysis of short-term dynamics, although this would be possible in principle as well.

In order to focus on the main mechanisms concerning the interest rate determination, we keep our model as small and simple as possible.³ Therefore, our model only encompasses private households, firms, a central bank and a government. But, unlike van Suntum (2013), there is neither a foreign nor a commercial bank sector. Private households maximize an intertemporal utility function in which not only consumption and savings, but also wealth in the form of both real capital and liquidity are included. This approach is standard in neoclassical general equilibrium modelling. It is also in accordance with Keynes's distinction: 'between the use of money for the transaction of current business and its use as a store of wealth' (Keynes, 1936, p. 107), as far as we interpret current business as consumption and savings as means to future consumption. Savings are linked via being invested to future consumption. Hence, investments are claims in real terms on future production and thus nothing more than wealth. As in Diamond (1965), households live for two periods and maximize lifetime utility. Firms produce a single commodity (corn) which can be used for consumption and investment purposes alike. By this simplification we circumvent the problem of an ambiguous definition of capital in a world with heterogeneous goods, which has already puzzled Böhm-Bawerk and many other authors working in this field.⁴ Capital goods completely depreciate in one period, so problems with the roundaboutness of production do not arise. We also restrict our analysis to steady state results, neglecting transition periods and dynamic behaviour.

The chapter is organized as follows. Section 2 lays out the model and introduces the agents, including a central bank and the government. Section 3 derives the steady state equilibrium conditions and analyses various variations of parameters. In particular, we discuss the effects of expansionary monetary and fiscal policies on interest rates and total output. Section 4 summarizes and concludes.

The model

Flow optimization by households: Böhm-Bawerk's first two causes

We employ a simple overlapping-generations model in the tradition of Diamond (1965). Households' lives are divided into a young and an elderly period. Only in the young period, households work and receive the firms' profits as income. They either consume their income or save some part of it for later consumption purposes when they are old. In their elderly period, households do not earn any income but completely dissave what they have put aside in their young period, including received interest payments. With respect to flows, the representative household thus maximizes the following logarithmic utility function which is quite standard in modern textbooks:⁵

$$\log U_F = \frac{1}{2-\theta} \log C_1 + \frac{1-\theta}{2-\theta} \log C_2, \text{ with } 0 \leq \theta \leq 1 \quad (1)$$

C_i denotes the household's consumption in period $i \in (1 = \text{young}, 2 = \text{elderly})$ of their life. Parameter θ is the household's rate of time preference, reflecting the valuation of consumption over the lifetime. The higher θ , the higher households value their consumption in period 1 over consumption in period 2, and thus the more they will consume in period 1. Böhm-Bawerk (1890) has already introduced subjective reasoning as a key aspect to interest rate determination. Meanwhile, subjective time preference has become experimentally well documented and analysed in modern economic theory (Fishburn and Rubinstein, 1982; Hoch and Loewenstein, 1991).

Our textbook-utility function implies two of Böhm-Bawerk's main arguments for the existence of an interest rate.

Even if the household does not value consumption in period 1 over consumption in period 2, $\theta = 0$, there is still an incentive to antedate consumption because of the diminishing marginal utility of income. In particular, as Böhm-Bawerk rightly stated, consumption tends to be less valuable in the future than today, when households expect their income to increase over time. Hence, starting with $C_1 = C_2$, households would try to shift some part of their consumption from period 2 to period 1, which in tendency already generates a positive interest rate. This effect is Böhm-Bawerk's first cause for the interest rate.

Böhm-Bawerk's second cause points to a psychological law, stating that future needs are systematically underestimated by the households.⁶ This is where the actual notion of time preference comes into play. Even if marginal utility of income were constant, a positive θ would create a tendency to antedate consumption. In the extreme case with $\theta = 1$, future consumption is completely sacrificed in favour of today's consumption.

By antilogarithm, equation (1) can be transformed into a more convenient form:

$$U_F = C_1^{1/(2-\theta)} C_2^{(1-\theta)/(2-\theta)} \quad (2)$$

The young household's income Y_{H1} is either consumed (C_1) or saved (S_1). Savings including interest is the only source of consumption in the elderly period C_2 . Thus the respective budget constraints are:

$$Y_{H1} = C_1 + S_1 \quad (3)$$

$$S_1(1+i_v) = C_2 \quad (4)$$

i_v denotes the average interest on savings. i_v is not necessarily the same as the capital market interest rate i , since part of the savings may also be held in liquid form (see below). Note that there is no difference between nominal and real interest rates in this model because we only tackle zero-inflation stationary states with a stable price level.

Applying the Lagrange method, we obtain the following optimal flows:

$$C_1^* = \frac{Y_{H1}}{2-\theta} \quad (5)$$

$$C_2^* = \frac{(1-\theta)(1+i_v)Y_{H1}}{2-\theta} \quad (6)$$

$$S_1^* = \frac{(1-\theta)Y_{H1}}{2-\theta} \quad (7)$$

C_1^* and C_2^* are the household's optimal consumption levels in their young and in their elderly period, respectively. Note that in this simple model with only two periods the optimal level of savings S_1^* is independent of the interest rate.⁷ Thus we have a microeconomic foundation of the usual assumption in simple Keynesian models. However, the relative volume of consumption in the two periods depends on both the interest rate and the rate of time preference, as can be seen from equations (5) and (6).

Up to now we have only derived the optimal flows from the household's point of view. Optimization of their stocks (money and bonds) is dealt with below in one of the following sections.

The productive sector: Böhm-Bawerk's third cause

Unlike other Austrian economists at his time,⁸ Böhm-Bawerk (1890) acknowledges that the production side of the economy has an impact on the interest rate as well. Due to higher investments in today's production capacities, which are derived from less consumption today, tomorrow's production capacities can be higher. The higher production level of tomorrow results either from a relatively bigger capital stock or from the use of additional facilities, since both alternatives increase the capital intensity of the production. This redirection of today's consumption in favour of tomorrow's higher production capacities by increasing the capital bound in the production process and thereby lengthening the production cycle is known as roundaboutness of production.⁹ Böhm-Bawerk has thereby created a temporal capital theory that has many similarities to the theory of German economist Johann Heinrich von Thünen, who deployed a production function to describe economic activities as early as the late nineteenth century.¹⁰

In our model, we use a most simple production function in which capital is the only factor of production:

$$Y = K_F^\beta \quad (8)$$

Y is gross domestic production, K_F is real capital and β is the relevant production elasticity, which we assume to be less than unity. Hence, we have positive but diminishing marginal returns on capital as it is generally assumed in neoclassical theory. The capital stock completely vanishes within one period and, thus,

production must cover both capital regeneration and interest payments. With factors being paid according to their marginal productivity, total production is distributed as follows:

$$(1+i)K_F = \beta Y \quad (9)$$

$$\Pi_F = (1-\beta)Y = Y_H \quad (10)$$

i is the capital market interest rate and Π_F are the firm's profits which accrue to the young households.¹¹

Private wealth optimization: introducing money and bonds

We now return to private households and examine how they optimize their stocks. In the model, the households' stocks consist of both bonds and liquidity. Bonds are issued either by firms, by the government, or by the central bank. By purchasing bonds, households provide capital K_H to the capital market and earn the respective interest rate i . All bonds have a maturity of one and, hence, must be renewed in every period.

Private households also hold liquidity in the form of paper money. They do this for two reasons which have already been noted by Keynes (1936, pp. 108 ff.). On the one hand, money is needed to carry out daily market transactions, namely the transactions-motive. On the other hand, money can also be held for speculative purposes. In that case money is simply a liquid form of wealth. This purpose is widely known as speculative-motive. Keynes's third motive, the precautionary-motive, we subsume with the speculative-motive. Since there is no uncertainty in our model, there is no need to analyse it separately from the other two. We assume that the money needed for transactions is determined technically as proportional to total income in the economy. Thereby transaction liquidity needs not be considered in the household's stock optimization, since it is simply a necessity. This not only facilitates calculations, but also appears realistic and, moreover, is in full accordance with the respective assumption made by Keynes, who has defined his transactions-motive as 'the need of cash for the current transaction of personal and business exchanges' (Keynes, 1936, p. 108).

Standard economic research analyses these two aspects of money mainly separately. In the 'money-in-the-utility' (MIU) framework money is a direct part of the individual's utility function and derives its positive value from it. Thus, money is a purpose in itself that yields utility directly rather than a means to purchase something else which yields utility. In the 'cash-in-advance' (CIA) framework the focus of the analysis is on transaction costs that arise due to the temporally separation of the household's income and purchase decision. Money helps to deal with transaction costs and yields a positive value because of its character as exchange medium. It only yields utility indirectly because it allows purchasing utility-yielding goods. Considering both aspects, we thus contribute to the overlapping-generations modelling literature by introducing money as both

an intra- and intertemporal exchange medium, namely to carry out daily life purchases today as well as saving today's income for later consumption during retirement.¹²

In contrast, post-Keynesian economists see money neither as a simply argument of the individuals utility function nor as a purely means of exchange but as a crucial part of the economy. This is why they analyse a monetary economy rather than the real-goods-only non-monetary economies of the neoclassical models. Accordingly, their focus shifts to issues of financing the production process, credit cycles including the respective business of banks and the influence of uncertainty. These three issues are primarily derived from insights from Keynes's seminal work of 1930, which has become the point of departure of many heterodox economists.¹³ Due to the banks' business and their role in the money creation process, money is no longer exogenous but endogenous. For instance, the most influential work for our chapter is the post-Keynesian monetary circuit approach of Godley and Lavoie (2007, 2012) in which all stocks and flows of an economy are taken into account explicitly. Depending on the complexity of their model, their framework allows for a sophisticated analysis of an economy with governmental money, private banking money, different kinds of financial assets and inflation under a broad variety of monetary and non-monetary shocks.

As introduced above, households' liquidity demand is defined in real terms and as being proportional to total income:

$$(L_T / P) = \bar{a}Y, \quad \text{with } \bar{a} \in (0,1) \quad (11)$$

In contrast, the volume of idle money can be voluntarily chosen by private households and is, therefore, subject to optimization. In particular, we assume the following stock-part of the household's utility function:

$$U_S = (K_H)^i (L_S / P)^l \quad (12)$$

K_H is the household's net capital and (L_S / P) is the household's liquidity (Keynesian idle balance). Both parts of their wealth are defined in real terms and weighted by their respective rate of return, namely the capital market interest rate i in case of K_H and the non-pecuniary advantage of liquidity l in case of (L_S / P) .¹⁴ The constraint of the household's wealth optimization is given by the volume of total savings V which is the sum of the household's capital net supply and their idle liquidity:

$$V = K_H + (L_S / P) = S_1^* \quad (13)$$

The optimal level of savings S_1^* is known from equation (7). Maximizing equation (12) subject to the savings constraint (13) yields the following optimal structure of household's wealth:

$$K_H^* = \frac{i}{i+l} \left[\left(\frac{1-\theta}{2-\theta} \right) (1-\beta) - \bar{a} \right] Y \quad (14)$$

$$(L_S / P)^* = \frac{l}{i+l} \left[\left(\frac{1-\theta}{2-\theta} \right) (1-\beta) - \bar{a} \right] Y \quad (15)$$

Obviously, according to equations (14) and (15), households save the more wealth in the form of bonds the higher the interest rate is. Analogously, they tend to hold more idle liquidity with a higher non-pecuniary advantage of liquidity; this is in accordance with both intuition and Keynesian liquidity preference theory.

The average interest on savings, which we have referred to in equation (4), can now be calculated as follows:

$$i_v = \frac{iK_H}{K_H + (L_S / P)} = \frac{iK_H}{V} \quad (16)$$

Household's total utility is assumed to be additive – that is, it is given by the sum of equations (2) and (12):

$$U = U_F + U_S \quad (17)$$

This specification allows us to handle the optimization of flows and stocks separately, which is advantageous from a technical point of view. However, we also, thereby, achieve two further goals. First, as in Böhm-Bawerk's theory, not only flows but also stocks play a role in the explanation of the interest rate, as has already been demanded by Tobin (1969). And, second, unlike Böhm-Bawerk (1890), we have created a link between real and monetary determinants of the interest rate, and thereby between Austrian and Keynesian interest rate theory as well.¹⁵

Public sector

Concerning the central bank, we limit our analysis to open market policy.¹⁶ That is, the central bank purchases bonds K_M (defined in terms of commodity units) at the capital market in exchange for money. Furthermore, we assume that there is some initial amount of paper money \bar{M} which is defined in nominal terms. It greatly facilitates calculations defining K_M as a fraction of total income, namely $m = K_M / Y$. Thus total money supply M in nominal terms is given by:

$$M = \bar{M} + PmY \quad (18)$$

Like any other provider of capital, the central bank earns interest payments and, thereby, attains a profit which is iK_M . We assume that central bank profits are handed to the government and are the only source of public receipts.¹⁷

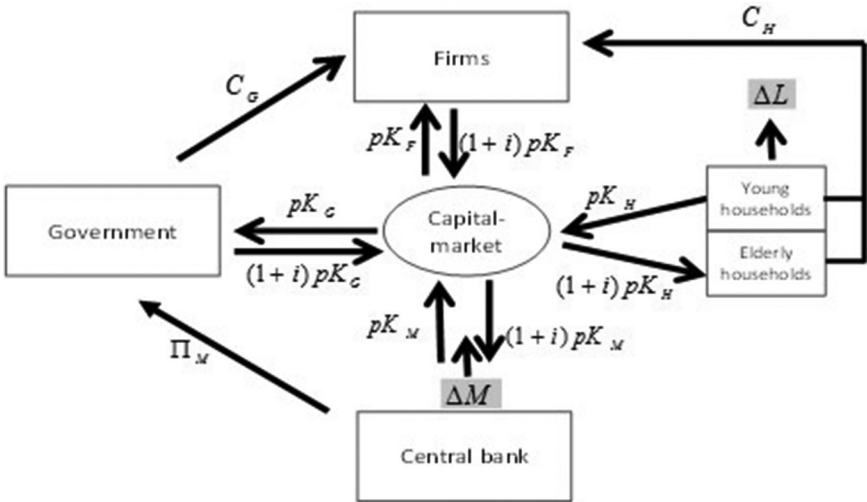


Figure 10.1 Overview of the model

The government can also take credit at the capital market by issuing public bonds K_G (defined in commodity units). Again, we define the volume of these bonds as a fraction of total income, namely $g = K_G / Y$. There are no public investments, so all of the government receipts are either consumed or used for paying interest on public debt. Thus, the steady state government's budget is given by:

$$C_G = i(K_M - K_G) = iY(m - g) \quad (19)$$

C_G denotes public consumption. Note that public debt reduces public consumption in the steady state unless the interest rate is negative. Only in transition periods, which are not regarded in this chapter, the government can temporarily extend its primary expenses by taking additional debt.

Figure 10.1 provides a graphical overview of the relevant flows between the four sectors:

Equilibrium conditions and steady state results

Equilibrium interest rate and price level

Equilibrium at the capital market requires equality of capital supply and capital demand:

$$K_H + K_M = K_F + K_G \quad (20)$$

By inserting equations (9), (14) and (19), equation (20) can be rewritten as:

$$\frac{i}{1+i} \left[\left(\frac{1-\theta}{2-\theta} \right) (1-\beta) - \bar{a} \right] Y + mY = \left(\frac{\beta}{1+i} \right) Y + gY \quad (21)$$

After cancelling Y , further manipulation yields a quadratic equation for the equilibrium interest rate with the following solution:

$$i = -\frac{A_1}{2} \pm \sqrt{\left(\frac{A_1}{2} \right)^2 - A_2} \quad (22)$$

with

$$A_1 \equiv \frac{\left[\frac{(1-\theta)}{(2-\theta)} (1-\beta) - \bar{a} \right] - \beta + (m-g)(1+l)}{\left[\frac{(1-\theta)}{(2-\theta)} (1-\beta) - \bar{a} \right] + m-g} \quad A_2 \equiv \frac{(m-g-\beta)l}{\left[\frac{(1-\theta)}{(2-\theta)} (1-\beta) - \bar{a} \right] + m-g}$$

Obviously, all variables in equation (22) are exogenous, so both the interest rate and all other endogenous variables in real terms are easily calculated. Concerning the root in (22), only the positive sign is relevant. Simulations show that the solution of the negative sign leads to a result in which the price level becomes negative and thus is economically meaningless.

Concerning nominal terms, the commodity price level P results from the money equilibrium condition:

$$M/P = \bar{M}/P + mY = (L_s/P) + (L_T/P) \quad (23)$$

that is, real money supply $(\bar{M}/P + mY)$ must equal private household's total real liquidity demand, which consists of both idle liquidity (L_s/P) and liquidity held for transaction purposes (L_T/P) . The price level P is then easily derived from (23) as:

$$P = \frac{\bar{M}}{(L_s/P) + (L_T/P) - mY} \quad (24)$$

What factors determine the interest rate and how?

In the following, we highlight some very general results which can be immediately derived from the model, both by a quick inspection of the relevant equations and by economic reasoning. That's why we do not provide rigorous formal proofs but restrict ourselves to some simulations. The latter do not include any transition periods or dynamics, but simply compare different steady states in

which we vary exogenous variables. We present only graphical expositions of these simulations here.¹⁸

On the one hand, we find that, besides Böhm-Bawerk's three causes for the existence of an interest rate, both fiscal and monetary policies also have an influence on the interest rate, even in the long run. Formally, this finding can be derived from equation (22), in which neither m nor g cancel out. On the other hand, the initial amount of money \bar{M} does not appear in equation (22), while it is proportional to the price level according to equation (24). This seems to support the widespread interpretation of the quantity theory that a pure increase in the quantity of money does not affect the interest rate, at least not in the steady state, but only leads to inflation in the long run.¹⁹ However, one has to be quite careful here. Indeed, a simple increase in money supply \bar{M} by helicopter would only increase the price level. The same thing is true for the more realistic case that the central bank purchases any commodities for freshly printed notes.

However, things are different if money enters the economy as credit money via expansionary monetary policy, $\Delta mY > 0$. In this case, which surely is the more relevant one in real-world economies, additional money supply does, indeed, have an impact on both the interest rate and real aggregate output. This important issue was detected in 1951 by Metzler, who argues that the central bank does not simply print notes, but rather acts as an additional supplier of capital at the market.²⁰ Because of the missing coverage by real goods, no real savings stand behind this central bank's capital offer. In this regard it can be perceived thoroughly as a kind of cheating, as Austrian economists usually stress. However, it is a cheat that actually works because the additional money supply decreases the interest rate even in the long run, according to equation (22).²¹ Therefore, the central bank can principally reduce the interest rate by whatever extent.²² A decrease of the interest rate in turn increases both the capital stock and total output, as can be seen from equation (9). However, as all our simulations show, these benefits are accompanied by an increase in the commodity price level (see Figure 10.2).

Although the commodity price increase is only a one-off effect, it cannot be neglected from a welfare point of view. While future generations would, indeed, benefit from a permanently higher income and wealth, the transition-period generation suffers from the devaluation of their savings due to inflation. Hence, no clear Paretian improvement follows from such an expansionary monetary policy, although both output and capital supply are permanently increased.

Concerning an increase in public debt, simulations suggest that it generally results in an increasing interest rate and, hence, in a decline in both capital supply and total output. While this result is not easily derived from equation (22), it is clearly in line with economic reasoning. Since most of government receipts are consumed rather than invested, we exaggerate and assume that all government receipts are consumed but not invested, and abstract from respective feedback from these investments on the interest rate. Thus, any increase in public debt tends to cause a crowding out effect at the capital market without any compensation in the form of public investment; the higher public debt is in relation to total

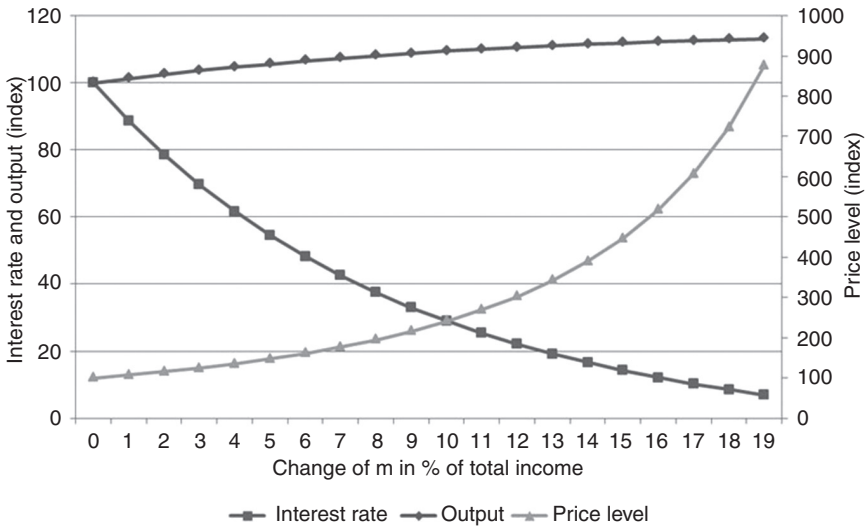


Figure 10.2 Effects of expansionary monetary policy

income, the lower are both total income and the private capital stock (see Figure 10.3).

It is also obvious what happens when an increase in public debt is fully financed by additional credit money (monetizing public debt). Since g and m do not appear separately in equation (22), but only as difference $g - m$, an equal increase in both of them does not affect the interest rate at all. Thus, total income and all other real variables do not change. This finding also applies to the relative size of the public sector. Although the government now faces higher interest expenses, these are exactly outweighed by the correspondingly higher central bank profits. Consequently, in the long run, the government can spend neither less nor more for public consumption without an increase in monetized public debt (see Figure 10.4).

However, according to equation (24), the price level increases as a result of the additional money supply because money demand is unchanged with an unchanged interest rate. Although this is, again, a one-off effect, it causes a welfare effect at least in the transition period, since inflation temporarily occurs and reduces the wealth of the then living private households, while it increases public consumption.²³ Thus monetizing public debt is innocuous in welfare terms in the long run, but not in the transition period.

Summarizing, both Austrian and the Keynesian economists are right: yes, printing money in order to decrease the interest rate does work, even in the long run. But also, yes, this is a fraud. The costs are imposed on the households who live in the transition period by allowing for temporary inflation. Therefore,

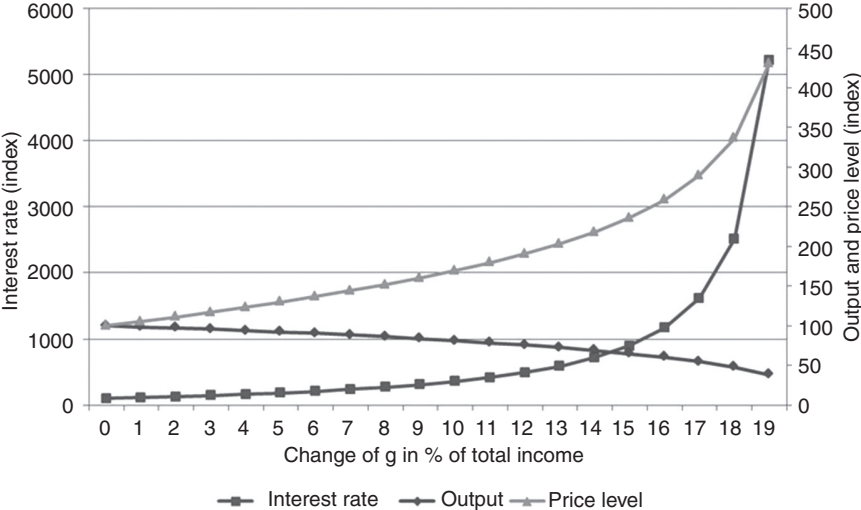


Figure 10.3 Effects of expansionary fiscal policy

expansionary monetary policy appears a highly questionable way of spurring growth, although in the end a new steady state with both a higher total income and a higher price level can be reached.

However, the view of some extreme Austrian economists asserting that the interest rate is solely determined by time preference has to be rejected. According

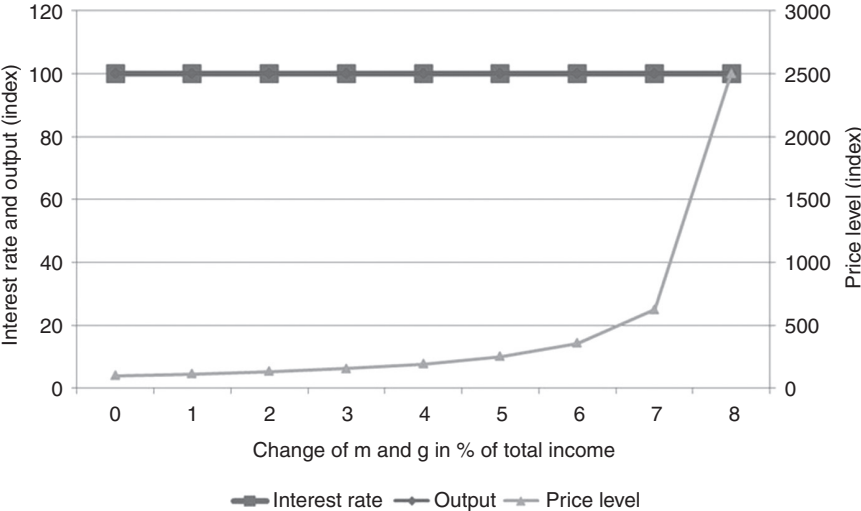


Figure 10.4 Monetized public debt taking

to the model, a positive rate of time preference is neither necessary nor sufficient for the existence of an interest rate. It is only one of several factors, both real and monetary, by which it is determined. Our results also do not support the widespread view that the interest rate would instantly vanish if only the impatience of the households could be overcome or be compensated by some public measures. Even if time preference were zero, there would generally emerge an interest rate from the other causes which have been derived above.

Can the interest rate become negative in the long run?

Samuelson (1958) has famously shown in his path-breaking three-period model that the interest rate can become negative in a stationary barter economy without money and durable goods. According to the so-called savings glut hypothesis (Bernanke *et al.*, 2011; von Weizsäcker, 2014), the same applies for a modern economy with a decreasing population, in which the demand for savings of young households is not high enough to satisfy the supply of savings by the old entirely. The old households have to give up part of their savings. As a result, the interest rate could fall below the growth rate. The economy is in a state of dynamic inefficiency. But, according to the lower zero bound hypothesis, the existence of stable money should at least prevent a negative interest rate because holding liquidity is then clearly preferable to lending at the capital market, as has already been argued by Samuelson.

As it is well known from steady state growth theory, the ‘golden rule’ of accumulation requires the interest rate to be equal to the growth rate of the respective economy. While this rule is not at all undisputed for interest rates above the growth rate, there is consensus that an interest rate below the growth rate would cause dynamic inefficiency. However, it is not at all clear if such a situation is possible at all. For example, Homburg (1991) convincingly argues that the pure existence of land would be sufficient to prevent it. Moreover, a policy of neutral money would lead to the same result, thus extending the lower zero bound argument to non-stationary economies.²⁴

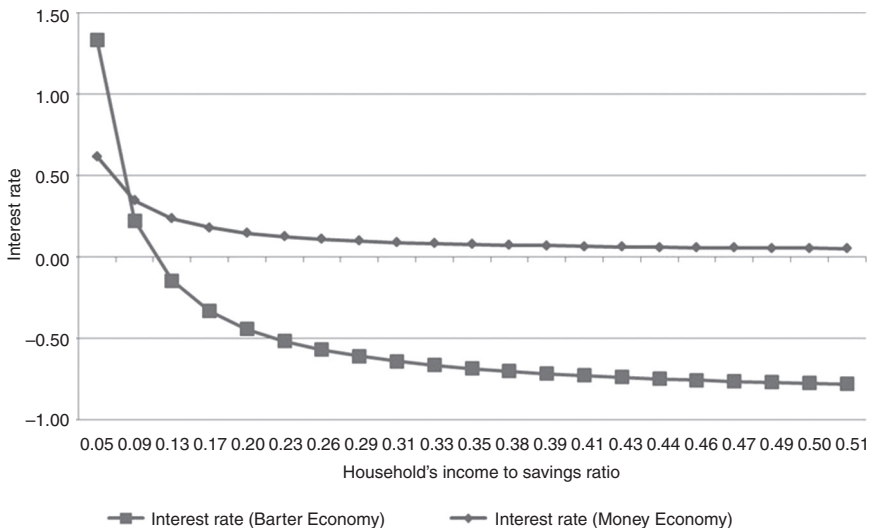
Further support for a negative interest rate comes from economists who try to use it to spur production and investment. For instance, Silvio Gesell (1919) famously argues to generate it by levying a tax on holding cash in the form of toll tags on bank notes. Today’s proponent Mankiw (2009) argues for negative interest rates by the central bank (Fed). Moreover, it is often argued that a negative interest rate would be necessary to overcome situations like the Keynesian liquidity trap.

We do not go further into these issues here, but ask whether our model allows for a negative interest rate at all and, if so, under what conditions. For a pure barter economy, a negative interest rate is indeed possible, when the household’s time preference decreases sufficiently. If households favor consumption in period 2 over consumption in period 1, the resulting increase in savings can lead to a negative interest rate. On contrast, with stable money, this process must stop at the lower zero bound ($i = 0$), because households then prefer holding liquidity to lending capital to the market. This simple intuition is, indeed, confirmed by our model, as

can be immediately seen from (14) and (15). Respective simulations also support this view (see [Figure 10.5](#)). Thus far, the savings glut hypothesis is not supported by our model, at least not for the case of a non-inflationary money economy.

However, that does not generally preclude a negative interest rate, since the central bank could certainly create it by the way of a sufficiently expansionary monetary policy. Even with a positive non-pecuniary return on holding liquidity ($l > 0$), a sufficiently high m will ultimately yield a negative capital market interest rate ($i < 0$), as can be learned from equation (22).²⁵ In this case, households would not only hold liquidity as their only asset, but even turn to be net borrowers themselves at the capital market ($K_H < 0$). The central bank would then be the only supplier at the capital market, and the lower zero bound is no longer binding. Thus, the marginal net rate of return on real capital becomes negative – that is, marginal gross return is insufficient to earn at least the depreciation. With regard to the economy's welfare situation, this appears to be a questionable outcome, although pure firm profits remain positive (see [Figure 10.6](#)).

To some extent, this scenario is similar to the current situation of financial repression in the European Monetary Union. The term financial repression describes a situation in which the governmental or monetary power forces the interest rate below the inflation level by means of expansionary monetary policy. Consequentially, cash-holders and holders of nominal assets suffer from a negative real return. It is sometimes argued that this cannot be blamed on the European Central Bank because the negative interest was caused by real reasons, as in Samuelson's model. However, in the light of our model, this line of argument is not convincing because inflation is low and liquidity is high. On the contrary, this is exactly the typical outcome of an extreme expansionary monetary policy in our model.



[Figure 10.5](#) Effects of an increase in the household's savings

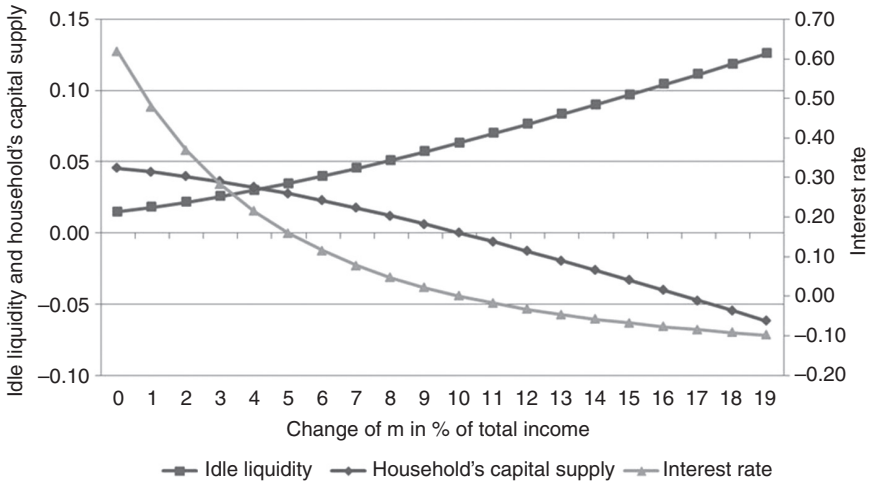


Figure 10.6 Effects of expansionary monetary policy on the household's stocks

Some limitations

We have to admit that our analysis has some limitations. In particular, the two-period utility function, the one-period maturity of capital and the homogeneous good might be a matter of debate. These assumptions have been made in order to simplify calculations because otherwise compound interest would creep into the equations and the model would no longer be solvable other than by numerical methods. The homogeneous good can be substituted by a respective homogeneous good basket quite easily without changing our results qualitatively. Although, with respect to the Cambridge–Cambridge controversy, the use of a homogeneous good may remain questionable, we rely on its tradition as robust tool of economic modelling.²⁶ We leave the introduction of heterogeneous goods which may lead to switching problems and, thus, to possible path-dependencies to future researchers.²⁷

We also leave the implementation of uncertainty to future researchers. Uncertainty, aside of random processes with expectation zero and some positive variance, need a much more sophisticated modelling framework, which is clearly not in the scope of our simple neoclassical steady state model.

Another serious limitation is the neglect of transition periods in the formal model, which would allow us to differentiate more clearly between short- and long-term effects of monetary and public shocks on production and the interest rate. An explicit analysis of the transition period would be an important feature, since it would allow to conduct a welfare analysis of the effects of policy shocks and to look for optimal interest rates.²⁸

Moreover, there is neither a foreign sector nor a private financial sector in our model, and we only allow for one single capital market interest rate. However, van Suntum (2013) shows that the incorporation of these refinements does not change anything principally. For instance, when foreign bonds are only imperfect substitutes to domestic bonds, the central bank still possesses the power to manipulate the capital market interest rate at home.

Conclusion

Böhm-Bawerk's and Keynes's interest theories complement each other. As has been shown, both real and monetary factors determine the interest rate. Unless there applies some extreme form of Ricardian equivalence, the central bank can, indeed, permanently lower the interest rate to a voluntarily chosen or even negative level. In our model, this kind of monetary policy leads to an increase in both total output and the capital stock. However, these increases are necessarily accompanied by inflation. Although the price level will only temporarily rise, this is sufficient to make such an expansive monetary policy quite questionable from a welfare economic point of view because households who live in the transition period are, thus, partly deprived of their wealth.

Furthermore, we have seen that Böhm-Bawerk's three causes for the existence of an interest rate are still valid and fully consistent with contemporary economic theory. It is not possible to reduce them to pure impatience, as, for example, Herbener (2011) suggests. On the contrary, at least one additional factor, namely the decreasing marginal utility of consumption, has to be taken into account. Moreover, in a monetary economy also the demand and supply of money has an impact.

We rely on further research to extend our synthesis of different economic concepts to open up a discussion between these different schools of thought. By thinking out of the box, current economic crises could be tackled; more widespread and pertinent solutions could stand on a broader economic base.

Notes

- 1 We are grateful to Finn Olesen and some unknown referees for helpful comments.
- 2 The email is downloadable from the homepage of the Verein für Socialpolitik, at http://www.socialpolitik.org/docs/Staatsschulden_Nov_2013.pdf
- 3 As a result our model stays analytically solvable and is, therefore, easily applicable for teaching purposes.
- 4 See, for instance, Cohen and Harcourt (2003).
- 5 See Romer (2012).
- 6 For an overview see Ekelund and Hébert (2007).
- 7 This would generally not be the case with more than two periods, such as in Samuelson (1958), or with non-logarithmic preferences.
- 8 See Fetter (1914).
- 9 See Böhm-Bawerk (1890), Book 1, p. 66.
- 10 See Samuelson (1983) and Etula (2008).
- 11 Note that with $0 < \beta < 1$ we have $Y > K_F$ only if $K_F < 1$, which is therefore a binding constraint in this model.

- 12 Walsh (2010), provides a short and comprehensive overview on this issue.
- 13 See Keynes (1930), also Bauvert (2009) for a short overview.
- 14 This specification is non-standard, but thoroughly well motivated: The exponents in a Cobb–Douglas function are the relative weights of its arguments. The relative weights of the wealth are the interest rate (i) and liquidity (l). In a world without uncertainty, the interest rate is paid on real capital and liquidity is simply a measure of the idle liquidity's subjective usefulness. With respect to uncertainty, this approach clearly has its origins in neoclassical modelling. Of course, you can relax this strict assumption by introducing uncertainty (e.g. droughts), but since we only consider steady states it would not be very informative. For example, after facing a drought, destroyed real capital would need to be reproduced in the transition period until the pre-drought level is restored. Intuitively, the transition period consumption level would be smaller than without the drought. In the end the optimal pre-drought level is equal to the post-drought level since the households preferences are intertemporal stable.
- 15 Real liquidity serves as a today's consumption good and as a claim on future consumption via a respective investment. Hence, we have created a particular relation between real production and money.
- 16 For a more comprehensive approach, see van Suntum (2013).
- 17 In van Suntum (2013), the government's budget is the total of the central bank profits and the receipts from a proportional tax on wages. Since this refinement does not change our findings in principle, we omit it in our present analysis.
- 18 The respective Excel sheets from which all parameters and formulas used can be explicitly seen will be published on the author's homepage.
- 19 Whereas interest rates are not part of quantity theory, money is not part of the older neoclassical model. We thus bring together aspects of both economic schools.
- 20 See Metzler (1951).
- 21 Differentiating equation (22) with respect to the monetary policy parameter m yields $\partial i / \partial m < 0$.
- 22 This would not be the case only if households remembered that the central bank is lastly their own. In this case of Ricardian equivalence, households would take into consideration that the central bank's profits tend to increase the supply of public goods (or reduce their tax burden). In this case they would, therefore, reduce their own savings. Ideally, we would have $\Delta K_M = -\Delta K_H$, i.e. monetary policy would then have no influence on the interest rate at all. However, it is not very likely that Ricardian equivalence really exists in this extreme form.
- 23 The reason for the latter effect is that central bank profits increase due to the inflation.
- 24 Neutral money would mean to make the rate of inflation or deflation, respectively, equal to the growth rate. Hence, the implicit interest rate on liquidity could never fall below the latter, and by this would also prevent the capital market interest rate from doing so.
- 25 However, as numerical simulations show, it can never happen that . The respective denominators in equations (15) and (16) remain always positive. At least, this is true as long we do not allow for a negative price level, which apparently would not make any sense.
- 26 See Cohen and Harcourt (2003).
- 27 See Samuelson (1966).
- 28 As it is well known from the discussion following Samuelson's famous 1958 steady state overlapping-generations model, the golden rule is not necessarily optimal when transition periods are explicitly taken into account. The reason for this is simple; a lower interest rate would, indeed, increase both the capital stock and total output in the long run, but this would also involve a sacrifice in the transition period in which less consumption can be realized. While the young individuals in our model can be compensated for the sacrifice in their second period of life, this obviously does not hold for the elder generation.

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11 The socio-economic philosophy of Keynes

Lessons for the twenty-first century

Eric Berr

Introduction

Keynes is undoubtedly the most influential economic thinker of the twentieth century. His economic analysis, while discredited by neo-classical economists during the ongoing neo-liberal period, remains perfectly relevant. Most of his ideas and policy recommendations are still of a peculiar importance, especially in times of crisis. Keynes's main concerns, in the historical context of the first half of the twentieth century, are about how to manage the consequences of World War I, to correct monetary and financial imbalances, to fight against mass unemployment, or more generally to implement an international environment aiming to favour peace. In such a context, Keynes appears to be more than a single economist and gives us, throughout his writings, the foundations of its socio-economic philosophy.

The core ideas of such a philosophy are summarized in chapter 24 of *The General Theory of Employment, Interest and Money* (1936a), where Keynes provides us with central elements as regards unemployment, inequality, uncertainty, the role of the state or the place of economics. So, he gives us the key to understand the failure of the present neo-liberal prescriptions – whether for developed or developing countries – while giving a very interesting analysis of globalization, economic crisis and their consequences.

Thus, we can show that behind his economic revolution hides a model of society which seems to be compatible with sustainable development. Undoubtedly, Keynes appears to be ahead of his time and his ideas are still fruitful for the twenty-first century.

Chapter 24 of *The General Theory*: a guide for Keynes's socio-economic philosophy

If *The General Theory* represents the main body of the Keynesian revolution, its final chapter gives us the core elements of what Keynes himself calls his social philosophy. According to him, 'the outstanding faults of the economic society in which we live are its failure to provide for full employment and its arbitrary and inequitable distribution of wealth and incomes' (Keynes, 1936a, p. 372).

Thus, fighting against unemployment and inequality appears to be at the root of Keynes's socio-economic philosophy, which leads him to question the role of competition.

Unemployment

If Keynes shows that unemployment is caused by a weak effective demand, he derives from his analysis that full employment can be reached either by mean of investing, consuming or working less. If, by referring to the effective demand principle, his opinion as regards the role of investment and consumption in fighting unemployment is very well known, his position regarding cut in working time is more ambiguous.

As early as 1930, Keynes shows that technological unemployment, 'due to our discovery of means of economising the use of labour outrunning the pace at which we can find new uses for labour' (Keynes, 1930, p. 325) may result in reducing the sorrow of each one, that is, 'to make what work there is still to be done to be as widely shared as possible' (ibid., p. 329). Later on, in his *General Theory*, he feels more reluctant about the reality of such an issue:

Another school of thought finds the solution of the trade cycle, not in increasing either consumption or investment, but in diminishing the supply of labour seeking employment; i.e. by redistributing the existing volume of employment without increasing employment or output. This seems to me to be a premature policy – much more clearly so than the plan of increasing consumption. A point comes where every individual weighs the advantages of increased leisure against increased income. But at present the evidence is, I think, strong that the great majority of individuals would prefer increased income to increased leisure; and I see no sufficient reason for compelling those who would prefer more income to enjoy more leisure.

(Keynes, 1936a, p. 326)

This step back does not mean that Keynes changed his mind, but reveals his strong attachment to the freedom of people. Besides, he confirms in a letter to the poet T.S. Eliot in 1945 that cut in working time is the best solution to fight against unemployment – and, we should add, especially in times where investment and consumption are depressed and generating low growth:

the full employment policy by means of investment is only one particular application of an intellectual theorem. You can produce the result just as well by consuming more or working less. Personally I regard investment policy as first aid. In US it almost certainly will do not the trick. Less work is the ultimate solution (a 35 hour week in US would do the trick now). How you mix up the three ingredients of a cure is a matter of taste and experience, i.e. of morals and knowledge.

(Keynes, 1945, pp. 383–4)¹

After all, if full employment requires more investment and/or consumption, we must acknowledge that we are now living in a world where ecological constraint prevails. Thus, it is crucial that the state has a say in orienting investment and consumption along sustainable paths, which could possibly lead to lower growth rates. Keynes seems to fit in with such an approach when he considers ‘the vital importance of establishing certain central controls in matters which are now left in the main to individual initiative’² (Keynes, 1936a, pp. 377–8). As far as investment and consumption are geared towards more sustainability, full employment appears not to be in opposition with the partisans of sustainable development who also militate for a cut in working time.

Inequality

One of the most important features of the Keynesian ‘revolution’ is the alternative explanation given to the relation between investment and saving. Neo-classical economists consider that saving drives investment. Hence, they favour policies aimed at increasing income and wealth of those that have more savings – that is, the richest (whether individuals or firms) – thus fostering the financialization of the economy. And if saving governs investment, the trickle-down effect which is at the basis of the so-called Kuznets curve come into play and make economic growth, resulting in decreasing inequality in the long run. They also promote fiscal austerity policies and the push for a balanced budget because they consider that government deficits represent negative government saving; this reduces the pool of national saving available for investment, thereby reducing the level of investment.

By showing that investment determines saving and by considering saving as residual,³ Keynes allows us to reject neo-liberal policies. The arguments developed in *The General Theory* lead him to conclude that:

in contemporary conditions the growth of wealth, so far from being dependent on the abstinence of the rich, as is commonly supposed, is more likely to be impeded by it. One of the chief social justifications of great inequality of wealth is, therefore, removed.

(Ibid., p. 373)

So, his theory of the rate of interest has a bearing on the future of inequalities of wealth. Indeed, by showing that the scale of investment is promoted by a low rate of interest and financed by credit, there is no room for incentives to save and to favour capital accumulation. On the contrary, we can ask for:

the euthanasia of the rentier, and, consequently, the euthanasia of the cumulative oppressive power of the capitalist to exploit the scarcity-value of capital. Interest today rewards no genuine sacrifice, any more than does the rent of land. The owner of capital can obtain interest because capital is scarce, just as the owner of land can obtain rent because land is scarce. But whilst there may

be intrinsic reasons for the scarcity of land, there are no intrinsic reasons for the scarcity of capital.

(Ibid., p. 376)

While not using a Keynesian approach, Piketty (2014) shows the detrimental impact of high inequality on the economy, leading to greater instability and recurrent crises. His demonstration is based on what he calls the fundamental inequality – that is, $r > g$, where r stands for the average annual rate of return on capital, including profits, dividends, interests, rents and other income from capital, expressed as a percentage of its total value, and g represents the rate of growth of the economy – that is, the annual increase in income or output (ibid., p. 25). When the rate of return on capital significantly exceeds the growth rate of the economy, which is the present situation, then it logically follows that inherited wealth grows faster than income and output. In other words, inequality increases and the rentier is the winner of this dangerous game. After all, Piketty is rediscovering... Keynes, but his solutions are less radical. Indeed, he militates for ‘a progressive global tax on capital’ (ibid., p. 27), while admitting it is unlikely to happen without a high degree of international coordination that is lacking today. We are far, indeed, from the ‘euthanasia of the rentier’.

Cooperation versus competition

Keynes has been deeply marked by World War I and its economic consequences, as described in his famous pamphlet *The Economic Consequences of the Peace* (1920). In this book, he warns the allies, in their own interest, not to further consider the defeated Germany as an enemy but as an economic partner instead. This idea of cooperation can be found throughout his work and would lead him to militate in favour of a gradual movement of relative withdrawal of national economies from international trade and finance, in opposition to nineteenth-century internationalism.

Yet, in *The Economic Consequences of the Peace*, his position is clear as regards debt.

The existence of the great war debt is a menace to financial stability everywhere.... In the case of internal debt, however, there are interested parties on both sides, and the question is one of the internal distribution of wealth. With external debts, this is not so, and the creditor nations may soon find their interest inconveniently bound up with the maintenance of a particular type of government or economic organization in the debtor countries.

(Ibid., p. 279)

In a text titled ‘National self-sufficiency’ (1933), Keynes confirms his inclination to more protectionism. This national self-sufficiency is, however, only a necessary condition to the advent of a new model, which can break with the logic of *laissez-faire*:

I sympathise, therefore, with those who would minimise, rather than with those who would maximise, economic entanglement between nations.

Ideas, knowledge, art, hospitality, travel – these are the things, which should of their nature be international. But let goods be homespun whenever it is reasonably and conveniently possible; and, above all, let finance be primarily national. Yet, at the same time, those who seek to disembarass a country of its entanglements should be very slow and wary. It should not be a matter of tearing up roots but of slowly training a plant to grow in a different direction.⁴

(Keynes, 1933, p. 236)

This fight against laissez-faire is, once again, put forward in *The General Theory*. Keynes shows that, under a free trade regime, nations are involved in a ‘competitive struggle for markets’, which is similar to the law of the strongest, where only the great economic power can win, thus preventing any catching up. As he previously stated, he believes, in fact, that solutions are national and he promotes a trade regime based on mutual aid rather than on competition. He argues that:

it does not now seem obvious that a great concentration of national effort on the capture of foreign trade, that the penetration of a country’s economic structure by the resources and the influence of foreign capitalists, that a close dependence of our own economic life on the fluctuating economic policies of foreign countries, are safeguards and assurances of international peace. It is easier, in the light of experience and foresight, to argue quite the contrary. The protection of a country’s existing foreign interests, the capture of new markets, the progress of economic imperialism – these are a scarcely avoidable part of the scheme of things which aims at the maximum of international specialisation and at the maximum of geographical diffusion of capital wherever its seat of ownership. Advisable domestic policies might often be easier to compass, if, for example, the phenomenon known as ‘the flight of capital’ could be ruled out.

(Keynes, 1933, pp. 235–6)

To avoid this ‘economic war’, Keynes promotes more protectionist options. According to him,

if nations can learn to provide themselves with full employment by their domestic policy (and, we must add, if they can also attain equilibrium in the trend of their population), there need be no important economic forces calculated to set the interest of one country against that of its neighbours.

(Keynes, 1936a, p. 382)

He adds that:

international trade would cease to be what it is, namely, a desperate expedient to maintain employment at home by forcing sales on foreign markets and restricting purchases, which, if successful, will merely shift the problem of unemployment to the neighbour which is worsted in the struggle, but a

willing and unimpeded exchange of goods and services in conditions of mutual advantage.

(Ibid., pp. 382–3)

The road to sustainable development is opened.

Keynes and sustainable development: a precursor that ignores itself?

Sustainable development is a notion that everyone accepts nowadays. It guides many economic policies in both the developed and developing world. Besides, it is now widely accepted that the biggest challenge of the twenty-first century will consist of promoting modes of development that are socially fair, ecologically sustainable and economically viable. Can this be done within the neo-liberal framework? We do not believe so and think it is only possible to view the future optimistically if a break can be engineered with the neo-liberal perspective that has dominated international relations over the past 30 years. Towards this end, we will see how Keynes can be a leading inspiration, despite not being involved in such issues in his time.

What is sustainable development?

While there has been growing interest in environmental issues since the late 1960s,⁵ the concept of sustainable development was popularized in the 1980s, notably following the 1987 publication of the findings of the World Commission for Environment and Development (WCED) – the famous Brundtland report – which came up with a definition that many people still use today: ‘Sustainable development seeks to meet the needs and aspirations of the present without compromising the ability to meet those of the future’ (WCED, 1987, p. 40).

Behind the definitions aired in the Brundtland report, two visions of sustainable development continue to vie with one another. The first is neo-classical in inspiration and serves as the basis for ‘weak sustainability’. It tries, at the micro-economic level, to give monetary value to natural elements so that they can be integrated into a cost-benefit analysis. At a macro-economic level, it extends the Solow model and tries to build theoretical arguments justifying an empirical argument rooted in an allegedly virtuous relationship between economic growth and environmental quality (encapsulated in the Kuznets curve). It also tries to formulate a ‘sustainability rule’ whereby the per capita value of the total stock of capital in a given society can only be maintained if one postulates perfect substitutability between the different forms of capital (physical, human, natural).

The second approach, which has come to form the basis of what might be called ‘strong sustainability’, is less focused on economic aspects alone and offers a more radical vision. Here, ecological sustainability postulates the preservation of a stock of so-called critical natural capital, rejecting the principle of the substitutability of production factors to emphasize their complementarity instead.

It disagrees with a monetary valuation of natural elements. Social sustainability is grounded in the implementation of a development process that combines an acceptable level of social homogeneity, a fair distribution of incomes and full employment with fair access to social services. Economic sustainability depends on a more efficient distribution and management of resources but also on a constant flow of both public and private investments destined to modernize the productive apparatus in an attempt to save on natural resources and alleviate human distress. It also supposes a certain amount of autonomy for scientific and technological research and accepts an integration of international markets without any denial of national sovereignty (see Sachs, 1997).

It seems clear that Keynes could be seen as a precursor of such a strong sustainability.⁶ While we have already shown his commitment in fighting against unemployment and inequality, his concept of uncertainty and his search for beauty are also marked by sustainability.

From radical uncertainty to the precautionary principle⁷

In Keynes's own opinion, the principle of effective demand represents the crux of his *General Theory of Employment*. This principle derives from the notion of uncertainty that underlies all of Keynes's economic philosophy and is a forerunner of the precautionary principle.

The notion of uncertainty is key to Keynes's analysis and one of the pillars of his 'revolution'. Keynes would later say (1938) that his opinions in this area had been strongly influenced by the philosophy of George Moore whose *Principia Ethica* (1903) would deeply mark him.

Moore tried to determine what is good and how people can do good things. Since he considered that good can, at best, be defined intuitively, he deduced that the best things imaginable are states of mind associated with aesthetic pleasure and the appreciation of beautiful objects, on the one hand, and with personal affection, on the other. Given how difficult it is to apprehend what is good, Moore considered that we never have any reason to imagine that an action is our obligation; and can never be sure that an action will produce the greatest possible value. Since we are unable to predict the effects of our actions with any certainty (insofar as there is no probabilistic basis for this), we have to rely instead on a certain number of traditions, rules of conduct, dominant morality and common sense.

Keynes embraces Moore's 'religion', which allows him to abandon the Benthamian utilitarianism that he considers 'as the worm which has been gnawing at the insides of modern civilisation and is responsible for its present moral decay' (Keynes, 1938, p. 445). It also means that he views economic values, thus the principle of rationality, as being of secondary importance.⁸ Lastly, Keynes draws from Moore the idea that we live in a world that is, by and large, non-probabilistic. As demonstrated by Moore, because 'good' cannot be defined – since its definition would assume that we know what it is – the logical deduction is that we can never be sure of the positive or negative effects of our decisions. This rips a huge hole in neo-classical logic since probabilities do not apply in an economic conception

requiring the recurrence of facts.⁹ In Keynes's opinion, it is essential that people reason in a universe of radical uncertainty or one where 'there is no scientific basis on which to form any calculable probability whatever. We simply do not know' (Keynes, 1937, p. 114).

Since action is needed, what is required is a new logic to orient actors' decisions. According to Keynes, decisions must be rooted in expectations of conventional behaviour. The problem, however, is that the foundations underlying such expectations are not particularly solid. In other words, Keynes feels that economic agents are guided both by facts that they feel relatively sure about – even if the effects are not the most significant – and by the degree of confidence they have in such facts.

The adoption of this convention is what enabled Keynes to reject Moore's conclusions that actions must be guided by traditional morality. Instead, he described a conventional way of generating situations in which rumour, fear, disillusion or, to the contrary, hope – all elements that cannot be probabilized – might cause sudden and sharp revisions in people's expectations and create self-fulfilling prophecies whose great variability explains, according to Keynes, the appearance of crises.

This convention, as defined by Keynes, makes it easier to understand our attitudes towards the environment. A number of scientific studies have demonstrated that the western model of development is unsustainable over the long run, and that rising pollution will cause major climate change. Yet, even if we are certain that such change will occur, the fact that we are uncertain which form it will take (or, in Keynes's words, that our confidence is limited) means that we do not fully understand the gravity of this problem – showing that, in this area, what is most important is not to know that changes are definitely going to occur but to simply believe that they may arise one day.

It remains that these new ecological circumstances, which as risks relating to our environment become increasingly visible have turned into an increasingly important component of actors' expectations, should normally induce us to adopt a more prudent attitude. If we consider, as per Keynes's thinking, that economic questions are secondary and that we live in a world of radical uncertainty, what we need to promote is a precautionary principle (PP). This construct, which appeared for the first time in Germany in the late 1960s, has been consecrated in numerous international texts. An example is Principle 15 found in the Rio de Janeiro Statement on the Environment and Development, containing the following definition:

In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.

(United Nations, 1993, p. 6)

The PP is related to two antagonistic conceptions. The first, which is a kind of weak PP, considers that the burden of proving the existence of danger falls on the

opponents to a given measure. The end result is that risk management should be rooted in a cost-benefits analysis that endorses the primacy of economic thinking since economic gains are easier to highlight than human and ecological costs. The second conception, which is a kind of strong PP, considers that it is up to the promoters of a risky activity to demonstrate the absence of any 'serious' risk. This approach considers that environmental (and social) considerations are more important than economic ones. It is a vision that does not undermine the Keynesian notion of the primacy of investment, but does ask questions about the investments' substance (see Robinson, 1977). This intimates a greater role for the state, which (notably using its law-making capabilities) can try to motivate firms to adopt an ethical stance and commit to 'clean' investments. Kalecki goes further by considering that the state must be both the planner and promoter of development, even producer if need be. In this view, it is up to the state to indicate development priorities and ensure that needed investments take place. In turn, this implies the use of a certain form of planning (see Kalecki, 1964).

All in all, it is evident that Keynes's analysis of radical uncertainty leads to the adoption of a PP, and that this vision is perfectly compatible with eco-development's desire for reasonable and prudent analysis.

The search for beauty

Keynes is not only a famous economist, he is also a lover of arts. As such, his socio-economic philosophy is marked with the search for beauty. Keynes feels that the purpose of life is to enjoy beauty, knowledge, friendship and love, all concepts that are not primarily concerned with economics. He rejects the 'classical' vision, based on Benthamite utilitarianism, coming from the eighteenth and nineteenth centuries, which he considers to be a catastrophic change for civilization. In his opinion, the arts, like nature, must be disconnected from economic considerations because 'the exploitation and incidental destruction of the divine gift of the public entertainer by prostituting it to the purposes of financial gain is one of the worst crimes of present-day capitalism' (Keynes 1936b, p. 344).

Keynes continues by denouncing the fact that the same rule of self-destructive financial calculation governs every walk of life.

We destroy the beauty of the countryside because the unappropriated splendours of nature have no economic value. We are capable of shutting off the sun and the stars because they do not pay a dividend... Or again, we have until recently conceived it a moral duty to ruin the tillers of the soil and destroy the age-long human traditions attendant on husbandry if we could get a loaf of bread thereby a tenth of a penny cheaper.

(Keynes, 1933, p. 242)

Keynes realizes that economic and financial logic are in opposition to ecological and social reasoning. He condemns environmental destructions and reacts to the disfigurement of the planet, which led him to minimize the role of economics

(Keynes, 1930).¹⁰ He would thus reject weak sustainability which subordinates nature to economic calculation.

His positions concerning the environment and the arts lead Keynes to formulate a virulent criticism of capitalism,¹¹ which he accuses of being amoral. In his opinion,

it seems clearer every day that the moral problem of our age is concerned with the love of money, with the habitual appeal to the money motive in nine-tenths of the activities of life, with the universal striving after individual economic security as the prime objective of endeavour, with the social approbation of money as the measure of constructive success.

(Keynes, 1925, p. 268)

If direct references to environmental problems are rather limited, the stance of Keynes towards the arts – or his philosophy of uncertainty – contains the premises of a Keynesian approach to the environment that foreshadows sustainable development.

Conclusion: are ideas more important than vested interests?

Keynes has always been sure of the power of ideas, and especially his own.¹² Besides, he concludes his *General Theory* on this issue: 'I am sure that the power of vested interests is vastly exaggerated compared with the gradual encroachment of ideas. Not, indeed, immediately, but after a certain interval' (Keynes, 1936a, p. 383).

If ideas are powerful, Keynes is aware of the role of vested interests. His (wrongfully?) naive interrogation concerning the fulfilment of his ideas – 'Are the interests which they will thwart stronger and more obvious than those which they will serve?' (ibid.) – is meaningful to that extent. It helps us to understand the basis of the neo-liberal counter-revolution triggered in the late 1970s by those who were 'loosing' part of their power during the '30 glorious years' – that is, the richest – whether households or multinational firms. Keynes was also concerned by the possible confiscation of the power by a minority for its own interest. Indeed,

it is the modern method – to depend on propaganda and to seize the organs of opinion; it is thought to be clever and useful to fossilise thought and to use all the forces of authority to paralyse the play of mind on mind.

(Keynes, 1933, p. 245)¹³

On this point, the partisans of a strong sustainability fully agree with Keynes. Indeed, they consider capitalism to be responsible for the increase of inequalities while it reinforces the power of the 'powerful' – that is, multinational firm managers, northern and southern political leaders and the mainstream media – whose cupidity or ignorance make them put their own interests before the general interest. Thus, they manage to convince the victims of the system how they need to make sacrifices today to reach an unceasingly deferred and largely illusory happiness.

Nevertheless, Keynes underestimates the power of vested interests, whereas Kalecki (1943) underlines that the influence of economic ideas in shaping policy is severely constrained by the prevailing social and political institutions (Eshag, 1977). Thus, Kalecki seems closer to reality by placing emphasis on political and class struggles.

The topicality of Keynes's ideas is unquestionable. The 'subprime' crisis has shown the failure of the neo-liberal approach and the validity of Keynes's analysis on such an issue. In this chapter, we stressed the proximity of Keynes with sustainable development. Eventually, the main challenge facing post Keynesian economics is not only continuing to show the powerfulness of Keynes's ideas, but also to make them worldly applied, thus overcoming the vain optimism of Keynes and building a more equitable balance of power, favouring the entrepreneur instead of the speculator, the one who has a high propensity to consume instead of the rentier, while preserving the biosphere.

Notes

- 1 In this letter, Keynes comments on a paper written by T.S. Eliot and entitled 'Full employment and the responsibility of Christians', *The Christian News-Letter*, Supplement 230, 21 March 1945. In this paper, Eliot agrees that eradication of unemployment is a Christian responsibility, but declines to treat it as such an absolute end because it might be regarded by some Christians as less important than other social objectives, and because it is only a reform undertaken 'by the temporal power for temporal ends'. See Margaret Kaye Browne (1979), *The Idea of a Christian Social Order: Aspects of Anglican Social Thought in England, 1918–1945*, Australian National University.
- 2 Therefore, Keynes conceives that 'a somewhat comprehensive socialisation of investment will prove the only means of securing an approximation to full employment; though this need not exclude all manner of compromises and of devices by which public authority will co-operate with private initiative' (Keynes, 1936a, p. 378). This implies that 'the central controls necessary to ensure full employment will, of course, involve a large extension of the traditional functions of government' (*ibid.*, p. 379). If Keynes insists on the leading role of the state, he also stresses the role of individualism: 'The advantage to efficiency of the decentralisation of decisions and of individual responsibility is even greater, perhaps, than the nineteenth century supposed; and the reaction against the appeal to self-interest may have gone too far. But, above all, individualism, if it can be purged of its defects and its abuses, is the best safeguard of personal liberty in the sense that, compared with any other system, it greatly widens the field for the exercise of personal choice. It is also the best safeguard of the variety of life, which emerges precisely from this extended field of personal choice, and the loss of which is the greatest of all the losses of the homogeneous or totalitarian state. For this variety preserves the traditions which embody the most secure and successful choices of former generations; it colours the present with the diversification of its fancy; and, being the handmaid of experiment as well as of tradition and of fancy, it is the most powerful instrument to better the future' (*ibid.*, p. 380).
- 3 Saving 'is not a substitution of future consumption-demand for present consumption-demand, – it is a net diminution of such demand' (Keynes, 1936a, p. 210).
- 4 This reduction of the interdependence between nations is wished for today by the advocates of sustainable development. Through it, we would assist in the relocation of production, thereby limiting transport in productive processes, including various pollutions (see section 2). We may also notice that, whatever his criticism of capitalism,

Keynes rejects any idea of revolution and preaches gradual changes towards a society less subjected to international constraints. He recognizes, however, the risks of an 'economic nationalism' that introduces many dangers, in particular the one of great haste: 'it is of the nature of economic processes to be rooted in time. A rapid transition will involve so much pure destruction of wealth that the new state of affairs will be, at first, far worse than the old, and the grand experiment will be discredited' (Keynes, 1933, p. 245).

- 5 See the work done by the Club of Rome (Meadows *et al.*, 1972).
- 6 In the 1970s, Sachs (1980) coined the term eco-development, which can be seen as the forerunner of the strong sustainability approach. Eco-development relies on three pillars (Sachs, 1980, p. 32): 1) self-reliance, which encourages autonomous decisions and the emergence of modes of alternative development encompassing the historical, cultural and ecological contexts that are specific to each country; 2) a fair assessment of everyone's essential material and immaterial needs, especially people's need to realize themselves through a meaningful life; 3) ecological prudence, or the search for a kind of development that is in harmony with nature. In this view, it is only through a better distribution of wealth that everyone's needs can be satisfied, changes must be made to a balance of power that currently defends markets and transnational firms' interest. This reorganization of power is based on the assumption that the state can use indicative planning processes to establish certain objectives and guarantee their realization. Those positions are clearly compatible with Keynes's ideas. For an in-depth analysis of the links between Keynes and eco-development, see Berr (2015).
- 7 This paragraph owes a great deal to Dostaler (2007). Berr (2009) offers an in-depth presentation of possible links between Keynes's thinking and sustainable development.
- 8 Keynes believes that 'the attribution of rationality to human nature, instead of enriching it, now seems to me to have impoverished it. It ignored certain powerful and valuable springs of feeling' (Keynes, 1938, p. 448).
- 9 'All these pretty, polite techniques, made for a well-panelled board room and a nicely regulated market, are liable to collapse' (Keynes, 1937, p. 115).
- 10 In his 'Economic possibilities for our grandchildren', Keynes considers that the role of economics is to allow the satisfaction of 'those needs that are absolute in the sense that we feel them whatever the situation of our fellow human beings may be' (Keynes, 1930, p. 326).
- 11 However, even if he is conscious of the environmental and cultural limits of capitalism, he does not reject it and proposes a regulation of the system instead.
- 12 See for instance what he thought about the future impact of his *General Theory*, as stated in a letter to G.B. Shaw: 'I believe myself to be writing a book on economic theory, which will largely revolutionise – not, I suppose, at once but in the course of next ten years – the way the world thinks about economic problems' (Keynes, 1935, p. 42).
- 13 In 'My early beliefs', Keynes confirms this idea: 'We were not aware that that civilisation was a thin and precarious crust erected by the personality and the will of a very few, and only maintained by rules and conventions skilfully put across and guilefully preserved' (Keynes, 1938, p. 447).

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12 Towards a theoretical foundation of Animal Spirits

Probability, uncertainty and intentionality¹

Joachim Güntzel

Introduction: do we need a theory of Animal Spirits?

The central role that uncertainty plays in Keynesian macroeconomics is widely recognized today. As, for example, Mark Hayes puts it:

Post Keynesian economics takes time seriously. Production takes time, time to make as well as to use the tools of an advanced technology under a specialized division of labor. The flow of time is irreversible and the future is unknowable. The value of capital assets depends on future events which are subject to uncertainty, not merely to statistical random variation or risk.²

This uncertainty is a fundamental one, and there is no way, however mathematically sophisticated it may appear, that could enable us to reduce this fundamental characteristic of the world we are living in. Uncertainty is like a veil, which lies impenetrable between us and the future.

There is also a newly arising recognition of the fact that Keynes, in his earlier years, paid great attention to a new and original conceptual foundation of probability.³ Last, but not least, the term ‘Animal Spirits’, which was used by Keynes in [chapter 12](#) of *The General Theory*, has gained new attention over recent years due to the need for a fresh understanding of human economic behaviour after the financial crisis of 2008.⁴ But this notion is sharply contrasted by the impression that there exists a certain gap between this newly recurring interest in the Keynesian concepts mentioned above, and a thorough theoretical investigation and – most of all – integration of these concepts within a concise theoretical frame. This chapter tries to make a contribution to filling this gap.

Do we need such a theoretical approach? Animal Spirits as a concept has received attention for some time, especially in post-Keynesian economics.⁵ It is certainly true that a lot of interesting and important contributions to this concept have made in the past two or three decades. But there still does not seem to exist a theoretically concise conception of what Animal Spirits *really are*, particularly in connection with Keynes’s conceptions on probability and uncertainty. Therefore the chapter poses – and tries to answer – three main questions:

- How can ‘Animal Spirits’ be *conceived more precisely* than usual?

- How, particularly, can Animal Spirits be connected with *Keynes's concept of probability and uncertainty*?
- What would a more general *philosophical foundation* of Animal Spirits within the philosophy of mind (esp. the concept of *intentionality*) look like?

In the final analysis, this aims to be a contribution in order to develop a *more general and more realistic idea of man* than is given by the dominating neoclassical concepts, as well as a *basis for a constructive use of Animal Spirits* within post-Keynesian economics.

The chapter is structured into three parts. First, it is argued that the analysis of Akerlof and Shiller (2009),⁶ which has generated a new and growing interest for Animal Spirits, does not hold as a solid basis for a definition of the phenomenon. Second, it is demonstrated that a more solid theoretical basis for Animal Spirits can be derived from Keynes's original concept of probability and uncertainty; and, third, the main elements of this theoretical basis are formed by what is introduced in the following as the concepts of :

- *α -attentism* and *α/β -attentism*
- the *reversion of the probability problem* and
- application of the philosophical concept of *intentionality*.

By the introduction of these new concepts, an attempt is made to give Animal Spirits a solid foundation within an appropriate theoretical framework. This appears to be important for more than one reason. Besides others, the most important reason – in the author's opinion – is that post-Keynesian economics needs to develop a serious opponent against the still dominating *homo oeconomicus* within mainstream economics. I suppose that, in the long run, it will not be enough to repudiate the idea of man which is represented by *homo oeconomicus*. This prudish fellow, although appearing to us to be boring, unrealistic and even unhuman, has proven an astonishing ability to resist and a stunning will to survive in the field of mainstream economics, which deserves at least some kind of respect from us. Some old wisdom says that you have to understand your opponent in order to beat him. I am convinced that this is also true if we want to overcome *homo oeconomicus*. We have to replace him by *another idea of man*, an idea which has a *comparably solid foundation*, or otherwise we will distress ourselves fighting against *homo oeconomicus* over and over again. At least, we should not forget that he has – in the shape of utilitarianism – impressive philosophical assistance on his side.

Some remarks on Akerlof and Shiller

Let me, first of all, stress my conviction that Animal Spirits are *important*. In fact, they are so important that they should not be left without a solid *theoretical foundation* and *precision*. But what actually *are* Animal Spirits? A starting point for this analysis is the book by Akerlof and Shiller (2009). Animal Spirits are described as any deviation from rational behaviour: 'In contrast, John Maynard

Keynes sought to explain departures from full employment, and he emphasized the importance of animal spirits.⁷ A little later, they state, ‘The thought experiment of Adam Smith fails to take into account... the extent to which people are irrational or misguided. It ignores the *animal spirits*.’⁸ and, finally,

animal spirits... is now an economic term, referring to a restless and inconsistent element in the economy. It refers to our peculiar relationship with ambiguity and uncertainty. Sometimes we are paralyzed by it. Yet at other times it refreshes and energizes us, overcoming our fears and indecisions.⁹

We therefore can summarize that Animal Spirits are apparently used as a synonym for behavioural patterns which contradict the classical/neoclassical ideal of economic rationality.

There are five manifestations of Animal Spirits according to Akerlof and Shiller:

- confidence and confidence multipliers
- fairness
- corruption and bad faith
- money illusion
- stories.

Without going too much into detail,¹⁰ one should ask if this specification of Animal Spirits is consistent and theoretically precise enough. Unfortunately, it seems not. The main critical remarks are:

1. Animal Spirits *are not clearly defined*; the term remains astonishingly vague and imprecise, due to a *lack of conceptual foundation*.
2. The selection of five manifestations of Animal Spirits appears to be somewhat *arbitrary*, moreover *heterogeneous* (what, e.g., has money illusion got to do with Animal Spirits?).
3. The manifestations of Animal Spirits according to Akerlof and Shiller are – regarded separately – well known and partly even objects of scientific research (e.g. behavioural economics/anomalies in the sense of a violation of expected utility maximization); thus a common parenthesis under the label of Animal Spirits seems to be neither necessary nor meaningful.
4. Other aspects of human behaviour are omitted (e.g. greed, fear, herd behaviour, etc.).

Besides these critical remarks, one can criticize at least one contradiction within Akerlof and Shiller’s analysis. When they discuss ‘fairness’, they recognize a certain ambiguity: ‘While on the one hand there is a considerable literature on what is fair or unfair, there is also a tradition that such considerations should take second place in the explanation of economic events.’¹¹ The role fairness plays as an Animal Spirit is particularity emphasized within the foundation of

efficiency wage theory, a core explanation of involuntary unemployment within mainstream economics:

$$l^{\text{EQ}} < l^{\text{EF}}$$

with l^{EQ} = equilibrium wage (real); l^{EF} = efficiency wage (real)

The justification for $l^{\text{EF}} > l^{\text{EQ}}$, according to efficiency wage theory is:

If $l = l^{\text{EQ}}$, that means if the labour market is in equilibrium, then $L^{\text{S}} = L^{\text{D}}$.

The result from this situation will be a lack of motivation for job holders to fulfil their tasks properly, since they can always find a new job ‘over the street’. Thus, a premium on l^{EQ} shall lead to higher motivation and, in consequence, cause higher productivity:

$$l^{\text{EF}} > l^{\text{EQ}},$$

and therefore $L^{\text{S}} > L^{\text{D}}$, that means unemployment as a result of too high wages. So far, Akerlof and Shiller follow the well-known argumentation of the efficiency wage theory. But then comes their ‘surprising turn’ because they see a common sensibility for fairness as the real cause for premium on l^{EQ} and thus involuntary unemployment:

This view of the labor market is... simpler... It is simpler because we think that we can represent the wage as depending at least in part on what workers think would be fair, and those fair wages are almost always above the market clearing wage.¹²

Apart from the impression that this argument concedes a rather high influence of worker’s views about fairness on the level of wages (maybe such an influence can be attested in some cases of very high qualified and specialized work, but for the vast majority of the labour force daily experience in times of globalization speaks a quite different language), there arises a contradiction when Akerlof and Shiller come to the third of their Animal Spirits, namely corruption and bad faith. Some examples are the sale of ‘fraudulent patent medicines’ (e.g. in the USA in the nineteenth century or in Europe in the Middle Ages), as well as dubious financial products and methods of ‘creative accounting’ by which potential investors are deceived about imaginary assets. Such methods are mainly held responsible, by Akerlof and Shiller, for a number of serious crises in modern capitalist economies, above all the financial crisis since 2007/8. They state that ‘the business cycle is connected to fluctuations in personal commitment to principles of good behavior and to fluctuations in predatory activity which in turn is related to changes in opportunities for such activity’.¹³ I would totally agree with Akerlof and Shiller on this point, but exactly here lies the contradiction to what they argued before. Under these assumptions, why should a generally accepted pledge

for fairness *not* be an appropriate *remedy against corruption and bad faith*? And, if this is acceptable, why should *fairness* then be regarded as being part of (seemingly) irrational Animal Spirits? Would fairness not be, instead, a pretty *rational corrective* against corruption and bad faith? In other words: isn't this a contradiction within the analysis of Akerlof and Shiller? I want to be clear on this point: I agree with Akerlof and Shiller on the tremendous importance that Animal Spirits have for the course of the economy. But I also am convinced that Animal Spirits need a more precise and theoretically satisfying foundation if we want them to play an important role within economics.

Nevertheless, apart from any detailed critique, one has to concede that Akerlof and Shiller have brought Animal Spirits back to the attention of economists as well as to a broader audience.

Connecting Animal Spirits with Keynes's conception of probability and uncertainty

Let us now move on to the question how Animal Spirits can be anchored within Keynes's conception of probability and uncertainty. Some preliminary remarks are necessary.¹⁴ First of all, it has to be mentioned that Keynes himself does not exactly define how Animal Spirits should be understood. The term appears only three times in Keynes's published writings.¹⁵ It is also worth mentioning that there is a distinction between the technical use of the term Animal Spirits (traced back to Descartes and Hume) and the literary use. Keynes himself appears to use the term in the literary sense; for some historical remarks on the term 'Animal Spirits', which has a history of more than 2,500 years, see, for example, Barends.¹⁶

Probability, according to Keynes, is not a given *characteristic* of events, but a *logical relationship* between a proposition and an available background of knowledge: 'this expresses strictly a relationship in which they stand to a corpus of knowledge... and not a characteristic of the propositions in themselves'.¹⁷ This simply means that it does not make sense to say that a certain event does have a concrete probability; in fact, this also makes clear that Keynes had a profound distrust of the mathematically sophisticated methods of probability calculus, particularly when it comes to an application of such methods in real-life situations.

$\alpha = a/h$ with a = proposition for which a probability shall be considered;
 h = proposition on the available corpus of knowledge;
 α = '*rational degree of belief*' in proposition a

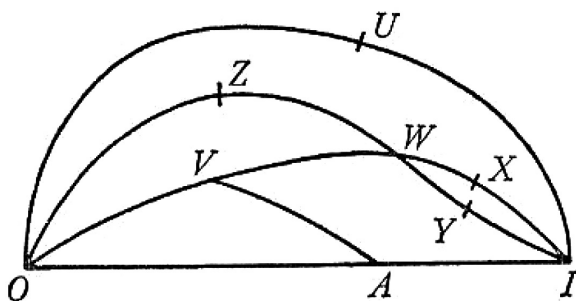
It therefore is argued that there is no *probability of certain events*, but 'a *probability-relation* of degree α between a and h '¹⁸ with each, a and h , representing a *set of propositions*.

From this argumentation there can be derived a number of characteristics of Keynes's probability conception. These *characteristics* of probabilities are:¹⁹

- probabilities are often not comparable (since there is no common measure for them);
- probability propositions are seldom quantifiable;
- probability propositions lie within a 'continuum between true and false';²⁰
- the term 'probability' experiences a 'transformation into a *rational degree of belief*';²¹
- the Bernoulli principle is, in most cases (of real life), not applicable; therefore 'Keynes distinguishes himself from traditional probability theory';²²
- and, finally, perhaps the most important notion is that can be said is 'that it is a lower degree of rational belief than certainty'.²³

Keynes illustrates his argumentation with a simple graphic, shown in [Figure 12.1](#).

In [Figure 12.1](#), 0 stands for an impossible event, whereas I stand for certainty (that means, a probability of 1). A, U, V, W, X, Y and Z stand for different probabilities. A is a numerically calculable probability because it is situated along a linear line between 0 and I. All other probabilities, which lie along a non-linear line between 0 and I, are not calculable. But they may be comparable, as long as they lie along the same line. For example, Z is a probability which lies along a non-linear line between 0 and W, therefore is $Z > 0$ and $Z < W$, but Z is numerically not calculable. It has to be pointed out that the comparability of two probabilities does not mean that they are numerically calculable. In [Figure 12.1](#), only A is calculable because it is situated along a direct, linear line between 0 and I. All other probabilities, which lie on a common non-linear line, are only comparable (but not calculable), whereas probabilities which lie along no common line are not comparable at all (and, of course, not calculable either). Probability A, for example, is calculable (because it lies on a linear line between 0 and I), but it is not comparable with Y, since A and Y have no line in common. The optical impression that probability Y is nearer to I than probability A is has no relevance.



[Figure 12.1](#) Keynes's probability graphic

Source: Keynes (1921), p. 42

This non-calculability of (most) probabilities, in particular, lies at the core of Keynes's argumentation on uncertainty: 'The sense in which I am using the term is that in which the prospect of a European war is uncertain, or the price of copper and the rate of interest twenty years hence... We simply do not know.'²⁴ It is crucial to point out that this principal uncertainty is a *fundamental characteristic* of reality; it cannot be diminished or managed through any procedure of mathematical probability theory. This sceptical view on any kind of mathematical probability calculus is a fundamental characteristic of Keynes's conception of probability. It is a consequence of his conviction that probability is a *logical relation between propositions* and *not* some intrinsic characteristic of real phenomena.

Let us now turn to the problem of a theoretical foundation of Animal Spirits within Keynes's probability conception. First of all, we have to consider that (mathematical) probability calculus is only a very limited help in daily-life situations. Therefore, in Keynes's own words, a decision problem must be tackled 'in virtue of an intuitive judgement directed to the situation as a whole' and not as 'an arithmetical deduction derived from a series of separate judgements directed to the individual alternatives each treated in isolation'.²⁵ As a consequence of this statement, Keynes emphasizes the central role of human *motives, judgements, expectations* and *psychological factors* and 'he is interested in the manner in which individuals make decisions and can act successfully under the circumstances which uncertainty imposes on them'.²⁶

Against this background, Animal Spirits should can be understood as a kind of *catalyst* which hinders a decision blockade, which would otherwise be caused by the fact of non-calculable probabilities. Since a probability $\alpha = a/h$ is not numerically determined, it varies with every new proposition.²⁷ $H_k \in h_k h$ (with: $h = \{ H \mid H = H_1, H_2, \dots, H_j \}$ resp. $h_k h = \{ H \mid H = H_1, H_2, \dots, H_j, H_k \}$). This simply means that a decision-maker will change his rational degree of belief with every piece of new information he obtains. Since every new proposition H_k enlarges the set $h_k h$, α can never be finally determined; in other words, $\alpha = a/h$ can only be of a temporary grade (because $a/h \neq a/h_k h$). This leads to the danger of infinite attentism: a change of α could improve the informational basis for decision; this first form of probability-based attentism shall be denominated hereafter: α – *attentism*.

There can also be identified a second form of probability-based attentism: a lack of comparability between different degrees of rational belief α and β leads to an attentism which will hereafter be denominated α/β -*attentism*; with $\beta = b/h$ (interpretation analogous to $\alpha = a/h$). Figure 12.2 illustrates this.

Here we have a new probability T, which lies on a new (red) non-linear line between Z (with rational degree of belief = α) and U (with rational degree of belief = β). Z and U, which have not been comparable before, can now be compared, since $Z < T$ and $T < U$, therefore $Z < U$. The probabilities Z, T and U are still not calculable (they are situated along a non-linear line), but they can be compared, thus the information basis for decision-making has improved. The form of α/β -attentism can be defined as the waiting for new information which makes two rational degrees of belief (here α and β) comparable. Both forms of

they determine his existence as a mental being. Therefore, I, first, want to make an *assumption*: human beings always act as an entirety.³⁰ Second, I postulate:

Because of the lack of calculability of probabilities, there occurs an eventually unbearable conflict between the state of the ‘outside world’ (being uncertain and incalculable) and the state of the ‘inside world’ of the individual (being intrinsically mental); this conflict appears to be at the source of a blockade which hinders the individual’s dynamic activity and its decision-taking.

The justification for the assumption lies in the philosophy of mind, particularly in the analysis of the philosopher J.R. Searle.³¹ That for the postulation is given by the introduction of probability-based attentism above: α -attentism and α/β -attentism can be regarded as a consequence of Keynes’s concept of probability, with probability being a ‘rational degree of belief’ and not an intrinsic characteristic of a certain event. The named conflict is unbearable in the long run, since intentional states of mind necessitate an appropriate activity of the individual.

Animal Spirits are now being interpreted in such a way that they dissolve this conflict by leading to what will be hereafter called a *reversion of the probability problem*.

The *probability problem* lies in the fact that non-calculable and non-comparable probabilities lead to a blockade of the individual’s ability to make a decision.

$\alpha = ?$ resp. $\alpha > ? < \beta$ means

Lack of calculability/comparability blocks the dynamics of individual’s activity.

The *reversion of the probability problem* through Animal Spirits lies in the possibility that incalculable and/or incomparable probabilities enable the individual to come to a decision on the basis of its intentional states of mind. The probability problem is reversed in the sense that, instead of being blocked by incalculable/incomparable probabilities, the individual is, on the contrary, being freed from the compulsion to follow these probabilities. Animal Spirits lie at the core of this reversion.

$\alpha = ?$ resp. $\alpha > ? < \beta$ means also

Since α resp. β are not numerically determined, the dynamics of the individual’s activity is *being enabled*, by taking decisions on the grounds of the individual’s intentional states of mind (like *convictions*, *hope*, *antipathy*...)

A specified and precise definition of Animal Spirits would therefore read like this:

Animal Spirits are laid down and fixed within the *mental structure* of an individual and they show a tight connection to the *intentionality of mental states*. Animal Spirits enable the individual to dissolve a conflict between the physical ‘outside world’ and the mental ‘inside world’, which occurs due to the lack of calculability of probabilities.

Concluding remarks

The main contribution of this chapter is an approach which tries to develop a theoretical foundation of Animal Spirits within Keynes's conception of probability. For Keynes, probability is not an intrinsic characteristic of a certain event, but a logical relation between a proposition and a given background of knowledge ('rational degree of belief'). Moreover, probabilities are often (at least in in real-life situations) non-calculable and very often even not comparable with each other. A rational degree of belief is never finally determined, since every new piece of information will change the background of knowledge and therefore the rational degree of belief.

On the grounds of this conception of probability, it is argued in this chapter that the characteristic of probabilities as being rational degrees of belief leads to two forms of probability-based attentism, denominated as α -attentism and α/β -attentism. The first form (α -attentism) is given when an individual decision-maker is waiting for new information about a rational degree of belief, α . The second form (α/β -attentism) is given when a decision-maker is waiting for new information in order to make two rational degrees of belief, α and β , comparable. It is argued then that Animal Spirits, in this context, can be regarded as a catalyst which enables an individual decision-maker to overcome both forms of attentism and, therefore, to react to the fact of uncertainty by the decision to act ('a spontaneous urge to action rather than inaction'). Animal Spirits are based on an instinctive propensity to act with regard to rational degrees of belief, as well as other motives of human behaviour (like convictions or moral judgements).

In the further course of the analysis, we hint at the possibility of anchoring Animal Spirits within the philosophy of mind, particularly the concept of intentionality. For this purpose, an assumption and a postulation are stated:

1. Human beings always act as an entirety.
2. Because of the lack of calculability of probabilities, there occurs an eventually unbearable conflict between the state of the 'outside world' (being uncertain and incalculable) and the state of the 'inside world' of the individual (being intrinsically mental); this conflict appears to be at the source of a blockade which hinders the individual's dynamic activity and its decision-taking.

Against this background, Animal Spirits are interpreted in the way that they allow for a reversion of the probability problem. The probability problem lies in the fact that incalculable and incomparable probabilities lead to the above-mentioned forms of attentism and, therefore, hinder the individual in making a decision. The probability problem is reversed in the sense that, instead of being blocked by incalculable/incomparable probabilities, the individual is, on the contrary, being freed from the compulsion to follow these probabilities. Animal Spirits enable the individual to come to a decision by following their intentional states of mind.

Notes

- 1 This is the full version of a paper presented at the Third Nordic Post-Keynesian Conference at Aalborg University (Denmark), 22–23 May 2014. The author wants to thank the organizers and the scientific committee, as well as the participants of the conference for their questions and comments.
- 2 Hayes (2010). For a more detailed overview on the role of uncertainty in Keynes's economic ideas, see for example: Dow and Hillard (2002).
- 3 See Muchlinski (2007).
- 4 See Farmer (2008).
- 5 Dow and Dow (1985) offers a prominent example.
- 6 Akerlof and Shiller (2009).
- 7 Ibid., p. 3.
- 8 Ibid.
- 9 Ibid., p. 4.
- 10 For a more detailed discussion, see Güntzel (2014).
- 11 Akerlof and Shiller (2009), p. 25.
- 12 Ibid., p. 106.
- 13 Ibid., p. 38.
- 14 See Barens (2011).
- 15 Keynes (1936), pp. 161 f.
- 16 Barens (2011), pp. 22 f.
- 17 Keynes (1921), pp. 3 f.
- 18 Ibid., p. 4, emphasis original.
- 19 See Muchlinski (2007).
- 20 See *ibid.*, p. 5.
- 21 Ibid., p. 7.; trans. by the author, emphasis original.
- 22 Ibid.; trans. by the author.
- 23 Keynes (1921), p. 16.
- 24 Keynes (1937), p. 213.
- 25 Keynes (1921), p. 345.
- 26 Muchlinski (2007); trans. by the author.
- 27 The terminology follows Keynes (1921); for a detailed explanation see that volume.
- 28 Keynes (1921), p. 62, emphasis original.
- 29 Searle (1991), p. 18.
- 30 See Güntzel (2015).
- 31 Searle (1991) and Searle (2012).

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13 Two generations of path dependence in economics?¹

Mogens Ove Madsen

Introduction

Even if there is no fully articulated and generally accepted theory of path dependence it has eagerly been taken up across a wide range of social sciences – primarily coming from economics. Path dependence is, most of all, a metaphor that offers reason to believe that some political, social or economic processes have multiple possible paths of outcomes, rather than a unique path of equilibria. The selection among outcomes may depend on contingent choices or events – outcomes of path-dependent processes require a very relevant study – a perception of history.

Normally, a path-dependent process is one whose outcome evolves as a consequence of the process's own history. The concept of path dependence is intended to capture the way in which small, historical contingent events can set off self-reinforcing mechanisms and processes that 'lock in' particular structures and pathways of development. In 'new institutional economics' there have, by the way, been different and well-known studies of path dependence concerning technological 'lock-in' (qwertynomics), dynamic increasing returns, institutional hysteresis and as regional economic evolution.

Also Keynes's *General Theory* is seen by some interpreters² as if it is created as a path-dependent system because, in this treatise, Keynes operates with uncertainty, expectations and historical time. It is so called a non-ergodic view, which has the implication for the analysis that Keynes is much more occupied with a concept of tendencies than a concept of equilibrium. To paraphrase Joan Robinson: the present is nothing but a moment in the passage from the immutable past to the unknowable future. In this optic an actual process is path dependent, helping to determine the character of a situation rather than it being pre-determined.

The intention of the following is a critical examination of the notion of path dependence and its applicability in economics. In this setting, the aim is to clear up the conceptual framework. One can ask, first: is path dependence more than a metaphor and of what kind are the organizing concepts of path dependence?

Second, does path dependence only capture slow forms of economic evolution, since major and radical changes must always originate from outside? Path dependence seems to have a worrying inconsistency: on the one hand, small

events can have large and long-term consequences; on the other hand, exogenous shocks can enable the system to break free from the path and evolve a new path-dependent trajectory.

Third, it is also a known critique that path dependence, in some versions, implies a very deterministic way of looking at history. Is there really any difference between the mechanisms of, respectively, a path-dependent process and a simple income multiplier – especially when we view the time aspect? It leaves us with questions like: can there be different kind of types, degrees and causes of path dependence?

Fourth, and very important, in recent years there has been a lively discussion of path dependence outside economics, in other parts of social science. The use of path dependence in other scientific areas shows that it has considerable potential for providing the basis of substantial theoretical and also empirical studies, where complex causal relations are difficult to study with traditional statistical and qualitative methods. Other scientific fields now make it possible to talk about path stabilization, path departure and path switching.

At the end of this chapter it will, therefore, be discussed whether it is possible to introduce a second generation of path dependence in economics and to cross-fertilize economics with new potential concepts from other parts of social science.

It is all about time

‘The future never resembles the past – as we well know,’ Keynes once said.³ Granted, it gives the economist a rather difficult agenda, but it was very clear why: ‘unlike the typical natural science, the material to which it [economics] is applied, is in too many respects, not homogeneous through time’.⁴

In his heritage from Marshall, Keynes states, in *Treatise on Money*, that he is working on a theory of a moving system:⁵ he is well aware, that it is:

a new step forward... namely, an advance to an understanding of the detailed behavior of an economic system, which is not in static equilibrium. This treatise, in contrast to most older work on monetary theory, is intended to be a contribution to this new phase of economic science.⁶

Later on in his early preparation of *The General Theory*, Keynes is still working on giving up the concept of equilibrium:

I should, I think, be prepared to argue that, in a world ruled by uncertainty with an uncertain future linked to an actual present, a final position of equilibrium, such as one deals with in static economics, does not properly exist.⁷

And, finally, in *The General Theory*:

as soon as we pass to the problem of what determines output and employment as a whole, we require the complete theory of a monetary economy.

Or, perhaps, we might make our line of division between the theory of stationary equilibrium and the theory of shifting equilibrium – meaning by the latter the theory of a system in which changing views about the future are capable of influencing the present situation.⁸

In this prelude it is now indicated, that time should play a crucial role in economic thinking and the question is if the concept of path dependence can play some of that role. This is the opportunity – to get closer to reality by taking time seriously. And as stated by Currie and Steedman:⁹ ‘more and more economists seem to be acknowledging that substantive progress in economic analysis can only come from confronting the formidable difficulties associated with time’.

It is not an easy task – but as economists like Shackle (1957), Kaldor (1972), Hicks (1976), Robinson (1980) and Davidson (1982/3) have recognized it is a difficult but necessary task to deal with. Anyway, the primary concern in this chapter is to look further into the importance of the ‘immutable past’!

New institutional economics and the raise of qwerty-nomics

How could the concept of path dependence occur and how could a typewriter come to play a central role in this context? This is the focal point in the next section.

In the 1980/90s the two Stanford colleagues Paul A. David and Brian Arthur published several papers that now are seen as the foundation of path dependence, with a focus on how inefficient technologies may become locked in as industry standard. Douglass C. North has adopted this approach for an economic study of politics and institutional change. All of these authors are well known from new institutional economics.

In 1985 David¹⁰ presented the story of ‘qwerty’ or how a standard of a typewriter’s keyboard was introduced. It is the empirical illustration of path dependence – a concept that he defines in the following way:

A path-dependent sequence of economic changes is one of which important influences upon the eventual outcome can be exerted by temporally remote events, including happenings dominated by chance elements rather than systematic forces. Stochastic processes like that do not converge automatically to a fixed-point distribution of outcomes, and are called ‘non-ergodic’. In such circumstances ‘historical accidents’ can neither be ignored, nor neatly quarantined for the purpose of economic analysis; the dynamic process itself takes on an essentially historical character.¹¹

David described how James Densmore, in 1873, in an effort to reduce the frequency of type bar clashes on a typewriter made a four-row, upper case keyboard approaching the modern qwerty standard. A famous arms-maker took over the manufacturing of the machine – E. Remington and Sons.

The typewriter had a boom in the beginning of the 1880s and thus witnessed a rapid proliferation of competitive designs, manufacturing companies and

keyboard arrangements rivalling the Remington. After 20 years, qwerty was still the 'universal' keyboard – it was, so to speak, 'locked in' as the dominant keyboard arrangement.

Why was that? David gives three reasons: technical interrelatedness, which means that the overall user cost of the system would decrease as it gains in acceptance relative to other systems; second, economies of scale, where the inter-system competition leads towards standardization through the predominance of the qwerty system. In this situation with unbounded decreasing cost of selection, each stochastic decision in favour of qwerty would raise the probability that the next selector would favour qwerty – as a formal theory this is known as the so called 'Polya urn scheme'.¹² And, finally, third, quasi-irreversibility of investments in specific touch-typing skills – all because of the early alliance between the qwerty developer and Remington any potential keyboard conversion cost would go up. Typewriters were thus already qwerty-programmed.

These are the basic ingredients behind what might be called qwerty-nomics and, as David concludes, a rather intriguing story for economists: competition in the absence of perfect future markets drove the industry prematurely into standardization on the wrong system!¹³

It is well known that the later 'Dvorak' keyboard system might give a faster way of typewriting, than use of the qwerty system. We would all be better off if the Dvorak system were used everywhere – but, as described, in this situation competition did not force participants in the market to choose the most efficient technology.

As a parallel Arthur claims, that traditional economic theory on the assumption of diminishing returns often fights against reality.¹⁴ Diminishing returns imply a single equilibrium point for the economy, but positive feedback gives increasing returns – making for multiple equilibrium points. It is a crucial point to Arthur that in the acceptance of positive feedbacks, economists' theories are beginning to portray the economy not as simple but complex, not as deterministic, predictable and mechanistic, but instead as process-dependent, organic and always evolving.

In later works Arthur develops mechanisms of increasing returns that exist alongside those of diminishing returns.¹⁵ He makes a rough proposition, that diminishing returns hold sway in the traditional part of the economy – the processing industries. Increasing returns reign in the newer part – the knowledge-based industries. In this kind of industry the process of positive feedback and increasing returns can turn this early lead into market dominance.

Why is it, then, that Arthur can give reasons for increasing returns?

At first glance, it is the so called up-front cost: high-tech products are, by definition, complicated to design and to deliver to the marketplace and require high research and development (R&D) costs; second, in network effects – where high-tech products need to be compatible with a network of users – coordination effects are especially significant when technology has to be compatible with linked infrastructure; third, customer groove-in, which means that the products are difficult to use and therefore require training and user experience, are likely

to spur further innovations in a product; and fourth, adaptive expectations: the self-fulfilling character of expectations about how to 'pick the right horse'.

David and Arthur both tell stories of path dependence: about VHS videotapes vs Betamax videotapes, or IBM's choice of Microsoft's DOS instead of Digital Research's CP/M.¹⁶ Users became familiar with VHS and DOS and established a market lock-in.

The story of qwerty-nomics is an illustration of a path-dependent process that, in stochastic terms, possesses an asymptotic distribution that evolves as a consequence or a function of the process's own history – it is a non-ergodic stochastic process. Furthermore, the idea of path dependence and increasing returns argues that the market does not always yield the best of all possible worlds and that there might be a place for government intervention.¹⁷

Economic historian and Nobel Laureate North has argued,¹⁸ that all Arthur's self-reinforcing mechanisms that lead to increasing returns can be applied in the study of institutional emergence and change. North wanted to investigate the following question: 'Why have underdeveloped countries maintained a less efficient developmental path?'

According to North, neoclassical competition theory and international trade theory could not answer why fairly rapid convergence did not happen; he was inspired by Arthur to see that a better answer could be to acknowledge that established institutions generate powerful inducements that reinforce their own stability and hinder further development.¹⁹

There are three main causes that may explain the persistence of a suboptimal economic pathway.²⁰ First, that transaction costs are high due to non-competitive markets – the adaptive mechanisms of prizes do not work properly. Second, political factors obstruct the institutionalization of property rights in such a way that competitive markets cannot operate properly. Third, once established, the institutions are locked in through path-dependent self-reinforcement.

It is interesting to notice that North proposes a more open kind of path dependence concept when he suggests: 'Path-dependence is a way to narrow conceptually the choice set and link decision making through time. It is not a story of inevitability in which the past predicts the future.'²¹

In his Nobel Prize Lecture (1993) North is occupied by the concept of time – time as it relates to economic and societal change is the dimension in which the learning process of human beings shapes the way institutions evolve. In his opinion, it is culture that provides the key to path dependence and he sees this term as used to describe a powerful influence of the past on the present and future.

It is worth noting that Tony Lawson (1997) saw David's work on path dependence as a way to remind people of the inevitable heavy weight of the past in the present. However, he warns against a simple interpretation of the case study of qwerty because it is not the case that, once a technology or social structure is in place, it can be treated as locked in for good – that the past is not only ever present but also all determining!

Lawson agrees with David that it is quite an interesting project to link the present state of outcomes with some originating context, in the sense that some

sequence of connecting events allows the hand of the past to exert a continuing influence upon the shape of the present. In this way Lawson sees path dependence literature as a useful contribution to economics – also from the angle of critical realism.

It is obvious that these variants of new institutional economics gave way of path-breaking new research regarding efficiency of technologies or institutions in achieving public or private goods, but also rather critical reactions. Let's start with the latter.

Path dependence: more than a fable of the keys?

The qwerty-nomics story gave rise to substantial controversy over the meaning of and implications of path dependence. Liebowitz and Margolis (1990, 1995b), in particular, have been exponents of a sharp critique.

In 'The fable of the keys' (1990) they have references to ergonomics literature and these new studies provide evidence that the advantages of the Dvorak system compared to the qwerty system are nearly next to nothing. So they conclude that the evidence of this kind is flawed and incomplete. They also claim that David uses a sterile model of competition and, in this respect, it is not surprising that accidents have considerable permanence.²² Consumers are given very little discretion to avoid starts down a wrong path, they say. But the question is: what is the big difference if the model used by Liebowitz and Margolis is a model with a single, global 'best' outcome?²³

Later, in 1995(b), the two authors go further to identify three types of path dependence because they are worried that it has been offered as an alternative perspective for economics, a revolutionary reformulation of the neoclassical paradigm.²⁴

For Liebowitz and Margolis it is important to stress that not all phenomena that have been described as path dependence imply market failure. These normative concerns have been a prominent part of the path dependence literature, such that we, by historical accident, were left with the wrong types of automobiles, video recorders, nuclear power plants and, of course, the famous typewriter keyboards.

What is important in their presentation of three distinct forms of path dependence is that the first two offer little in the way of an objection to the neoclassical paradigm. The last and strongest form challenges the neoclassical paradigm, but that requires important restrictions on prices, institutions and so on.

According to Liebowitz and Margolis, path dependence of the first degree includes instances in which sensitivity to starting points exist, but with no implied inefficiency. Here we have an optimal decision based on perfect foresight. The second-degree of path dependence concerns a situation of imperfect knowledge, where efficient decisions may not always appear to be efficient in retrospect. This can imply outcomes that are highly regrettable and costly to change. One of Liebowitz and Margolis's close followers, Lewin (2002), characterizes David's historical examples as corresponding to second-degree path dependence.²⁵

If an efficiency outcome can be characterized as a third-degree path dependence the initial conditions lead to an outcome that is inefficient – but also ‘remediable’, which according to Williamson (1993) describes the condition that feasible alternatives exist and urges remediability as the appropriate standard for public policy discussion. This type of path, in contrast to the two other weaker paths, supposes the feasibility, in principle, of improvements in the path and conflicts with the neoclassical model of rational behaviour.

For Liebowitz and Margolis, the special importance of path dependence is associated with third-degree claims – that is, inherited inefficiencies that purportedly are, or were, remediable. Communication, planning, property and other market institutions are absent from the models of David and Arthur, implying a logic underlying path dependence that is seductive but incomplete. And as long as the story of qwerty remains the paradigmatic case for path dependence it surely indicates, according to Liebowitz and Margolis, that the empirical content of this theory is thin.

Puffert²⁶ summarizes this position in a way that purposeful, rational behaviour of forward looking, profit-seeking economic agents can override the effects of events in the past – except where the costs of a remedy, including transactions costs, are greater than the potential benefits. In a Kuhnian sense there is a lack of agreement on what the debate is about. Market failure has, in Puffert’s optic, not been the primary concern of proponents of the importance of path dependence. This is, however, the primary concern of Liebowitz and Margolis. David argues for the legitimacy of stochastic economic models with multiple equilibria (potential outcomes) and Liebowitz and Margolis forcefully and effectively argue that economic processes can move an economy out of clearly undesirable situations. And this is probably the main reason why the discussants failed to meet head on.

Puffert concludes that path dependence arises because there are increasing returns to the adoption of some technique or other practice and because there are costs in changing from an established practice to a different one, although he says that the theory of path dependence is not an alternative to neoclassical economics but rather a supplement to it. The theory assumes that people optimize on the basis of their own interests and the information at their disposal. The theory offers reason to believe that some – or perhaps many – economic processes have multiple possible paths of outcomes. Liebowitz and Margolis have said little about the allocation process, but David argues that models that are path dependent might describe a process and can be useful in an effort to develop a theory of economic change, with history as a central element.²⁷

Another central point is that, in Puffert’s opinion,²⁸ it is not possible at the moment to assess the overall importance of path dependence, either in determining individual features of the economy or in determining larger patterns of economic activity. But what can be interesting is that empirical case studies can offer examples of how choices or events have led to establishment and ‘lock-in’ of particular techniques, institutions and other features of the economy.

Institutional hysteresis as path dependence

For many years there has been a discussion in economics between the previously discussed new institutional economics and 'old institutional economics' on the origins, nature and role of institutions in capitalism. The latter can be characterized by a historical, structural approach in contrast to a much more reductionist approach in new institutional economics.

Inspired by North (1985) and Cornwall (1990), Setterfield tries to use the best from these two institutional approaches, which excludes simple historicism and standard equilibrium metaphors.²⁹ This approach is called institutional hysteresis; the central feature of it is that institutions are best treated as evolving, non-optimal, path-dependent phenomena.

According to Setterfield, the institutional structures of an economy may be best conceived in terms of a process of hysteresis. And it exists when the long-term value of a variable depends on the value of the variable in the past, by virtue of the influence of this past value on the alleged exogenous variables that characterize the system that determines the variable. In other words, hysteresis will exist when current institutions influence the nature of current economic activity, which in turn influences subsequent institutional forms.

Long-term institutional changes are path dependent.³⁰ These changes can only be interpreted in terms of the sequential, short-term patterns of economic activity leading up to them – patterns of activity that themselves are influenced by previously existing institutions.

After 1993 Setterfield continued his work on developments in path dependent organizing concepts.³¹ He identified three important types of path dependence, which can facilitate the modelling of economic processes along historical lines. It is, as already mentioned, hysteresis, but also cumulative causation – especially with inspiration from Kaldor and lock-in, as presented above in relation to David and Arthur.

Still Setterfield has reservations about these organizing concepts because he is not sure that any of them can faithfully replicate all nuances of the philosophical construction that historical time is. Of course, it is important to scrutinize concepts of path dependence, he says, in order to establish their affinity (or lack thereof) with basic features of historical time such as fundamental uncertainty or irrevocability.³² Setterfield hopes that the different concepts of path dependence at least may be conceived as embodying what he calls 'low-level' conceptualization of historical time.³³

The lesson from institutional hysteresis of short-term exogeneity/long-term endogeneity of institutions in a model is used by Setterfield in an interpretation of Kregel's famous article on 'Economic methodology in the face of uncertainty' (1976). What is at focus is Keynes's shifting equilibrium model. This is also called, by some, 'Keynes's complete dynamic model', where short-run expectations can be disappointed and the state of long-run expectations is treated as non-constant and, crucially, short-run and long-run expectations are interdependent.³⁴ In short, the results of this theoretical model show an actual path of an economy

over time chasing an ever-changing equilibrium, and never catching it. Changes in animal spirits that ultimately produce path-dependent changes within the model are not imposed on the model from without – rather, they are endogenous but indeterminate.

The general message from Setterfield is that not all of the path-dependent organizing concepts do a good job of imitating the properties of historical time.³⁵ He recommends that post Keynesians must be judicious in their assessment, construction and use of path dependent organizing concepts and also develop models of economic processes to rival those of the neoclassical orthodoxy.

The innovative critique from other social sciences

The concept of path dependence has also been exported to other social sciences; even if it is not well known to economists, the concept has been adopted and developed in different directions. But the results from this process have apparently not been re-exported to economics.

In this section we will deal with two neighbour sciences – policy studies and sociology. This does not mean that it could not be interesting also to focus on other types of social sciences, but the experience from policy studies and sociology is so well documented that it, in itself, is quite illustrative for the point developed in this writing.

Policy studies

The first neighbour science to be looked at is policy studies. No doubt, it is North's application to issues of institutional emergence and change that offset path dependence studies for students of politics.³⁶ What Arthur observed about factors behind increasing returns is useful for North to apply to the study of institutions. New institutions normally have high start-up costs; they involve learning and coordination effects and adaptive expectations. Established institutions, in contrast, reinforce their own stability.

According to Pierson politics differ from economics in many ways:³⁷

1. the central role of collective action,
2. the high density of institutions,
3. the possibilities for using political authority to enhance asymmetries of power and
4. its intrinsic complexity and opacity.

Each of these features makes increasing returns processes prevalent in politics; especially because of the weakness of efficiency-enhancing mechanisms of competition and learning, a short time horizon of politicians and a strong status quo bias is generally built into political institutions.

Pierson states that it is the role of path dependence to explain patterns of institutional emergence, persistence and change that may be of greatest significance

for political science and establish the following features of political life, where path dependence is at work:³⁸

1. *Multiple equilibria*: under a set of initial conditions conducive to increasing returns, a number of outcomes – perhaps a wide range – are generally possible.
2. *Contingency*: relatively small events, if they occur at the right moment, can have large and enduring consequences.
3. *A critical role for timing and sequencing*: in increasing returns processes, the moment when an event occurs may be crucial. Because earlier parts of a sequence matter much more than later parts, an event that happens ‘too late’ may have no effect, although it might have been of great consequence if the timing had been different.
4. *Inertia*: once an increasing returns process is established, positive feedback may lead to a single equilibrium. This equilibrium will, in turn, be resistant to change. This way of using path dependence in political science is normally done by people who refer to themselves as historical institutionalists. They are, according to Skocpol,³⁹ more likely to trace sequences of outcomes over time, showing how earlier outcomes change the parameters for subsequent developments. They are also interested in conjunctures of separately located processes or conflicts, contrary to rational choice theorists, who too often presume that actors must be individuals rather than looking for groups or organizations that in some ways act together. And she clearly states that rational choicers avoid messy historical changes and real-life political processes.

In recent years path dependence has become a very important notion in diachronic approaches to understanding social and political processes. It is an appealing concept for understanding public policy development⁴⁰ – it encapsulates the insight that policy decisions accumulate over time; a process of accretion can occur in a policy area that restricts options for future policy-makers. Gartland⁴¹ notes, that political science by its nature, predominately tends to study cases within a regulatory paradigm and at an organizational or societal level, but with a behavioural rather than a technical approach. As we saw in economics, the starting point for path dependence was based on technological change while, in political science, the regulative paradigm tends to be based on behavioural change. Examples of analyses are numerous, but, to mention a few: health care policy in USA and the UK; the reform of housing benefit in the UK; the UK pension policy; and the Common Agricultural Policy of the EU.

Path dependency encourages explicit attempts at dynamic analysis.⁴² In this sense, ‘dynamic’ means that time is an independent variable in the explanation of change. This contrasts with comparative static explanations of change and development where time simply is a dependent variable. According to Pierson (2004), one of the crucial features of a historical process that generates path dependence is positive feedback. A successive step down a path increases the likelihood that a particular event or choice will be repeated.⁴³ Because of many kinds of potential complexity in policy studies, there can be several mechanisms that lead to path

dependency. One I have already mentioned, namely increasing returns, but others can be negative feedback, reactive sequences or cyclical processes.

Another developmental path in the study of institutional change is that of the concept of path dependence from a simple, deterministic concept to more open path dependence as a study of a wider range of long-term institutional evolutionary processes,⁴⁴ giving a variety of forms in path dependence – for example, path continuation, departure, switching or cessation. Taxonomy of this kind of changes is still being developed. Another example is path shaping and path depending.⁴⁵

A quite interesting study⁴⁶ reviews how process tracing and systematic case comparisons can address path-dependent explanations. As a comment to Arthur's (1994) economist view that the world is 'messy, organic, and complicated', Pierson (2004, p. 54) is quoted:

specific patterns of timing and sequence matter; starting from similar conditions a range of social outcomes is often possible, large consequences may result from relatively 'small' or contingent events; particular courses of actions, once introduced, can be virtually impossible to reverse; and, consequently, political development is often punctuated by critical moments or junctures that shape the basic contours of social life.

According to Bennett and Elman⁴⁷ path dependence invokes causal possibility, contingency, closure and constraint, and that is why case study methods are well suited to analyse these kinds of arguments. As a matter of fact, case studies offer four advantages for the analyses of path dependencies and interactions: they allow for detailed and holistic analyses of sequences in historical cases, they are suited to the study of rare events, they can facilitate the search for omitted variables that might lie behind contingent events and they allow for the study of interaction effects within one or a few cases. In this way we have come to the edge of empirical studies. With help from investigating the empirical content of path dependent political and social processes, we can recognize that complex causal relations are difficult to study with traditional statistical and qualitative methods. It is work in progress, but it is obvious that process tracing and detailed comparisons of a small number of cases, especially when used together, can help to unravel these kinds of complexity.

Sociology

The second neighbour science to be looked at is sociology. Like the studies of politics, it is evident that historical sociology enriches the path dependence debate⁴⁸. As Mahoney states,⁴⁹ path-dependent analysis represents one potentially important strand in the overall project of historical-sociological investigation – by studying critical junctures and self-reinforcing sequences and also by identifying additional mechanisms that can underpin reproductive processes, including functional, power and legitimating mechanisms.⁵⁰

In this way historical sociology follows Stinchcombe's model of historicist explanation.⁵¹ It means that two types of causes are identified. First, we are looking for how a tradition or an institution was started and, second, we are trying to identify the general process by which social patterns or institutional patterns reproduce themselves. Compared to economics, where the models start with individuals or firms, the sociological perspective begins with society.⁵²

Historical sociologists are very keen to escape from the simple expression of path dependence as how the past influences the future. This understanding is related to their ongoing and sophisticated efforts to assess how process, sequence and temporality can best be incorporated into social explanations.⁵³

Mahoney (2000) suggests, that all path-dependent analysis should have a minimum of three defining features. First, he maintains, like Pierson on politics, that an analysis should involve the study of causal processes that are highly sensitive to events that take place in the early stages of an overall historical sequence. Second, the early historical events are contingent occurrences that cannot be explained on the basis of prior events or initial conditions. Third, after a contingent event has taken place, a process is set into motion and begins tracking a particular outcome. If it is a self-reinforcing mechanism, the inertia will reproduce a particular institutional pattern over time. If, on the contrary, it is reactive sequences, inertia involves reaction and counter-reaction, where one event 'naturally' leads to another event.⁵⁴

These latest observations are quite interesting. The work by historical sociologists implies that a particular outcome can be examined by a broad range of theoretical frameworks employed in sociology. In the context of Randall Collins' institutional reproduction it can be categorized in terms of utilitarian, functional, power and legitimation explanations – each one resulting in different mechanisms. As we have seen from the genesis of path dependence in economic history, a utilitarian theoretical framework is used to explain self-reinforcing processes. North has generalized the utilitarian logic of institutional reproduction in terms of the benefits of learning effects, coordination effects and adaptive expectations. Primarily, it is economic historians and not historical sociologists that have advanced on a rational choice logic and a utilitarian explanation.

A functional explanation as known from new institutional economics will, in its weakest form, simply explain the reproduction of an institution in terms of its consequences. It is often assumed that the initial origins of an institution can be explained teleologically by the beneficial effects the institution brings to a system after it is created.⁵⁵ The functional self-reinforcing processes replace, so to speak, the idea of efficiency in utilitarian accounts as the mechanism of institutional reproduction.

A power explanation will, in contrast to the utilitarian mode of explanation, build on institutions that distribute costs and benefits unevenly – actors with different endowments of resources will have conflicting interests. An institution can persist even when most individuals/groups prefer to change it and, according to Mahoney, 'provided that an elite that benefits from the existing arrangement has sufficient strength to promote its reproduction'.⁵⁶ Power-based explanations

imply that institutional reproduction is a conflictual process and potential changes are built into institutions.

A legitimization explanation is grounded in actors' subjective orientation and beliefs about what is appropriate or morally correct and an institution will be reinforced through processes of increasing legitimization. Compared to utilitarian rationality, system functionality, or elite power a legitimization explanation assumes that decisions of actors to reproduce an institution derives from their self-understandings about what is the right thing to do.⁵⁷

Recursive sequences have another inner logic compared to self-reinforcing mechanisms. In Mahoney's own words, 'Whereas self-reinforcing sequences are characterized by processes of reproduction that reinforce early events, reactive sequences are marked by backlash processes that transform and perhaps reverse early events.'⁵⁸ In other words, a counter reactive process is not just reproducing a given pattern – it is setting in motion a chain of reactions and counter-reactions. This also implies, that analysts may have many more problems in both predicting and explaining a final outcome of a sequence, but – with help from fine-grained analysis of causal mechanisms and a temporal ordering among events in a sequence and, probably, by using narrative analysis – it is possible to improve the analysis.

Finally, the innovative critique from other social sciences on qwerty-nomics, first of all, focuses on temporality or a meticulous tracing of sequences in a path-dependent process. Second, it is a nuanced development of different kinds of path. Finally, the focus is changed from the original technological sub-optimality to behavioural sub-optimality. Focus has also been changed from a theory exclusively based on rational choice to other kinds of theories, which also implies that the kind of explanations must vary.

Concluding perspective: possibilities and limits of path dependence in economics

In its most simple form, path dependence is an expression of the idea that history matters. It is a way of bringing history into economics. That, of course, is interesting in the sense of the classical Joan Robinson way of expressing the difference between the past and the future. Choices made in the past can possibly affect present decisions and have consequences in the future.

But path dependence is a universal term without social and historical content – and there is still no clear analytical framework for evaluating, integrating or developing the concept of path dependence, although there are some interesting features that can be observed by the use of the concept in economics and also by cross-fertilizing this work with much of the work done in other social sciences.

As this chapter shows, path dependence has had different meanings over the last 25 years, starting from new institutional economics, where qwerty-nomics describes a specific lock-in of a technological development to a case of increasing returns and institutional reproduction. In a more strict neoclassical sense, the third-degree of path dependence is a special, but very interesting and relevant case.

In the post Keynesian case there is room for institutional hysteresis, cumulative causation and technological lock-in. In other social sciences the concept of path dependence is, as shown, much more nuanced in focus and tracing sequences.

Why is that?

Path dependence is a metaphor that leaves the user all over place in social sciences, in a three-lemma, because the concept is not an empirical notion alone – neither a methodological device on its own, nor solely a theoretical construction. It is, at best, a mixture of all these components – and there are, as described, a lot of possible combinations.

As an analytical device path dependence gives a possibility to freeze and analyse activities with an initial critical juncture and some kind of following path reproduction, though the question is: what kind of explanatory power does it give? In some way, path dependence refers to a string of related events – it is causality in retrospect. Raadschelders (1998) states that the concept does not even come close to a mechanism that propels social change.⁵⁹ Will the notion of a path provide any fine-grained mechanisms that might provide necessary and sufficient conditions for the process observed? There is a risk that mechanisms operate at a lower level to that being explained, which implies that the concept cannot be used for current or future phenomena.

Even if it is an ambition to gain some degree of generalizability another problem is, that history does not repeat itself in all cases. Table 13.1 shows a collection of results comparing the simple qwerty-nomics example of path dependence (Generation I) with a heuristic summary of the results from developing path dependence, especially in neighbour sciences (Generation II)

The explanatory power of these two generations of path dependence is related to the kind of explanations that are given. In Generation I, explanations are functionalist.⁶⁰ When a contingent event initially selects a particular technology or institution the functionalist logic identifies predictable self-reinforcing processes. As a consequence, the technology or institution that is ultimately adopted may be less functional in the long run than alternatives that could have been developed – a functional explanation assumes an efficient historical process, even if the outcome is not optimal.

Table 13.1 Two generations of path dependence in social science

Generation	I	II
Model	Polya urn	Decision tree
Path	Trodden path	Branching pathways
Mechanism	Self-reinforcing	Recursive sequences
Starting point	Small chance events	Starting point
Change	Technological change	Behavioural change
Inner logic	Process of reproduction	Backlash process
Form	Deterministic	Key breakpoints
Type of explanation	Functional	Intentional

Another way of dealing with this problem is to move away from the systemic way of using path dependence with help from the Generation II model of path dependence and intentional models of explanation. This will require a move forward in the study of social mechanisms of institutional change, but it is still in its early stages.⁶¹ It is certainly a rather deterministic conception of path dependence that is delivered from new institutional economics. The Polya urn model is a study of a closed system with non-change or a repetition of basic decision and where the outcome is a result of deterministic persistence through self-reinforcement. Ebbinghaus maintains that,

In historical-institutionalist studies, the concept of Path Dependence has been used in a broader, non-deterministic sense; the concept 'path' is not primarily used to describe the emergence and persistence of an (unchanged) institution by repeated uniform basic decisions of individual actors, but the long-term developmental pathway of an institution, or complex institutional arrangement, shaped by and then further adapted by collective actors.⁶²

In this context economic history herewith should be one of many disciplines in social sciences that uses the more open path dependence concept to describe institutional development.

It can also be argued, following Hall,⁶³ that as we have sought to understand and explain complexity in social and political life our ontologies have outrun both our methodologies and standard views of explanation. This means that analysis based on path dependence is at odds with standard regression techniques and conventional comparative methods in providing valid causal inferences. It is also appropriate to refer to Setterfield (1997) again: concepts like hysteresis, cumulative causation and lock-in do not encompass all facets of the contributions of authors such as Knight, Keynes and Shackle and would be a gross mistake, indeed – not least because this claim is quite frequently and demonstrably false.

Causal complexities like tipping points, high-order interaction effects, strategic interaction, two-directional causality or feedback loops, equifinality and multifinality require new forms of process tracing and systematic case studies to address issues of path dependence.⁶⁴ There must be more room for case study methods that elucidate how causal mechanisms operate in context, tracing rare events and 'left-out variables'. This is one of the interesting features when path dependence is used in policy studies; it gives rise to studies of ever more sophisticated forms of complexity and, used in the same way, it could also bring economics closer to historical time.

In conclusion, it is worth noting some wise words from David (2005). He emphasizes that the whole point of path dependence is to restore the importance of causal, historical economic explanation involving sequential actions – most of all because path dependence should highlight the interactions between purposeful action and positive unforeseen feedbacks. This is quite an interesting path in the further development of path dependence – especially as part of a Generation II of path dependence in economics!

Notes

- 1 A version of this chapter was presented at the Ricardian-Post Keynesian Joint International Seminar at Nishogakusha and Meiji Universities, Tokyo, 5–6 September 2009. An earlier edition was presented at the 11th SCHEME Workshop on ‘Methodology after Keynes’ in September 2008. I am much indebted to Jan Toporowski, Victoria Chick, Jesper Jespersen, Brian Loasby, Takashi Yagi, Alberto Cruz, Heinz Kurz, Enrico Bellino and Finn Olesen for valuable comments. The responsibility for the content is solely mine.
- 2 See Chick (1998, 2003), Setterfield (1999b), Jespersen (2002b, 2004, 2007), Fontana and Gerrard (2004).
- 3 Keynes (1973–87), XIV, p. 124.
- 4 *Ibid.*, p. 269.
- 5 Keynes (1930), p. 365: ‘Unfortunately Marshall, in his anxiety to push economic theory on to the point where it regains contact with the real world, was a little disposed sometimes to camouflage the essentially static character of his equilibrium theory with many wise and penetrating obiter dicta on dynamical problems. The distinction between the long period and the short period is a first step towards the theory of a moving system.’
- 6 *Ibid.*
- 7 Keynes (1973–87), XXIX, p. 222.
- 8 Keynes (1936), p. 293.
- 9 Currie and Steedman (1990), p. 241.
- 10 David (1985).
- 11 *Ibid.*, p. 332.
- 12 David refers to Brian Arthur, who has been working on the increasing returns problem that fits a general probability schema formulated by the mathematician George Polya. As David describes it, an urn containing balls of various colours is sampled with replacement, and every drawing of a ball of a specified colour results in a second ball of the same colour being returned to the urn. The probabilities that balls of specified colours will be added are therefore increasing functions of the proportions in which the respective colours are represented within the urn. In his later book from 1994, Arthur states, that the outcome will be crucially affected by the early draws, which can lead to large changes in the proportions of the two colours in the urn; in contrast to Polya, Arthur also allows for a more general and nonlinear function.
- 13 For David this is no surprise and he gives an example from Veblen (1915), where he talks about Britain’s undersized railway wagons compared to Central Europe.
- 14 See Arthur (1990).
- 15 Arthur (1996).
- 16 Arthur’s theory has also provided some of the intellectual underpinnings of the US Justice Department’s case against Microsoft.
- 17 Kaplan (2000).
- 18 North (1990), p. 95.
- 19 Pierson (2000), p. 255.
- 20 A summary from Ebbinghaus (2005), p. 14.
- 21 North (1990), pp. 98–9.
- 22 Liebowitz and Margolis (1990, p. 22) state: ‘In that model, an exogenous set of goods is offered for sale at a price, take it or leave it. There is little or no role for entrepreneurs. There generally are no guarantees, no rental markets, no mergers, no loss-leader pricing, no advertising, no market research.’
- 23 See Sullivan (2003).
- 24 They refer to Arthur (1990), who distinguishes between ‘conventional economics’, which largely avoids increasing returns or path dependence, and the ‘new’ ‘positive feedback economics’.
- 25 See Sullivan (2003).

- 26 Puffert (2008).
- 27 See Sullivan (2003).
- 28 Puffert (2008).
- 29 Setterfield (1993), p. 755.
- 30 Ibid., p. 761.
- 31 Setterfield (1995, 1997).
- 32 In a comment on these concepts of path dependence Setterfield (1997, p. 60) states: 'To claim that these concepts somehow "encompass" all facets of the contributions of authors such as Knight, Keynes, and Shackle would be a gross mistake indeed – not least because this claim is, quite frequently, demonstrably false.'
- 33 Setterfield (1998a), p. 524: 'low level, embodied in specific concepts of path dependency (such as cumulative causation) that can be used in practical modelling exercises'. In his study of Kaldor Setterfield also became aware that the features of various different concepts of path dependency are, themselves, qualitatively different.
- 34 Setterfield (1999a), p. 484.
- 35 Setterfield (1998b), p. 169. 'Lock-in' is not doing a good job.
- 36 Pierson (2000), p. 255.
- 37 Ibid., p. 257.
- 38 Ibid., p. 263.
- 39 Skockpol (1995), p. 106.
- 40 Kay (2005), p. 558.
- 41 Gartland (2005), p. 693.
- 42 Kay (2005), p. 559.
- 43 Bennet and Elman (2006), p. 256.
- 44 Ebbinghaus (2005), p. 24.
- 45 Torfing (1999, 2001).
- 46 Bennet and Elman (2006).
- 47 Ibid., p. 259.
- 48 Gartland (2005), p. 694.
- 49 Mahony (2000), p. 509.
- 50 Gartland (2005), p. 694.
- 51 Mahony (2000), p. 512.
- 52 Thelen (1999), p. 386.
- 53 Ibid., p. 510.
- 54 Ibid., p. 511.
- 55 Mahony (2000), p. 519.
- 56 Ibid. p. 521.
- 57 Ibid., p. 523.
- 58 Ibid., p. 526.
- 59 Kay (2005), p. 561.
- 60 Mahoney (2000), p. 519.
- 61 Ebbinghaus (2005), p. 24.
- 62 Ibid., p. 14.
- 63 Bennet and Elamn (2006), p. 250.
- 64 Ibid., p. 251.

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