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FINANCIAL SHOCKS, UNEMPLOYMENT, AND PUBLIC POLICY

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ABSTRACT

Financial Shocks, Unemployment, and Public Policy

This paper is based on presentation given at the June 2011 Conference of the Centre for Growth and Business Cycle Research at the University of Manchester. It reviews key features of the 2007-08 financial crisis, the subsequent 'great recession' and the European public debt problems; in the light of these it discusses new avenues of research that have been opened up in response to recent events.

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Financial Shocks, Unemployment, and Public Policy

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Revised: January 2013

1. Introduction

Macroeconomics has been the object of much criticism since the emergence of the financial crisis in 2007. The observation that it failed to predict the crisis and cannot explain it has been repeated *ad nauseam*. Nevertheless, the methodology of real business cycle (RBC) and dynamic stochastic general equilibrium (DSGE) modelling, which focusses on matching second moments of synthetic data generated by the theoretical numerically calibrated models with those of de-trended business cycle data, shifts attention away from short run economic developments. It shifts attention away from looking at each particular business cycle, e.g., looking in detail at this particular business cycle, towards looking at the properties of the average business cycle. This is unfortunate, because this unusually long and deep recession raises many questions, and provides a great deal of information, about the workings of the economy and economic policy. The transformation of a financial crisis via deep recession into a public debt crisis and an existential crisis for the Euro zone has uncovered many unsuspected aspects of monetary union. So many institutional details matter. So many micro-economic aspects matter. The good news as regards macroeconomic analysis is that the recession has stimulated an enormous amount of empirical research, into – among many other things – the effects of fiscal policy, quantitative easing and other unconventional monetary policies, the operation of monetary policy in a monetary union, financial regulation, wage and price rigidity, and labour market reform.

In this paper I first reflect on some salient aspects of the public debt crisis, and then consider briefly some recent developments in macroeconomics.

2. The Euro zone public debt crisis

At the end of 2012, five years after the emergence of the global financial crisis in 2007, the developed world remains stuck with low growth and rising unemployment, and there is no end in sight to the 'Great Recession'. The fall-out from the North Atlantic financial crisis is proving long drawn-out. The process of de-leveraging by households and financial institutions, and of course by governments, still seems to have a long way to run. While all sectors of the economy attempt to save, the Central Banks have been the only institutions able to provide any macro-economic stimulus. They have greatly enlarged their balance sheets, following purchases of trillions of dollars-worth of toxic assets, other private sector debt, and, on a massive scale, government debt, through their programmes of quantitative easing. But despite low interest rates, small and medium sized enterprises are finding it more difficult to obtain bank loans, whether to finance on-going operations or for new investment, as now-cautious banks apply tightened lending criteria and lend at higher spreads over their costs of funds. The amounts of credit firms can get, and the cost of it, have gone up. Mortgages have become harder to get; maximum loan-to-value ratios have gone

down. Meanwhile many large corporations are flush with funds but find few opportunities for profitable investment. Unemployment rates in the Euro zone continue to rise, even at the end of 2012. The headline figure for youth unemployment has reached 50% or more in Spain and Greece. This overstates the scale of the problem, but nevertheless, it is pretty bad. Long-term unemployment has also been growing considerably.

2.1 How did we come to such a pass?

The European debt crisis ought never to have happened. Prudent fiscal policies, restrained by the Stability and Growth Pact, should have kept public budgets roughly in balance, and debt below 60 percent of GDP. Automatic stabilizers should have dampened the fall in GDP without destabilizing public debt. But Greece, Italy and Portugal had debts well above 60% in 2007, and when demand fell in 2008 and 2009 deficits ballooned and their ratios of debt to GDP started to shoot up. More importantly, the recession stripped away the prospects of future economic growth which had been essential to the appearance of stable public finances.

After 1997 many countries were not able to resist the temptation to borrow at low Euro zone interest rates to finance public spending. There was intense political pressure for spending and tax cuts. Many of the goods provided by government – education, health care, and social services – have a high income elasticity of demand. As real incomes grow, the share of total spending taken up by these goods rises. At the same time, they have enjoyed lower technical progress than in other areas of the economy. Public spending has risen persistently over the course of time, only limited by the willingness of the public to pay taxes. In some countries it has hit a ceiling (The Economist, 2012). The conservative government in power in the United Kingdom from 1979 to 1997 reduced public spending as a share of GDP; and the current coalition government is trying to do the same thing. Electorally weak governments in particular have found it hard to resist demands from powerful interest groups such as unions and industry lobbyists. In coming decades governments will have to scale back their ambitions for what they can achieve. They have no room left for electorally attractive spending financed by borrowing.

The restraining influence of the Stability and Growth Pact was undermined France and Germany in 2004, when they effectively repudiated it. The SGP had been roundly condemned and lampooned for its arbitrary numbers limiting debts and deficits. With the benefits of hindsight, it now looks to have been a sensible policy. Had its rules been followed, several countries would have entered the crisis with more fiscal room for manoeuvre.

Ireland and Spain were in a very different position, with debt well below 60 percent of GDP in 2007. When the crisis struck, demand and incomes fell, and property prices collapsed. The Irish banking industry had become very large relative to the Irish GDP, and the national debt was increased massively when the state took on the obligations of the banks. In Spain, regulatory policy had limited damage to the banking industry in 2007 and 2008, but Spain's huge building industry collapsed, the economy collapsed too, and sent the public finance over the cliff. Later on, the property collapse undermined the assets of Spanish banks which needed extensive bailouts in 2012.

The United Kingdom had allowed its financial services industry to grow to an enormous size, in terms of employment and gross liabilities relative to GDP. The collapse of the UK's overgrown financial sector contributed to a large fall in GDP in 2009. This, combined with the state's having to bail out banks, on top of public finances that were already stretched and highly dependent on

future growth for apparent sustainability, put the UK's public finances on an unstable course and necessitated a programme of spending cuts and tax rises.

A common feature of all the problem countries, Greece, Spain, Portugal, Ireland, and Italy is that they all had bigger increases in unit labour costs than Germany between 2001 and 2008; all became progressively less competitive and ran progressively larger current account deficits in the early 2000s. A long-term solution to the Euro zone crisis will have to involve substantial cuts in wages and prices in the problem economies relative to Germany.

2.2 Austerity: Does it work? Is there an alternative?

In the face of high and rising ratios of public debt to GDP, European countries have followed "austerity" policies. Despite recession, they have cut public spending and raised taxes in an attempt to limit borrowing and bring public debt-to-GDP ratios under control. In the case of Greece, Ireland, and Portugal, which have not been able to borrow on international capital markets, the Troika of lenders (the IMF, the ECB, and the European Commission) have imposed spending cuts and tax rises (among other things) as conditions for loans. But these policies, pursued simultaneously by many countries, have deepened the recession, and made it progressively harder to restore budget balance. The problem economies have repeated performed worse than expected. Deficit reduction has been more difficult and has taken longer than predicted.

There is an argument that fiscal retrenchment may stimulate the economy, as entrepreneurs can look forward to a low-tax future, and on that basis increase investment. If this is true, tax increases and public spending cuts quickly bring the budget into balance. But there has been no evidence of it so far. The principal effect of austerity seems to have been the old-fashioned Keynesian one. Indeed the IMF in its October 2012 World Economic Outlook argued that the fiscal multipliers are much larger than thought, so fiscal tightening does not improve the government's budget balance by much, but it cuts aggregate demand by a great deal.

The more spending is cut and taxes raised, the deeper is the recession, and the public deficit scarcely narrows. Deficit target after deficit target is missed; the governments of Greece, Spain, Portugal and other countries have to ask time and again for more time to implement the austerity measures. It may yet be impossible to close the public spending gap enough to avoid defaulti. This factor is at work in many other countries at the same time. A coordinated fiscal expansion – or at least a relaxation – may help solve the problem. But no country is both able and willing to relax its fiscal stance. Germany could loosen fiscal policy, but has a domestic boom, and is unwilling. The UK government has some room for a less tight squeeze on public spending, but is unwilling to amend its policies. Even here, austerity is not reducing the public deficit as quickly as planned.

2.3 Echoes of the 1930s

The current situation in Europe recalls Barry Eichengreen's (1992) description of the 1930s in his account of the Gold Standard, 'Golden Fetters'. After Britain left gold in September 1931, many other countries followed; the United States devalued in 1933. Subsequently, while the countries that remained on gold (France, Belgium, Switzerland, Czechoslovakia) attempted to cut budget deficits and bring their current accounts into balance, following austerity policies reminiscent of today's,

the depression only deepened, while deficits hardly changed. They faced runs on their currencies, shortages of reserves, and high interest rates. Unemployment grew and grew. Eventually they were forced to let go. And thereafter their economies began to grow quickly. The experience of the countries that had devalued undermined the case for staying on gold after 1933. The policies of internal devaluation pursued by France and others did not work. Their experience, as described by Eichengreen, was not that of the popular myth, in which beggar-thy-neighbour policies and competitive devaluation fail to solve the problem. In fact, it collective devaluation worked because going off gold allowed all the countries that did so to follow more expansionary monetary policies, which stimulated growth and employment in the late 1930s.

One of the questions about the current situation is that voters may tire of endless rounds of further austerity. Will it be possible for Europe to stick with austerity long enough?

2.4 Exits from the Euro zone?

There has been much talk of Greek exit from the Euro zone (Grexit), and the possibility of more countries leaving. Greece, Portugal and Spain need to cut labour costs by 20 or 30 percent relative to Germany to restore their competitiveness, and if they stay in the Euro and do not default they will have a large burden of public debt to pay off in the coming years. This will be a drag on growth and impose a huge fiscal burden. The public debt of Greece has threatened to reach a level at which it becomes impossible to repay. The big players in Europe, notably Germany, have been equivocal about providing finance to ease the burden. Naturally the financial markets have feared that Greece might be forced to leave the Euro zone and default on its debts. Many commentators, including Nouriel Roubini and Han-Werner Sinn (Sinn, 2011), have argued that this would in fact be a good thing, both for the remaining Euro zone, and for the leavers. Exit is promoted as a quick and clean way of ending the crisis, following the example of countries like Argentina, which has defaulted on debt and allowed the currency to depreciate before rebounding with strong growth.

Remarkably, perhaps, despite the hardships of life in Greece now, there has been no exit. The ECB's policy of making Outright Monetary Transactions to buy up public debt of countries in difficulties, announced in 2012, and ECB President Mario Draghi's declared intention of doing all it takes to keep countries in the Euro zone, have calmed market fears of exits, and brought down sovereign bond yields. European leaders reluctant to widen the remit of the EFSF and the ESF have had the opposite effect. Greek last minute fulfilment of conditions attached to international loans has further added to uncertainty and has given the air that a small mischance could trigger a default. But exit is a step into uncharted territory, made complicated by the existence of contracts in Euros and externally held public and private debt in Euros. So it would not be just a normal devaluation. The institutions of the Euro zone have been designed to make it difficult or impossible to leave: to make membership an irrevocable decision. By the same token, an exit may be irreversible, or at least costly to reverse. This argues for not doing it until there is a clear benefit. There is an option value of staying in the Euro zone, and retaining the option of leaving at some future date. This may be why on both sides there is a reluctance to make a clean break., even though continued austerity and working off an overhang of high public debt looks like a recipe for many years of slow growth ahead. It may also be that the distinction between exit and staying in are exaggerated. Even staying in the Euro zone, Greece and others may be able to renegotiate terms of international loans, getting lower interest rates and deferring repayment, in such a way as to reduce the burden of the debt.

2.5 Why no quick solution?

It has been a source of frustration to many that the crisis has persisted so long with no clear resolution. Europe – the Commission and the countries who are lending to the problem countries – has been slow and half-hearted in its response. It has failed to create a lending facility large and flexible enough to calm market fears about break-up. Plans for a banking union (again, announced in 2012) have been watered down. The borrowers have applied the required austerity and restructuring measures, but they have repeatedly not quite met deficit conditions, or have asked for more time to meet them. The crisis goes on and on because neither side is willing to make concessions. Each is pressuring the other for as many concessions as it can get. There is no incentive for the Troika to lend more or under looser conditions; nor is there any incentive for Greece and other borrowing countries to make more rapid concessions, tighten fiscal policy faster, make more radical structural reforms. Time matters. There is no quick solution. The Euro zone economy will be teetering on the brink for a long time.

2.6 How effective has QE been?

A factor in the continuing recession is the rebuilding of balance sheets in all sectors of the economy simultaneously. Households, who had built up high debts relative to income in many countries and now have lower current real incomes and are anticipating lower growth of incomes in future, have shifted to higher saving. Governments are cash-strapped. Many large firms see few profitable investment opportunities, despite having large reserves of cash. And the financial sector is deleveraging, reducing its assets and liabilities rapidly, partly under the pressure of strengthened bank regulations in Basel III, the proposals from the UK's Independent Commission on Banking, and the European Union's Liikanen report. Many banks have been bailed out and / or taken in whole or part into public ownership. The same banks are under strong political pressure to lend more business, but at the same time are now very cautious and want to limit the risks they take. Despite official lending rates at or near the zero lower bound, small and medium sized enterprises have found finance for current operations and new investment expensive and limited. Households have found mortgages hard to obtain.

This situation has pushed the European Central Bank, the Bank of England and the US Federal Reserve to engage in extensive programmes of Quantitative Easing (QE) and other unconventional monetary policies. All Central Banks have expanded their balance sheets massively. The Bank of England has purchased between a third and half of the national debt, leaving banks holding nearly £400 billion of reserves at the Bank of England. The ECB has had a programme of Long Term Refinancing Operations with the same aim, and in 2012 announced a programme of Outright Monetary Transactions in which it would buy up the public debt on the secondary market to lower interest rates as necessary to maintain stability. The Federal Reserve has committed to buying up Federal debt as necessary and to keep interest rates low until unemployment falls below a threshold and inflation picks up. Despite all these actions, and numerous analyses from central bank staff and academic researchers, it is not clear that QE has had a major effect on output, employment, and inflation.

2.7 Is this the end of independent central banks? Have they become too political?

The effects of QE have nevertheless been controversial. QE has been credited with lowering interest rates on long term government bonds, and thereby reducing annuity rates and lowering pensioners'

incomes. Low interest rates may be keeping ‘zombie firms’ alive (as well as zombie banks) and delaying restructuring and eventual recovery. QE is exposes central banks to risks to their balance sheets and has to be supported by Treasury indemnities. Some observers and politicians have started to argue that because of this central bank actions have taken on more of a fiscal character, and are no longer essentially monetary; that they are having effects on the distribution of incomes and allocation of resources which should be under the control of elected politicians. In late 2012 the new government in Japan put the Bank of Japan under intense pressure to adopt more aggressive monetary policies and adopt a 2 percent inflation target. The incoming governor of the Bank of England Mark Carney has floated the idea of moving away from an inflation target to a nominal GDP target. These are straws in the wind at the moment, but they raise the question whether the doctrine of independent Central Banks as a route to macroeconomic stability is in decline and about to be replaced by something new. Certainly from a historical perspective, this framework for monetary policy has enjoyed an unusually long ascendency. Its time may be up.

2.8 How will we get out of this mess?

At the end of 2012 there is no sign of growth in Europe, and policy makers seem to see no alternative to continued austerity. Meanwhile unemployment keeps growing and social tensions simmer below the surface. It is always true that in the depths of a recession it is difficult to see where growth will come from, or when. But recessions always come to an end one way or another. While all European governments are pursing fiscal consolidation in the fear that financial markets will otherwise take fright, a concerted fiscal relaxation by all the less constrained economies would help to raise activity. Fiscal changes that focus tax increases on the most wealthy and highest income members of society and tax cuts and spending increases on the least wealthy and lowest-income would have the greatest expansionary effect for the lowest increase in the fiscal deficit, and would also address the growing inequality of incomes and wealth that has been taking place in most developed economies over the last few decades.

Some American commentators including Paul Krugman and Larry Summers have also argued for more expansionary fiscal policy. Summers, writing in the Financial Times on 12 June 2011, diagnoses the US problem as a lack of aggregate demand. He argues that supply side measures may well backfire; fiscal stimulus needs to be extended; slow growth is the greatest risk to the creditworthiness of the US; and more confidence is needed to get the economy moving again, even if too much confidence caused the problem. Policy needs to focus on ensuring there is adequate demand, in his view. Fixing financial regulation and avoiding inflation can come later. Even in Japan, despite public debt at 230 percent of GDP, the government of Prime Minister Shinzo Abe newly elected in late 2012 plans a substantial fiscal stimulus, as well as forcing the Bank of Japan to follow more aggressively expansionary policies.

The big problem for European economies is the absence of prospective growth. More expected growth would raise the prospect of countries growing out of their high public sector indebtedness, stimulate investment and calm the fears of financial markets about lending to governments. For the next few years Europe may be stuck with austerity and bumping along the bottom.

3. The current conjuncture and macroeconomics

All these developments – the financial crisis and its aftermath – have thrown several issues in macroeconomics into sharp relief. Many people have asked whether macroeconomics has been going in the right direction and whether it ought not to change. There has been a great deal of soul-searching and breast-beating. There have been many conference sessions on the problems of and prospects for macroeconomics in the last few years. Papers from a panel discussion at the Money, Macroeconomics and Finance research Group conference in Cyprus in September 2010 appear in a special issue of The Manchester School (Driffill, 2011). And indeed the tide of criticism has not receded. An ESRC-funded conference on new directions in macroeconomics was held at the Oxford Martin School on 1-2 October 2012 (and there is a report at http://www.oxfordmartin.ox.ac.uk/downloads/reports/ESRC-OMSReport2012.pdf)

Critics include Willem Buiter (2009), Charles Goodhart (2009) and Paul Krugman (2009). George Soros has funded INET, the Institute for New Economic Thinking (http://www.ineteconomics.org), to foster research that will address the subject's failings. INET's advisory board contains luminaries of economics, including Axel Leijonhufvud, Joseph Stiglitz, and others many.

3.1 New Thinking?

Many people have said that economics needs a new Keynes, and lamented the lack of a thinker of that stature among the current leaders of the discipline. Though of course the American stock market crash took place 1929 but the General Theory did not appear until 1936. So it may yet be too soon for salvation from a new genius. (Or perhaps the saving insights have been published already, but no-one believes they are any good!) George Akerlof and Robert Shiller have taken up a Keynesian theme in their 2009 book 'Animal Spirits'. Robert Skidelsky has written of the need to revisit and revive Keynes's ideas, particularly as regards the treatment of risk and uncertainty, in 'The Return of the Master'. There has been a revival of interest in the work of Hyman Minsky (Cassidy, 2008), who developed the position that a monetary economy tends to be very unstable, prone to bubbles and crashes, and in need of active public policy to stabilize it (Minsky, 1986).

Despite the many calls for macroeconomics to head off in radically new directions, some feel that progress is slowly being made within well established frameworks. Narayana Kocherlakota, now the President of the Minneapolis Fed, for example, is among them. In a 2009 note on the state of macroeconomics, he looked at all the recently appointed or promoted professors in the 17 top US economics departments, and comments on their research. He argues that many of the points made by the critics, concerning financial market imperfections, differences among agents, frictions, and bounded rationality, are being addressed. He believes there is no longer a freshwater/saltwater divide. But he concedes that the sources of shocks in macro models are unconvincing, and that financial markets and banks are inadequately featured.

3.2 The DSGE Framework

The DSGE model is the *bête noire*. But it is a slippery animal and difficult to criticise. Dynamic, stochastic, general, and equilibrium: all these are splendid features of a macroeconomic model. What is there not to like about them? DSGE covers a vast range of different models, some of which may capture all the important features of the world. Keynes's macroeconomic model in The General Theory is a DSGE model, after all. Whatever aspect of the economy should be studied,

there is sure to be someone somewhere embedding it into a DSGE model, if it has not been done already. But it remains true that DSGE has become associated with a particular kind of model, with a familiar set of assumptions that are used routinely and with too little reflection on whether they are sensible or not: the representative household, imperfect competition, and Calvo contracts to determine pricing and wage decisions and introduce a degree of nominal rigidity. Financial markets are either perfect, or if not, not far from it. Money and banks play little or no role. There is no room for bubbles in asset markets: the transversality condition rules them out. Bankruptcy is not allowed for. The model starts from the assumptions of a perfectly functioning real business cycle model, and deviations from it – the nominal and real rigidities, absences of markets, deviations from rational behaviour – have to be justified on microeconomic foundations. 'Ad hoc' assumptions are not allowed. It is this kind of model which is the main target of criticism.

There has been a welcome growth of research within the DSGE framework into models that take on board financial market imperfections, heterogeneous agents, and more radical models of wage and price rigidities. But the problem remains that the RBC/DSGE methodology, comparing the second moments of the data with those generated by the calibrated model, focuses attention on the properties of the average business cycle, and not on the distinctive features of particular cycles, such as the present one. The need for simplification to keep DSGE models capable of being understood and analysed rules out using them as a vehicle for modelling financial markets and banking satisfactorily in a general equilibrium framework.

3.3 Addressing current policy issues

In many ways the more interesting developments in research since the crisis have been empirical and/or partial equilibrium analyses of particular aspects of the economy. Two examples are quantitative easing and fiscal policy. The fact that the central banks are using it has created a demand for analysis of the effects of quantitative easing and other 'unconventional monetary policies. A large body of empirical work has emerged in the last few years. Much of this work has been empirical, and has used event studies and other methods to try to uncover the effects of QE on financial markets. Chadha and Holly (2011) provide a volume of papers on QE from a 2010 Cambridge conference. QE was the subject of a conference at Heriot-Watt University in September 2011, papers from which are published in a Special Issue of Oxford Economic Papers (Cobham, 2012) which includes a contribution by the present author (Driffill and Miller, 2013); and a Bank of England conference in December 2011, papers from which are now in a special issue of The Economic Journal (December 2012). Joyce et al (2011) survey the Bank of England's analysis of QE.

Similarly, the need for fiscal policy action in recent years, with the economy still in deep recession after monetary policy has done all it can, has stimulated much more research in to a neglected area. The Keynesian multiplier has been given a new lease of life. Suddenly everyone wants to know how big it is. The IMF has re-examined empirical evidence and found estimates much larger than generally accepted, of the order of 1.5 – 2, providing a critique of the current austerity policies, which in these circumstances reduce income and employment but do little to reduce fiscal deficits (IMF World Economic Outlook, 2012). Again, these estimates emerged from substantially a-theoretical empirical analysis. Even in the context of a DSGE model, the multiplier is found to be larger than it otherwise would be when interest rates are at the zero lower bound and the is some stickiness of wages and prices (Christiano *et al*, 2011). A large empirical literature has appeared

devoted to the issue of uncovering the effects of fiscal policy shocks, again using VARs and other largely non-theoretical models. A vast amount of work has gone into establishing what the relevant fiscal shocks actually were, following work of Romer and Romer (2010). While it is important to identify tax shocks independently of other influences on the economy, and it is valuable to know the effects of completely unanticipated tax changes, this literature raises a question about the effects of automatic stabilisers and other predictable fiscal interventions. How big are these? After all, a fiscal response to a recession, and even to a public debt crisis, is likely to be at least partly predictable. It is also important to know the size of the effects of automatic stabilisers. A series of random fiscal shocks is not going to help to end the current recession. A systematic fiscal response might.

The possibility of lasting departures from full employment depends on, among other things, wage and price stickiness: real and nominal rigidities. Calvo contracts have come to be used routinely in modelling. They provide a convenient simplification and deliver analytically attractive results. But they generate a number of results that do not conform to data. As a time-dependent price- or wage-setting rule they are behavioural relationships, rather than fundamental. People are likely to adjust prices at higher frequencies at when inflation is higher. This is clearly a weakness of the formulation. In practice wage and price changes do not occur randomly with the Calvo pattern. Some are very frequent, others less so, and state-dependency may be important. Dixon (2012) uses empirical evidence on the frequency of price adjustment, and shows that when it is used in a generalised Calvo/Taylor model of overlapping contracts it delivers predictions about aggregate price movements that are much more data-consistent than the conventional Calvo model.

3.4 Banks and Financial Markets

The financial crisis and the European public debt crisis have thrown into very sharp relief the importance of banks, money and financial markets. Although the assumption of efficiency is deeply held – it is clearly a core assumption of the neoclassical economic paradigm, which will not be given up without a struggle – much evidence calls it into question. The recent financial crisis only added to the pile of evidence on the prevalence of herd behaviour, bubbles, crashes and panics in financial markets. The effects of restricted bank lending on the real economy since 2008 are highly apparent. They highlight the imperfectness of these markets and the importance of credit limits.

Banking has been bailed out. The rich seem to have got off scot free and the taxpayers have had to pay for it. Is out-of-control banking going to create more problems in the future? There is huge moral hazard problem, referred to as the 'doom loop' by Piergiorgio Alessandri and Andrew Haldane (Alessandri and Haldane, 2009) in that each crisis sows the seeds of the next, bigger one. Tighter regulation is in the pipeline. The Vickers Commission has proposed that retail banking is ring-fenced and protected from losses arising from investment banking. The banks may feel lucky they are not threatened with being broken up. New regulations are in force, and more are being put in place, in the United States and Europe. Despite all the new regulatory apparatus one wonders how long it will be before a new unexpected financial crisis emerges from an unsuspected quarter, and indeed, how long the new tough regulations will survive.

The consequences of bailing out banks (or not doing so) and fear of the effects of sovereign default point up the importance of bankruptcy costs in the economy. Charles Goodhart has spoken of the importance of these on many occasions. If bankruptcy, lending and borrowing are to be modelled

satisfactorily, economies with various different agents, debtors and creditors are needed. The representative household is not enough. Herding and bubbles are important features of markets that are in need of better modelling. Meaningful bubbles in rational expectations models have been all but ruled out by the transversality condition.

Paul Krugman (2011) has offered a very simple and instructive model of the effects of de-leveraging in the presence of credit limits. He takes a model of patient and impatient borrowers and lenders, with a ceiling on borrowing. A tightening of the ceiling causes a fall in spending and may reduce nominal interest rates to the zero lower bound. He notes that Keynes omitted the banking system from the General Theory, a practice that has carried on to this day, with the unfortunate consequences discussed above. He makes the point that debt is not just debt: it matters whose debt it is. Government borrowing may be a good response to a crisis caused by too much borrowing by private sector agents. He also notes that more wage flexibility might make the problem worse rather than better. In response to arguments that recovery should wait for private investment to take off, he asks, if public spending is not expansionary, why should private spending be?

Among more radical approaches in which there is growing interest are: agent-based modelling; using experiments to investigate behaviour of people in financial markets; and behavioural economics. David Laibson used his 2009 keynote speech at the Royal Economic Society Annual Conference to give a behavioural interpretation of the US housing boom and bust (Laibson and Mollerstrom, 2010). One response to experimental results is to devise theoretical models that can rationalize them without abandoning central tenets of conventional economics. Thus Park and Sabourian (2011) demonstrate theoretically that apparently perverse herding behaviour is consistent with individual rationality in some market situations. Experiments confirm that this kind of behaviour takes place in practice.

3.5 One model or many?

Should there be one macro model or set of macro models good for all occasions or should there be separate models for good times and crises? It is often argued that the DSGE model was good for normal times, and there are other models better suited to analysing the very occasional crises that it cannot handle. And that having several different models for different situations is a reasonable state of affairs. Others argue that the models should allow for the possibility of extraordinary events – bubbles, crashes, and panics – even if they are aimed mainly at understanding normal times; that the extraordinary differs from the ordinary in degree, not in kind. The extraordinary emerges from the ordinary. The crisis has lasted for a few years, and on this scale, is a rare occurrence, roughly once a half-century. ‘The great moderation' lasted for fifteen years. Nevertheless structural change occurs all the time. The post-war period has been marked by a succession of different economic situations: the golden age of the 1950s and 60s, stagflation, fighting inflation, the great moderation, different understandings of how economies work and different policy frameworks. It may be too much to try to fit them all into the same model. Nevertheless, an integrated model is the only conceptually satisfactory long-run position.

One of the problems of economic theory is that if correct it is tautological. The assumptions lead logically to the conclusions. Know the assumptions, and the conclusions follow. There is always the danger that the theory adds nothing to knowledge when the conclusions are obvious immediately from the assumptions. To be of value, theory needs to take widely (preferably, universally) accepted,

innocuous assumptions, and produce from them astonishing conclusions. It has to pull a rabbit out of a hat. Many long-established economic theories do just that: comparative advantage, for example; or the Keynesian multiplier. But all too often economic theories do just the opposite. An enormous pile of complicated and contentious, if not actually highly implausible, assumptions is used to prove some perfectly obvious result. This kind of theory is of no value.

In partnership with overwrought theory is the stylised fact, which has been overused, greatly devalued, and has become an essentially worthless currency. Too often what is billed as a 'stylised fact' is a mere anecdote, drafted in at short notice to provide a flimsy perch for an improbable and elaborate theoretical confection that has no chance of getting off the ground.

4. Conclusions

Where do all these reflections end up? The financial crisis has brought a lot of neglected problems to the fore and sparked off a lot of interesting new research on them. It may have broken the grip of a rather narrow set of issues and methods of analysis in macroeconomics. It has surely given a shot in the arm to those interested in experiments, behavioural economics, agent-based modelling, and learning.

It is always annoying when a commentator wafts along and says that there is a need for more research of some particular kind and less of another. It is surely legitimate to respond by saying: well, if you think it is so important, why don't you do it yourself? It is a healthy thing that in economics you have to either put up or shut up. If economists believe their own laissez-faire rhetoric, they should be happy to welcome diversity and let a thousand flowers bloom. John Kay (2012) argues that it is the myriad experimentation fostered by the unplanned market economy that has been responsible for its creativity and growth. The stimulation of lots of new avenues of research by the events of the last few years has got to be good thing.

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