



ECFIN Economic Brief

Crisis and reform:

Keynote addresses at DG ECFIN's Annual Research Conference 2009 (15-16 October)



Marco Buti

Director-General for Economic
and Financial Affairs
European Commission

The present global financial crisis is the deepest since the Great Depression of the 1930s. It has impacted severely on the European economy. It has forced policy-makers in the EU and elsewhere to respond with exceptional measures to counter the depressive effects of the crisis. The crisis has also impacted on the research agenda of the economics profession, in particular of those economists who work on policy-related issues concerning stabilisation, economic growth and structural reforms.

The research program of DG ECFIN has paid great attention to the causes, consequences and cures of the current crisis. Results of our internal ECFIN analyses have been published in a [special issue of European Economy](#) in 2009. Our research work continues. For this reason, the crisis was in the centre of DG ECFIN's 6th Annual Research Conference on "Crisis and Reform" (Brussels, 15-16 October 2009). The conference was attended by about 200 researchers from academia, central banks, international organisations and other institutions. Following the Opening Lecture, sessions dealt with the political economy of reform, the design of financial systems and issues related to the economic paradigm.

This ECFIN Economic Brief puts together the keynote lectures by Axel Leijonhufvud, Allan Drazen, and

Charles Goodhart, while Paul DeGrauwe contributes a summary of his keynote lecture.

Axel Leijonhufvud. In his Opening Lecture ("Macroeconomics and the crisis: a personal appraisal") **Axel Leijonhufvud** (UCLA) argued that economists have moved within living memory like a migrating herd from one worldview to its diametric opposite. As he told the audience, fifty years ago students were taught that the private sector had no tendency towards full employment and that a benevolent government could stabilise the economy. At the beginning of the 21st century, however, students were being taught that free markets produce full employment and it is governments that produce fluctuations in prices and output unless they are constrained from doing so. At the end of this trail economists would come to realise that the latter is not the Promised Land but an ominous place beset with disaster of a kind and on a scale that was supposed to be nothing but a distant, unpleasant memory.

The main conclusion of Leijonhufvud's review of developments in macroeconomic thinking over recent decades is that the modern economy is not globally stable. Theories that assume that the economy is a stable general equilibrium system,

albeit beset with some frictions and imperfections, do not hold true in general. The instabilities that such theories ignore are precisely those problems that should be the particular responsibility of macroeconomists.

Allan Drazen. In the session on "The political economy of reform", **Allan Drazen** (University of Maryland) reviewed the hypothesis that crises induce reform, finding that the literature provided a useful general guide, but little information on specific reform episodes ("Financial market crisis, financial market reform: Why hasn't reform followed crisis?"). He looked at arguments supporting the "crisis hypothesis": (1) the impact of crisis on perceptions of how the world works, making people better aware of required changes; (2) crisis creating groups that are willing to forego private gain while weakening groups that block reform; (3) a deterioration of the status quo, creating groups more willing to accept uncertainties associated with large structural changes; and (4) crisis weakening powerful interest groups that block reform.

The main point in Drazen's presentation is that the strength of the financial sector lobby in the U.S. is key to the absence of reform so far. He argued that the effect of special interest groups on the reform process is more complex than simple statements would suggest. Particularly the timing of reforms is essential, because once the sense of crisis has passed, reform might be seen as "yesterday's problem" - a problem aggravated by the fact that support for major changes takes time to build up

Charles Goodhart. The focus of the session "The design of financial systems" was on financial sector reforms. Here **Charles Goodhart** (LSE) stated in his keynote address ("Banks and the public sector authorities") that regulators were cognitively captured in that they used the models developed to assess and to control risk conditions in individual banks under "normal" conditions rather than to examine the effects of major shocks on the financial system as a whole. Basel II, combined with the simultaneous application of "mark-to-market" and "fair value" accounting, made the official regulatory system much more pro-cyclical and unstable.

Asking what can be done, Goodhart discussed two responses. (1) Returning to the status quo ante, i.e. without the State as general guarantor, could include breaking up banks regarded as "too big to fail". But this would disregard the fact that the systemic risk is contagion depending on (perceived) similarities between banks and independent of their size. (2) Limiting the range of institutions/functions to which the safety net applies ("narrow banking") would put regulatory constraints on a protected, narrow sector, bringing business to the unregulated sector during normal times and provoking a flight back to safety during crises, thereby worsening the crisis. If the new reality is that the State is providing insurance for systemic components of finance, it is essential to prevent the insured from taking advantage of their status to extract rents, and the insurers (taxpayers) from excessive burdens. As risks increase with leverage and with maturity mismatch, he saw a need for a new instrument to adjust regulatory pressure so as to restrain financial cycles.

Paul De Grauwe. The final session aimed at "Revisiting the economic paradigm" giving special attention to DSGE modelling. In his keynote address on "Top-down versus bottom-up macroeconomics", **Paul De Grauwe** (Catholic University of Leuven) distinguished a system in which one or more agents fully understand the system (top-down) and one where no individual understands the whole picture (bottom-up). He related this distinction to Hayek's criticism of the "socialist" economists who had taken the view that the central planner understood the whole picture.

De Grauwe argues that rational expectations models are the intellectual heirs of these central planning models and suggests a model that is adopted from behavioural finance. He introduces bounded rationality in expectations formation. In this model, business cycle movements in output arise from informational inertia. Thus, even if prices and wages become more flexible, this will not necessarily reduce business cycle movements in output. As a result, society's desire to stabilise output will not be reduced and central banks that

inevitably respond to these desires will face the need to stabilise output.

The ideas emerging in the ARC 2009 are inspiring research within DG ECFIN. For example, in our research directorate, one group of researchers is now focused on integrating financial frictions and non-fundamental shocks to asset prices in DG ECFIN's existing macro models. Another is looking into the behaviour of fiscal multipliers under banking crises. There are additional plans to reflect the questions raised by ARC 2009 in our research plan for 2010.

The messages of the four keynote speakers at ARC 2009 are gathered in this ECFIN Economic Brief in order to make them available to a wider audience. The issues raised in ARC 2009 will stay with us. I am convinced they will return in future research conferences organised by DG ECFIN.

Reference

"Economic Crisis in Europe: Causes, Consequences and Responses", *European Economy*, 7, 2009.

http://ec.europa.eu/economy_finance/publications/publication15887_en.pdf





Axel Leijonhufvud

University of California Los Angeles
and University of Trento

Macroeconomics and the crisis: a personal appraisal

The Long Swings

Fifty-some years ago, when I began to study economics, students were taught that the private sector had no tendency to gravitate to full employment, that it was prone to undesirable fluctuations amplified by multiplier and accelerator effects, and that it was riddled with market failures of various sorts. But it was also believed that a benevolent, competent, democratic government could stabilize the macroeconomy and reduce the welfare consequence of most market failures to relative insignificance.

Fifty years later, in the beginning years of this century, students were taught that representative governments produce pointless fluctuations in prices and output but, if they can be constrained from doing so – by an independent central bank, for example – free markets are sure to produce full employment and, of course, many other blessings besides.

So, within the memory of living men, economists have moved like a migrating herd from one worldview to its diametric opposite (leaving a few stragglers stranded in odd places along the way). At the end of the long trail they have now met with the nasty realization that this is not the Promised Land but an ominous place beset with disaster of a kind and on a scale that was supposed to be but a distant bad memory. While the leaders of the Long March remain valiant, they have trouble with a growing number of followers who feel that this place is not right and we have to turn back.

This long swing in our economic understanding¹ is a distressing thing to contemplate. It spans a half-century of prolific technical accomplishments in economics. But what the story shows is that, ontologically, economics

has been completely at sea, drifting on the surface in currents of our own making. We lack an anchored understanding of the *nature* of the reality that economics is supposed to illuminate.

Neoclassical Syntheses

There is a persistent tension in economics between, on the one hand, microtheory which does a good and useful job of explaining interactions in individual markets and much else besides and, on the other, macrotheory which has to cope with the sometimes dramatic failures of the Invisible Hand. In the 1950s and 60s, this tension was resolved after a fashion by the Old Neoclassical Synthesis which postulated that the economy worked as portrayed by general equilibrium (GE) theory except that wages did not respond to excess supply of labor. There was, so to speak, “a spanner in the works” which kept the labor market from clearing. The Synthesis embodied, as I said a great many years ago, the “terms of truce” between neoclassical theorists and Keynesian macroeconomists, leaving the theoretical honors to the former and practical policy influence to the latter.

The brand of Keynesian economics associated with the Synthesis ran into trouble in the stagflation years of the 1970’s, lost out first to the Monetarism of Milton Friedman and was subsequently swept aside entirely by a New Classical economics in which all markets cleared and intertemporal plans were coordinated by rational expectations. The New Classical ideas became the motivating force driving the development of dynamic stochastic general equilibrium (DSGE) models that can be implemented empirically. In the Monetarist version of NCE, unemployment was due to evanescent misperceptions of the central bank’s actions and the cure for it was to constrain the bank to obey a fixed rule.

1 Leijonhufvud (2004).

Eventually, this Lucasian version of Monetarist causation was found empirically implausible and was then replaced by the Real Business Cycle version of NCE. In this theory, in which money and finance played no role in the explanation of business cycles, fluctuations in unemployment were optimal adaptations to variations in the rate of technological progress. Policies designed to alter the time-path of employment would have negative welfare consequences. The policy doctrine associated with New Classical Economics, therefore, was that discretionary fiscal or monetary policies could do no good but only harm and that obedience to the Hippocratic commandment “to do no harm” could only be obtained by constraining the authorities as far as possible to do nothing. Monetary policy should be disciplined by having the central bank bound to operate according to a transparent rule; fiscal policy, in turn, should be constrained by making the central bank independent. This is hardly descriptive of policy making in the last two years.

The main opposition to New Classical Economics has come from a rather loose coalition of macroeconomists usually labelled New Keynesians. Since the latter are more predominant on the two coasts of the United States, they are now often referred to as “saltwater” economists to distinguish them from the New Classical “freshwater” ones who are dominant in the Midwest “Land of Lakes”. The New Keynesians put less stress on the inflexibility of money wages than the Old Keynesians had done and developed a complementary strain of analysis emphasizing “frictions” and “imperfections” in capital markets due, in particular, to various problems of asymmetric information. The lack of an alternative general theoretical framework on the New Keynesian side together with accumulating empirical difficulties on the Real Business Cycle side eventually drove these two schools into each others arms, albeit in an embrace somewhat lacking in warm affection. The New Keynesians adopted the DSGE framework while the New Classics borrowed the New Keynesian “frictions.” This “brackish” water mix is now referred to as the New Neoclassical Synthesis.

The DSGE theory of today’s New Synthesis is enormously more sophisticated from a technical standpoint than its predecessor of half a century ago. But it does not seem to have given us an advantage over the old and primitive one in forewarning us of the current disaster or in instructing us on what exactly to do about it.

I criticized the Old Neoclassical Synthesis forty years ago to little effect. I think the New Neoclassical Synthesis is on the wrong track today. The reasons are basically the same. The technically sophisticated DSGE theory of today shares with the simple atemporal GE theory of 1950s vintage a fundamental preconception, namely, that the economy can be truly represented as a *stable* self-regulating system in which effective “market forces” will always tend to bring it into a state of general equilibrium except in so far as “frictions” of one sort or another brake down the equilibrating process.

I believe that this macrotheoretical preconception is false, that it is based on a fundamental misunderstanding of the nature of the market economy, and that further technical innovations in mathematical modelling or econometrics will not bring real progress as long as this remains the ruling paradigm.

Some backwater economics

Although “freshwater” and “saltwater” economists disagree on many things in more or less disagreeable ways, both groups undeniably remain in the “mainstream.” Some ideas that have not been part of the mainstream for quite some time are helpful in understanding financial crises and their macroeconomic consequences. Keynes’s theory has come to be regarded as a stale “backwater”, but it contained some insights that were lost track of in the Old Neoclassic Synthesis. Formalization of the Synthesis, primitive though it was, froze Keynesian economics in a state that would not allow these ideas to be reabsorbed into it. The monetary transaction structure of the economy was an essential property of Keynes’s theory. “Goods buy money and money buys goods but goods do not buy goods”, as Robert Clower used to put it many years ago. Saving is a demand for command of future purchasing power but it is not an *effective demand* for future consumption. The supply of labor is a demand for money wages but it is not an *effective demand* for consumer goods. Production and pricing decisions in markets only respond to effective signals. These “effective demand failures” were at the core of Keynes’s explanation of why the economy might remain in a persistent unemployment state.

These old Keynesian ideas have of course been of no relevance in recent years. If almost no one saves (or if foreigners do you saving for you), there is no reason to

worry about saving exceeding investment. And as long as most people stay below the limits on their credit cards (or are offered “ninja” loans) there will not be much in the way of effective demand failures in consumer goods markets. Economists had little reason to dwell on these matters during the long years of the Great Moderation. But in the wake of a great financial crash there is reason to bring them back to mind.

It is of some consequence to distinguish effective demand failure (EDF) theory from fix-price general equilibrium theory (Barro and Grossman, Benassy, Malinvaud) which was a version of the Old Neoclassical Synthesis particularly cultivated in France. Fix-price GE theory presumes that there are obstacles of one sort or another that prevent market excess demands from steering prices into a GE configuration. Effective demand failure theory maintains that the economy can get into states such that the effective market excess demands steer prices in directions that do not converge on a general equilibrium, at least not monotonically. In the areas of the state space characterized by effective demand failures flexibility of prices may not help you and highly flexible prices may do you fatal damage.

The Corridor Hypothesis

The most obviously non-neoclassical feature of Keynes’s theory was the multiplier. It is an example of *deviation-amplifying* (positive feedback) processes at odds with the equilibrating responses to shocks that normally characterize “market mechanisms.” But strong multiplier effects are not to be expected in normal times. The consumption theories of Franco Modigliani and Milton Friedman, which 50 years ago were known as the “new” theories of the consumption function, taught us that the real determinants of consumption are much less volatile than current income (as usually measured). Thus according to Friedman’s Permanent Income hypothesis, for example, variations in current income receipts would have only relatively minor effects on current consumption² and the Keynesian multiplier would be

2 Depending on the illiquidity of households the effect on current purchases of consumer durables may be stronger than the effects on consumption as defined by Milton Friedman which includes only the services of durables. However, it will hardly benefit the argument in the text to digress on this matter.

correspondingly smaller³. So the effective demand failure at the core of Keynes’s explanation of persistent unemployment would normally be of only marginal significance.

When (if ever) should we expect the equilibrating capabilities of a market economy to be inhibited by the fact that the offer of labor is not by itself an effective demand for consumer goods? It would have to be when unemployed labor is constrained from exercising the level of demand predicted by the permanent income hypothesis, which is to say, when their liquid assets and available credit have been run down and their unemployment compensation has run out. At any time, there will be some people in this position but it would take a prolonged period of rather massive unemployment for the economy to end up being trapped in a Keynesian unemployment state of this sort. This is not how the economy functions in normal times but it is an important aspect of how one would expect it to function in the wake of a financial crisis.

Considerations of this sort led me many years ago to propose the “corridor hypothesis”⁴ which suggested that an economic system’s capabilities for self-regulation were bounded. Within some “corridor” around an equilibrium time-path, the usual adaptive market mechanisms would operate to coordinate activities. But further away from equilibrium, effective demand failures would impair the system’s ability to restore itself to a coordinated state and beyond the bounds of the corridor it would languish in far-from-equilibrium states indefinitely unless salvaged by effective policy interventions. As you might surmise, this corridor hypothesis was heartily disliked by Keynesians and free market fundamentalists alike. It is just unattractive to people with an ideological bent.

The corridor argument from the Keynesian multiplier is suggestive but I will admit that by itself it is less than compelling. In the present crisis, we are so far less troubled by the inability of some people to spend than by the return to saving of the majority. There are other types of effective demand failures, however. One is the Japanese case. Following the collapses of the twin stock market and real estate bubbles, Japan has not been

3 The problem has changed since the time of Milton Friedman and Franco Modigliani. More recently, it has been that multiplier effects seem larger than predicted by rational expectations theory.

4 Leijonhufvud (1973).

able to find a path to resume vigorous growth for well-nigh twenty years. The coordination problem in this case has been that the prospect of future revenues from current investment does not constitute effective demand for the present resources that the investment requires. Once again, such an exchange has to be mediated by money. But following the crash, Japanese firms could not, and years later would not, borrow to finance investments. The priority for banks and firms alike was to repair their balance sheets. This case resembles the present recession more closely. It is the sad condition of balance sheets that makes the current situation so very different from an ordinary recession.⁵

What should make the corridor hypothesis persuasive, however, is not the “discovery” of effective demand failures beyond those found in the *General Theory*. It is instead that something very much like it is true of *all* complex systems. *Their capacities for self-regulation are bounded*. In biology, it is true of all living creatures. (Once beyond the age of invulnerability, we all become aware that the human body is a special case of this general proposition). It is true of ecological systems. It is true of man-made engineering systems such as automatic pilots or long-distant transmission networks. It is improbable in the extreme that the same would not be true of economic systems.

The economics of how an economy functions inside the corridor is of course an important subject. It has to be the foundation of much of public finance, for example. General equilibrium theory may well be the best way available to us at present to study questions that presume the normal functioning of the economy. But the special responsibility of the macroeconomist, I believe, is to try to improve our understanding of what is going on in the boundary regions of the corridor, of how one might prevent the economy from transgressing the bounds, and of what to do when this nonetheless happens.

This conception of the subject led me to spend many years studying high inflations.⁶ There are many aspects of behavior under conditions of extreme monetary instability that pose serious challenges to theories of efficient markets and macroeconomic general

equilibrium.⁷ The manifold difficulties encountered by the former socialist countries in the transition years are of great interest from this same standpoint.⁸ The problems that come to the fore in conditions of extreme instability have much to teach us about what is required for an economy to function normally. The sheer everyday familiarity with normal conditions causes us to take some of these requirements so much for granted that we are hardly aware of their importance.

A Complex Dynamical System

The economy is a large complex dynamical system which is in large measure self-regulating. Its self-regulatory features are the negative feedback loops that we (somewhat evasively) refer to as “market mechanisms”: excess demand for a good raises its price which in turn reduces the excess demand; profit at the margin leads to increased output which reduces the rate of return to the activity, etc. The Invisible Hand at work.

The corridor hypothesis asserts that there are regions of the state space where these mechanisms do not function at all well. In the current cliché “you don’t want to go there.” But this is a seriously incomplete characterization of the qualitative dynamic properties of an economy with a developed financial system. It is formulated in an impulse-propagation framework: if the economy is displaced not too far from equilibrium, market forces will bring it back; if displaced too far, they will be ineffective or may work perversely. This type of reasoning admits (bounded) instabilities such as the deviation-amplifying multiplier and the far more dangerous debt-deflation feedback loop. But it treats the impulse itself as exogenous. It misses the possibility of endogenously generated instability.

We have known about the instability of fractional reserve banking for some 200 years and it took us more than a hundred of those years to get a reasonable amount of control over it. The instability of banking inheres in the combination of leverage and the maturity mismatch between assets and liabilities. That combination is equally descriptive of the state of the

5 Leijonhufvud (2009a).

6 Heymann and Leijonhufvud (1995).

7 “All the main macroeconomic theories have been stress-tested in Argentina – and they all flunked.” I used to tell my colleagues twenty years ago. The major high inflation anomalies are summarized in Leijonhufvud (1997).

8 Leijonhufvud and Craver (2001).

financial system as a whole that developed in this decade. We might have realized this a bit earlier! We cannot allow ourselves a hundred years to learn to control the system that has now evolved.

It was the great contribution of Hyman Minsky to have explained that the endogenous instability of a financially unregulated capitalist economy extends beyond the deposit-taking banking system. Prolonged periods of stability, during which anticipated risks do not materialize, Minsky argued, will lead agents to revise their estimates of risk downward. As the financial system adapts to the changed perception of risk it becomes increasingly *fragile*. The late lamented era of the Great Moderation illustrates this aspect of Minsky's theory perfectly.

It only takes relatively small shocks to cause a fragile system to crash. In our present case, the cause was a rising rate of default on subprime US mortgages. If *all* subprime mortgages had gone into default the total loss to investors would have amounted to a few hundred billion dollars.⁹ A tidy sum, to be sure, but at this time American and European governments and international agencies have committed more than 10 times that amount trying to stabilize the system. It has not been to overcome "frictions" that they have allocated trillions in bail-outs, loan guarantees and stimulus spending. It has been done to stop the collapse of an unstable financial house of cards before it draws us all into another Great Depression.

It is instabilities of this nature that are missing from the theories belonging to the New Neoclassical Synthesis.

Three Systemic Problems

We are faced with three major issues that demand action if we are to have a reasonable prospect of a return to "Moderation." They are (1) the instability of leverage in the economy, (2) the increased connectivity of the global financial network, and (3) the potential instability of the price level.

Instability of Leverage

High leverage is the easy way to high rates of return – as long as the going is good. When, in a system of

⁹ Not counting what the lenders might have recovered from the sale of foreclosed properties.

endogenous base money, there is no quantitative limit to the liquidity being fed into the system, the going can stay good for quite some time. Underestimation of risk leads institutions to increase their leverage. But also those who do not underestimate risk find that competitive pressures make it difficult to step off the gravy train. Those who do not participate lose out.¹⁰

When most financial institutions play this game, the margin of return between the assets they invest in and the liabilities they issue will shrink. The players can adapt to this threat by (1) increasing leverage still further, or (2) by turning to riskier asset classes promising higher returns, or (3) by issuing shorter term liabilities on which they pay less. Thus the recent boom "ended up with historically high leverage ratios, historically low risk premia, high volumes of assets soon to be revealed as "toxic", and some billion dollar positions financed in the overnight repo market."¹¹

High leverage means that small losses can spell insolvency. Widespread losses on subprime mortgages, for example, will cause interbank markets to freeze and create intense pressure to scramble back onto *terra firma* by deleveraging. Banks can deleverage by selling assets or by using loan service revenues to draw down debt instead of relending the funds. When the financial sector as a whole strives to deleverage in this way, falling asset prices will erode the balance sheets of banks further while the contraction of credit drives the real sector into recession. The recession, in turn, erodes the quality of bank assets. It is a profoundly destabilizing process from which the only way out will be government bail-outs ultimately funded by the tax payer.

It is worth noting in passing that the severity of the recessionary pressures unleashed by financial deleveraging gives us a clue to the role that the build-

¹⁰ Paul Tucker, Deputy Governor of the Bank of England, has put it as follows: "... there is a potent collective action problem in getting off the dance floor. Not a few senior market participants felt from at least 2006 that financial risk was underpriced, and that conditions in, for example, the leveraged loan market were silly. But they also had no conviction about when, or indeed whether for sure, the music had to stop, and so feared individually that stepping away from the dance 'too early' would crystallise business risk, as the dance would simply go on without them and their franchise would be undermined as customers migrated to their competitors." Barclays Annual Lecture ("The debate on financial system resilience: Macroprudential instruments"), London, 22 October 2009.

¹¹ Leijonhufvud (2009b).

up of leverage must have played during the preceding boom years. The two sides of the process are, of course, not symmetrical. Like the dynamics of Per Bak's famous sandpile, leverage in the economy builds slowly but comes down as an avalanche.

Connectivity

The collapse of the American savings and loan industry some 30 years ago was a costly affair. But it was confined. It did not spread to the entire American financial sector, much less to the world at large. The current disaster also started with trouble in American home finance. It has engulfed almost the entire world.

Much blame has been showered on regulators for failing to enforce more transparency in various markets for new instruments and for not putting checks on the growth of credit default swaps, etc. But the most fundamental change brought about by deregulation has been the greatly increased *connectivity* of the global financial network.

The old Glass-Steagall system in the United States compartmentalized the financial sector into a number of distinct industries, each characterized by the assets in which it was allowed to invest and the liabilities it could issue. There was no direct competition across compartment boundaries and very little diversification of risk within each compartment. Today, a financial institution can compete in virtually any market it wants and the big global banks have a presence in almost all markets.

It is this structural change that has created a financial system so interconnected that a disturbance in one part of it can be felt everywhere else all around the globe. Whether a shock to some part of it will propagate in a destructive way or peter out harmlessly depends (1) on the general level of leverage, (2) on the presence of highly interconnected banks that are "too big to fail", and (3) on the volume and distribution of toxic assets in the system.

Three years ago, central bankers could congratulate themselves on a high degree of independence, on being responsible only for the stability of the price level, and on knowing how to do it by fiddling with the interest rate. Do they even remember those halcyon days? Since that time central banks have acted as lenders of last

resort not just to commercial banks but to financial institutions of every description. They have entered various markets to "unfreeze" them and bought assets of a quality which central bankers of an earlier generation would not have dreamt of in their worst nightmares. In short, neither they, nor we, know any clear boundaries for the responsibilities of central banks.

This is because of the *increased connectivity* of the new global financial system. It no longer has a well-defined core of just old-fashioned commercial banks to which central banks could limit their attentions.

The Potential Instability of the Price Level

The third problem is the most insidious of the three because the satisfaction is so widespread that we have it under control. I have argued before that inflation-targeting misled the Federal Reserve into thinking that their interest rate policy from 2002 onward was right because the inflation rate stayed low and basically constant.¹² Interest rate policy is more complicated than we thought.

But there is a deeper problem. The Wicksellian recipe for stabilizing the price level in a pure inside money system instructs the central banker that he will know whether the interest rate is too high or too low because the price level will be, respectively, falling or rising. *How fast* it does *not* say. (It gives the *sign* but not the *value* of the derivative of prices). This matters not at all if you happen to be living through a "great moderation" but if we ever were to end up in an inflationary period with volatile inflation expectations, it will not work.

When in the 1980s, the relationships between nominal income and various measures of the money stock became unstable, the old Friedmanian Monetarism died. When people like Otmar Issing argued that you nonetheless had better pay attention to what was happening to money, this was pooh-poohed by theorists enamored with the Wicksellian ideas. But Issing was right, in my opinion. It is a dangerous illusion that you can always control the price level in an economy where the money stock however measured is left to vary in purely endogenous fashion.

12 Leijonhufvud (2007).

Policy Challenges

The slide into real depression has been halted and for that we should be truly grateful. But formidable policy challenges loom ahead for which, I believe, we do not have reliable quantitative models to guide us. We have been propelled back into a world where, as Ralph Hawtrey put it, central banking is an “Art”, which means in a somewhat cruder American idiom, into a world where policy makers have “to fly by the seats of their pants.”

The United States and Europe are poised between the dangers of Japanese stagnation and Latin American high inflation. At this time, all the signs point to stagnation as the more immediate prospect. But with the longer term soundness of the public finances in doubt, the navigable channel between Scylla and Charybdis has become quite narrow. Making sure that we avoid stagnation means risking a hard-to-control inflation.

One overwhelmingly important fact must guide stabilization policy and financial reform efforts at this time. It is that *we cannot afford to have another bubble burst*. The recent stimulus packages and bail-outs have not only been added to pre-existing high deficits and large public debts but to large, unfunded liabilities. We do not have the resources required to handle another emergency like this one. We need to go as far as possible in the direction of fail-safe strategies from now on.

I am apprehensive that the very low interest rates maintained by the central banks at present are not a fail-safe policy. The crisis has been one of solvency, not of liquidity, and while loose liquidity is obviously of some help in a solvency crisis, it is of limited value. Low interest rates following the dot.com crash sent all financial institutions “looking for yield”—and they found it in maturity transformations done at higher and higher leverage. The surviving players are back at the tables, this time more secure than ever that they will not be allowed to lose. We need to ask whether the present recovery of the markets might be a symptom of the same syndrome beginning to play out once again.¹³

¹³ Just a few days after this lecture, others gave independent voice to the same concerns. Cf. Wolfgang Münchau, “Why Minsky was Right: The Next Bubble is already Under Way,” *Financial Times*, October 20, 2009 and two days later, Gillian Tett, “Rally fuelled by cheap

High leverage has been the big culprit in the disaster. Leverage has been rising in the economy in general for quite some time—the ratio of debt to GNP has steadily increased. But most immediately we are concerned with the banks and other financial institutions which have been operating at historically unprecedented leverage. To reduce the risk of another crash it is imperative that leverage be curbed. At present, however, we face a dilemma from which there is no easy escape. Governments have as far as possible avoided taking controlling stakes in the big banks. Having made that choice, they do not want the financial sector to deleverage at the present time because the falling asset prices and curtailed credit that this would entail could only make the recession much more severe. The surviving big banks themselves seem happy to return to their old high-stakes game, secure in their too-big-to-fail status. They cannot very well attract private capital with the promise that it will be used to reduce leverage since this would reduce the rate of return on capital correspondingly.

The central banks assure us that they are planning their “exit strategies” which are supposed to restore their balance sheets to something resembling normalcy while keeping inflation under control. We all hope for the best. But even if they succeed they remain in the situation where the boundaries of their lender-of-last resort responsibilities have lost all definition. Comes another crisis and the monetary authorities would again find themselves bailing out insurance companies and extending credit in “frozen markets” to all sorts of non-bank enterprises. To get back to a structure where the responsibilities of central banks are limited and clearly defined will not be at all easy. One would like to see a system with at least two “compartments”. One would be the regulated banking system with access to the lender of last resort; the other a more lightly regulated “swim-or-sink” sector. The regulated sector would have to be in some degree insulated from the riskier sector. But the too-big-to-fail banks already straddle any such dividing line, so they would have to be forced to divest themselves of certain lines of business. Compartmentalization would, however, give rise to a

money brings a sense of foreboding,” *Financial Times*, October 22, 2009.

“boundary problem.”¹⁴ Rates of return would differ between the sectors which would make the boundary exceedingly difficult to maintain. This is a problem for which I do not think we have a clear solution as yet.

Finally, the problem of the potential instability of the price level requires the reintroduction of a nominal anchor in some form. My preference would be to reintroduce reserve requirements on all liquid liabilities of commercial banks and to impose them also on all other financial institutions that issue the same type of liabilities.

The agenda before us is formidable.

Conclusion

The core argument of this paper is simple. A modern economy is not globally stable. Theories that assume that the economy is a stable general equilibrium system, albeit beset with some frictions and imperfections, do not hold true in general. The instabilities that such theories ignore are precisely those problems that should be the particular responsibility of macroeconomists.

14 This problem was particularly stressed by Charles Goodhart at the conference. It is discussed at length Brunnermeier et al. (2009).

References

- Brunnermeier, Markus K., Crockett, Andrew, Goodhart, Charles, Persaud, Avinash D. and Hyun Shin, *The Fundamental Principles of Financial Regulation, Geneva Reports on the World Economy*, No. 11, 2009.
- Heymann, Daniel and Axel Leijonhufvud, *High Inflation*, Oxford: Oxford University Press, 1995.
- Leijonhufvud, Axel, Effective Demand Failures, *Swedish Economic Journal*, March 1973, Vol. 75, No. 1, pp. 27-48 (reprinted in my: *Information and Coordination: Essays in Macroeconomic Theory*, New York: Oxford University Press 1981).
- Leijonhufvud, Axel, Macroeconomics and Complexity: Inflation Theory, in W. Brian Arthur, Steven N. Durlauf and David A. Lane, eds., *The Economy as an Evolving Complex System II*, New York: Addison-Wesley and the Santa Fe Institute, 1997.
- Leijonhufvud, Axel, The long swings in economic understanding, in K. Vela Velupillai, ed., *Macroeconomic Theory and Economic Policy: Essays in Honour of Jean-Paul Fitoussi*, London: Routledge 2004, pp. 115-127.
- Leijonhufvud, Axel, “The Perils of Inflation Targeting,” VoxEU.org, June 25, 2007.
- Leijonhufvud, Axel, (2009a) “No Ordinary Recession,” VoxEU.org, February 13, 2009.
- Leijonhufvud, Axel, (2009b) Curbing Instability: Policy and Regulation, *CEPR Policy Insight* No. 36, July 2009.
- Leijonhufvud, Axel and Earlene Craver, Reform and the Fate of Russia, *Observatoire Français des Conjonctures Economiques (OFCE), Document de Travail* No. 2001-03, May 2001.
- Münchau, Wolfgang, Why Minsky was Right: The Next Bubble is already Under Way, *Financial Times*, October 20, 2009.
- Tett, Gillian, Rally fuelled by cheap money brings a sense of foreboding, *Financial Times*, October 22, 2009.
- Tucker, Paul, The debate on financial system resilience: Macroprudential instruments, *Barclays Annual Lecture*, London, 22 October 2009.



Allan Drazen

University of Maryland,
CEPR, and NBER

Financial market crisis, financial market reform: Why hasn't reform followed crisis?

Introduction

Much conventional wisdom argues that crisis triggers or induces reform, though what this means has different interpretations. One view (Bruno, 1993) is that a crisis is necessary for major reform, that is, major reform rarely takes place without an economic crisis. Another view, closer to a statement about sufficiency rather than necessity, is that a severe enough crisis will lead to major reform, as in Olson (1982) or Drazen and Grilli (1993). The “*crisis hypothesis*”, as it is sometimes termed, is part of political wisdom. For example, Rahm Emanuel, President Obama’s chief of staff, has been quoted as saying in connection with the 2008 financial crisis, “*You never want a serious crisis to go to waste ... it’s an opportunity to do things you could not do before.*”

Most would agree, however, that a year after the financial crisis, there has not yet been legislation for significant structural reform in the financial sector. Should we be surprised? Has the possible causal relation between crisis and reform been overstated? Have existing models of crisis and reform missed something (or perhaps missed the boat entirely)?

I think that existing work on relation between crises and reform is useful in some of its general lessons, but is not very informative in understanding specific reform episodes. My goal here is threefold. First, I will quickly summarize the existing theory and some of the empirical results. Second, on the basis of the existing literature, I will consider the specific question with which I began, namely the relation between the financial crisis and (lack of) financial reform. My main point here is that the strength of the financial sector lobby in the U.S. is key to the absence of reform so far. While some might say this is obvious, I will argue that the effect of special interest groups (SIGs) on the reform process is more

complex than simple statements would suggest. Third, I will ask generally why crisis might not trigger reform, at least quickly and perhaps not at all. These observations will be applied to efforts by powerful SIGs to block reform, especially but not only financial sector reforms. I will also ask what lessons can be learned about adopting reform when SIG strength is a key factor.

I will not address the question of what financial market reforms should be made, as this is not my expertise. I will concentrate on the experience of the United States, though I think many of the points apply to the EU as well.

Crisis and Reform – Basic Approaches

There are four basic approaches on why crisis triggers reform, which we denote the “*crisis hypothesis*”. This summary is quite short – more to jog the reader’s memory than to provide a self-contained summary. A more detailed discussion may be found in chapter 10 of Drazen (2000).¹

The first type of argument is that a crisis changes our perception of how the world works and therefore makes us aware of a need for change not previously perceived (Harberger, 1993). Only when things reach “*crisis proportions*” do we realize that very different types of policies must be tried.

A second argument is that crisis makes groups willing to forgo private gain or makes weaker groups more ready to stop blocking programs favored by stronger groups (War of Attrition models: Alesina and Drazen,

¹ Empirical evidence on whether crisis leads to reform finds mixed results. See for example, Lora (2000), Drazen and Easterly (2001), Abiad and Mody (2005), and Alesina, Ardagna, and Trebbi (2006).

1991; Drazen and Grilli, 1993). Larger distortions induce an earlier expected reform. Hence, if reform is delayed by the inability to gain consensus on how the burden of reform is to be divided among interest groups, a crisis can hasten agreement by increasing the distortion associated with the status quo, thus raising the cost of not agreeing to reform. In short, a crisis makes each interest group more amenable to reform.

Third, deterioration of the status quo makes groups more willing to accept the uncertainties associated with large structural changes (Fernandez and Rodrik, 1991; Laban and Sturzenegger 1994). If socially beneficial policy change is not enacted due to high uncertainty about who will be the winners and who the losers from the change, a large deterioration of the status quo will lead groups to accept the uncertainty associated with a reform.

Finally, there is the view that crisis weakens powerful interest groups that block reform (Olson, 1982; Nelson, 1990). For example, Olson argues that economic success creates powerful groups with vested interests who may naturally be against policy changes that hurt them. If reform requires a significant weakening of the power of some interest groups, only a severe economic deterioration may be sufficient to weaken their power and bring about reform. However, as will be argued below, though a crisis may be necessary to weaken interest groups, crisis alone may not be sufficient to bring about reform. Nor, as will be argued, does a crisis necessarily weaken interest groups; it may in fact strengthen them.

Why No Significant Structural Financial Reform?

I now turn to the focus of the paper – why hasn't the financial crisis of 2008 led (at least so far) to more structural reform of the financial sector? Subject to an important caveat, the most relevant empirical paper for this question is probably Abiad and Mody (2005). Over a sample period 1973-9 they find that “when a country is in a banking crisis, the likelihood of a large financial reform falls from 5.5 percent to 2.6 percent and the possibility of reversals [of financial reform] increases from 2.3 percent to 9.5 percent.” The caveat is simple but crucial: “financial sector reform” in their study means decreased regulation of financial firms

and markets – the standard definition of “financial reform” prior to the recent crisis. After the 2008 crisis, similar to after other financial crises, “reform” generally means tighter rather than looser regulation. Hence, Abiad and Mody's finding is that a financial crisis slows or reverses deregulation, that is, leads to *more* reform in the sense we are considering it.

Numerous explanations have been given for why the crisis has not so far led to tighter regulation the absence of reform in the wake of the 2008 crisis.² First, there is the argument of *complexity*, that is, the problem of what to do is quite complicated, so much so that being unsure of what to do explains nothing having been done. This argument certainly has some truth to it in general and seems particularly at in the case of structural financial reform in the wake of the 2008 crisis. However, it cannot be the whole story and leaves too much unexplained.

Second, there is the argument that once the immediate crisis passed, financial market reform became “yesterday's problem” in the competition for attention in an always overcrowded legislative policy agenda. That is, the sense of crisis has passed, where the “crisis hypothesis” requires perception of a crisis for there to be reform. This view, as stated, is also unsatisfactory. If the crisis hypothesis is true, why were there no significant policy changes when it was perceived there was a crisis? And why, if the sense of crisis has passed, is financial reform legislation still being discussed, however glacial the pace of action? I will argue below that the crisis hypothesis must be refined to recognize **adopting structural reform takes time**. Support for major changes takes time to form³, both in the public and in the policy making apparatus – it must “percolate”.⁴

2 Some arguments – such as reform being electorally unpopular – are not relevant. The evidence does *not* support views that tough policy loses elections in general (see, for example, Buti, Turrini, Van den Noord, and Biroli (2010) and the references therein); more specifically, greater regulation of Wall Street does seem electorally unpopular.

3 Brender and Drazen (2009) find that in normal circumstances, a new leader only affects expenditure composition after several years in office.

4 There is a broader argument here, namely that changes in attitudes induce legal changes rather than the other way around. See for example Murrell (2009) on how the changes in the English political system often associated with the Glorious Revolution of 1688 are better seen as the result of ongoing evolution rather than the result of specific legislative changes.

A third argument is that special interests, both inside and outside government, are often responsible for the lack of significant reform in response to crisis. Inside government, bureaucrats fight to “protect their turf”. More importantly, powerful special interest groups (SIGs) block changes that hurt them. I believe this is central to the specific case of financial market reform after September 2008 in the U.S. – the role of the financial sector lobby in pushing against tighter regulation in the wake of the crisis is unquestionable.⁵ The argument is far more general.⁶ A second refinement of the crisis hypothesis is that **special interest group influence** needs to be reexamined in considering the effect of crises on reform. Does a crisis really weaken SIG power? If so, how?

More generally, the basic argument that crisis triggers reform ignores the role of specific **political actors** who are likely to be important not only in blocking reform, but also in marshalling support for reform. Furthermore, the basic crisis hypothesis in my view pays insufficient attention to the **interactions** between factors. In the next section I expand on these three elements – time, political actors, and interactions – that may help explain the relation between crisis and reform both generally and in the case of financial market reform in wake of the 2008 crisis.

Expanding the Basic Argument

A first issue of time is that it is not only the severity of crisis, but also its duration which may prompt action. Only the war of attrition approach of Alesina and Drazen (1991) explicitly considers duration of a crisis, where it is central to inducing reform. Passage of time in a crisis reveals information about the relative political strength of different interest groups and is crucial to inducing weaker groups to concede once the ability of stronger groups to hold out becomes clear to them.

⁵ For example, consider a story head in the New York Times on 1 June 2009, “In Crisis, Banks Dig In for Fight Against Rules”, or a lead the following month (New York Times, 1 July 2009), “Banks and mortgage lenders are placing top priority on killing President Obama’s proposal to create a new consumer protection agency.”

⁶ An example is “regulatory capture”, where agencies represent interests of the industries they regulate.

The duration of a crisis can be central to the adoption of reform for other reasons as well. Following Harberger’s (1973) argument given above, the duration of a crisis may be important in convincing political actors (including voters) of the need for significant change. It may also be crucial in mobilizing citizens to oppose vested interests blocking reform by showing the “bankruptcy” of existing system and the groups that benefit. Finally, even when the need for significant change is accepted, the political process itself often requires time for new policy to be crafted and adopted.

Furthermore, for a crisis to trigger reform quickly, the reform must be seen as directly addressing the crisis. Structural reform to be enacted and cause of crisis should be closely tied. This is was true for the Glass-Steagall Act of 1933, discussed below, and for changes in the U.S. Auto industry in 2009. Generally, however, in the case of structural reform, crisis may logically delay rather than hasten reform. When the house is burning, one doesn’t discuss fireproof building techniques. In the financial crisis, the priority was avoiding a financial meltdown or economic collapse.

There is an interaction here with the “identities” of political actors. Powerful SIGs often have special expertise, and hence they are used as the firefighters when the house is burning. This was certainly true in the reaction to the financial crisis. Moreover, the complexity of financial products that stands in way of effective regulation made financial actors especially important during the crisis itself, so that the crisis increased their power rather than weakening it.

The importance of considering political actors explicitly may also be seen in assessing the effect of a crisis on legislators. Put simply, does the crisis increase constituent pressure for tighter regulation more or less than pressure from SIGs, whom many legislators see as crucial in providing campaign finance, against tighter regulation? As Alan Blinder put it in considering what financial reform legislation is likely to pass, “People clearly want greater consumer protection and restrictions on executive pay. By no coincidence, those are the two pieces of financial reform that seem most likely to survive the Congressional sausage grinder.” (New York Times, 5 September 2009)

Equally if not more important are leaders. Krueger (1993) has argued, “Most reforms seem to take place in one of two circumstances: Either a new government comes to power or a perceived economic crisis prompts action.” But, crisis does not magically bring forth proposals and someone to push them. Effective leaders take advantage of crisis, weak leaders do not. I return to this below.

A Case Study – FDR, Pecora Hearings, and the 1933 Glass-Steagall Act

The above points may be illustrated in a short case study of financial reform after the financial crash of 1929, based on Leuchtenberg (1963). In the fall of 1929 the U.S. stock market crashed, and (without arguing causality) the Great Depression began. President Hoover’s policies were largely ineffective in arresting the sharp decline, so much so that “[i]n Hoover’s last days in office, the old order teetered on the brink of disaster.” (Leuchtenberg, 1963). In January 1933, the Senate began hearings on the causes of the financial collapse headed by Ferdinand Pecora, a tough former prosecutor, who saw his job as uncovering the “secret financial history of the 1920s”.

Franklin Roosevelt took office on March 4, 1933 and immediately called the newly elected (left-leaning) Congress into special session. On March 29, he sent Congress recommendations for financial regulation. Leuchtenberg (1963) wrote that a “short while before, such legislation would have been inconceivable, but the debate on the securities bill took place as the Pecora committee was carrying the popular outcry against Wall Street to a heightened pitch” (Leuchtenberg, 1963). In June 1933, the Senate passed with no dissent the Glass-Steagall Act imposing broad new regulations on banks with no dissent. The vote came two days after Pecora inquiry reveals that the 20 J.P. Morgan partners paid no taxes in 1931 and 1932, a revelation seen as strongly influencing the vote.

Is Reform Possible When SIGs are Powerful?

In the U.S., the financial sector has and continues to fight extremely hard against any legislation it views as

harmful. But reform is possible.⁷ As indicated above the duration of crisis, combined with perceived misbehavior of SIGs, weakens them. But as Boeri et al. (2006) point out, there can be no real structural reform without costs, perhaps substantial. A leader, even one who received the Nobel Prize, must be willing not only to step on toes, but to step hard. Vito Tanzi, as quoted in Boeri et al. (2006) puts it well: “If a minister starts his mandate with the promise that he will not take one dime out of the pockets of the citizens, or that a major tax reform will be done without any taxpayer experiencing an increase in taxes, it is likely that reforms will not take place.” Leaders who take advantage of crisis are those who are willing to make enemies. As Roosevelt put it in 1936, “They [‘organized money’] are unanimous in their hate for me, and I welcome their hatred.”

When vested interests are too powerful to buy out, they must be split with the cost of reform concentrated on targeted groups. That is, “**divide and conquer**”. Hence, policies must be crafted carefully – one can’t enact structural reform with policies that unite rather than divide the opposition. Consider two types of reform, one that keeps the SIG politically united (“*homogeneity-preserving*” reform), the other that induces political divisions in the SIG (“*heterogeneity-inducing*” reform). Financial sector views reforms ex-ante as the first type, which unites them in opposition. In contrast, 1933 Banking Act politically separated large and small banks, creating a stronger constituency for reform.

Caselli and Gennaioli (2008) argue that policy makers can use the market to drive these political wedges that split powerful SIGs. Consider a situation in which current regulations protect insiders, who vary in their competence levels. A reform may hurt all, but differentially. In absence of a market for corporate control, all insiders are against the reform. With such a market, some insiders can “cash out” and hence may support a reform. The political constraints can be lessened by making a homogeneity-preserving reform into a heterogeneity-inducing reform.

Another lesson is the need for judicious sequencing of reforms. Dynamics allows divide and conquer over time,

⁷ See Boeri et al. (2006), especially chapter 11, “Divide and Conquer”.

including playing groups off against their future selves.

Conclusions

So, what do we do? The above suggestions are easier said than done. But, I hope this lecture has provided insight into a question that has bothered many – why has there been no significant financial reform after the crisis, at least so far. In so doing I put a focus on special interest groups lacking in previous literature on political economy of reform. A key aim was to show that existing models of crisis and reform must be modified to better explain the real world.

References

Abiad, Ashoka and Abdul Mody, "Financial reform: What shakes it? What shapes it?," *American Economic Review*, March 2005, Vol. 95, No. 1, pp. 66-88.

Alesina, Alberto, Ardagna, Silvia and Francesco Trebbi, "Who adjusts and when? The political economy of reforms," *IMF Staff Papers*, September 2006, Vol. 53, Special Issue, pp. 1-29.

Alesina, Alberto and Allan Drazen, "Why are stabilizations delayed?," *American Economic Review*, December 1991, Vol. 81, No. 5, pp. 1170-1188.

Boeri, Tito, Castanheira, Micael, Faini, Riccardo and Vincenzo Galasso, eds., *Structural reforms without prejudices*, Oxford: Oxford University Press, 2006.

Brender, Adi and Allan Drazen, "Do leaders matter affect government spending priorities?," *NBER Working Paper*, no. 15368, September 2009.

Bruno, Michael, *Crisis, Stabilization, and economic reform – Therapy by consensus*, Oxford: Oxford University Press, 1993.

Buti, Marco, Turrini, Alessandro, Van den Noord, Paul and Pietro Biroli, "Reforms and re-elections in OECD countries" *Economic Policy*, Januar 2010, Vol. 25, No. 61, pp. 61-116.

Caselli, Francesco and Nicola Gennaioli, "Economics and politics of alternative institutional reforms," *Quarterly Journal of Economics*, August 2008, Vol. 123, No. 3, pp. 1197-1250.

Drazen, Allan, *Political economy in macroeconomics*, Princeton: Princeton University Press, 2000.

Drazen, Allan and William Easterly, "Do crises induce reform? Simple empirical tests of conventional wisdom," *Economics and Politics*, July 2001, Vol. 13, No. 2, pp. 129-158.

Drazen, Allan and Vittorio Grilli, "The benefit of crises for economic reforms", *American Economic Review*, June 1993, Vol. 83, No. 3, pp. 598-607.

Fernandez, Raquel and Dani Rodrik, "Resistance to Reform: Status Quo Bias in the Presence of Individual Specific Uncertainty," *American Economic Review*, December 1991, Vol. 81, No. 5, pp. 1146-1155.

Harberger, Arnold C., "The search for relevance in economics," *American Economic Review Papers and Proceedings*, May 1993, Vol. 83, No. 2, pp. 1-17.

Krueger, Anne, *Political economy of policy reform in developing countries*, Cambridge MA: MIT Press, 1993.

Labán, Raúl and Federico Sturzenegger, "Distributional conflict, financial adaptation and delayed stabilizations," *Economics and Politics*, November 1994, Vol. 6, No. 3, pp. 257-276.

Leuchtenberg, William E., *Franklin D. Roosevelt and the New Deal*, New York: Harper and Row, 1963.

Lora, Eduardo, "What makes reform likely?: Timing and sequencing of structural reforms in Latin America," *IADB Working Paper no. W-424*, Inter-American Development Bank, Office of the Chief Economist, 2000.

Murrell, Peter, "Design and Evolution in Institutional Development: The Insignificance of the English Bill of Rights", working paper, SSRN, 2009.

Nelson, Joan M., ed., *Economic crisis and policy choice: the politics of adjustment in less developed countries*, Princeton: Princeton University Press, 1990.

Olson, Mancur, *The Rise and Decline of Nations*, New Haven CT: Yale University Press, 1982.



Charles A. E. Goodhart

Financial Markets Group
London School of Economics

Banks and public sector authorities

Introduction

The aim of this paper is to view the current financial crisis through the prism of conceptual models of the basic relationships between the commercial banking sector on the one hand and the public sector authorities, comprising the government, especially the Ministry of Finance, Central Bank and specialist regulatory/supervisory authorities, on the other. In Section II I set out my interpretation of the Anglo-Saxon model of this relationship, as it stood in June 1997 before the crisis, and contrast this with, a less clearly defined, Asian model; the European (Rhineland) model being an uncomfortable mixture of the two.

In Section III I describe how the original Anglo-Saxon model imploded under the pressure of events (2007-9), and how it is being gradually refashioned, though alongside various dead-end turnings. In some respects this has been bringing the two models, the Anglo-Saxon and the Asian, closer together. I conclude, in Section IV, by asking whether the remaining differences may disappear, so that the world moves closer to a unified model.

The Anglo-Saxon Model and its Asian Counterpart

The Macroeconomic Structure

The main focus of monetary policy, in the Anglo-Saxon model, has been for the Central Bank to set (short-term) interest rates so as to hit an inflation target, whether implicit (USA) or explicit, over some future forecast horizon.¹ With some admixture of luck, such inflation

targeting did lead to some fifteen years (1992-2007) of growth and stability, the ‘great moderation’, a golden age, at least in the Anglo-Saxon developed countries. There were some weaknesses, e.g. the notorious ‘imbalances’, low savings rates in the Anglo-Saxon countries, enhanced inequality, etc., but so long as the good times continued, these were put on one side as issues to be addressed later.

The implicit assumption was that so long as the macro-economy was held stable, so would be its financial infrastructure. Or to put the same point another way, if the financial system autonomously misbehaved, this might be expected to show up quickly enough in forecasts, for the output gap and inflation, in time to allow successful remedial action through the standard official interest rate tool. The success of the Greenspan Fed in doing just so on several occasions reinforced the credibility of this hypothesis.

The Incentive Structure for Bank Executives

Within the Anglo-Saxon model, key decisions are taken by a firm’s, or a bank’s, top executives. While the board, key stake-holders, the government and public opinion more widely, all have some influence, at least on some occasions, and decisions are always taken within a context, nonetheless such decisions are generally taken independently by top management.

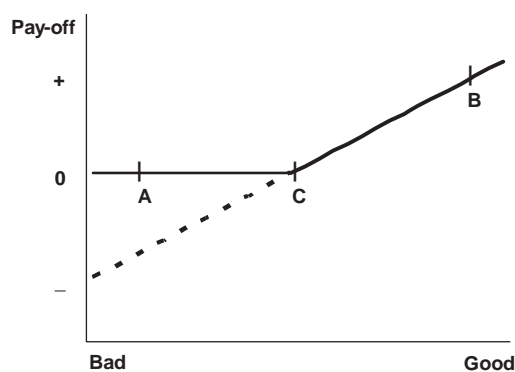
The main theme of governance theory and of practical remuneration policy had been, over previous decades, to aim to align managerial interests with those of shareholders. This was done, with a vengeance, by rewarding top managers, mainly via bonuses, for success in

gap rather than to forecast values of these variables, but explains policy quite well ex post, because current, and past, values of those variables are the main factors driving the forecasts of their future values.

¹ The standard Taylor reaction function is faulty because it relates decisions to current inflation and output

achieving steady earnings growth, and rising share prices. Given the difficulty of distinguishing between prudent risk aversion and plain bad management during booms, and the relatively short expected shelf-life of a top manager, this would usually lead to short-termism.

Perhaps more important, the limited liability of shareholders meant that they, and a fortiori their top managers, would prefer a risky option (with the same expected mean outcome) to a safe policy. This is shown in diagram 1, where a 50/50 chance of A or B will always be preferred to C. One answer to this had been to organize some (particularly risky) financial institutions into partnerships rather than limited liability companies (e.g. the large US investment houses), but this had eroded over time, partly because of the advantages of companies in raising new capital and partly from the desire of existing partners to cash in their chips while they could.



A more realistic constraint on such risk-seeking was meant to come from minimum capital requirements, and from tying executive bonuses and wealth to the value of the company. If the (required) capital position of a company (bank) is raised from C to B in the diagram, then the advantage of the risky option, with the same dispersion as before, over the safe option disappears. Moreover requirement that banks hold minimum capital provides a buffer to absorb losses, and to protect the taxpayer, and the public sector, from having to pick up the pieces.

Regulation and Supervision

Consequently the focus of regulation and supervision in the Anglo-Saxon system was to ensure the provision

of a sufficient minimum capital buffer. Moreover, so long as their buffer was sufficient to ensure solvency, it was held that liquidity could always be attained by accessing the broad and efficient wholesale money markets. Given the availability of such funding liquidity, regulators/supervisors allowed banks throughout the Anglo-Saxon world to cut back on their asset liquidity, to a tiny fraction of what had once been in place, say in the 1960s.

The general belief, e.g. of Alan Greenspan, was that, with sufficient capital and personal wealth tied up in their own companies, top bank executives would never allow their own banks to come under serious risk of having their own institution collapse.

Hence regulation could be light-touch and based on general principles rather than intrusive intervention. Indeed, the original *raison d'être* of the Paulson Report in March 2008 was to try to lighten capital market regulation in the USA to cope with competition from London; the crashing of gears to change direction in mid-draft in that Report is rather obvious.

A serious problem with the precept of leaving risk management primarily to bank executives is that the probability of really severe tail events, such as a major systemic crisis, cannot be easily established, if at all, (early warning exercises have a poor track-record). Moreover private sector bank executives would often regard it as being the public sector authorities' responsibility to cope with a crisis systemic tail-event. So the risk management models used by banks, such as Value at Risk, tended to focus on sensible procedures for handling normal conditions, represented by normal distributions, rather than on extreme tail events.

But their models were, at least initially, technically much more sophisticated than those of the regulators/supervisors, so the latter tended to get cognitively captured, in that they used the models developed to assess and to control risk conditions in individual banks under 'normal' conditions, rather than to examine the effects of major shocks on the financial system as a whole. This syndrome reached its apex with the adoption of Basel II, which, combined with the simultaneous application of 'mark-to-market' 'fair value' accounting, had the unintended effect of making the official regulatory system much more procyclical and unstable than previously.

The Asian Model

Whereas the basic (USSR) communist model of finance was clearly distinct from the Anglo-Saxon model, it is harder to identify a clearly Asian model. Nevertheless I would suggest, though others will know better, that there are some distinct features of the Asian approach, by which I primarily mean the banking systems of China, India, Indonesia and Japan.

Amongst these are:

- A much greater willingness to have a sizeable proportion of the domestic banking system under public sector ownership and/or control. Where there are private sector banks, these are more likely to be family-owned and/or related to industrial groupings, than the limited liability companies with widely dispersed shareholders of the Anglo-Saxon model. Thus there are likely to be more external constraints on the control and power of bank executives in the Asian model.
- Much greater direct influence of the public sector, especially the Ministry of Finance/Central Bank, in providing 'guidance' on the quantum of bank lending to the private (and public) sectors, and even 'guidance' on the sectoral distribution of such lending, e.g. agriculture, construction, infrastructure, etc.

Anglo-Saxon free marketeers claim that the greater direct intervention of the public sector with the banking sector leads to allocative inefficiency, higher non-performing-loans and, in the limit, corruption. But it also greatly reduces the pressure for short term profit maximisation.

By the same token the wish of the authorities to encourage growth, and the comparative power of large industrial borrowers, vis-à-vis the Asian banks, has helped to make external finance primarily bank-funded rather than done via the (relatively) undeveloped capital markets.

Again, the closer, and more continuous, involvement of the public sector with the banks has also meant that the external control mechanisms of the Anglo-Saxon system, e.g. transparent accounting and external supervision, are less well developed in the Asian system.

In part because shareholders are less important in this system, than the public sector and/or dominating family/industrial influences, the appointment mechanism and incentive structure of top managers

differs from that of the Anglo-Saxon world. And some of the directors are more likely to be parachuted in from outside (perhaps from public sector bureaucracy or industry). Once again short-term profit maximisation, though not unimportant, will often be less crucial for preferment than carrying out the wishes of those ultimately in charge. Rewards and incentives come less in the form of pecuniary rewards (e.g. bonuses) and more in the guise of ascendancy to a higher rung in the ruling hierarchy.

Under these conditions regulation and supervision is more basic and simple, partly because more external control is exerted directly. With less regulation, there is less incentive for regulatory arbitrage. For all these reasons there has been less financial innovation in the Asian model, which now seems much closer to traditional banking than that in the Anglo-Saxon system with its reliance on derivatives, off-balance sheet shadow banking, securitisation, etc., etc.

The Implosion of the Anglo-Saxon Model

The Macroeconomic Context and the Sad History of the Crisis

The macroeconomic context in 2006, and up until August 2007, continued to appear benign, as can be checked by looking at forecasts issued up to that date. To be sure, US official interest rates in 2003-5 were, with the benefit of hindsight, held perhaps 1%, or even 1½% too low, and this contributed to the housing boom, both in the USA, and abroad, to the search for yield and to the expansion of financial leverage. But, pace John Taylor, *Getting Off Track* (2009), I find it hard to believe that a relatively minor error in setting interest rates could really destabilise the bulk of the Anglo-Saxon financial system, (and if it did, it would suggest that the system was remarkably precarious).

Instead my belief is that the basic source of the crash is that described by Hyman Minsky (1977 and 1982), which is, in effect, that stability carries within itself the seeds of future instability. A combination of the 'great moderation' and low and competitive interest rates caused all financial institutions, but especially banks, to expand leverage. This was particularly so in Europe, where there was no required leverage ratio, so European

banks levered themselves up, often 50 to 1, by buying highly rated tranches of mortgage-backed securities, and amongst investment houses in the USA where the leverage constraints had recently been relaxed. It was no accident that the epi-centre of the crisis was to be found in these two sectors.

The adoption of the pro-cyclical combination of Basel II and mark to market accounting served to hide the fragility of the over-extended financial and banking positions both from the regulators and from the regulated. Northern Rock had a leverage ratio of over 50 to 1, was highly reliant on wholesale funding, and was making mortgage loans with no equity buffer in the over-heated UK housing market. Yet a couple of months before its effective demise in September 2007, the FSA assessed that its compliance with Basel II was so good that it could even increase its dividend! Similarly the profitability and balance sheet positions of banks in the USA, and elsewhere, in mid 2007 appeared so comparatively strong, (partly because the shadow banking system was only dimly perceived by the regulators), that it appeared then improbable that the relatively minor losses in asset values following on from the downturn in the US housing market and the demise of sub-prime could not be quite easily absorbed by these profitable and well capitalised banks.

And the initial losses were quite small. But the banks, (and other parts of the financial system), were over-leveraged and over-extended, and both the high profits and excess capital buffers were, in some considerable part, figments of the world of over-inflated asset values and credit ratings. In reality the margins were much thinner. Banks and professional investors came, fairly quickly, to realize this, and the corollary was that the solvency of some parts of the shadow banking system, and by extension of some banks, was no longer absolutely assured. That led to the withdrawal of asset-backed commercial paper, to the closure of wholesale markets, and of severe liquidity problems which interacted with solvency concerns.

All this led to massive de-leveraging, several self-amplifying destructive value-reducing spirals, (see the Brunnermeier et al., 2009), until the whole process came to a cataclysmic juddering halt in September 2008 with the bankruptcy of Lehman Bros and the rescue of AIG. During the intervening period central banks had been struggling to meet the steadily increasing demands for liquidity, by lending to an ever-widening set of financial

institutions, on an ever-widening range of collateral assets, at ever longer maturities.

But central banks cannot provide capital. And as market prices and credit ratings went into reverse, more capital became required, and, as the financial system weakened, the market began to demand ever higher capital buffers. Not surprisingly the capital market became closed, most of the time, to new equity issues by banks; and most Sovereign Wealth Funds came to regret their investments during the few windows of opportunity. During this period the authorities failed to prevent continuing dividend payments and massive compensation packages; indeed they did not have the legal powers to do so; and banks could not cut back unilaterally on such out-payments without adverse signalling implications. So the banks, and many associated financial intermediaries, such as monoline insurers, became massively under-capitalised.

Eventually it seemed that the State had to step in, using taxpayer funds on a gargantuan scale. The alternative was complete financial collapse, as the Lehman bankruptcy presaged. Moreover, partly to limit the fiscal burden, the authorities also sought to encourage, perhaps even to bring pressure on, the bigger, and better capitalised, banks to absorb their failing brethren, often by waiving anti-trust and cartel regulations, as in the case of Lloyds and Halifax/Bank of Scotland (HBOS) in the UK. The result has been the concentration of banking systems in the Anglo-Saxon countries into a small number of vast and widespread enterprises, probably too large to control efficiently (Citibank and Bank of America) and certainly too large to close.

Whither the Anglo-Saxon Model?

The old basis of the relationship between the public sector authorities and the financial system in the Anglo-Saxon model, whereby the public sector sets the broader macroeconomic and regulatory context, and the private financial system decides autonomously on its own behaviour within that, has been upset, if not blown away entirely. It is not just that the public sector has come to own all the banks in Iceland and Ireland, and large swathes of the financial sector in the USA (Fannie Mae, AIG, etc.), in the UK (Lloyds, RBS), and in Europe (Fortis, Dexia, HRE, Landesbanken), but probably more important, the public sector has now effectively guaranteed virtually all non-equity liabilities, including various kinds of subordinated debt, everywhere. The

public sector has become the guarantor not just of bank liquidity, but, except for equity shareholders, effectively of the solvency of all systemic financial institutions. Moreover in a crisis a widening range of institutions, even quite small ones, such as the Dunfermline Building Society in Scotland, may become regarded as 'systemic'.

Such ownership of private sector financial institutions has been assumed reluctantly in the Anglo-Saxon countries, as an unfortunate concomitant of the necessary recapitalisation. Steps have been taken, wherever possible, to design the recapitalisation, e.g. by the issue of preference shares rather than diluting equity, so that business decisions are left with private sector managers. Even when a controlling equity stake is taken, the role that the public sector adopted has generally, at least in public, been one of an arms-length shareholder with no direct say in decisions.

The model which the Anglo-Saxons are following is that applied during the Scandinavian banking crisis of the early 1990s. In this case the authorities took the banks in need of recapitalisation into public ownership, injected new capital, tidied up the balance sheet, and then found themselves able to sell the banks back to the private sector, at a profit, within a few years. But this rapid recovery was, in some large part, due to sharp depreciations of their currencies, and a rapid rise in net exports, in a context in which the much larger Rest of the World was, after 1992, growing quite fast (see Jonung, 2007). Such favourable macroeconomic conditions will not be available to the developed world as a whole. Consequently any early sale of ownership stakes in such banks could probably only be done at a loss, and to avoid having to absorb such a concrete loss, governments may find themselves in a controlling position for much longer than they now hope.

Although governments have avoided the phrase 'nationalisation' like the plague, largely for presentational and political reasons, there is a growing tension between the reality of control and the desire to avoid interference in what is seen as properly private sector decisions. Much of the blame for the continuing depression is placed on the 'credit crunch'. But if the State actually owns some banks, why can it just not order them to expand lending? The rapid recovery of China, apparently fuelled by massive State-ordered expansion of bank lending in 2009 H1, has not gone unnoticed. So we have the curious spectacle of Chancellor Darling and his

German counterpart threatening banks, in general, with (unstated) sanctions if they do not increase lending to the private sector, and yet, apparently, not taking steps to enforce just that where they have powers to control (except in the case of Northern Rock where a planned policy of running down the book was reversed by official diktat).

Moreover, the political hot-spot of the recent crisis was the continuation of huge pay-outs to, failing, bank executives. Should a publicly owned bank really go on paying these seven figure salaries to top executives? The reported negotiation of a potential pay out of over 9 million pounds to the new CEO of RBS, Stephen Hester, was not popular.

If the public sector owns banks, and other financial intermediaries, can, or should, it refrain from using its controlling position, for example to achieve social, or political, objectives? For the time being however, such questions are being avoided and sidelined on the grounds that such a controlling position was obtained unwillingly and accidentally, and will be strictly temporary and shortly reversed. If, however, I am right that the recovery will be so anaemic that such stakes cannot be easily resold for many years, such issues may come to have greater prominence.

The likelihood that public sector recapitalisation will bring with it constraints on private sector freedom of action in such delicate areas as remuneration and dividend policies, and perhaps on asset market decisions, is already clearly influencing banking decisions. If the banks can take actions to reduce the need for public sector support, they will tend to do so. In some cases this may take the form of aggressive deleveraging, running down the balance sheet, in order to preserve capital, and hence avoid the need for public sector assistance. But such a response would only worsen the macro-economic conjuncture. Of course, banks claim that sluggish bank lending is due to a fall in demand, but they are or have been, at the same time, tightening the terms and the spreads at which borrowers can access funds.

But the questions about the implications for public/private roles in this field of public ownership of banks are, perhaps, minor compared to the questions posed by the State's role as the ultimate guarantor of the solvency of (non-equity) bank liabilities. In effect, the State, in the face of a systemic crisis, has not only insured bank liquidity, via the Central Bank, but also the solvency

of bank creditors. The implications for moral hazard are obvious.

This is not a comfortable outcome, to say the least. But what can be done about it? There are two natural responses. The first is to try to reset the structure so that we can return to the status quo ante, in which the State would no longer play a role as general guarantor; and bankruptcy, and the fear of private sector loss would provide some (enough?) discipline against excessive risk-taking. The second is to recognize that the financial system is so central to any market economy, so that the State will always provide de facto ultimate insurance in a crisis, and to adapt and adjust policy to reflect that.

There are several versions of the first proposal, most of which have a slightly quaint flavour of seeking to revert to an unspoilt, earlier and simpler Arcadian age before the wiles and innovations of investment bankers fouled the nest. The first is the call to break up big banks, so they can be more easily shut. "If banks are too big to fail, they are too big", Mervyn King has said, and he has the support of Paul Volcker. Whereas it is true that some banks are now too big to fail on their own even with zero contagion, the key systemic problem is contagion. Contagion depends on the (perceived) similarities between the failing bank and its confreres, and on the interconnections between them. Northern Rock, and IKB and Sachsen, were not large, but if Northern Rock had been allowed to fail, there would have been a run on Bradford & Bingley and Cheltenham & Gloucester the day after, and on HBOS they day after that.² If a large bank was broken up into segments that were just smaller-scale mirror images of the original, then the contagion/systemic problem would remain almost as bad.³ As several economists, such as W. Wagner and V. Acharya (see for example Acharya, 2009, and Wagner, 2007/2008) have noted, contagion is a positive function of similarities between banks. The micro-prudential

2 The sceptic will note that all these banks did eventually fail and have to be taken over, but crisis resolution is, in some large part, about playing for time, and seeking to avert panic. If such time is not well used, one may then just get a slower-moving collapse. The difficulty in 2007/8 was that the basic concern was ultimately about solvency/capital adequacy, and this was not really addressed until after the Lehman failure.

3 But this approach might at least allow the first small bank to run into difficulties to go bankrupt, pour encourager les autres, even if runs on similar banks are then vigorously rebuffed. When Barings was allowed to fail in 1995, the Bank prepared prophylactic measures to support the remaining British merchant banks.

supervisor wants diversification within each individual bank; the macro-prudential supervisor should want diversification between banks. A danger of micro-prudential regulation is that it forces all the regulated into the same mould.

So, apart from the legal issues of whether the government should over-ride private property contracts by enforcing a break-up, there are doubts whether having many smaller banks would help to ease contagious crises. Recall that it was the myriad of small banks that failed in the USA in 1929-33, whereas the more oligopolistic systems in some other countries, e.g. Canada and the UK, were more resistant. A more realistic approach is to try to assess how far the larger banks involve greater systemic risk, and then impose additional offsetting charges, (as discussed further below).

A second approach is to try to limit the range of institutions/functions to which the safety net applies. This theme goes under several headings, such as "Narrow Banking", bring back Glass-Steagall, with the associated populist phrase that current banking combines 'a casino with a utility'. This has obtained surprising traction, even in the august pages of the Financial Times, given how silly the idea is. Perhaps the worst error of the crisis was to allow Lehman Bros to fail, but this had no retail deposits. In the populist jargon, it, and AIG and Bear Stearns, were casinos, not utilities. For reasons set out in my paper on 'The Boundary Problem in Financial Regulation', (Appendix to the Geneva Report, 2009, and Goodhart, 2008), regulatory constraints on the protected, narrow sector will drive business to the unregulated sector during normal times, but provoke a flight back to safety during crises, thereby worsening the crisis.

Banking is about risk-taking, e.g. with maturity mismatch. Securitisation and derivatives are used to lessen and to hedge such risks. A narrow bank which has to hold all its assets (unhedged) to maturity can be very risky; is a fifteen year fixed rate mortgage loan a suitable asset for a bank, or a specialised building society (S&L) to hold? What exactly do the proponents of narrow banking suggest in the case of relationships with industry? Relationship banking, as practiced in Asia and in Europe, places these banks far more at risk to the changing fortunes of their major clients, than in the more arms-length, and capital-market-integrated, Anglo-Saxon model. It is arguable that the Asian/Rhineland model can only exist because the State is

perceived as the ultimate guarantor. Presumably, without such a guarantee, the Anglo-Saxon model had to be safer, but it has now been shown not to be safe enough.

A third strand in this genre, which overlaps with the second response of adapting to the new reality, is to try to shift the burden of guaranteeing the banks back to the private sector, in this instance to the debt holders, by forcibly requiring subordinated debt to be transmuted into equity at the behest of the authorities in the event of a crisis. There is a question of the legality of this with existing debt instruments, but it could be required to be a feature of (some or) all future debt issues. But even with the present structure of debt, the debt holders of failing institutions, such as Fannie Mae, could have been penalised, as they were in the case of Lehman Bros. The effect of this latter was to transfer the losses to other debt holders, such as money market mutual funds, and thereby to widen the crisis. The US authorities, in those cases where they rescued a financial institution, generally did not impose losses on debt holders, mainly out of concern about the reputation, and the access to, and cost of, future funding of their financial system. When push came to shove, the US authorities were, therefore, not prepared to impose large losses on such debt holders. Would they act differently in future if they did have the right to enforce the transmutation of debt into equity. Perhaps, but, if so, what would be the cost to the banks of being required to hold a second-tier tranche of transmutable debt?

There is a need to reconsider the role of (transmutable) debt as an element in banks' capital base, but, beyond that, most of the proposals for enabling the public sector to withdraw from its role as ultimate guarantor of the financial system would be ineffective, or damaging to efficiency, or both. So we need to turn to the second set of responses, of adapting to the new reality.

This new reality is that the public sector, the State, is the ultimate guarantor of both the liquidity and the solvency of all the systemic parts of the financial sector. Or in other words that the public insures the systemic components of finance. If we now view the State as providing such insurance, it gives guidance on what needs to be done to prevent both that that task becomes an excessive burden to the taxpayer, (who will then get stuck with meeting any such pay-outs), and that the insured, the systemic banks and other key financial

institutions, do not take advantage of their insured status to extract rents (moral hazard).

The answer, of course, must lie in, first, seeking to measure the extent to which the behaviour of the insured places the State's insurance function at risk, and, second, in imposing sanctions, which could take various forms, against such adverse behaviour. Both steps in this procedure are difficult. In the case of measurement, problems are made worse, inter alia, by externalities, whereby an act undertaken by an individual component will not be fully internalised but react, often in very different ways, on the system as a whole, by the intertemporal nature of finance, whereby acts undertaken now will have a probable, but uncertain and stochastic, effect in future, and by innovation, whereby the regulated will seek to adjust in order to minimise the constraints on themselves of external regulation.

One example of externalities is that, when faced by pressures on both liquidity and capital adequacy, the obvious escape route for an individual bank is to cut back on lending. But that simply transfers the reinforced pressures to the rest of the system. So, while it certainly remains essential to measure the liquidity and capital adequacy of each (systemic) individual institution, it will also be necessary to monitor carefully aggregate developments in financial conditions. Moreover, such (aggregate) developments have time-varying implications. A generalised rapid expansion (increased leverage) of domestic (bank) credit will initially enhance asset prices, profitability and economic activity, but, if pursued too far – with the development of asset bubbles – will raise the probability of future bad debts, financial problems and crashes in future. A problem is that such a future reversal remains stochastic, more likely, but still uncertain. Accountants prefer to stick with what they can objectively measure, and time and state varying probabilities of default do not come into this category. Hence attempts to measure financial fragility, such as in the Spanish dynamic pre-provisioning approach, frequently collide with the precepts of accountants, (and of the tax authorities who fear that the use of probabilistic measures can lead to the manipulation and deferment of taxes).

Unless regulation binds, it will not be effective. So effective regulation will prevent the regulated from carrying out their preferred policies. So they will try to avoid and to evade such regulation, largely by means

of innovating around it. As Ed Kane has frequently emphasized, the regulatory process is dialectic, in which the regulated have more money, skills and incentive than the regulators. Those who have the greatest incentive to avoid the constraints of regulation, usually via innovation, are those who command the residual profits of the enterprise, i.e. the shareholders, especially since they can put all losses, via limited liability, onto the public sector insurer and thence onto the taxpayers. In this context a major error of Anglo-Saxon (banking) governance mechanisms was to seek to align the incentive structures, embedded in remuneration, of bank executives (and of key employees more generally) with that of shareholders (Bebchuk and Spamann 2009). Perhaps the more (bureaucratic) incentive structures of Asian banking were a strength, rather than a weakness? I have, on occasions, advocated, with tongue only slightly in check, the allocation of a non-transferable unlimited-liability share to all senior bank executives, cancellable only on death or n ($n=3?$) years after leaving the bank. Some have retorted that this would unduly diminish risk taking, the basis for the capitalist dynamic. Perhaps so, but then what remuneration structure would provide the optimal degree of risk-taking, if alignment with limited liability shareholders leads to excessive risk-taking, but unlimited liability to excessive risk aversion? Much more analytical research needs to be done on this.

The question of sanctions is not only equally important, but just as difficult. Indeed, one of the greatest weaknesses of the Basel Committee on Banking Supervision (BCBS) was that, as an advisory committee without any constitutional backing, it felt constrained from considering, or even advising on, sanctions, since such legal matters lay in the province of each nation state. So the BCBS restricted itself to advising on principles and norms, without any advice on what to do as the regulated entities either approached, or fell below, desired levels. Since the BCBS has taken the lead on (international) banking regulation, the proper structure of sanctions, (to maintain and uphold good behaviour amongst the regulated), has been an under-researched field. This is particularly important since the choice of minimum satisfactory levels, e.g. of tier 1 capital or of liquid assets, will always be somewhat arbitrary. What is necessary is to start putting remedial pressure on the regulated, as an institution falls below 'good' levels, in a graduated, but, steadily increasing,

manner. About the only regulation to do so is the US FDIC Improvement Act of 1991, which was advised by two economists, George Benston and George Kaufman.

There are several ways to apply sanctions. They could take the form of straight payments to the public sector authorities, premia for insurance, increasing as the measured risk becomes assessed as greater, or of measures, such as requiring counter-cyclical or risk-weighted capital or liquidity requirements, which impose costs on banks (and may, or may not, provide income to the public sector) as such banks become riskier and raise the risks of the financial system as a whole. In shorthand, risks increase with leverage and with the extent of maturity mismatch. The solution, therefore, is to raise taxes on banks in line with the extent of leverage and of maturity mismatch. The aim is to mitigate cycles in financial leverage and maturity mismatch.

Essentially the Anglo-Saxon model has been short of one necessary instrument, the ability to adjust regulatory pressure so as to restrain such financial cycles. Indeed, the direction of policy movement until recently, with the introduction of Basel II and mark-to-market accounting (both procyclical), was counter-productive, and did nothing to restrain the recent severe financial cycle. The problem now is to design and to introduce a new instrument(s) that will provide such mitigation with the least cost to financial intermediation, and the best influence on appropriate innovation and risk-taking. This will not be easy, and is at an early stage of design. Some academic examples can be found in the Geneva Report (2009) and in *Restoring Financial Stability* (NYU, 2009, eds. Acharya and Richardson). Less has been written on this in official Reports, since they have been more tentative (e.g. the White Papers in the UK and of the US Secretary of the Treasury) and rarely couch the problem in this stark fashion.

A Synthesis of Models?

As outlined above, the Anglo-Saxon model has now been shown to be flawed and will have to change in several significant respects. The public sector, the State, has clearly become the guarantor of all systemic financial institutions, providing both liquidity and solvency insurance. Fear of bankruptcy, especially within the context of limited liability (for shareholders and bank

executives), will not restrain moral hazard. The public sector, as the provider of ultimate insurance, will now need to apply new instruments to prevent its insurance function being misused.

In the Asian model, the close links between the authorities and the key financial intermediaries has generally been more realistically appreciated. But the way in which such exposure to insurance payouts has been handled has been rather by direct external control measures than by broader market mechanisms. In the Anglo-Saxon model the aim is to induce the agent, in this case the bank executive, to follow desirable, (hopefully welfare maximising), lines of behaviour by setting general market mechanisms, such as regulations, market prices, taxes and subsidies, and then letting the agent decide on his own (maximising utility) within this general framework.

That framework was found to be insufficient, and Anglo-Saxons may, at least for a time, be less arrogant about the superiority of their approach. But they may succeed in patching up their framework by adopting generalised regulatory measures that apply counter-cyclical pressures on financial cycles in leverage and maturity mismatch. If they succeed in this approach, should Asian countries adopt similar mechanisms? And if they do, will this result in a closer match, a greater synthesis, between the two models?

Bibliography

- Acharya, Viral V., "A theory of systemic risk and design of prudential bank regulation", *Journal of Financial Stability*, September 2009, Vol. 5, Issue 3, pp. 224-255.
- Acharya, Viral V. and Matthew Richardson, eds., *Restoring financial stability: How to repair a failed system*, New Jersey: John Wiley & Sons, 2009.
- Bebchuk, Lucian A. and Holger Spamann, "Regulating Bankers' Pay", *Harvard Law School Faculty Discussion Papers*, No. 641, June 2009 (published in *Georgetown Law Journal*, Vol. 98, No. 2, 2010, pp. 247-287).
- Brunnermeier, Markus K., Crockett, Andrew, Goodhart, Charles A.E., Persaud, Avinash, and Hyun S. Shin, *The fundamental principles of financial regulation*, *Geneva Reports on the World Economy*, No. 11 (Geneva: International Center for Monetary and Banking Studies, ICMB, and Centre for Economic Policy Research, CEPR), 2009.
- Goodhart, Charles A.E., "The boundary problem in financial regulation", *National Institute Economic Review*, October 2008, No. 206 (Special Issue: The Great Crash of 2008), pp. 48-55.
- Jonung, Lars, "Lessons from financial liberalisation in Scandinavia", *Comparative Economic Studies*, December 2008, Vol. 50, No. 4, pp. 564-598.
- Minsky, Hyman P., "A theory of systemic fragility", in Edward I. Altman and Arthur W. Sametz, eds., *Financial Crises: Theory, Institutions and markets in a fragile environment*, New York: Wiley, 1977, pp. 138-152.
- Minsky, Hyman P., *Can 'It' Happen Again? Essays on Instability and Finance*, M.E. Sharpe, Inc., 1982.
- Paulson, Henry M., Steel, Robert K., and David G. Nason, "The Department of the Treasury Blueprint for a Modernized Financial Regulatory Structure", *The Department of the Treasury*, Washington DC, March 2008.
- Taylor, John B., *Getting off track: How government actions and interventions caused, prolonged, and worsened the financial crisis*, Hoover Institute Press, Stanford University, 2009.
- Wagner, Wolf, "Diversification at financial institutions and systemic crises", *Discussion Paper (University of Tilburg)*, 2007, also: *Journal of Financial Intermediation*, 2010 (forthcoming).
- Wagner, Wolf, "The homogenization of the financial system and financial crises", *Journal of Financial Intermediation*, July 2008, Vol. 17, No. 3, pp. 330-356.



Paul De Grauwe

Catholic University of Louvain

Top-down versus bottom-up macroeconomics

There is a general perception today that the financial crisis came about as a result of inefficiencies in the financial markets and a poor understanding of economic agents, in particular of investors, of the nature of risks. Yet mainstream macroeconomic models as exemplified by the Dynamic Stochastic General Equilibrium models (DSGE-models) are populated by agents who are maximizing their utilities in an inter-temporal framework using all available information including the structure of the model (see Smets and Wouters, 2003, Woodford, 2003, Christiano et al. (2005), and Adjemian et al., 2007). In other words, agents in these models have incredible cognitive abilities. They are able to understand the complexities of the world and they can figure out the probability distributions of all the shocks that can hit the economy. These are extraordinary assumptions that leave the outside world perplexed about what macroeconomists have been doing during the last decades.

These developments in mainstream macroeconomics are surprising for other reasons. While macroeconomic theory enthusiastically embraced the view that agents fully understand the structure of the underlying models in which they operate, other sciences like psychology and neurology increasingly uncovered the cognitive limitations of individuals (see e.g. Kahneman, 2002, Camerer et al., 2005, Kahneman and Thaler, 2006, and Della Vigna, 2007). We learn from these sciences that agents only understand small bits and pieces of the world in which they live, and instead of maximizing continuously taking all available information into account, agents use simple rules (heuristics) in guiding their behavior (Gigerenzer and Todd, 1999). The recent financial crisis seems to support the view that agents have limited understanding of the big picture. If they had understood the full complexity of the financial system they would have understood the lethal riskiness of the assets they massively took in their portfolios.

In order to understand the nature of different macroeconomic models it is useful to make a distinction between top-down and bottom-up systems. In its most general definition a top-down system is one in which one or more agents fully understand the system. These agents are capable of representing the whole system in a blueprint that they can store in their mind. Depending on their position in the system they can use this blueprint to take over the command, or they can use it to optimize their own private welfare. An example of such a top-down system is a building that can be represented by a blueprint and is fully understood by the architect.

Bottom-up systems are very different in nature. These are systems in which no individual understands the whole picture. Each individual understands only a very small part of the whole. These systems function as a result of the application of simple rules by the individuals populating the system. Most living systems follow this bottom-up logic (see the beautiful description of the growth of the embryo by Dawkins, 2009). The market system is also a bottom-up system. The best description made of this bottom-up system is still the one made by Hayek (1945). Hayek argued that no individual exists who is capable of understanding the full complexity of a market system. Instead individuals only understand small bits of the total information. The main function of markets consists in aggregating this diverse information. If there were individuals capable of understanding the whole picture, we would not need markets. This was in fact Hayek's criticism of the "socialist" economists who took the view that the central planner understood the whole picture, and would therefore be able to compute the whole set of optimal prices, making the market system superfluous.

My contention is that the rational expectations models are the intellectual heirs of these central

planning models. Not in the sense that individuals in these rational expectations models aim at planning the whole, but in the sense that, as the central planner, they understand the whole picture. These individuals use this superior information to obtain the “optimum optimum” for their own private welfare. In this sense they are top-down models.

In my paper *“Top-down versus Bottom-up macroeconomic models”* I contrast the rational expectations top-down model with a bottom-up macroeconomic model. The latter is a model in which agents have cognitive limitations and do not understand the whole picture (the underlying model). Instead they only understand small bits and pieces of the whole model and use simple rules to guide their behavior. I introduce rationality in the model through a selection mechanism in which agents evaluate the performance of the rule they are following and decide to switch or to stick to the rule depending on how well the rule performs relative to other rules. Thus agents in the bottom-up model learn about the world in a “trial and error” fashion.

These two types of models produce very different insights. I mention three differences here. First, the bottom-up model creates correlations in beliefs which in turn generate waves of optimism and pessimism. The latter produce endogenous business cycles which are akin to the Keynesian “animal spirits” (see Akerlof and Shiller, 2009).

Second, the bottom-up model provides for a very different theory of the business cycle as compared to the business cycle theory implicit in the rational expectations (DSGE) models. In the DSGE-models, business cycle movements in output and prices arise because rational agents cannot adjust their optimal plans instantaneously after an exogenous disturbance. Price

and wage stickiness prevent such instantaneous adjustment. As a result, these exogenous shocks (e.g. productivity shocks, or shocks in preferences) produce inertia and business cycle movements. Thus it can be said that the business cycle in DSGE-models is exogenously driven. As an example, in the DSGE-model the financial crisis and the ensuing downturn in economic activity is the result of an exogenous and unpredictable increase in risk premia in August 2007.

In contrast to the rational expectations model, agents in the bottom-up model experience an informational problem. They do not fully understand the nature of the shock nor its transmission. They use a trial and error learning process aimed at distilling information. This process leads to waves of optimism and pessimism which in a self-fulfilling way create business cycle movements. Booms and busts arise which reflect the difficulties of economic agents to understand economic reality. The business cycle has a large endogenous component. Thus, in this bottom-up model the financial crisis and the ensuing economic downturn should be explained by the previous boom.

Finally, the bottom-up model confirms the insight obtained from mainstream macroeconomics (including the DSGE-models) that a credible inflation targeting is necessary to stabilize the economy. However, it is not sufficient. In a world where waves of optimism and pessimism (animal spirits) can exert an independent influence on output and inflation it is in the interest of the central banks not only to react to movements in inflation but also to movements in output and asset prices so as to reduce the booms and busts that free market systems produce quite naturally.



References

Adjemian, Stéphane, Darracq Pariès, Matthieu, and Stéphane Moyen, "Optimal monetary policy in an estimated DSGE for the euro area", ECB Working Paper Series, no. 803, August 2007.

Akerlof, George A. and Robert J. Shiller, *Animal spirits: How human psychology drives the economy, and why it matters for global capitalism*, Princeton: Princeton University Press, 2009.

Brock, William A. and Cars H. Hommes, "A rational route to randomness", *Econometrica*, 1997, Vol. 65, No. 5, pp. 1059-1095.

Camerer, Colin, Loewenstein, George and Drazen Prelec, "Neuroeconomics: How neuroscience can inform economics", *Journal of Economic Literature*, March 2005, Vol. 43, No. 1, pp. 9-64.

Christiano, Lawrence J., Eichenbaum, Martin and Charles Evans, "Nominal rigidities and the dynamic effects of a shock to monetary policy", *Journal of Political Economy*, February 2005, Vol. 113, No. 1, pp. 1-45.

Dawkins, Richard, *The greatest show on earth: The evidence for evolution*, Bantam Press, 2009.

Della Vigna, Stefano, *Psychology and economics: Evidence from the field*, NBER Working Paper, no. 13420, September 2007.

Gigerenzer, Gerd and Peter M. Todd, *Simple heuristics that make us smart*. New York: Oxford University Press, 1999.

Hayek, Friedrich A., "The use of knowledge in society", *American Economic Review*, 1945, Vol. 35, No. 4, pp. 519-530.

Kahneman, Daniel, *Maps of bounded rationality: A perspective on intuitive judgment and choice*, Nobel Prize Lecture, December 8, 2002, Stockholm.

Kahneman, Daniel and Richard H. Thaler, "Anomalies: Utility maximization and experienced utility," *Journal of Economic Perspectives*, 2006, Vol. 20, No. 1, pp. 221-234

Smets, Frank R. and Raf Wouters, "An estimated Dynamic Stochastic General Equilibrium Model of the euro area", *Journal of the European Economic Association*, 2003, Vol. 1, No. 5, pp. 1123-1175.

Woodford, Michael, *Interest and prices: Foundations of a theory of monetary policy*, Princeton University Press, 2003.