The Financial and Economic Crisis:

New Challenges for Monetary Policy

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Introduction

It is a great honor to have been awarded this prize for lifetime achievement in the theory and practice of monetary policy. Let me first thank the awards committee, under the Chairmanship of Professor Dr. Volker Weiland, and all of you in attendance today. And let me say that I feel doubly honored knowing that it was given last year to Otmar Issing, whom I have known and greatly respected for many years.

As my curriculum vitae shows, I have been in the central banking business for many years, indeed many decades, with about half my professional life spent in Canada and the other half in Europe. Looking back on it, I would like to say I have learned a lot. Unfortunately what I have learned is how little I know (although Socrates called this "wisdom") and, indeed, how little it is possible to know. I am sorry to say that it has taken me many years to get to where Hayek was as far back as 1974 when he gave his Nobel Memorial Lecture entitled "The Pretence of Knowledge".

In a nutshell, the economy is not in fact a machine, with constant structure and therefore predictable outputs given known inputs. Rather the economy has a complex and constantly changing structure. Moreover, that structure adapts in response to actions taken by economic agents, including policy makers, based on certain prior beliefs about structures. Evidently if this is the case those prior beliefs are, by definition, wrong. This has a number of very important implications.

One is that we actually live in a world of Knightian uncertainty rather than one in which we can calculate probabilities of something going wrong. This suggests that many of our "risk management techniques" are giving us a false sense of comfort. Second, data drawn from the past may give us little idea of what the future holds. This suggests that the way we test out hypotheses against the data need to be reexamined. Third, all policy choices are likely to have unexpected consequences. This suggests that policy makers should therefore focus less on policies designed to maximize welfare or well being, and rather try to design policies to avoid truly disastrous outcomes. To me this last suggestion truly resonates in current circumstances.

Against this backdrop, I want to review briefly the evolution of beliefs over the last 50 years about "How best to conduct monetary policy?" What I see, consistent with what I have just said, is a process of constant change with at least five major phases being identifiable: Bretton Woods (post war to 1972), Monetarism (roughly the 1970's), Inflation Reduction (the 1980's), Price Stability (1990's through to 2007) and the ongoing period of Crisis Response. Furthermore this evolution is not over. The continuing economic and financial crisis has called into question a number of old beliefs about the conduct of monetary policy, while also pointing the way to new ones.

In the next few minute I will illustrate this process of change with respect to three sets of issues that monetary policymakers must address. I call them Strategic Questions, Framework Questions and Practical Questions. Evidently I move from the more general to the more particular, but they are all questions that must be answered. Moreover, whether central bankers realize it or not at any given moment in time, all the answers are contestable. They have in fact changed enormously over the course of the years and might well change again.

Strategic Issues: Choosing an Exchange Rate Regime

A monetary authority needs some kind of a strategy to ensure the consistent conduct of policy over time. In this regard, the choice of an exchange rate regime has always been of great importance. What has not changed over time has been the fundamental insight concerning the "Impossible Trinity". A monetary authority cannot have an autonomous monetary policy, a fixed exchange rate and highly mobile capital flows all at the same time. Choices need to be made as to what to give up. Over time, views on this have in fact changed enormously.

The heyday of "fixing" was under the gold standard, when countries gave up autonomous monetary policy. In effect, it was not thought a sacrifice since policymakers were not trusted to purse the desired goal of long run price stability. However, by the time of Bretton Woods, views had changed and the best choice was thought to be giving up mobile capital flows. As international capital flows grew, regardless, it was "fixing" that was given up and an era of "floating" soon followed. The fact that Milton Friedman had given a theoretical rationale for this was also important.

However, the shortcomings of this approach began to emerge as early as the middle 1980's, with the need for the Plaza and Louvre accords to deal with exchange rate volatility and perceived overshooting. The exchange rate tensions then generated in Europe also provided the impetus for the rethinking that eventually led to the euro zone, one of the two "corner" solutions then widely talked about. The other "corner" solution chosen was "free floating" among the G 3, which has worked reasonably well since.

Elsewhere, however, many countries chose intermediate positions involving managed floating, managed capital controls and a domestic monetary policy somewhat constrained by international considerations. In effect, we have wound up with a global monetary non-system, since there are no predictable rules to guide everyone's behavior. "Chacun pour soi" is not a system, and can lead to current account imbalances that threaten sustainable growth going forward. This unresolved issue is one of the reasons for expecting (or at least hoping for) further change going forward.

Another unresolved problem is that the US dollar still sits at the heart of the international monetary system. What the Federal Reserve does with its policy has global implications, but the Fed is legislatively constrained to think only of US domestic interests. Thus, we have the concerns expressed about "currency wars". Countries are now being advised by the IMF to use capital controls and macro prudential policies to protect themselves. Unfortunately, "sauve qui peut" is not a system either and seems doomed to failure. The international monetary system needs serious rethinking.

Framework Issues: Analytical, Political, Philosophical

Monetary authorities need an analytical framework. How do they think the economy is influenced by monetary policy? They also need a political framework. What is the appropriate relationship with governments in a democratic society? Finally, they need a philosophical framework. What is the basis on which monetary authorities generate their beliefs, and when do they determine that those beliefs should change? I want to suggest that the answer to all three questions has changed enormously over time, and may be on the verge of changing again.

The analytical framework for conducting monetary policy

Without prejudice, let us suppose a monetary authority has decided to float its currency and pursue totally domestic objectives. How do they see their policy instruments being related to their objectives? Otherwise put, what is their "model" of the economy?

Looking back prior to WWll, we see a big difference between the European way of looking at things (essentially deduction) and the US way for doing it (essentially induction). Tinbergen brought the two traditions together with the first econometric models and, by the 1960s, most macroeconomists and central bankers were prepared to accept the IS/LM model (and its econometric equivalent) as capturing the core of 'Keynesian" thought. In the 1960s, moreover, there was a widespread belief that a long-run Phillip's curve existed. That is, you could permanently lower the unemployment rate by accepting a little more inflation.

An important moment of change, however, came when Edmund Phelps and Milton Friedman in the late 1960s asserted that this conclusion was false. They noted that inflation would affect inflationary expectations with a 'long and variable lag" (essentially adaptive expectations). Subsequently, rational expectations models replaced adaptive expectations models and this implied (absent other frictions) that deviations of output and employment from 'potential' would be very short. Variations on this theme were played by Real Business Cycle modellers as well as the so called New Keynesians. Eventually these schools joined forces to support the development of Dynamic Stochastic General Equilibrium models, which became very popular (indeed de rigueur) in academic circles and even began to exercise influence in central banks as well.

For those pursuing this way of thinking, the current crisis should have been an acute embarrassment since long-lasting periods of underemployment are simply not allowed in such models. Note, moreover that even large-scale structural models (having more 'Keynesian' properties implying slower adjustment to equilibrium) also failed to predict the crisis. None of the above mentioned models incorporate a developed financial sector. Thus they omitted any consideration of the credit, debt, stocks and bankruptcies which actually seemed to be at the heart of the crisis.

Our current analytical framework for conducting monetary policy thus clearly needs to be reexamined. One strand of thought suggests that we need to go back to the Classical scholars, who eschewed any concept of economic "equilibrium". Apparently their basic assumptions and beliefs (about growth, cycles and income distribution) can by linked to modern complexity economics via Hayek's writings in the 1950's and 1960's[1]. However, there are many alternative strands of thought that might also prove fruitful. Unfortunately, I doubt that such a fundamental reexamination is likely, at least over the near term. I will come back to this in talking later about the belief systems of central bankers. This has less to do with economics than with human nature.

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[1] See the recent book by David Simpson (2013) "The Rediscovery of Classical Economics: Adaptation, Complexity and Growth" Edward Allen in association with the Institute for Economic Affairs, Cheltenham UK.

The political framework for conducting monetary policy

Again we have witnessed enormous changes over the last fifty years in the relationship between central banks and other arms of government. Moreover, the crisis seems highly likely to foster still further changes.

Recall that following WWII most central banks were firmly under the control of their Treasuries. Further, most financial systems were highly regulated. This reflected the popular belief that central banks and bankers had made errors that contributed materially to the Great Depression. With time, however, these memories began to fade. Gradually the transformation to an analytical framework that assumed stabilizing behavior and market efficiency contributed to financial market regulation being rolled back. As well, central bankers were given increasing amounts of “independence”. Both of these were big changes.

On talking about central bank “independence”, however, it is important to be clear about what the word means. While there is actually a lot of dispute about this, I suggest that the scope of central banking (relations with Government) is defined by three components: mandate, powers and accountability. The “mandate” defines what objectives the central bank is trying to achieve. “Powers” refers to the use of central bank policy instruments. Being able to use those instruments free from political influence is what most people really mean when they talk about “independence”. Finally, accountability has both an ex ante (transparency) and an ex post (potential punishment) element to it.

I want to suggest that institutional arrangements concerning each aspect of this vary widely across central banks. For example, the source of the mandate can be the constitution, at one end of the spectrum, to being self selected by the central bank at the other. Moreover, views about each of these three components have also changed significantly over time. Again, by way of example, mandates were very fuzzy and multi dimensional in the post-war period but have tended to become sharper with time – often, but not always, in the direction of pursuing price stability more single mindedly.

By way of a further example, the exercise of accountability has also evolved. The old central bank philosophy (ex ante) was "never apologize and never explain". In effect, rely on the high priest to know what he or (much less often) she is doing. This obscurantism was subsequently replaced by a call for full transparency about what central banks were doing and their reasons why. This transformation also occurred, and I say this from personal recollections, without any serious debate about whether it was a good idea or not. In recent years, the pendulum has begun to move again, with some serious commentators suggesting that more clarity about the central banks intentions (forward guidance) might actually encourage destabilizing speculation in financial markets.

Where to from here? There were many developments during the crisis that lead to the conclusion that central bank "independence", as we knew it, is gone forever. Whether we like it or not, central banks are/will be drawn into the pursuit of financial stability. But without the previous simple mandate, it will be far harder to ensure ex post accountability. Further, central bank actions in the course of crisis management have had distributional implications. Finally, much more attention is being given to the distributional implications of monetary policy itself, not least the way in which very low interest rates redistribute income from creditors to debtors. Since distributional issues are archetypically political issues, I assert that the political framework for conducting monetary policy is almost sure to change again.

<u>The philosophical framework for conducting monetary policy</u>

Philosophy is thought to be intermediate between religion and science. Since most laymen see central bankers as high priests, and many central bankers see themselves as scientists, it is remarkable that the philosophical framework behind central banking has received so little attention.

Behind what central bankers do are basic but often unstated ontological assumptions. What is the essential nature of the economy; is it better viewed as a machine or as a forest? This leads us directly to epistemological issues. As I suggested in my introduction, does the answer we give to this first question logically imply limitations on what we can actually know about how the economy works? Closely related, "what" do central bankers actually believe and why? And how do they validate their current beliefs, or decide to change them?

As to "what" beliefs, central bankers share some beliefs but not others Shared beliefs would include the view that central bankers produced the "Great Moderation" and subsequently their policies prevented a repeat of the Great Depression. They also generally share the belief that the crisis itself was not the product of central banks' previous policies. These beliefs are all, of course, rather comforting. Since central bankers are also human, this comforting aspect may go at least part of the way to explain why central bankers hold them.

As to differences in beliefs between central banks, there are also many examples. However, in current circumstances I think the biggest difference in beliefs has to do with what constitutes the biggest risk going forward. European Central Banks, especially in central Europe, tend to believe that fiscal excess leading to hyperinflation is the biggest concern. North American central banks believe that deflation leading to Depression is the biggest worry. These beliefs arise from their respective defining historical moment. Sadly, both sides have ignored wider ranging historical studies that show both outcomes – deflation and inflation – are common following credit/monetary “boom-bust” cycles. Indeed there are even historical examples of outcomes flipping from deflation to very high inflation as tax challenged governments turned to their central banks for solace.

More broadly, I fear that central banks have not only learned too few lessons from economic history, but too few lessons from the history of economic thought. Further, research at central banks (as elsewhere) is rarely done to challenge the current belief system but to support it. In over 40 years in this business, I have yet to see a serious piece of work done by a young researcher that challenges the conventional wisdom of the central bank that he or she works for. As the recent IMF study, by their Independent Evaluation Office, of pre crisis IMF policy recommendations asserts, telling “truth to power” is extraordinarily difficult.

Looking forward in light of the crisis, I am doubtful that the belief system will change radically – that we will have a paradigm shift in central banking. Consider a simple reality. The policies followed since the crisis broke have essentially been "more of the same". They are based on the beliefs that monetary expansion will work to restore growth in aggregate demand, and that any side effects of such policies will be minimal.

Why "more of the same" policies that I believe contributed to the crisis in the first place? One reasonable answer is that central bankers do not agree with me. They downplay their own role because they can (rightly) attach some significant blame to others – greedy bankers, sleepy regulators, incompetent politicians etc. However, Daniel Kahneman raises another possibility. When confronted with truly shocking and unexpected events, people do not question their basic beliefs, but retreat deeper into them. Again, human nature may be an important factor, driving a wedge between belief and knowledge.

Practical Issues: Choosing Objectives and Dealing with Uncertainty

While less exalted than strategic or framework issues, central banks face a lot of practical or operational issues. These include the choice of a "final objective" and dealing with uncertainty in the conduct of monetary policy. In both realms we observe differences between central banks but, more importantly, enormous changes over time.

Choosing the objective for monetary policy

As I have mentioned, the objective in the 1960's was a low rate of unemployment. When that subsequently generated a high rate of inflation, the objective changed to stabilizing inflation. When that proved difficult and the costs of high inflation became more evident, the objective changed again to the pursuit of low inflation. More or less at the same time, the 1980's, views were also changing from a preference for "gradualism" to a preference for "cold turkey". Presumably, this too was subject to the influence of the rational expectations revolution.

Views hardened again during the 1990s as inflation targeting regimes gradually spread out from the original targeting countries, New Zealand and Canada, to many countries around the world. Curiously, however, three of the world's most important central banks (The Federal Reserve, the Bank of Japan and the ECB) never signed on formally to this last trend. As the Great Moderation lengthened, views about the merits of price stability hardened again. In effect, there seemed to be a subtle shift from price stability being "necessary" for good macroeconomic performance, to price stability being "sufficient" for good macroeconomic performance. In fact, this latter view had no support from history. There was no inflation prior to the Great Depression nor the Japanese Great Recession, nor the South East Asia crisis. Nevertheless, this view was held so strongly that it allowed warnings of impending problems, building up under the surface of price stability, to be totally ignored. Even actual financial crises (e.g. LTCM) could be dismissed as being only temporary "teething troubles" caused by new financial instruments.

Since the crisis, central banks have had to widen their set of objectives beyond price stability to financial stability and macroeconomic stability more generally. Historically, of course, such issues were always of concern to central banks, so these recent developments actually constitute a return to ”normality”. I have already noted that this broader mandate will compromise the “independence” of central banks. What I have not speculated upon is the character of the relationship between governments and central banks that should replace the old one.

One important issue will be the establishment of responsibility for the use of macro prudential instrument in the pursuit of financial stability. On the one hand, they could be set jointly with monetary policy to jointly achieve price stability and financial stability. On the other hand, some advocate the Tinbergen principle which says the two sets of instruments should be separately assigned to separate agencies with distinct targets. This is an important issue, but one on which the jury is still out.

Dealing with uncertainty.

What do you do when you know you don’t know? The reality is that the interest rate channel and the exchange rate channel of the transmission mechanism are increasingly seen as being inherently complicated. Moreover, each chain in the link is affected by changing structure and changing expectations. The latter complication (the prevalence of “animal spirits”) explains why Keynes was not very sympathetic to Tinbergen’s initial efforts at econometric modeling.

For many years, most central banks simply ignored the problem by assuming "certainty-equivalence" and constant structure. The Fed, for example, still tends to put great emphasis on the output gap in predicting inflation. This is the case in spite of the research by Orphanides and Van Norden which indicates that "real time" estimates of the output gap are highly unreliable. Other central banks were more inclined to hedge their bets. The ECB (and earlier the Bundesbank) had their second monetary pillar, though what it might be used to predict seems to be changing. Initially the emphasis was on the low frequency link between money and inflation, but increasing references are now made to the link between credit and deflation (via a "boom-bust" process). For its part, the Bank of Japan, at least prior to the arrival of Governor Kuroda, had its second "perspective". Essentially, this was a promise never to repeat the credit boom of the 1980's.

Looking forward in light of the crisis, we should first be asking the following question. Do we need a different model of how the economy works for post-crisis periods when, as Leijonhufvud put it, we are "outside the corridor of stability"? Put otherwise, how certain can we be that monetary policy in post crisis periods will succeed in stimulating growth in aggregate demand? Recall that Keynes himself repudiated this view in his intellectual journey from the Treatise on Money to the General Theory?

And how certain can we be that ultra-easy monetary policy will not have unexpected consequences of the sort suggested by theorists going back over a hundred years. At the end of the 18th century, Wicksell predicted that a positive gap between the "natural rate" and the "financial rate" of interest would generate inflation. Hayek in the

1920's worried about "malinvestments" in the real economy. Minsky in the 1960's extended the scope of concern by suggesting that stability would breed financial instability in a fiat money system. Koo, observing the Japanese Great Recession in the 1990's, added that unsustainable corporate debt could also be a problem, and widespread concerns about rising household debt soon followed. To simply deny all these risky possibilities strikes me as imprudent at the very least.

Conclusions

In light of the crisis, we should have been asking ourselves some difficult questions about strategy (the International Monetary System?), domestic monetary policy frameworks as well as more practical issues. When these issues are finally addressed, it will also be clear that there are no "totally right" answers. Conclusions will vary across countries and will have to change with time. As structures change, policy will have to change and this will in turn change structure in a never ending process.

Nevertheless, what I think we can still say today is that we should be more humble in assessing what monetary policy can do. Looking forward, this likely means achieving our objectives over longer time periods, and with less precision. Moreover, recognizing the inherent limitations of monetary policy, it should not be overburdened. This is not only a lesson for managing future crises, it applies to managing the current one. We currently face problems of insolvency and debt overhang rather than simple illiquidity. Governments should be playing a much bigger role in this than they are. Leaving it all to the central banks, with their inherently limited tool kit, is to raise the likelihood of a still greater crisis in the future.