COMMENT

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1 INTRODUCTION

I wish to begin with a crucial introductory point. According to all of the models commonly in use at central banks and international financial institutions, this crisis was not supposed to happen. Indeed, it could not happen. Modern macro models such as the New Classical, New Keynesian, and DSGE models rule out extended economic disequilibria by assumption. More traditional structural models rule out such outcomes inadvertently by paying too little (if any) attention to the factors now commonly believed to have both precipitated the crisis and to have contributed to its longevity. Here I am referring to the whole gamut of credit, leverage, stocks (especially of debt), and the gradual build-up (now unwinding) of "imbalances" in the real economy.

By "imbalances" I mean asset prices that rose to levels that were increasingly hard to explain in terms of fundamentals, as well as financial institutions that became exposed to a variety of risks that threatened their solvency. The dangers posed by these financial imbalances are now being addressed in the context of the broader search for "financial stability". However, other imbalances also built up, affecting the real side of the global economy. Household savings rates in English-speaking countries (and some others) fell to zero, and sometimes well below. Fixed investment ratios in China rose to over 50% of GDP, a level never seen before in market-based economies. And, as a by product of these domestic imbalances, global trade imbalances also rose to unprecedented levels. Finally, as supply responded to demand-side pressures, whole industries expanded beyond sustainable levels (construction, financial services, global distribution networks, etc.), implying a need for subsequent downsizing. These real-side imbalances are still not receiving the attention they deserve.

The crisis was triggered in the summer of 2007 by the recognition of problems in the financial sector, but could just as easily have started on the real side of the economy. Whatever the trigger, the fundamental point is that the imbalances on the real and financial sides interact in both the upswing ("boom") and the downswing ("bust") of the credit cycle. While some of the imbalances revealed by the crisis have subsequently been reduced, most of them still remain. This is the fundamental reason for doubting the robustness and sustainability of the recovery seen recently in the global economy.

Of course, the fact that commonly used models failed to foresee the crisis was only part of the broader analytical failure. If crises cannot happen, there is no need for pre-emptive action to prevent them. Nor is there any need for ex ante measures to improve crisis management (appropriate insolvency laws for both banks and other entities, Memoranda of Understanding between official bodies, adequate deposit insurance, burden-sharing agreements, etc.). And, of course,

without an understanding of the deep roots of the crisis, there was also a tendency for insolvency problems to be first misdiagnosed as liquidity problems, and for any positive economic indicators to be interpreted wrongly as the "green shoots" of a lasting recovery.

So we need a profound re-evaluation of how our modern economies work, and of the role of money and credit in such economies.[1] In effect, we need to reopen the Keynes-Hayek debate of the 1930s, which effectively pitted a one-period model (Keynes), which focused on how to get out of a deep slump, against a multi-period model (Hayek), which focused, quite differently, on the dynamics of how the economy got into such a terrible muddle in the first place. And I would add that attention to some of the insights of Minsky[2] (how stability breeds instability) and Koo[3] (on balance sheet recessions) would not go amiss either.

Evidently, such a re-evaluation could have profound implications for monetary strategy. However, just *how* profound, for any given central bank, would depend very much on what it believed before the crisis. I would contend that the beliefs of central banks actually differed significantly before the crisis arrived, and that these differences contributed at times (for example in the summer of 2008) to significant differences in policy stance.[4] While there are many reasons for these differences between central banks, history has certainly had an important role to play. Let me expand.

The Federal Reserve seems to have a "one pillar" strategy, which relies on the output gap to drive inflation. The insurance policy they commonly refer to is insurance against deflation. This reflects the fact that the Great Depression was historically the defining economic moment for the United States. In contrast, the European Central Bank (ECB) has a "two pillar" strategy (the gap pillar and the monetary pillar), and has traditionally been on the lookout for inflationary pressures. I think this reflects the fact that the defining historical moment for Europeans (the legacy of the Bundesbank) was the hyperinflation in central Europe in the 1920s. Finally, the Bank of Japan has a strategy based on "two perspectives". As with the other central banks, the first perspective relates prospective inflationary pressures to the output gap. However, the second perspective involves looking out for signs of "imbalances" and bubble-like behaviour leading eventually to a bust and deflation. It is in effect a pledge not to repeat the Japanese excesses of the 1980s, and is thus very different from a traditional interpretation of the second pillar of the ECB. Against the backdrop of these fundamental differences, it is very hard to see how the conduct of monetary policy can be described as a "science", as many (largely American) economists seem inclined to do.

My own belief is that excessive credit/monetary creation is at the heart of all the problems feared by these different central banks. Moreover, each of them is right,

1 For a fuller discussion of such issues see White (2010).
2 Minsky (1992).
3 Koo (2009).
4 For a fuller discussion, see White (forthcoming).

though they fear different things, since historically some episodes of excessive credit expansion have led to inflation while other episodes (via imbalances and eventual busts) have led to deflation. It is like a horse race, with the winner being revealed only at the end. These views about the importance of credit seem to be well supported by the historical analysis carried out by those such as Bordo and Filardo (2005), Reinhart and Rogoff (2009), Reinhart and Reinhart (2010), and Eichengreen and Mitchener (2003), as well as research carried out by the Bank for International Settlements (BIS)[5] and the International Monetary Fund (2008, 2009).

Let me now turn to the two papers I am going to discuss. One is by Rick Mishkin, who has had a long and close association with the Federal Reserve System, and the other is by staff members of the European Central Bank. Without questioning their objectivity, I must first note that both wind up strongly supporting the basic positions of their respective institutions. That said, both are excellent papers. The Mishkin paper is more wide-ranging, but the ECB paper is particularly insightful and innovative in dealing with the more limited number of issues it chose to address.

2 COMMENTS ON THE PAPER BY RICK MISHKIN

In important respects, Mishkin seems rather unrepentant. He states that "the case for the basic monetary policy strategy (flexible inflation targeting)... is still as strong as ever". In light of the magnitude and depth of the crisis, this seems, at first glance, astonishing. However, he then goes on almost immediately to say that we require "major rethinking regarding the details of the basic framework". Since the devil is always in the details, let me turn to some of his suggestions about possible changes to monetary policy strategy. Here I distinguish between lessons for the "leaning" phase (the upswing of the credit cycle) and lessons for the "cleaning" phase (the downswing of the credit cycle).

2.1 LESSONS FOR THE "LEANING" PHASE

Mishkin makes a number of points with which I agree. His description of how monetary policy can contribute to credit excesses via the "risk-taking channel" is something that my former colleague at the BIS, Claudio Borio, has been writing about for years.[6] I also agree that a clearly articulated and credible policy commitment to leaning against financial excesses could well steer behaviour in a stabilising direction.[7] After all, is that not what we believe happened after central banks became serious about resisting inflation?

I also agree that identifying credit bubbles is a lot easier than identifying irrational exuberance bubbles. I must add, however, that at the BIS our analysis of emerging problems was always couched in terms of credit rather than asset prices. To put it differently, we always felt that it was important to deal with

5 The BIS has published an immense amount of work on these general themes. For a careful look at one aspect of the historical record, see Borio and Filardo (2004).
6 See Borio and Zhu (2008).
7 As suggested in a previous paper. See White (2006).

the underlying causes of imbalances rather than focus on just one of their many symptoms. Indeed, the vigour with which this narrow asset-price theme was pursued before the crisis may have reflected a more sinister motivation. By creating a straw man, it would evidently be easier to undermine the arguments for the more fundamental rethink of the policy framework that we were suggesting.

I must, however, also disagree with Mishkin on a number of points. He refers (as did Chairman Greenspan) to what we have just gone through as "a once-in-a-century credit tsunami". And he adds that that, in light of this rare event, "The case for leaning... has therefore become much stronger". This is simply not true. The historical analysis to which I referred earlier shows that credit-driven bubbles occur with very high frequency and cause enormous damage – whether the result is rising inflation or deflation or just general stagnation. The fundamental policy error in the United States derived, then, not only from a failure to learn from the history of economic thought, but also a failure to take the right lessons from economic history.

On one other matter concerning policy in the upswing, I am not sure whether I disagree with Mishkin or not, since he seems to say two contradictory things. On the one hand, he argues against monetary policy playing a role in resisting credit excesses, and potentially leading to financial instability, since "one instrument is being asked to do two jobs". On the other hand, he stresses, that the distinction between price stability and financial stability is not only overdrawn, but wrong. I agree with this latter point. The underlying problem is a macro problem: excessive credit, leading to excessive real growth, and potentially to both inflation and imbalances, each of which could lead to financial instability. Leaning against one is to lean against them all, even if this obviously implies more "fuzziness" in achieving all three objectives, given only one instrument. Mishkin is also right in suggesting that the responsibility for such macro policy decisions should be in the hands of the central bank, and that macro-prudential policies (more instruments) must be very important complements to the use of monetary policy.

Finally, with respect to "leaning", I think Mishkin's analysis misses a crucial point in that it justifies leaning against financial imbalances solely in terms of avoiding financial instability. As noted above, real-side imbalances are equally costly to the economy. Indeed, it is the interaction of real-side imbalances with financial imbalances that commonly cause such huge losses in the "bust" phase of credit cycles. As households and corporations cut back spending in the face of accumulated debt, we are confronted with what Keynes called the "paradox of saving". Similarly, as exposed lenders cut back, we are confronted with what Fisher called the "paradox of deleverage". Interacting with each other, these constitute powerful forces pushing the economy away from full employment equilibrium.

The influence of real-side imbalances are also attested to by Reinhart and Rogoff (2009). They note that over half of the crises they looked at began on the real side of the economy, with the financial sector being damaged only subsequently as

recession affected the capacity of borrowers to repay. They also note numerous cases in history where the real economy suffered badly even though the financial sector seemed to be in a relatively good state of health. The experience of my home country, Canada, during the Great Depression is a good example of this phenomenon.

2.2 LESSONS FOR THE "CLEANING" PHASE

In spite of his more positive comments on "leaning", Mishkin still seems to believe that "cleaning" is a better alternative – if done properly. To this end, he suggests a pre-emptive reduction in interest rates when the probability of a financial crisis rises above some threshold. I think this would not work for at least four reasons.

First, if the imbalances are building up on the real side of the economy then looking primarily at financial indicators would be looking in the wrong place. Second, during credit booms, the financial sector generally looks in fantastic shape right up until the "Minsky moment", when everything changes. This means that identifying the appropriate time to ease would not be easy. Third, lowering interest rates at the height of a boom would only encourage more risk-seeking behaviour. And fourth, Mishkin's "risk management" seems suspiciously like Chairman Greenspan's "risk management paradigm", which I believe contributed significantly to our current problems in the first place.

On a similar note, Mishkin also fails to mention an important fact. Whatever its possible merits in encouraging near-term increases in aggregate demand, there are also many downsides to aggressive monetary easing in the bust phase of a credit bubble. One possible consequence is that it will just encourage another unsustainable bubble. Indeed, as we speak, fears are increasing over asset price increases globally (with the exception of house prices in some important countries) and over massive capital flows to emerging markets. Another concern is that low interest rates encourage "zombie" companies and "zombie" banks that reduce aggregate productivity growth in turn. Low savings rates and misallocated capital can reduce potential growth even further. While I have no time here to go into the details, let me say for the record that I believe such forces have contributed significantly to Japan's secular stagnation. Put differently, these issues are not so unimportant that they can be safely ignored by policy-makers.

Finally, Mishkin provides some comments on inflation targets and price-level targets going forward. On the former, I agree with him that Blanchard's recent suggestion (a throwaway comment, to be fair) – that we should raise our inflation targets to provide more room for interest rates to fall in downturns – is not acceptable.[8] Not only does higher inflation have significant costs, but also Blanchard's suggestion again focuses on making it easier to clean up after a crisis rather than trying to avoid the problem in the first place. As for price-level targets, Mishkin seems to like them because they also allow more stimulus in downturns. However, it is instructive to look at the period 2003-07, when

8 Blanchard *et al*. (2010).

inflation was constantly registering below both target and forecast. For those (like me) who think monetary policy was too easy during that period, a price-level target would have made things even worse.

3 THE PAPER BY FAHR, MOTTO, ROSTAGNO, SMETS AND TRISTANI

This brings me to the ECB paper. Unlike Mishkin's analysis, which focuses almost totally on aggregate demand, this paper gives much more balanced attention to demand-side and supply-side issues. While my introductory comments indicate that I am not the greatest fan of DSGE modelling, I found the authors' decomposition of shocks extremely useful. Moreover, their analysis of the implications for policy was both interesting and important.

I particularly welcome the attention to supply-side issues and how important supply shocks can complicate the strategy of monetary policy. For example, positive supply shocks push down prices, even as they increase demand. With time, however, the latter phenomenon is likely to get out of hand (given monetary accommodation), and this could potentially push prices back up above desired levels. This is one rationale for the ECB looking past the immediate effect on prices to the potential longer-term effects.

The observation that the source of a shock matters for policy is not only interesting, but also important. While the ECB paper is based on the use of a closed-economy model, it still throws light on a bigger problem. Globalisation led for a decade or more to significant downside pressure on world prices. The reaction in most central banks was to follow an easier than normal monetary policy. In a way this is curious. Given the rise in potential growth, and thus in the longer-term natural rate of interest, the very opposite reaction would seem to have been called for. Indeed, there is an extensive body of pre-war literature[9] that argues for inflation targets to be reduced in response to such productivity increases. In a nutshell, if prices "want to go down" and monetary policy refuses to let them, then monetary expansion creates the imbalances that lead to recession or worse. This was Hayek's particular insight when (almost alone) he predicted the Great Depression in the United States.[10]

Another interesting question raised in this paper has to do with communications policy. It comes up in the discussion of the medium-term orientation of the ECB. It is also raised in the discussion of the use of non-standard instruments, where the authors repeatedly note that the ECB (unlike the Federal Reserve) never offers "pre-commitments" concerning future changes in the policy rate. The authors apparently agree (not surprisingly in their assumed world of rational

9 This body of literature was well summarised by Selgin (1997). For a more recent analysis, see Beckworth (2008).

10 This is well described in Haberler (1986). While many believed in the 1920s that the stability of US prices meant the business cycle had been abolished, "Hayek demurred; he argued that under the smooth surface of stable prices basic maladjustments were bound to develop that would eventually lead to a severe crisis".

expectations) that pre-commitment can be a very powerful monetary instrument. However, once one allows for supply-side shocks, that same power can lead to very bad outcomes as well as good ones. I found their counterfactual simulations about the use of such policies by the ECB in the late 1990s very convincing.

The paper also contains an interesting discussion of the Federal Reserve's communication strategy when it was raising policy rates in a "measured" way between 2003 and 2007. Apparently, it was worried that a more aggressive tightening might tip the economy into deflation, even though it was also aware that much of the downside risk to prices was arising from supply-side shocks. This in itself might lead one to question the appropriateness of the Federal Reserve's policy, but it is possible there was another important downside. With the yield from maturity transformation constantly declining, but with clear "communication" implying an even greater reduction in the risks associated with the carry, there was a strong incentive to increase leverage. This might well have contributed to the severity of the subsequent financial meltdown.

The role of the second monetary pillar is illustrated in the paper through simulations using a Taylor type rule, augmented with a "monetary" variable (deviations from trend of credit to the non-financial sector). It is demonstrated that such a rule leads to better economic performance than a rule without such a variable, and that it also dominates a standard Taylor rule premised on a more aggressive response to deviations of inflation from target.

However, the substitution in their work of "credit" for "money" raises a truly fundamental question. What is the second pillar for? Is it just another indicator of latent inflationary pressures (money growth predicts inflation at low frequencies), or is it rather an indicator of the dangers of a boom-bust cycle (credit growth leading to "imbalances") and potential deflation? And does the answer to this question have implications for the conduct of monetary policy, or not?

I will touch only briefly on the issue of the ECB's approach to the use of non-standard instruments in responding to the crisis. The single most important point that emerges is that the ECB's approach differs from that of the Federal Reserve in a number of ways. First, the authors contend that non-standard instruments were a complement to standard monetary policy for the ECB, but were used by the Federal Reserve as a substitute only after standard policy had reached its limits. Second, the ECB lent only to the banking sector while the Federal Reserve purchased the liabilities of non-financial corporations. Third, to facilitate an "exit" from the non-standard measures, the ECB conducted only repos whereas the Federal Reserve made outright purchases. Fourth, as already noted, the ECB made no pre-commitments on policy rates, whereas the Federal Reserve did.

I do not feel qualified to comment on the merits of each institution's position. I would only note that the evident differences between them indicate that they were certainly not guided by the "science" of monetary policy. Of course, this cannot be considered a shortcoming, for the ECB at least, since they did not consider the use of these non-standard instruments to be an instrument of monetary policy in the first place.

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