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# The Short and Long Term Effects of Ultra Easy Monetary Policy<sup>2</sup>

*In this paper, an attempt is made to evaluate the desirability of “ultra easy” monetary policies; namely, keeping policy rates near zero and engaging in other non-traditional policies. Since the onset of the crisis in 2007, a number of major central banks from the advanced market economies have been experimenting in this regard. Such an evaluation requires weighing up the balance of the desirable short run effects and the undesirable longer run effects of these policies – the latter sometimes referred to as the unintended consequences. The conclusion of this evaluation is that there are serious limits to the effectiveness of such policies.*

*One reason is that monetary stimulus, operating through traditional (“flow”) channels, might now be less effective in stimulating aggregate demand than previously. The evident weakness of financial systems, post crisis, has clearly contributed to this outcome. Further, cumulative (“stock”) effects also provide negative feedback mechanisms that weaken both supply and demand. In effect, “ultra easy” monetary policies aggravate economic imbalances built up over previous decades by the “unnaturally easy” monetary policies followed at a global level; namely, policies which kept the financial rate of interest well below the natural rate of interest for many years. This analytical framework was first suggested by Wicksel and then later extended by others.*

*It is also the case that “ultra easy” monetary policies now threaten the health of financial institutions and the functioning of financial markets, threaten the “independence” of central banks, encourage imprudent behavior on the part of governments, and worsen income distribution as well. None of these longer term effects could be remotely described as desirable.*

*While monetary policy is not “a free lunch”, it does buy time. Governments must use this time to set the policy levers they control to support strong, sustainable and balanced growth at the global level. We need more international cooperation to encourage creditor countries to expand demand, and more public and private investment. This would please Keynes. We also need more explicit debt forgiveness, the associated recapitalization of financial institutions, and more structural reforms to increase growth potential. This would please Hayek. We need not live in an “either-or” world.*

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*“This long run is a misleading guide to current affairs. In the long run we are all dead. Economists set themselves too easy, too useless a task if in tempestuous seasons they can only tell us that when the storm is long past the sea is flat again.”*

*(John Maynard Keynes)*

*“No very deep knowledge of economics is usually needed for grasping the immediate effects of a measure; but the task of economics is to foretell the remoter effects, and so to allow us to avoid such acts as attempt to remedy a present ill by sowing the seeds of a much greater ill for the future.”*

*(Ludwig von Mises)*

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## 1 Introduction

The central banks of the advanced market economies (AMEs)<sup>3</sup> have embarked upon one of the greatest economic experiments of all time – ultra easy monetary policy. In the aftermath of the economic and financial crisis which began in the summer of 2007, they lowered policy rates effectively to the zero lower bound (ZLB). In addition, they took various actions which not only



caused their balance sheets to swell enormously, but also increased the riskiness of the assets they chose to purchase. Their actions also had the effect of putting downward pressure on their exchange rates against the currencies of Emerging Market Economies (EMEs). Since virtually all EMEs tended to resist this pressure,<sup>4</sup> their foreign exchange reserves rose to record levels, helping to lower long term

rates in AMEs as well. Moreover, domestic monetary conditions in the EMEs were eased as well. The size and global scope of these discretionary policies makes them historically unprecedented; thus “ultra easy”. Even during the Great Depression of the 1930s, policy rates and longer term rates in the most affected countries (like the USA) were never reduced to such low levels.<sup>5</sup>

In the immediate aftermath of the bankruptcy of Lehman Brothers in September 2008, the exceptional measures introduced by the central banks of major AMEs were rightly and successfully directed to restoring financial stability. Interbank markets in particular had dried up, and there were serious concerns about a financial implosion that could have had important implications for the real economy. Subsequently, however, as the financial system seemed to stabilize, the justification for central bank easing became more firmly rooted in the belief that such policies were required to restore aggregate demand<sup>6</sup> after the sharp economic downturn of 2009. In part, this was a response to the prevailing orthodoxy that monetary policy in the 1930s had not been easy enough and that this error had contributed materially to the severity of the Great Depression in the United States.<sup>7</sup> However, it was also due to the growing reluctance to use more fiscal stimulus to support demand, given growing market concerns about the extent to which sovereign debt had built up during the economic downturn. The fact

<sup>3</sup> It is important to note that, in spite of many similarities in the policies of various AMEs central banks, there have also been important differences (White, 2011).

<sup>4</sup> This phenomenon was not in fact confined to EMEs. A number of smaller AMEs, like Switzerland, have also resisted upward pressure on their exchange rates.

<sup>5</sup> See Bank for International Settlements (2012) Graph IV.8.

<sup>6</sup> See in particular Bernanke (2010). The reasons for conducting QE2 seem to differ substantially from the reasons for conducting QE1.

<sup>7</sup> Bernanke (2002).

that monetary policy was increasingly seen as the “only game in town” implied that central banks in some AMEs intensified their easing even as the economic recovery seemed to strengthen through 2010 and early 2011. Subsequent fears about a further economic downturn, reopening the issue of potential financial instability,<sup>8</sup> gave further impetus to ultra easy monetary policy.

From a Keynesian perspective, based essentially on a one period model of the determinants of aggregate demand, it seemed clearly appropriate to try to support the level of spending. After the recession of 2009, the economies of the AMEs seemed to be operating well below potential, and inflationary pressures remained subdued. Indeed, various authors used plausible versions of the Taylor rule to assert that the real policy rate required to reestablish a full employment equilibrium (and prevent deflation) was significantly negative. Such findings were used to justify the use of non standard monetary measures when nominal policy rates hit the ZLB.

There is, however, an alternative perspective that focuses on how such policies can, over longer time periods, also have less desirable effects. This strand of thought also goes back to the pre-war period, when many business

cycle theorists<sup>9</sup> focused on the cumulative effects of bank-created-credit on the supply side of the economy. In particular, the Austrian school of thought, spearheaded by von Mises and Hayek, warned that credit driven expansions would eventually lead to a costly misallocation of real resources (“malinvestments”) that would end in crisis. Based on his experience during the Japanese crisis of the 1990s, Koo (2003) pointed out that an overhang of corporate investment and corporate debt could also lead to the same result (a “balance sheet recession”).

Researchers at the Bank for International Settlements (BIS) have suggested that a much broader spectrum of credit driven “imbalances”<sup>10</sup>, financial as well as real, could potentially lead to boom-bust processes that might threaten both price stability and financial stability.<sup>11</sup> This BIS way of thinking about economic and financial crises, treating them as systemic breakdowns that could be triggered anywhere in a system overstretched by credit, also has much in common with insights provided by interdisciplinary work on complex adaptive systems. This work indicates that such systems, built up as a result of cumulative processes, can have highly unpredictable dynamics and can demonstrate signifi-

<sup>8</sup> *The catalyst for these fears was a sharp slowdown in Europe. This was driven by concerns about sovereign debt in a number of countries in the euro area, and associated concerns about the solvency of banks that had become over exposed to both private and sovereign borrowers. Also of importance were fears of the “fiscal cliff” in the USA. This involved existing legislation which, unless revised, would cut the US deficit by about 4% of GDP beginning in January 2013. As discussed below, this prospect had a chilling effect on corporate investment and hiring well before that date.*

<sup>9</sup> *For an overview, see Haberler (1939). Laidler (1999) has a particularly enlightening chapter on Austrian theory, and the main differences between the Austrians and Keynesians. He notes in concluding (p. 49): “It would be difficult, in the whole history of economic thought, to find coexisting two bodies of doctrine which so grossly contradict one another.”*

<sup>10</sup> *An “imbalance” is defined roughly as a “sustained and substantial deviation from historical norms”, for which there is no compelling analytical explanation.*

<sup>11</sup> *See in particular the many works authored or co-authored by Claudio Borio, including Borio and White (2003). See also White (2006a). The origins of this way of thinking go back to the work of Alexander Lamfalussy and possibly even before. See Clement (2010) on the origins of the word “macroprudential”, whose first recorded use at the BIS was in 1979.*

cant non linearities.<sup>12</sup> The insights of George Soros, reflecting decades of active market participation, are of a similar nature.<sup>13</sup>

As a testimony to this complexity, it has been suggested that the threat to price stability could also manifest itself in various ways. Leijonhufvud (2012) contends that the end results of such credit driven processes could be either hyperinflation or deflation,<sup>14</sup> with the outcome being essentially indeterminate prior to its realization. Indeed, Reinhart and Rogoff (2009) and Bernholz (2006) indicate that there are ample historical precedents for both possible outcomes.<sup>15</sup> As to the likelihood that credit driven processes will eventually lead to financial instability, Reinhart and Rogoff (2009) note that this is a common outcome, though they also note that the process more commonly begins with a recession feeding back on the financial system than the other way around.<sup>16</sup> Reinhart and Reinhart (2010) document the severity and durability of downturns characterized by financial crisis, implying that this complication would seem more likely to shift the balance of macroeconomic outcomes towards deflation rather than inflation.

In this paper, an attempt is made to evaluate the desirability of ultra easy monetary policy by weighing up the balance of the desirable short run effects and the undesirable longer run effects. In chapter 2, it is suggested that there are grounds to believe that ultra easy monetary policy operating through traditional (flow) channels might now be less effective in stimulating aggregate demand than is commonly asserted. In chapter 3, it is further contended that cumulative (stock) effects provide negative feedback mechanisms that also weaken growth over time. In effect, ultra easy monetary policy aggravates the “imbalances” built up over previous decades by “unnaturally easy” monetary policies. By “unnatural” is meant global policies which kept the financial rate of interest well below the natural rate of interest. This analytical framework was first suggested by Wicksel, and then extended in different ways by a variety of economic theorists. In the face of accumulating stock effects, not least the build-up of household debt, stimulative policies that have worked in the past eventually lose their effectiveness.

It is argued in chapter 3 that ultra easy monetary policies also threaten

<sup>12</sup> *There is a long history (although never mainstream) of treating the economy as a complex, adaptive system. It goes back to Veblen and even before. However, this approach received significant impetus with the founding of the Santa Fe Institute in the early 1990s. See Waldrop (1992). For some recent applications of this type of thinking see Beinhocker (2006) and Haldane (2012). From this perspective, an economy shares certain dynamic characteristics with other complex systems. Buchanan (2002) suggests the following. First, crises occur on a regular basis in complex systems. They also conform to a Power Law linking the frequency of crises to the inverse of their magnitude. Second, predicting the timing of individual crises is impossible. Third, there is no relationship between the size of the triggering event and the magnitude of the subsequent crisis. This way of thinking helps explain why “the Great Moderation” could have been followed by such great turbulence, and why major economic crises have generally emerged suddenly and with no clear warning.*

<sup>13</sup> *Soros has written prolifically on these themes over many years. For a recent summary of his views, see Soros (2010).*

<sup>14</sup> *In earlier publications, Leijonhufvud referred to the “corridor of stability” in macroeconomies. Outside this corridor, he suggests that forces prevail which encourage an ever widening divergence from equilibrium. See also White (2008).*

<sup>15</sup> *This helps explain the coexistence today of two schools of thought among investors about future price developments.*

<sup>16</sup> *See Reinhart and Rogoff (2009 p. 145). “Severe financial crises rarely occur in isolation. Rather than being the trigger of recession, they are more often an amplification mechanism.”*

the health of financial institutions and the functioning of financial markets, which are increasingly intertwined. This provides another negative feedback loop to threaten growth. Further, such policies threaten the “independence” of central banks, and can encourage imprudent behavior on the part of governments. In effect, ultra easy monetary policies (and indeed unnaturally easy policies) lead to moral hazard on a grand scale.<sup>17</sup> Further, “exit” from ultra easy policies will become extremely difficult. Finally, ultra easy monetary policy also has distributional effects, favoring debtors over creditors and the senior management of banks in particular. None of these longer term effects could be remotely described as desirable.

The force of these arguments might seem to lead to the conclusion that continuing with ultra easy monetary policy is a thoroughly bad idea. However, an effective counter argument is that such policies have averted near term economic disaster. They have “bought time” to pursue other policies that could have more desirable outcomes. Among these policies might be suggested<sup>18</sup> more international policy coordination and higher fixed investment (both public and private) in AMEs. These policies would contribute to stronger aggregate demand at the global level. This would please Keynes. As well, explicit debt reduction, accompanied by structural reforms to redress other “imbalances” and increase potential growth, would make remaining debts more easily serviceable. This

would please Hayek. Indeed, it could be suggested that a combination of all these policies must be vigorously pursued if we are to have any hope of achieving the “strong, sustained and balanced growth” desired by the G-20. We do not live in an “either-or” world.

The danger remains, of course, that ultra easy monetary policy will be wrongly judged as being sufficient to achieve these ends. In that case, the “bought time” would in fact have been wasted.<sup>19</sup> In this case, the arguments presented in this paper imply that monetary policy must eventually be tightened, regardless of the current state of the economy. The logic is that the near term expected benefits of ultra easy monetary policies will eventually become outweighed by the longer term



expected costs. Undoubtedly tightening in such circumstances would be very painful. However, and axiomatically, the pain would be less than the alternative of not tightening. John Kenneth Galbraith touched upon a similar practical conundrum some years ago

<sup>17</sup> This is discussed further in White (2004).

<sup>18</sup> White (2012b).

<sup>19</sup> Shirakawa, previously Governor of the Bank of Japan, has made this argument particularly forcefully. See Shirakawa (2012a and 2012b). It also resonates strongly in both Europe and the United States. Their respective central bank heads have repeatedly called on governments to take the necessary measures to deal with fiscal and other problems that are ultimately government responsibilities. See also Issing (2012, p. 3) and Fisher (2012). Both have stressed repeatedly that there are clear limits to what central banks can do.



when he said:<sup>20</sup> “Politics is not the art of the possible. It is choosing between the unpalatable and the disastrous”. This might well be where the central banks of the AMEs are now headed, absent the vigorous pursuit by governments of the alternative policies suggested above.



## 2 The Shorter Run Effects of Ultra Easy Monetary Policy

Will ultra easy monetary policies stimulate aggregate demand? While stimulative monetary policies are commonly referred to as “Keynesian”, it is important to note that Keynes himself was not convinced of the effectiveness of easy money in restoring real growth in the face of a Deep Slump. This is one of the principal insights of the General Theory and marks a significant change from the views Keynes expressed in the *Treatise on Money*.<sup>21</sup> In the *Treatise*, Keynes had called for monetary authorities to take “extraordinary” and “unorthodox” monetary policies to deal with the slump in the UK economy. In the *General Theory*, however, Keynes suggested relying much more on fiscal policy.

In current circumstances, two questions must be addressed. First, will ultra easy monetary conditions be effectively transmitted to the real economy? Second, assuming the answer to the first question is yes, will private sector spending respond in such a way as to stimulate the real economy and reduce unemployment? It is suggested in this paper that the answer to both questions is no.

### 2.1 Ultra Easy Monetary Policy and the Transmission Mechanism

When the crisis first started in the summer of 2007 the response of AMEs’ central banks was quite diverse. Some, like the ECB, remained focused on resisting inflation which was rising under the influence of higher prices for food and energy. Others, like the Federal Reserve, lowered policy rates swiftly and by unprecedented amounts. However, by the end of 2008, against the backdrop of the failure of Lehman Brothers and declining inflation, virtually all AMEs’ central banks were in easing mode and policy rates were reduced virtually to zero. This response showed clearly the capacity of central banks to act. At the same time, having lowered policy rates to or near the ZLB, these actions also implied a serious limitation on the further use of traditional monetary policy instruments. Further, as time wore on, doubts began to emerge about the effectiveness of some of the traditional channels of transmission of monetary policy.

An important source of concern was whether lower policy rates would be effectively transmitted along the yield curve to longer maturities. Due to the potentially interacting effects of

<sup>20</sup> Galbraith (1993).

<sup>21</sup> Kregel (2011, p. 1), contends that “The unorthodox policies that Keynes recommended are a nearly perfect description” of the ultra easy monetary policies followed in Japan, and more recently in other countries.

rising term and credit spreads, long rates might fall less than normally (or indeed might even rise) in response to lower policy rates. This phenomenon has already been witnessed in a number of peripheral countries in the euro area. After years of declining long rates driven by “convergence trades”, prospects of continuing slow growth (or even recession) in these countries raised concerns about the continued capacity of their governments to service rising debt levels. The European Central Bank took various steps to support the prices of sovereign bonds in the various countries affected, but these measures have not thus far proved wholly successful.<sup>22</sup>

In contrast, for sovereigns deemed not to have counterparty risk, there has been no evidence of such problems. Indeed, long term sovereign rates in the USA, Germany, Japan and the UK followed policy rates down, and by mid-2013 were at unprecedented low levels. However, there can be no guarantee that this state of affairs will continue. One disquieting fact is that these sovereign long rates have been trending down, in both nominal and real terms, for almost a decade and there is no agreement as to why this has occurred.<sup>23</sup> Many commentators have

thus raised the possibility of a bond market bubble that will inevitably burst.<sup>24</sup> Further, long term sovereign rates in favored countries could yet rise due to growing counterparty fears. In all the large countries noted above, the required swing in the primary balance needed just to stabilize debt to GNE ratios (at high levels), is very large.<sup>25</sup> Such massive reductions in government deficits could be hard to achieve in practice. In the USA and Japan, in particular, the absence of political will to confront evident problems has already led to downgrades by rating agencies.<sup>26</sup>

As for private sector counterparty spreads, mortgage rates in a number of countries have not followed policy rates down to the normal extent. In the United States in particular, as the Fed Funds rate fell sharply from 2008 onwards, the 30 year FNMA rate declined much less markedly.<sup>27</sup> In part, widening mortgage spreads reflect increased concentration in the mortgage granting business since the crisis began, and also increased costs due to regulation. However, it also reflects the global loss of trust in financial institutions, which has led to higher wholesale funding costs. In addition, costs of funds have risen in many countries due to the failure of deposit rates to fully reflect declines in

<sup>22</sup> The ECB directly purchased such bonds in 2010 and 2011 under its SMP program. Subsequently, it extended LTRO facilities, with some of the funds provided being used by banks to purchase bonds issued by their national sovereigns. In mid 2012 President Draghi of the ECB promised to “do whatever it takes” to ensure peripheral sovereigns would be able to service their debts and to eliminate fears of a breakup of the euro area. This had a significant calming effect on markets although there are reasons to believe earlier concerns could still reemerge.

<sup>23</sup> For a fuller analysis of the potential contributing factors, see Turner (2011).

<sup>24</sup> Perhaps the best known market participant to express this view was Bill Gross of Pimco, though he has subsequently changed his mind.

<sup>25</sup> For calculations indicating how large the needed swing might be, see Cecchetti et al. (2010). Their calculations indicate the primary surplus must swing by more than 10 percentage points of GDP in the United Kingdom, Japan, and the United States. Generally speaking, the adjustments required in large continental European economies are smaller.

<sup>26</sup> The ratings downgrade of the USA was not due to any change in the objective economic circumstances. Rather, it reflected a political assessment that a dysfunctional Congress was increasingly unlikely to make the compromises necessary to achieve a meaningful reduction of the US deficit.

<sup>27</sup> Moreover, the average effective rate on outstanding US mortgages fell even less; homeowners with negative effective equity were unable to refinance their mortgages at lower rates, as in earlier cycles.



policy rates.<sup>28</sup> A fuller discussion of the effects of low interest rates on the financial industry is reserved for later.

Spreads for corporate issues have also fallen less than might normally have been expected, even if the absolute decline has been very substantial. Nevertheless, these spreads could rise again if the economy were to weaken or even if economic uncertainties were to continue. Paradoxically, a rise in corporate spreads might even be more likely should governments pursue credible plans for fiscal tightening.<sup>29</sup> These plans might well involve tax increases and spending cuts that could have material implications for both forward earnings and companies net worth. This could conceivably increase risk premia on corporate bonds.

A further concern is that the reductions in real rates seen to date, associated with lower nominal borrowing rates and seemingly stable inflationary expectations, might at some point be offset by falling inflationary expectations. In the limit, expectations of deflation could not be ruled out. This in fact was an important part of the debt/deflation process first described by Irving Fisher in 1936. The conventional counterargument is that such tendencies can be offset by articulation of explicit inflation targets to stabilize infla-

tionary expectations. Even more powerful, a central bank could commit to a price level target, implying that any price declines would have subsequently to be offset by price increases.<sup>30</sup>

However, there are at least two difficulties with such targeting proposals. The first has to do with making the target credible when the monetary authorities' room for maneuver has already been constrained<sup>31</sup> by the ZLB problem. The second objection is even more fundamental; namely, the possibility that inflationary expectations are not based primarily on central banker's statements of good intent. Historical performance concerning inflation, changing perceptions about the central banks capacity and willingness to act, and other considerations could all play a role. The empirical evidence on this issue is not compelling in either direction.<sup>32</sup>

Lower interest rates are not the only channel through which monetary conditions in AMEs might be eased further. Whether via lower interest rates or some other central bank actions, reflationary forces could be imparted to the real economy through nominal exchange rate depreciation<sup>33</sup> and the resulting increase in competitiveness.<sup>34</sup> However, an important problem with this proposed solution is

<sup>28</sup> On this general question of the increased cost of financial intermediation, see Lowe (2012).

<sup>29</sup> See Dugger (2011). Dugger introduces the concept of Fiscal Adjustment Cost (FAC) discounting. He contends that companies are already assessing the effects of fiscal constraint on their own balance sheets and earnings. In effect "they begin to treat long term fiscal shortfalls as present value of off balance sheet (corporate) liabilities". This is a variant of the argument for Ricardian Equivalence.

<sup>30</sup> This is very similar to the process that worked under the gold standard. Falling prices were expected to reverse, thus lowering the ex ante real interest rate and encouraging prices to rise.

<sup>31</sup> For an elegant description of this problem see Yamaguchi (1999). Prior to the departure of Governor Shirakawa, the Bank of Japan refused to set a "target" for inflation, but rather espoused a less ambitious "goal"

<sup>32</sup> See Galati and Melick (2004). Also Galati, Heemeijer and Moessner (2011) which provides a survey of recent theory and the available empirical evidence.

<sup>33</sup> Svenson (2003).

<sup>34</sup> How long nominal depreciation results in a real depreciation is another highly debated issue. Inflation would presumably be less of a problem in countries with high levels of excess capacity. Experience of depreciation in Latin American countries over decades indicates this need not always be the case.

that it works best for a single country. In contrast, virtually all the AMEs are near the ZLB and desirous of finding other channels to stimulate the real economy. Evidently, this still leaves the possibility of a broader nominal depreciation of the currencies of AMEs vis a vis the currencies of EMEs. Indeed, given the trade surpluses of many EMEs (not least oil producers), and also the influence of the Balassa-Samuelson effect, a real appreciation of their currencies might be thought inevitable.

The problem rests with the unwillingness of many EMEs to accept nominal exchange rate appreciation; the so called “fear of floating”. To this end, they engaged over many years in large scale foreign exchange intervention and easier domestic monetary policies than would otherwise have been the case. In this sense, they contributed materially to the “unnaturally easy” monetary policies observed at the global level. After the crisis, and the adoption of ultra easy monetary policies in the AMEs, the rhetoric concerning “currency wars” sharpened considerably, and a number of countries turned for a time to capital controls.<sup>35</sup> The principal concern about these trends in EMEs is that they might lead to a more inflationary domestic outcome<sup>36</sup> and/or the same kinds of “imbalances” seen in the AMEs. There are already clear signs of such contagion,<sup>37</sup> with unwelcome developments in both the real and financial sectors. China is a focus of particular concern,<sup>38</sup> even though they have recently shown a greater willingness to allow the renminbi to rise on an effective basis.

Another channel through which ultra easy monetary policy is said to work is through higher prices for assets, in particular houses and equities. In effect, higher prices are said to add to wealth and this in turn spurs consumption. Before turning (below) to the latter link in this chain of causation, consider the former one. In those countries in which the crisis raised concern about the health of the banking system (e.g. USA, UK, Ireland, Greece, Spain) house prices began to decline sharply early in the crisis. Lower policy rates were not sufficient to reverse this trend. As for equity prices, stock indices in the AMEs did recovery substantially after policy easing began. However, it is also notable that these increases began to moderate in the summer of 2010 and again in the middle



of 2011. In each case, the announcement of some “non standard” policy measure then caused stock prices to rise once again. More broadly, however, the very fact that a number of central banks felt the need to have recourse to such non standard measures indi-

<sup>35</sup> Interestingly, the IMF now seems more willing than hitherto to accept both large scale intervention in foreign exchange markets and capital controls. See Ostry et al. (2010).

<sup>36</sup> Recent efforts in China to raise domestic wages in order to spur domestic consumption work in the same direction.

<sup>37</sup> See Hoffman (2012) and Brereton-Fukui (2012).

<sup>38</sup> Chancellor and Monnelly (2013).

cates that standard measures had failed to produce the stimulative effect desired. The durability of “real” gains supported by the expansion of “nominal” instruments also seems highly questionable.

An evaluation is also needed of the effectiveness of the many “non standard” monetary policy measures that



have been taken by central banks in large AMEs, pursuant to reaching the ZLB.<sup>39</sup> The highly experimental nature of these measures is attested to by various differences observed in what different central banks have actually done. As described by Fahr et al. (2011) there are important differences between the practices of the Fed and the ECB.

Perhaps most important, the Fed seems to have treated its “non standard” measures as a substitute for standard monetary policy at the ZLB. In contrast, the ECB treats them as measures to restore market functioning so that the normal channels of the transmission

mechanism policy can work properly. Second, while the Fed made increasingly firm pre commitments (though still conditional) to keep the policy rate low for an extended period, the ECB consciously made no such pre commitment, until abruptly (and experimentally) changing its policy in mid 2013. Third, whereas the Fed has purchased the liabilities of non financial corporations as well as those of Treasury and Federal agencies, the ECB has lent exclusively to banks and sovereigns. Fourth, while the ECB conducted only repos, in order to facilitate “exit” from non standard measures, the Fed made outright purchases.

Many of the non standard measures taken to date are broadly similar to those undertaken earlier by the Bank of Japan. It is instructive therefore that, prior to the introduction of “Abenomics” in late 2012, the Japanese authorities remained highly skeptical of their effectiveness<sup>40</sup> in stimulating demand. Perhaps the most important reason for this was that the demand for bank reserves tended to rise to match the increase in supply; in short, loan growth was not much affected. A similar phenomenon has been seen in many other countries, not least in Europe. A further source of concern would be the tendency of central banks to absorb collateral in implementing non traditional policies, which might lead to liquidity problems in private markets. Finally, more technical considerations could also impede the effectiveness of non standard monetary instruments.<sup>41</sup>

It is of course true that still more aggressive unconventional measures could be introduced that might have the ef-

<sup>39</sup> For an early analysis see Borio and Disyatat (2009).

<sup>40</sup> Shirakawa (2012a, 2012b).

<sup>41</sup> For example, QE3 in the USA promised more Fed purchases of mortgage backed securities to bring down mortgage rates. However, mortgage originators had such a backlog of originations, and relatively few staff to process them, that they subsequently reduced mortgage rates only marginally and increased their profits accordingly.

fect desired. Indeed, in chastising the Bank of Japan for its timidity, Bernanke (2000) and (2003) explicitly suggested targets for long term interest rates, depreciation of the currency, a higher inflation target (say 3% to 4%) and fiscal expansion entirely financed by the central bank.<sup>42</sup> Unfortunately, for each of these policy suggestions there is a convincing counterargument.

Explicit targets for long rates hardly seem required with long rates already at record lows. As for the difficulties of achieving a currency depreciation, these have been discussed above. Recent suggestions for a higher inflation target<sup>43</sup> have also generated wide spread criticism, particularly since inflation in AMEs has stayed stubbornly and unexpectedly high to date. Finally, fiscal expansion entirely funded by monetary creation could, given AME sovereign debt levels generally thought of as “unsustainable”, easily raise fears of fiscal dominance and much higher inflation. Perhaps the clearest indication of the force of these counter arguments is that Chairman Bernanke, having proposed these policies almost a decade ago, has not found it appropriate to reassert them more recently, in spite of the ongoing and (again) unexpected weakness of the US recovery.<sup>44</sup>

## 2.2 Ultra Easy Monetary Policy and the Private Sector Response

Conventional thinking is that lower interest rates will encourage households to save less (and consume more) and will encourage companies to invest

more. In both cases, spending is brought forward from the future, because the discount rate has been reduced. Even abstracting from the influence of cumulative stock considerations (both real and financial) on spending,<sup>45</sup> this conventional thinking can be challenged in a number of ways.

A consideration that applies to both household and company spending is the message given by ultra easy monetary policy. To the extent that such measures are unprecedented, indeed smacking of desperation, they could actually depress confidence and the will to spend. Keynes references to “animal spirits” in the General Theory would seem appropriate here. Indeed, the greater the respect held by the public for the central bank in question, the more likely this outcome might be. Higher respect would increase the likelihood that the public would believe that the central bank had identified problems that they themselves had not foreseen.

A number of other considerations might affect household spending in particular. Perhaps the most important has to do with the assumed positive relationship between the interest rate and the desired rate of saving. While it is conventional wisdom that lower interest rates will stimulate consumption, Bailey (1992) and others have long argued that even the sign of this relationship is ambiguous. Suppose that savers have a predetermined goal for the minimum amount of savings they wish to accumulate over time. This would cor-

<sup>42</sup> Lord Turner (2013) has more recently made a similar suggestion. For counter arguments see White (2013).

<sup>43</sup> See Blanchard et al. (2010).

<sup>44</sup> Ball (2012) rather attributes to a different cause the unwillingness of Bernanke to pursue his earlier policy prescriptions. Ball suggests that “group think” and a “shy” personality prevented Bernanke from speaking out forcefully at an FOMC briefing in 2003. At this meeting, his earlier suggestions were essentially ruled out by the Fed staff. I think it highly implausible that these character traits would have seriously conditioned Bernanke’s behavior over the next nine years, particularly after he became the Chairman of the FOMC.

<sup>45</sup> To be dealt with in the next section of the paper.

respond to someone wishing to purchase an annuity of a certain size upon retirement, at a desired age. Evidently, a lower interest rate always implies a slower rate of accumulation. But, if in fact the accumulation rate becomes so low that it threatens the minimum accumulation goal, the only recourse (other than postponing retirement) will be to save more in the first place. As will be discussed below, a similar logic affects the behavior of those financial institutions (like insurance companies) who have committed to providing annuities or who offer defined benefit pensions.

The distributional (income) implications of interest rate changes for aggregate household spending also receive too little attention. Very low rates imply less household disposable income for creditors and more disposable income for debtors. Should the marginal propensity to consume of creditors (say older, credit constrained people living off accumulated assets) exceed that of debtors, the net effect of redistribution could be to lower household spending rather than raise it.<sup>46</sup> This argument has in the past been invoked occasionally by central bankers in EMEs. More recently, Lardy (2012) and Rogoff (2011) have both recommended ending financial repression in China as a way to raise household consumption. The core of their argument is that higher interest rates would raise disposable income and consumption in turn.

There is a further reason to suggest that lower policy rates might actually reduce consumption rather than raise it. In recent years, commodities have taken on some of the characteristics of

a financial asset class, moreover one that seemed to have relatively low correlation with other asset classes. If lower policy rates were responsible to some degree for increases in food and energy prices, this would reduce real incomes and consumption in turn. This effect would also be most marked for poor people who generally have little room for consumption smoothing.

Finally, the argument that higher “wealth” (generated by lower rates causing rising asset prices) will lead to more consumer spending also needs serious reevaluation. While not denying the empirical robustness of this relationship in the past, the argument suffers from a serious analytical flaw. Lower interest rates cannot generate “wealth”, if an increase in wealth is appropriately defined as the capacity to have a higher future standard of living.<sup>47</sup> From this perspective, higher equity prices constitute wealth only if based on higher expected productivity and higher future earnings. This could be a byproduct of lower interest rates stimulating spending, but this is simply to assume the hypothesis meant to be under test.

As for higher house prices raising future living standards, the argument ignores the higher future cost of living in a house. Rather, what higher house prices do produce is more collateral against which loans can be taken out to sustain spending. In this case, however, the loan must be repaid at the cost of future consumption.<sup>48</sup> No “wealth” has in fact been created. In any event, as noted above, house prices in many countries have continued to fall despite lower policy rates.<sup>49</sup> This implies that

<sup>46</sup> As Walter Bagehot put it over a century ago “John Bull can stand many things, but he cannot stand two per cent”.

<sup>47</sup> See Bailey (1992) and Merton (2006).

<sup>48</sup> See Muellbauer (2007) and White (2006b).

<sup>49</sup> Some estimates indicate that US householders’ equity in their houses fell from a peak of about USD 10 trillion to USD 6 trillion at the end of 2011.



the need for “payback” can no longer be avoided by still further borrowing.

A number of counter arguments can also be made to the hypothesis that ultra easy monetary policy will raise corporate investment. First, note the fact that investment, as a proportion of GDP, has been trending down in most AMEs in recent years. This has occurred in spite of generally solid corporate profits, healthy balance sheets, large cash reserves and relatively low interest rates over a number of years. A number of plausible reasons have been suggested to explain the lack of investment response to these propitious financial conditions. If anything, the onset of the crisis has reinforced these arguments.

The first factor restraining investment has been an environment of ever growing uncertainty about a number of important issues; future domestic demand in light of uncertainty about job prospects, future foreign demand given uncertainty about exchange rates and protectionism, and uncertainty as to how the burden of fiscal restraint and possible sovereign debt reduction might affect the corporate sector. A second set of concerns is closely related. In many AMEs anti business rhetoric is becoming more common and the political momentum seems to be shifting towards extremism. Moreover, growing concerns about rising income inequality (returned to below) and concerns about the ethical standards of the banking community could all too easily be converted into a broader anti business agenda.<sup>50</sup>

A third reason for continuing low investment seems to have been a secu-

lar trend on the part of corporate managements in AMEs to maximize cash flow. The incentive for this “short-termism” could be that it allows for larger payouts for both salaries and dividends, also raising equity prices and the value of management options in the bargain. Evidently, however, such behavior comes at the expense of both fixed capital investment and the future health of the firm itself. If low interest rates encourage firms to borrow more money, which they can use for the same short term purposes, then presumably the longer term damage will be even worse. There has been clear evidence of this in the last few years.<sup>51</sup>



It has even been suggested that low interest rates have themselves contributed to lower fixed investment in AMEs. One channel would be via higher commodity prices (as a result of the public sector investment boom in China), which raises costs in AMEs and reduces profits. Perhaps more importantly, many corporations still have significant obligations in the form of defined benefit pension plans. Ramaswamy (2012) presents a chilling quantitative

<sup>50</sup> For an analysis of anti business attitudes in the 1930s, under the Roosevelt administration, see Powell (2003) and Smiley (2000).

<sup>51</sup> Macintosh (2012) reports that “the proportion of cash flow returned as dividends and buybacks to shareholders in US non financial companies is close to record highs, while the proportion spent on equipment is at 55 year lows. This is not what central banks set out to achieve.”



analysis of the effects of interest rate changes on public pension funds and defined benefit funds. The essence of the argument is that lower interest rates reduce the asset revenues of pension funds and raise the present value of future liabilities. Funding shortfalls eventually have to be made up by the sponsoring company, reducing profits and funds available for investment.



A recent report by the consulting firm Mercer indicates that the 1,500 leading companies in the USA had a pension deficit of USD 689 billion as of July 2012; i.e., they are only 70% funded. In the UK, the Pension Protection Fund recently estimated that almost 85% of defined benefit plans were underfunded, with a cumulative shortfall of over USD 400 billion.<sup>52</sup> Moreover, proposed changes to pension rules, in countries using IFRS account-

ing standards, seem likely to make the impact of low rates on companies with such pension funds significantly worse.<sup>53</sup>

To summarize, there are significant grounds for believing that the various channels through which ultra easy monetary policy might operate are at least partially blocked. Moreover, there are also grounds for belief that neither household nor corporate spending would react as vigorously as in the past, even if the traditional transmission channels were functioning properly. Note too that the issue of “debt stocks”, other “imbalances”, and the possibility of a “credit crunch” affecting the real economy, have not yet even been mentioned. These influences will also weigh on both the capacity to spend and the will to spend, further offsetting the influence of ultra easy monetary policies.<sup>54</sup> As well, such policies can have other unintended consequences which might also tend to grow over time.

### 3 The Longer Run Effects of Ultra Easy Monetary Policy

The unexpected beginning of the financial and economic crisis,<sup>55</sup> and its unexpected resistance to policy measures taken to date, leads to a simple conclusion. The variety of economic models used by modern academics and by policymakers give few insights as to how the economy really works.<sup>56</sup> If we

<sup>52</sup> Even as of mid 2010, when bond yields were significantly higher than in early 2012, there were estimates that sustained low rates implied that “half of UK companies are bust”. See Johnson (2010).

<sup>53</sup> Under proposals outstanding as of June 2012, companies will no longer be able to defer recognition of actuarial gains and losses. Currently, they can do so using the so called “corridor method”. In addition, companies will no longer be able to assume a lower rate for discounting liabilities than the assumed rate (often unreasonably high) at which assets accumulate.

<sup>54</sup> For empirical work on the effects of monetary policy, in previous downturns that were accompanied by financial crisis, see Bech et al. (2012). They conclude that the benefits of easier money in such circumstances have been “more elusive”.

<sup>55</sup> The WEO, published by the IMF in the spring of 2008, predicted real growth in the advanced economies in 2009 of 3.8% of GDP. The actual outcome was -3.7%, a forecast error of 7.5 percentage points of GDP. The IMF was by no means alone in missing this dramatic turnaround.

<sup>56</sup> For more on this, see White (2010).

accept this ignorance as an undesirable reality, then it would seem logically difficult to deny the possibility that the policy actions taken in recent years might also have longer run and unintended consequences. Indeed, it must be noted that many pre war business cycle theorists focused their attention on precisely this possibility.

Perhaps a good jumping off point for such analyses might be the work of Knut Wicksell. He made the distinction between the “natural” rate of interest, which equalized saving and investment plans, and the “financial” rate of interest, set by the banking sector. Were the natural rate to diverge from the financial (or market) rate set by the banking sector, prices would respond and a new equilibrium would eventually be reestablished at a different price level. Later thinkers in the Wicksellian tradition (the Austrians in particular) rather laid emphasis on the “possibility that a divergence of the market rate from the natural rate might have consequences beyond changing the price level”.<sup>57</sup> Referred to as “imbalances” in this paper, these consequences would over the longer run inevitably lead to a crisis of some sort if inflationary forces did not emerge first. Moreover, it has also been suggested the magnitude of any crisis would depend on the size of the accumulated imbalances, which would themselves depend on the size and duration of the differences between the two rates.

Were we to adopt this analytical framework, policymakers today would seem to have serious cause for concern. In effect, global monetary policies had been “unnaturally easy” for a very long

time before the crisis began. For simplicity, suppose that the natural rate of interest (real) for the global economy as a whole can be proxied by an *ex post* measure; the potential rate of growth of the global economy, as estimated by the IMF. Reflecting globalization and technology transfer, this measure has been *rising* steadily for the last twenty years. In contrast, if one proxies the financial rate of interest (real) by an average of available breakeven rates (say for ten year TIPS), this measure has been *falling* for the last twenty years. Moreover, at the global level, the natural rate of interest rose above the financial rate in 1997, and the gap kept widening until the onset of the crisis in 2007.<sup>58</sup> From this perspective, underlying inflationary pressures and/or imbalances had been cumulating for many years before the crisis began.

Indeed, the magnitude of the crisis which began in 2007, and the lack of response in many AMEs to macroeconomic measures to date, can actually be viewed as evidence in support of using this kind of framework. In contrast to the *ex post* measure of the natural rate, assumed for simplicity above, most of those in the Wicksellian tradition assumed the natural rate was an *ex ante* concept, related to expectations about the future rate of return on capital. Evidently, as noted also by Keynes and his discussion of “animal spirits”, these expectations could change quite dramatically over time. It could then be suggested that the (ex ante) natural rate collapsed in 2007, to a level well below the financial rate, as a direct result of the imbalances that had built up earlier.

<sup>57</sup> See Laidler (1999), p. 35.

<sup>58</sup> See BIS (2007) and Hanoun (2012) Graph 4. Hanoun also provides evidence (Graph 5) that, for the last decade at least, the global policy rate has generally been well below the rate suggested by a global Taylor rule. For a description of the changes in central bank balance sheets, see Bank for International Settlements (2012), p. 40.

Moreover, given this particular way of thinking, and noting that the financial rate is now constrained by the ZLB, a further policy conclusion is that this gap can only be redressed by raising the natural rate to encourage investment. As discussed in section 2.2 above, this has thus far proved to be a difficult task. An important corollary of this would be that invested capital which was no longer profitable should be removed from production and the losses written off by borrowers and lenders respectively. Evidently, this would have effects on bank capital in particular, perhaps demanding closures in some cases and recapitalization in others. The failure to confront such issues directly has, in a number of countries, been a notable feature of the post crisis years and helps explain its durability.

The approach taken below is to review the undesirable longer run effects of easy monetary and credit conditions, suggested by theory, and then to assess whether these concerns would seem of practical importance today. Consistent with the discussion above, the concerns raised about ultra easy monetary policies would include rising inflation and imbalances of various sorts. To be more specific, the latter would include further misallocations of real resources, undesired effects on the financial sector and still greater income inequality. Note that such concerns about post crisis policy responses (ultra easy monetary policies) must be amplified by the recognition that they were preceded by decades of unnaturally easy monetary policies at the global level. In effect, post crisis policies have been “more of the same” policies that contributed to the crisis in the first place.

### 3.1 The Likelihood of Rising Inflation?

Perhaps the first question to be addressed is how inflation was avoided in the AMEs during the many years of unnaturally easy monetary policies at the global level?<sup>59</sup> One possible answer is that a growing commitment by central banks to the maintenance of low inflation succeeded in anchoring inflationary expectations. This explanation, however, is hard to reconcile with the objective fact of rapid monetary and credit expansion engineered by central banks of the AMEs over that period.

A more plausible (or at least complementary) explanation would be the major increase in the rate of growth of potential in the EMEs, accompanied by a series of investment “busts” in a number of countries; Germany after reunification, Japan after the “bubble”, South East Asia after the Asian crisis, and the USA after the TMT equity crash of the early 2000s. In effect, a secular increase in global supply was met by a decrease in global demand with the predictable result of reducing inflation.<sup>60</sup> This provided the context in which easy monetary policies could be more easily pursued.

Looking forward, the likelihood of rising inflation in the AMEs would seem to be limited, even given the added spur of ultra easy policies after the crisis. In most countries there appears to be a significant degree of excess capacity, and section 2 above implies that ultra easy monetary policy is unlikely to remedy this problem quickly. Nevertheless, some sources of concern remain. In some countries, like the UK, exchange rate depreciation could already be having an impact on inflation. Crisis related reductions in the level of potential could also prove

<sup>59</sup> Alternative explanations for the “Great Moderation” are discussed at length in Borio and White (2003).

<sup>60</sup> A more detailed analysis is available in White (2008). See also Issing (2012) p. 10.

greater than is currently expected,<sup>61</sup> leaving room for policy mistakes. Finally, a sudden shift in inflationary expectations, perhaps linked to still further measures to extend ultra easy monetary policies, cannot be completely ruled out. While inflation expectations show no trends (away from desired levels) in recent years, they do seem to have become more volatile.

A perhaps more pressing problem is the possibility of sharply higher inflation in EMEs. In part due to their “fear of floating”, many EMEs seem to be operating near full capacity, and monetary conditions are generally very loose. As well, the rate of growth of potential now seems to be slowing after previous sharp increases.<sup>62</sup> This could in turn, via the higher price of imports, lead to inflation accelerating unexpectedly in the AMEs as well. In effect, this would be a reversal of the secular disinflationary impulses sent by EMEs to the AMEs in previous years.<sup>63</sup> A countervailing influence, however, might be a sharp slowdown in EMEs as well, due to the accumulation of various domestic imbalances. China seems particularly exposed in that regard.

### 3.2 Misallocations of Real Resources?

New books, articles in the popular press and even rap videos indicate that the Keynes-Hayek debate of the early 1930s is on again.<sup>64</sup> It remains highly relevant to evaluating the longer run effects of both unnaturally easy and ultra easy monetary policies. Keynes was

fundamentally interested in demand side policies that would revive economies in a “Deep Slump”. In contrast, Hayek and other members of the Austrian school were fundamentally interested in supply side issues. They rather focused on how the economy got into a “Deep Slump” in the first place, conscious of the possibility that remedies (more of the same) might actually make things worse over time.

The Austrian conclusion was that credit created by a fiat-based banking system, rather than the lending of genuine savings, would indeed spur spend-



ing but would also create misallocations of real resources (“malinvestments”). These supply side misallocations would eventually culminate in an economic crisis. Moreover, they concluded that the magnitude of the crisis would be closely related to the amount of excess credit created in the previous upswing. Jorda, Schularick and Taylor

<sup>61</sup> The OECD estimates that the level of potential in the OECD countries fell after the onslaught of the crisis by about 3% on average. They stress, however, that these estimates are highly imprecise.

<sup>62</sup> As EMEs begin to industrialize, they initially have the benefit of rapid urbanization (as agricultural productivity rises) and the international transfer of technology. Over time both of these “catch up” factors supporting growth become less important.

<sup>63</sup> Since AMEs’ central banks underestimated the importance of the positive supply shocks in earlier years, it is not unlikely that they would also fail to recognize the implications of its reversal.

<sup>64</sup> It is important to note that the debate was with the Keynes of the “Treatise” and not yet the Keynes of the “General Theory”. Recall, as noted above, that Keynes’ enthusiasm for “unorthodox” monetary measures had faded by the time of the General Theory.

(2012), using data from 14 AMEs dating back to the 1870s, provide convincing empirical evidence that this intuition was essentially correct.<sup>65</sup> A similar conclusion arises from the historical data used by Reinhart and Reinhart (2010), and from recent US data based on differences in local market economic conditions.<sup>66</sup>



In practice, Keynesian thinking has almost completely dominated the policy agenda for most of the post War period. Thus, the predominant consideration for policymakers<sup>67</sup> has been the near term effects of monetary easing on aggregate demand, and the associated impact on inflation. Over the last two

decades or so, with inflation near target levels or even threatening to fall below target, policymakers saw little need to raise interest rates in cyclical upturns. Similarly, there seemed no impediment to vigorous monetary easing in downturns.

Even within the Keynesian framework, however, these policies might now be thought questionable. As noted just above, the disinflationary trends observed in the global economy were in large part the result of positive supply shocks, rather than solely due to deficient demand. They should in principle have elicited a different and tighter response.<sup>68</sup> Viewed from an Austrian perspective, the policy error was even graver. Below the surface of the Great Moderation, such policies encouraged financial exuberance<sup>69</sup> which allowed significant “malinvestments” to build up in both phases of successive credit cycles<sup>70</sup> prior to the outbreak of the crisis. These developments are documented below.

<sup>65</sup> See also Reinhart and Reinhart (2011).

<sup>66</sup> Mian and Sufi (2011) relate the magnitude of local downturns in the USA (primarily in the non traded sector) to the degree of household borrowing that built up in the same locality during the boom.

<sup>67</sup> Virtually all AMEs' central banks give pride of place to a “first pillar”; namely their estimate of the output gap and its effect on inflation via an augmented Phillips curve. The Bundesbank, but now also the ECB, have a “second monetary” pillar which relates low frequency movements in monetary aggregates to longer term inflationary trends. This is still very different from looking at credit developments for their possible “unintended consequences”, particularly on the supply side of the economy.

<sup>68</sup> There is a curious asymmetry here. It has been well accepted for decades that negative supply shocks, for example increases in energy prices pushing up inflation, need not cause policy rates to rise. The logic was that first round shifts in the price “level” could be tolerated if they had no second round effects on wages and “inflation”. In contrast, positive supply shocks did in practice seem to lead to lower rates than otherwise. On this issue, see Beckworth (2008). Perhaps the clue to the asymmetry is that, in both cases, policy rates wind up lower than otherwise which tends to be both easy and popular.

<sup>69</sup> Issing (2012, p. 3) notes that a combination of inflation targeting and supply side shocks can “turn policy into an independent source of instability. (It) fuels financial exuberance and financial exuberance in turn creates financial imbalances”.

<sup>70</sup> On returning from a visit to the USA in the late 1920s, Hayek foretold a deep slump. On being told this was impossible, because US prices were essentially stable, Hayek apparently responded that this was precisely the evidence of an underlying problem. Increases in productivity should have been pushing prices down, but credit expansion was holding them back up.



### 3.2.1 Misallocations in the Credit Upswing

In a comprehensive review of pre war theories of business cycles, Haberler (1939) distinguished between two forms of “malinvestment” that arise in the upswing of the credit cycle: vertical and horizontal. Vertical malinvestments imply an intertemporal misallocation. It occurs when easy and cheap access to credit causes an inordinate shift towards capital investments, and particularly to longer lived capital investments. For the same reason, saving rates would be reduced and debts allowed to accumulate. These would eventually constrain future spending<sup>71</sup> just at the time the increased supply potential was coming on line. Horizontal malinvestments are investments in particular sectors that eventually lead to excess capacity.

In both kinds of malinvestment, the eventual outturn is a collapse in profits. This results in the forced termination of further investment in projects already well advanced, less new investment in general, and an investment collapse in those particular sectors that had expanded the most during the credit upswing. Looking at developments in the period leading up to the crisis, and subsequently, it is very easy to find evidence of such processes at work.

First, consider *vertical* malinvestments. In the years of easy credit conditions preceding the onset of the crisis, investment in the housing stock in virtually every AME rose sharply.<sup>72</sup> House prices rose markedly, as did housing

starts in most cases. The fact that these developments were unsustainable is now all too evident. In countries like the USA, the UK, Spain and Ireland, the housing downturn is already well advanced, house prices continue to fall, and construction activity has slowed markedly.

In some other countries (Canada, Sweden, Denmark, Norway etc.) house prices have continued to rise since the crisis broke, encouraged by ultra easy monetary policies, and construction activity remains elevated. Nevertheless, concerns about overbuilding in these countries are being expressed ever more forcefully.<sup>73</sup> House prices have also been rising sharply in many parts of Germany and Switzerland, eliciting similar official statements of concern. Similarly, in many EMEs relatively easy credit conditions have also led to sharp increases in construction activity and in house prices. In many cases, not least China and Brazil, activity has focused on the production of “high end” properties which remain vacant after their purchase. Given this overhang of inventory, it is not hard to believe that a downturn will prove inevitable. Since housing is long lived, cannot be readily used for other purposes, and is generally not internationally tradable, the effects of this particular kind of malinvestment could be felt for a long time.

Another example of vertical malinvestments would be the massive increases in infrastructure investment, largely privately financed, which occurred globally prior to the onset of the crisis. Indeed, in mid 2008, the Econo-

<sup>71</sup> *In effect, savings would prove inadequate to purchase all of the goods and services provided by the increased investment generated artificially by credit received from the banking system.*

<sup>72</sup> *Among the AMEs, only Germany, Switzerland and Japan failed to reflect these developments. In part, this was because all three countries were still recovering from their own, earlier, house price bubbles.*

<sup>73</sup> *Such concerns have been expressed in the various country reviews organized by the Economic and Development Review Committee of the OECD. Australia, New Zealand, Canada, the Scandinavian countries and a number of others all seem to be exposed in this regard.*



mist magazine called this infrastructure investment “the biggest boom in history”.<sup>74</sup> While this private sector boom came to a halt with the onset of the crisis, it was replaced in part by public sector spending on infrastructure. This has been most marked in China, where overall spending on investment since 2008 has hovered near 50% of GDP. Neither the private sector nor public sector phases of this investment boom would have been possible without ready access to relatively cheap credit. Indeed, in the Chinese case, the central authorities largely avoided fiscal expansion by explicitly ordering Chinese banks to provide the loans required by lower levels of government to meet their spending goals.

Large scale spending on infrastructure is not in itself a bad thing. In many circumstances, particularly in EMEs, the social rate of return might be expected to well exceed the cost of financing. However, there is accumulating empirical evidence that many large infrastructure projects cost far more to build than originally estimated and produce far fewer benefits. Flyvbjerg (2009) gives many examples of large projects in AMEs that would never have been built if ex post estimates of benefits and costs had been available. He cites the Channel Tunnel, the Danish Great Belt Tunnel, the “Big Dig” in Boston and the Millennium Dome among a host of others.

Flyvbjerg notes as well three global trends that increase the likelihood of

infrastructure investments becoming “malinvestments”. The first is the trend towards more rapid spending, driven by the exigencies of spending quickly during a downturn. This raises the risk of both waste and corruption. The second is the rising proportion of global infrastructure spending in EMEs, given the presumption that governance of such projects might be even worse than in AMEs.<sup>75</sup> In China, for example, the dominant influence of the Communist Party on both borrowers and lenders is hard to reconcile with objective assessment of the net benefits of suggested projects.<sup>76</sup> Third, infrastructure projects everywhere are increasingly dependent on IT and communications systems, where large projects have an even more dismal record of accomplishment than projects in other sectors.

A third example of vertical maladjustment, prompted by easy credit conditions, has been the massive build up of export capacity in many countries in South East Asia. Low interest rates in the importing AMEs ensured high levels of consumption and ready markets. Conversely, in the exporting countries, low interest rates encouraged investment to satisfy those demands. Government commitment to “export led growth” strategies also implied resisting upward exchange rate pressures, and encouraged easier monetary policy in turn. Today, many of these exporting countries remain heavily reliant on sales to AMEs<sup>77</sup> whose debts are such

<sup>74</sup> *The Economist* (2008).

<sup>75</sup> Flyvbjerg ultimately blames “bad governance” for these bad outcomes. In effect, those putting together projects consciously underestimate costs and overestimate benefits. They do this to make their projects more “competitive” with others in the search for funding, especially from governments.

<sup>76</sup> See McGregor (2010) for a broader discussion. For a more specific example, China is intent on building over 20,000 kilometers of high speed rail track to link up its major cities. At the same time, there is to be a massive expansion of airport service to the same destinations. Note as well, that many prestige projects favored by local governments are designed to “outdo” the projects of other local governments. This is a recipe for overcapacity.

<sup>77</sup> This is not to deny successful efforts by a number of countries, including China, to expand markets in other EMEs. Of course this still leaves the broader question of the robustness of the totality of those markets in the event of another serious downturn in the AMEs.

that they can no longer afford to borrow to finance such purchases.

A fourth and final example of vertical maladjustment is provided by the sharp drop in household saving rates over many years in a number of AMEs, most notably in the English speaking countries. In many of these countries, house prices were rising rapidly during the period of rapidly expanding credit. Some households likely believed (wrongly) that they were in fact “wealthier” as a result, and spent more accordingly. In some countries, most notably the United States, higher house prices also provided more collateral to support further borrowing. Since in the early years of this century there were significant fears of inadequate demand and potentially even deflation, this borrowing was welcomed by policymakers as “intertemporal optimization”. However, at the time, little or no attention was paid to the fact that such optimization would by definition require “payback” and could act as a serious constraint on growth in the future.<sup>78</sup>

The need for “payback” is most clearly evident in sharp increases in household debt ratios in many countries,<sup>79</sup> prior to the crisis, and a failure of these ratios to fall subsequently. These include the English speaking countries noted above, but also a number of “peripheral” countries in Europe as well. Further, perhaps linked to the “fear of floating” phenomena discussed above, many EMEs recorded growing

levels of household debt both before and after the crisis. Such countries include some of the largest and fastest growing of the EMEs; China, India, Brazil and Turkey in particular. While it is true that these debt increases in EMEs have come off very low levels, the speed of the increase has been notable, and might well have outpaced the capacity of the local financial systems to accurately estimate the capacity of borrowers to repay. Indeed by mid 2012, the percentage of non performing car loans in Brazil had already jumped sharply. Whether in AMEs or EMEs, the need for deleveraging by



households adds a further reason to doubt that ultra easy monetary policy can sustainably stimulate the real economy.

Nor is it difficult to find evidence for the buildup of *horizontal* (sectorial malinvestments) in the years leading up to the crisis. The most obvious example is seen in the construction industry in

<sup>78</sup> This problem is analogous to that faced by Japanese corporations in the 1990s, after many years of debt financed investment which proved unprofitable. Koo (2003) strongly contends that the weakness of investment spending in Japan in the 1990s was due to this “balance sheet effect”, and was not due to a shortage of loans caused by a weakened banking system.

<sup>79</sup> See BIS (2012, p. 29) for a fuller documentation. Also see McKinsey (2010) who identify the household sector in five of the fourteen countries they consider as having a high probability of future deleveraging. They identify Spain, the USA, the UK, Canada and Korea. While the household sectors in Brazil, Russia, China and India were not judged to be overleveraged, note that the data considered extended only to 2009. Thus the report missed the recent sharp increases in household debt levels in those countries.

many countries, mostly but not exclusively in the AMEs. Evidently, this was closely related to the increased spending on housing and infrastructure referred to above.<sup>80</sup> Closely related, the financial sector also expanded very rapidly prior to the start of the crisis in 2007, before imploding immediately afterwards. The global automotive industry witnessed a massive increase in production capacity, not only



prior to 2007, but also afterwards as automakers extrapolated past increases in sales in EMEs far into the future. China in particular was estimated to have six million units of unutilized capacity in 2011 (twice the size of the German car market),<sup>81</sup> with dealers also struggling with a huge increase in inventory. Finally, there was also a substantial increase in capacity in the renewable energy industry. As a result, the price of solar panels and wind powered turbines collapsed after the crisis

began and many producers faced bankruptcy.

Beyond these increases in the global capacity to produce final goods and services, there were marked expansions in the capacity to produce intermediate and primary goods as well. Much of this was driven by developments in China where productive capacity was still expanding rapidly as of mid-2012. The steel and aluminium industries head a long list of sectors where overcapacity has been evident for a long time.<sup>82</sup> As for primary products, heavy investments have been made in Latin America, in Australia, and a number of other countries to produce and export basic commodities to support the development efforts in South East Asia. Should any link in this demand chain prove faulty, these investments in primary products could also prove much less profitable than had been previously anticipated.<sup>83</sup> Finally, there has been a commensurate increase in excess capacity in the global distribution industry, not least container ships and bulk shipping. With profits falling sharply, cutbacks are already underway.

### 3.2.2 Misallocations in the Credit Downswing

Economic downturns, whatever their cause, are always painful. Output that might have been produced is lost, and unemployment rises. Moreover, those less well off, often marginally attached

<sup>80</sup> Increased spending generally results in more production, but not necessarily. Supply responsiveness in the construction industry in fact varies widely across countries. For example, the response in terms of new housing starts was much greater in the USA than the UK, due to the very strict planning and zoning restrictions in the latter.

<sup>81</sup> See KPMG Global (2012).

<sup>82</sup> See European Chamber of Commerce in China (2009). In presenting the report, the President of the Chamber said: "Our study shows the impact of overcapacity is subtle but far reaching, affecting dozens of industries and damaging economic growth, not only in China but worldwide." Note that this was written before the further spurt in investment spending in 2010.

<sup>83</sup> By mid 2013, many such investment projects (some well advanced) were being abandoned.

to the work force, seem to suffer the most. This is the familiar Keynesian argument for using macroeconomic stimulus in such circumstances to raise aggregate demand.<sup>84</sup> However, as alluded to above, pre-war economic theorists thought downturns also had some positive qualities. For those concerned about rapid credit expansion and “malinvestments”, the downturn simply reveals the unsustainability of the previous expansion and its inevitable end. The downturn was then a time of necessary rebalancing with resources shifting from less productive to more productive uses. Schumpeter in particular stressed the opportunities which excess resources provided to entrepreneurs having new ideas and new products – the concept of “creative destruction”. From this perspective, monetary policy choices in a downturn should again balance off short term benefits against longer term costs.

Consistent with the dominance of the Keynesian paradigm, monetary policy had been used with increasing vigor in the pre crisis period to address prospective or actual downturns in the economy. For example, US monetary policy was eased significantly in 1987 after the stock market crash of October. It was further eased sharply in the early 1990s, after the property boom and the collapse of the Savings and Loan Associations. In spite of unemployment falling well below prevailing estimates of the US NAIRU, the USA failed to raise rates in 1997 reflecting concerns about the possible global effects of the crisis in South East Asia. In 1998, the failure of LTCM led to explicit easing. This was followed in 2001 by an un-

precedentedly vigorous monetary policy response to an impending slowdown, aggravated by the stock market crash and the events of September 11. Finally, ultra easy monetary policy was introduced in 2008, as described at the beginning of this paper.

The following paragraphs will focus on the longer term, cumulative, effects of such policies. First, there is evidence that allowing malinvestments to persist can reduce potential growth rates. Second, it can be contended that the aggressive easing of policy in successive cycles led to serial “bubbles” of various sorts. In effect, these serial bubbles constrained the normal process through which malinvestments would have been purged in the course of a typical cyclical downturn.

The contention that easy monetary conditions *lower the rate of growth of potential* is not without counterarguments. On the one hand, some would contend that easy monetary conditions in a downturn help the reallocation of real resources from less to more productive industries.<sup>85</sup> As well, if the economy recovers, then the accelerator mechanism can also lead to more capital investment.<sup>86</sup> These arguments, however, must also consider the various forces (considered above) that are currently acting to restrain investment. On the other hand, to the extent that low interest rates do discourage saving, capital accumulation will be discouraged over time. Very low “risk free” rates, dominated by the actions of central banks, can also mislead and contribute to costly misallocations. More-

<sup>84</sup> Recall, however, that Keynes’s *General Theory* (1936) was directed to the issue of “Deep Slumps”. It is not then clear that Keynes would have recommended similar policies in the face of actual small downturns, much less preventive easing to preclude even prospective downturns.

<sup>85</sup> See for example, Posen (2011).

<sup>86</sup> Summers and Delong (2012).

over, it is possible that easy monetary conditions actually impede, rather than encourage, the reallocation of capital from less to more productive uses.

This last argument rests on the contention that banks will offer advantageous borrowing conditions to traditional customers in a downturn, even when they suspect they are insolvent. Peek and Rosengreen (2003) have investigated this phenomenon in Japan, and evidence of similar behavior has emerged in both the UK and continental Europe in the post crisis period.<sup>87</sup> Such behavior on the part of banks is encouraged when they can borrow very cheaply, and also when they expect that easy money will lead to recovery and improved prospects for their clients. In effect, low interest rates encourage all the parties involved to “gamble for resurrection”.

“Evergreening” of this sort helps maintain the weak, the so called “zombie companies”, who then continue to compete and drag down the strong. The Peek and Rosengreen study also documented how productivity growth suffered particularly in those Japanese industrial sectors most characterized by this kind of bank behavior. Moreover, the perceived need to support the weak could also lead to higher interest charges for those strong enough to afford it. Finally, it likely also implies tighter credit conditions for potential clients with new ideas as to how to adapt domestic supply to changing pat-

terns of demand and foreign competition.<sup>88</sup> Since innovation is now seen as a primary driver of productivity growth (and thus potential),<sup>89</sup> financial constraints of this sort would be particularly worrisome. And this would be even more the case in countries (as in Europe) where banks remain the dominant source of finance and where small and medium size enterprises remain the backbone of the economy.

The Governor of the Bank of Japan has repeatedly suggested that Japan’s poor economic performance in recent decades has been largely due to a failure to adapt its production structure to the requirements of an aging population and the growing competitiveness of emerging Asian countries.<sup>90</sup> In contrast to his advice, and particularly since the onslaught of this current crisis, governments in many AMEs have actually taken explicit measure like “cars for clunkers” and “short time working” to support existing production structures. Since the countries that used these programs the most actively were also running large current account surpluses at the time (eg: Germany, Japan, the Netherlands and Korea) it might also be suggested that many of the jobs “saved” in the short run will eventually disappear as global trade imbalances decline.<sup>91</sup> These policies were not only mistaken, in that they impeded longer run adjustment, but they were also fiscally costly. This raises the question of whether they might not have been un-

<sup>87</sup> See BIS (2012, p. 42 and p. 74), for a list of supporting references.

<sup>88</sup> With the rise of the EMEs and their dominance of traditional manufacturing, some commentators even contend that AMEs need to develop a whole new, post industrial information economy. Evidently, if true, this would require a lot of financing.

<sup>89</sup> Assuming a Cobb Douglas production framework, “unexplained” movements in total factor productivity have for decades been the biggest driver of growth in most AMEs. In recent years, the OECD has increasingly emphasized the importance of innovation in “explaining” movements in total factor productivity.

<sup>90</sup> Shirakawa (2012a, 2012b).

<sup>91</sup> In Europe the car industry was a particular beneficiary of such programs. It is already being recognized in France, Italy and Belgium that some auto plant closures are inevitable. The subsidiaries of foreign car firms operating in Germany might also be affected.



dertaken had the government's financing costs been higher at the time.

Finally, there is the issue of *serial bubbles*. Mention was made above of the increasingly aggressive use of monetary easing by central banks, since the middle 1980s, either to preempt downturns (e.g. after the stock market crash of 1987) or to respond to downturns (e.g. 1991, 2001 and 2008). What cannot be ignored is the possibility that each of those actions simply set the stage for the next "boom and bust" cycle, fuelled by ever declining credit standards and ever expanding debt accumulation.<sup>92</sup>

From the perspective of this hypothesis, monetary easing after the 1987 stock market crash contributed to the world wide property boom of the late 1980s. After it crashed in turn, the subsequent easing of policy in the AMEs led to massive capital inflows into Southeast Asia contributing to the subsequent Asian crisis in 1997. This crisis was used as justification for not raising policy rates, in the United States at least, which set the scene for the excessive leverage employed by LTCM and its subsequent demise in 1998. The lowering of policy rates in response, even though the unemployment rate in the AMEs seemed unusually low, led to the stock market bubble that burst in 2000. Again, vigorous monetary easing resulted, as described above, which led to a worldwide housing boom. This boom peaked in 2007 in a number of AMEs, seriously damaging their banking systems as well. As noted above, the ultra easy monetary policies followed subsequently led to further house price increases in many AMEs and a va-

riety of "bubble" like symptoms in many EMEs<sup>93</sup> as well.

By mitigating the purging of malinvestments in successive cycles, unnaturally easy monetary policy thus raised the likelihood of an eventual downturn that would be much more severe than a normal one – the current crisis. Similarly, it generated a state of affairs in which aggressive monetary easing would not only be more needed but also less effective. The response to the former has been ultra easy monetary policy which, as documented above, has not thus far produced the results intended.

### 3.3 Effects on the Financial Sector

Similar to the way that easy money in successive cycles encouraged imprudent borrowing, it also encouraged imprudent lending.<sup>94</sup> There are a number



of dangers associated with this. The first of these would be that lenders eventually suffer losses severe enough to cause a marked tightening of credit conditions. This could occur spontaneously, helping precipitate an economic slowdown. In fact, this did seem to be

<sup>92</sup> Soros (2010) has referred to this serial process as the "debt super cycle".

<sup>93</sup> For some supporting observations on recent developments in EMEs, see Hoffman (2012).

<sup>94</sup> For a fuller analysis of how expanding "safety nets", not least monetary easing in downturns, have contributed to moral hazard on the part of both lenders and borrowers, see White (2004).



the trigger for the current crisis. Alternatively, and more commonly the case historically,<sup>95</sup> the tightening could follow upon an economic slowdown (led from the demand side) that significantly raised loan losses. Whatever the cause, tighter credit conditions would feed back on the real economy, aggravating the downturn. There seems clear evidence of such phenomena in the current crisis, not least in Europe.

A second concern would be that unnaturally easy monetary conditions, in association with regulatory and technical developments, encouraged over time the development of the shadow banking sector. Shadow banking is based less on traditional banking rela-



tionships and more on collateralized lending. Again, there was clear evidence of such an expansion in the years prior to the crisis. Since this kind of lending seems to be even more procyclical than traditional bank lending, and subject to other risks as well,<sup>96</sup> this would have to be thought of as another still longer-term implication of easy monetary conditions.

A third concern, generated by ultra easy monetary policies more recently,

is that insurance companies and other lenders might find it increasingly difficult to earn adequate returns on their assets. Looking forward, this could again imply longer term problems for an important part of the financial sector. Fourthly, ultra easy monetary policies have led to significant changes in market behavior (Risk-On-Risk-Off Investing) which raise a number of longer term concerns.

### 3.3.1 Banks and Shadow Banking in the Credit Upswing

The mainstay of traditional banking is to borrow short and lend long. With policy rates low relative to longer term rates, and relative to rates incorporating a counterparty risk premium, banks have an incentive to create credit as the demand for credit increases. The rate of growth of credit in the AMEs and the EMEs between 2003 and 2007 was well above the respective growth rates of nominal income.

Moreover, there is growing evidence that banks and financial markets more generally can become overly optimistic about the risks that they run in their lending practices. Recent BIS Working Papers by Borio and Zhu (2008), Gambacorta (2009), Disyatat (2010) and Altunbas et al. (2010) all provide evidence of the importance of what they call the “risk taking channel” of the transmission mechanism of monetary policy.<sup>97</sup> Adrian and Shin (2008a and 2008b) also provide compelling evidence that “Short term interest rates are determinants of the cost of leverage and are found to be important in influencing the size of financial intermediary balance sheets”. In addition, Adrian and Shin establish an

<sup>95</sup> Reinhart and Rogoff (2009, p. 145).

<sup>96</sup> For a fuller assessment, see Financial Stability Board (2012).

<sup>97</sup> Also see Maddaloni and Peydro (2010).

empirical link between higher leverage, induced by lower interest rates, and subsequent growth rates of housing investment and durable goods consumption.

More anecdotal evidence also supports the hypothesis that low rates encourage more risk taking and softer lending standards. In the years leading up to the crisis which broke in 2007, lending standards dropped almost everywhere, with subprime mortgages to households and covenant light loans to corporations being the most egregious examples. Similarly, there were sharp declines in the sovereign spreads of EMEs and of lower rated corporate and financial paper. Beginning in the middle of 2003, when policy rates in the AMEs were at their lowest level, the prices of houses in many countries, as well as the prices of other illiquid assets (including commodities), began to rise sharply. Similarly, the cost of insurance against unexpected events (proxied by the Vix index) fell to record low levels. In sum, illiquidity was in high demand and liquidity was for sale cheaply. All of these trends were consistent with a credit driven expansion, fostered by low policy rates,<sup>98</sup> that was likely to end in crisis. While the beginning of the crisis led to a reversal of all the above trends, by the end of 2012 new records were again being set under the influence of successive rounds of ultra easy monetary policy in many countries.

Credit expansions, if not restrained by sufficiently high policy rates, will eventually run into two other constraints. The first of these is a shortage of capital, which results in leverage ratios rising to uncomfortable levels. The second is a shortage of longer term and reliable funding to support the credit expansion. Indeed, Kaminska (2012) contends that this latter problem is a “terminal disease” affecting banking, and was greatly aggravated by the secular fall in interest rates.<sup>99</sup> However, banks took aggressive steps to confront both problems, thus allowing them to continue to meet the demand for credit expansion promoted by low borrowing costs. As noted above, this implied a deeper eventual downturn than otherwise given both larger “malinvestments” and also a structurally weakened financial sector.

Banks first confronted the capital shortage problem by exploiting opportunities for regulatory arbitrage opened up by the introduction of “risk weighted assets” in the first Basel Accord of 1992. Slovik (2011) investigates the behavior of 15 of the largest systemically important banks in the AMEs. He documents how the ratio of risk weighted assets to total assets fell almost monotonically from 70% of GDP in 1992 to just 35% just prior to the onset of the crisis. The implication he draws is that large banks, stretching back over two decades, have been drawing back from their tradi-

<sup>98</sup> A puzzle is why increases in policy rates, in the USA in particular between mid 2004 and 2007, failed to stop the excesses. Two reasons suggest themselves. First, the dynamic of the boom was so great that the “measured” increase in policy rates (essentially 25 basis points per meeting) was inadequate to offset the expected gains. Second, because the increases in policy rates were so well telegraphed, the risks involved in leveraged positions were declining even more than the spread was narrowing. With the Sharpe ratio rising, there was a positive invitation to take on even more leverage. Adrian and Shin (2008) seem to take this point seriously. They state (p. 28) “If central bank communication compresses the uncertainty around future short rates, the risk of taking on long-lived assets financed by short term debt is compressed. In this sense, there is the possibility that forward looking communication can be counterproductive.” This point was also made repeatedly in BIS Annual Reports prior to the beginning of the crisis.

<sup>99</sup> Kaminska (2012, p. 3) “The consequences of falling yields were, after all, potentially deadly for banks if mismanaged. Not only did they threaten the margins banks collected via cheap liabilities, they increasingly compromised funding supply altogether.”

tional line of business; namely “to actively search for and evaluate lending opportunities and advance loans to credit worthy enterprises and households”.<sup>100</sup> Instead, prior to the crisis, large banks increasingly pursued a different business model, based on “shadow banking”, which promised to alleviate both the capital problem and the long term funding problem simultaneously.

The essence of shadow banking is to make loans, securitize them, sell the securities and insure them, and actively trade all the financial assets involved.<sup>101</sup> In effect, traditional relationship banking is replaced by a collateralized market system with the repo market at its heart. Banks thus get risky assets off the balance sheet, reducing the constraints just noted, while providing a rich source of fees and further profits from market making and proprietary trading. However, while seemingly convenient to the financial institutions involved, shadow banking activities have significant externalities (or systemic risks) for the financial system as a whole.

A report by the Financial Stability Board (2012) enumerated many of these risks. Not least is the complexity and inherent non transparency of “shadow banking” – thus its name. With long chains of interactions involving collateral, rehypothecation<sup>102</sup> and large off-setting positions in CDS and other derivatives, exposure to counterparty

risk became almost impossible to estimate. In association with the belief (likely justified) that many of the firms at the heart of the system were “too big and/or complicated to fail”, these attributes effectively precluded the exercise of market discipline to reign in excessive risk taking. As well, the opacity of the system proved a substantial impediment to supervisory oversight. Shortcomings in this regard, with macroeconomic implications, have been documented by Blustein (2012) as well as the Independent Evaluation Office of the IMF (2011). Shortcomings at the microeconomic level were attested to by a number of criminal investigations into unacceptable kinds of financial behavior in the run up to the crisis.<sup>103</sup>

Another danger is that is that a collateral based lending system tends to be highly procyclical in its operations. This point has been well made by the FSB as well as Adrian and Shin (2008a and 2008b) and Geanakoplos (2003 and 2010). Essentially, this danger arises because the value of available collateral reflects three components; the market value of the collateral, the haircut imposed on the borrower and the velocity of turnover (rehypothecation) of the available collateral. All three of these are likely to move highly procyclically, a tendency documented using recent data by Singh (2012). Further, later in the credit upswing, whole classes of collateral can be judged “acceptable” that would not previously have been so con-

<sup>100</sup> Slovik (2011, p. 6) *To put this otherwise, the ratio of total loans to total assets for Deutsche Bank fell from 85% in 1990 to 27% in 2010. For UBS the decline was from 78% to 22%, and for Bank of America from 58% to 42%. See Slovik table 1.*

<sup>101</sup> *The most comprehensive description can be found in Pozsar et al. (2010). Also Financial Stability Board (2012).*

<sup>102</sup> *This element of market practices is not well known. Assets received as collateral by a lender are frequently lent out or used as collateral by the lender to borrow more funds. Known as “rehypothecation”, this practice makes the chain of related transactions still longer and more complicated. See Singh and Aitken (2009) for a seminal discussion.*

<sup>103</sup> *Consider recent cases of insider trading, money laundering and the setting of LIBOR. However, Kindelberger and Aliber (2005) remind us that fraud and criminality were late-credit-cycle phenomena long before the rise of shadow banking.*

sidered. Indeed, as Rajan (2005) has pointed out, substantial efforts were made to construct new instruments (like CDOs and their variants) that looked less risky in that the probability of default seemed to have fallen. The fact that the expected loss had not fallen commensurately, because the loss given default had risen, given the nature of the new instrument, was generally ignored.<sup>104</sup>

Finally, the way the shadow banking system evolved implied that the end of the “boom” phase might occur very precipitously. Longer term lending tended increasingly to depend on short term funding. Because such funds are not covered by deposit insurance schemes, “runs” can occur quickly when confidence erodes in the solvency of the counterparts. In effect, the famous “Minsky moment” is likely to be shorter, harder to predict, and even more self fulfilling than Minsky suggested. The failure of Bear Sterns and Lehman Brothers were the realization of these dangers. As well, the shadow banking system took on an increasingly international flavor. This not only reduced transparency and the quality of regulatory oversight, but also produced a degree of “balance sheet” exposure that threatened to precipitate or aggravate foreign exchange crises. Concerns of this nature were raised by Obstfeld (2010), Borio and Disyatat (2011) and Shin (2011).

To sum up, low policy rates encourage imprudent behaviour on the part of lenders during upswings in the credit cycle. Moreover, over recent decades, they also contributed to structural change within the financial sector that made it inherently more procyclical. All of

these developments implied that, when the crisis hit, it would prove resistant even to ultra easy monetary policy.

### 3.3.2 Banks and Shadow Banking in the Credit Downswing

Whatever precipitates the end of a credit upswing, the downswing will be characterized by a reversal of all the forces that previously made credit so easily available. Losses will have to be absorbed, affecting profits and capital.<sup>105</sup> The appetite for risk will de-



cline, as will the value of collateral as market prices fall, haircuts rise and rehypothecation slows. Worse, whole classes of collateral (like CDOs and the bonds of peripheral countries in Europe) will be judged unacceptable by lenders. Instead, they will accept as collateral only the bonds of the highest ranked sovereigns, and even then only for short term loans. Perhaps still worse, uncollateralized lending (say unsecured bond issues by banks) could become almost unavailable. All of these developments have been observed in the current crisis.

<sup>104</sup> In effect, these new instruments were designed to exploit a human trait well known to psychologists as “disaster myopia”; a suppression of fears about truly disastrous outcomes. It is possible that this trait could be the result of successful survival strategies becoming hard wired over millions of years of evolution.

<sup>105</sup> Financial institutions can for a time (perhaps a long time) avoid this by making new loans to cover interest payments (“evergreening”). Low interest rates encourage such behavior. Since the crisis began, loan default rates in Europe have been unusually low. See Bank for International Settlements (2012) Graph VI.1.

To say that financial institutions during the crisis now face capital losses and severe funding challenges is to say that the very problems they tried to avoid earlier, through the shadow banking mechanism, have now reappeared in a particularly virulent form. Moreover, they must be confronted, not at a time of vigorous economic expansion, but rather of contraction. This implies that both the cost of capital and the cost of funding (relative to policy rates) are



likely to be higher than during the earlier period of expansion. From a secular viewpoint, the implied need to deleverage might be thought a welcome reaction to excessive leverage earlier on.<sup>106</sup> However, from a cyclical perspective, it is legitimate to worry that a sharp tightening of credit conditions for ultimate borrowers will reduce their capacity to spend and thus deepen the downturn.

There seems little question that the financial systems of most AMEs face particular challenges at the present time. The situation is perhaps worst in Europe reflecting factors considered just below. While the problems of European banks are highlighted, the

interdependencies implicit in shadow banking imply that financial systems in other continents might also be deeply affected by possible European developments. Unfortunately, this is in the realm of uncertainty rather than quantifiable risk.

To explain the particular challenges facing European banks, consider first the degree of imprudent lending of core euro area banks to the banks of peripheral countries. These loans reflected the fallacious belief that there could be no balance of payments problems within the euro area. Closely related, European banks prior to the crisis had raised large sums in short term dollar loans and used them to make longer term dollar loans through the shadow banking system. Finding dollars to fund those positions subsequently proved particularly difficult, as money market mutual funds in particular withdrew funding.<sup>107</sup> Second, regulatory efforts to tighten capital and liquidity standards during the credit downswing have materially complicated the situation. Recall that most of the measures being implemented now were suggested under Basel 3. However, they were originally scheduled to be brought in only much later, in order to cushion the effects on a still recovering economy. Third, the evolving euro area crisis, with its implications for indebted sovereigns and even the survival of the euro, have raised further questions about the future of European banks.

How have financial institutions in the AMEs responded to the joint shortages of capital, longer term funding and acceptable collateral? As for capital, many banks have cut costs and retained more of the resulting profits, while a

<sup>106</sup> A body of literature is now emerging which suggests that, beyond certain levels of credit to GDP, financial deepening actually slows potential growth. See Cecchetti and Kharroubi (2012).

<sup>107</sup> McGuire and Goetz (2009).



few have issued new equity. Less positively, some European banks seem to have engaged in forbearance on bad loans to avoid losses of capital. Moreover, there also seems to have been a significant effort to reduce capital requirements by manipulating risk weights using internal models. As for longer term funding and the particular problem of collateral, many banks have been highly innovative in “collateral mining” in an attempt to obtain or create new collateral that lenders will think of as being safer. Collateral swaps between banks and insurance companies, better constructed CDOs, greater issuance of ETFs, issuance of covered bonds, and reliance on funding from corporations in the repo market have all increased. Unfortunately, each of these alternative sources of funds also has significant risks associated with it,<sup>108</sup> not least that the collateral offered could be significantly less safe than it first appears to be.

The bottom line thus remains. The poor health of the financial system in AMEs, arising from the earlier period of low rates and rapid credit expansion, could add materially to the headwinds facing the global economy. As noted above, rising funding costs have implied that bank lending rates have fallen significantly less than policy rates. In many countries, especially peripheral countries in Europe, lending standards have also tightened significantly. Small and medium size enterprises every-

where have been the most affected, as have borrowers in areas dominated by community banks whose lending generally lacks diversification.

Short of a wholesale restructuring of the liabilities of financial institutions (linked to recognizing losses on the asset side of the balance sheet), it is not clear what central banks can do to restore the financial system to health. If the problem is insolvency and fears of insolvency, the provision of still more liquidity only postpones the day of reckoning.<sup>109</sup> Indeed, if the central bank lending is done only against “good collateral”, the collateral shortfall problem will be exacerbated especially since central banks do not in general rehypothecate.<sup>110</sup> Finally, cheap capital from central banks discourages banks from issuing longer term (and more costly) bonds and encourages them to redeem older ones.

Reducing policy rates to zero temporarily raised lending spreads and profitability. However, over time, spreads (both term and credit) have trended back towards normal levels as longer term assets have matured. Indeed, in the aftermath of the financial crisis, the search for safety along with tightened regulatory standards resulted (in some countries) in abnormally sharp declines in term spreads due to declines in longer term government bond rates.<sup>111</sup> Against this background, policies like the Fed’s so called “Operation Twist”,

<sup>108</sup> *The Bank of England is concerned about collateral swaps and ETFs. See Hughes (2011). On ETFs, also see Ramaswamy (2011). On the limitations of the issuance of covered bonds, see Alloway (2012a) and Alloway (2012b). While it seems there continues to be scope for more covered bond issues at present, the concern remains that there will eventually be a “tipping point”. Because covered bonds subordinate other lenders, they might in the end cause uncovered lending to stop entirely.*

<sup>109</sup> *In the Introduction to this paper, explicit and timely debt restructuring was suggested as one of the policies that governments might follow that would actually encourage recovery. This would include measures to restore the health of the financial system, along the lines pursued by the Nordic countries in the early 1990s.*

<sup>110</sup> *Declining liquidity in the longer term US Treasury market has been ascribed to “Operation Twist”. Similar comments have followed on large scale purchases of gilts by the Bank of England. Aggressive purchases of JGBs by the Bank of Japan in early 2013 was also linked to increased interest rate volatility*

<sup>111</sup> *The flattening of yield curves has already led to a narrowing of interest spreads. See Bank for International Settlements (2012). Table VI.1.*



which artificially reduced term spreads, also reduced the willingness to lend long even if the desire to borrow long had increased commensurately.<sup>112</sup> And, finally and likely most important, with interbank rates close to zero, banks with surpluses became increasingly unwilling to lend to other banks with a shortage of funds. In this way, the availability of credit became even more constrained.

### 3.3.3 Other Longer Term Effects on the Financial Sector

Given the unprecedented character of ultra easy monetary policies, and the almost complete absence of a financial sector in currently used macroeconomic models, there might well be other longer term implications that are not yet on the radar screen. By way of example only, futures brokers demand margin, and customers often provide excess margin. The broker can invest the excess, and often a substantial portion of their profits comes from this source.<sup>113</sup> Very low interest rates threaten this income source and perhaps even the whole business model. A similar concern might arise concerning the viability of money market mutual funds, supposing that asset returns were not sufficient to even cover operating expenses. A final example of potential problems has to do with the swaps markets, where unexpectedly

low policy rates can punish severely those that bet the wrong way. This could lead to bankruptcies and other unintended consequences.<sup>114</sup>

A problem which has been well recognized is the implications of low interest rates for insurance companies.<sup>115</sup> This issue was flagged at least as far back as 2000,<sup>116</sup> but in recent years a wide range of studies into this problem have been carried out.<sup>117</sup> Ernst and Young estimate that the top 25 life companies would see net investment income decline by 51 basis points (from a 2010 level of 5.01%) if interest rates remained at the level of October 2011 for three years. Companies would be most affected when heavily invested in bonds, when the duration of the assets was short (relative to the duration of liabilities), and when companies had little room to maneuver on the liability side because of previous contractual agreements.

Such a decline in portfolio returns is significant and has already led to certain reactions on the part of the insurance companies most affected. Various, dividends have been lowered, premia have been raised, payouts to the insured have been reduced (where possible), and companies have withdrawn from business lines that no longer seem profitable. In conducting an assessment of the problems faced, and the reactions to date, Standard and

<sup>112</sup> See Gross (2012). This is particularly pernicious if it thwarts longer term lending to fund the longer term investment that many AMEs really need. A recent G-30 (2013) study has drawn attention to some of the difficulties faced in finding funding for long term investments.

<sup>113</sup> See Meyer (2012).

<sup>114</sup> See Haddock and Barnes (2012). They contend that, prior to 2007, many highly leveraged property deals in the UK used swaps to minimize the risks of rising financing rates. Indeed, many of these swaps had a maturity longer than the underlying loan itself. Now many of these deals need to be restructured, but low policy rates have raised the cost of breaking the swap to prohibitive levels. This is another example of how low policy rates can impede the purging of malinvestments in the downswing of the credit cycle.

<sup>115</sup> These are very similar to the implications for pension funds which were discussed above.

<sup>116</sup> Dickson (2001).

<sup>117</sup> Antolin et al. (2011), French et al. (2011), Standard and Poors (2011) and Ramaswamy (2012).

Poors said that it saw no need to change ratings “in the near term”. This is comforting.

However, left unassessed were three other risks that could prove important. First, what would be the effects of interest rates staying low for much longer than the next two to three years? Second, how might this interact with calls for more capital and expensive, new monitoring procedures in companies judged to be of systemic importance? Third, and closely related, what is the likelihood that some insurance companies might gamble for resurrection by substantially increasing their risk taking. Evidently this is a possible outcome not just confined to insurance companies, but to all financial institutions who suffer losses in a low interest rate environment.<sup>118</sup> Unfortunately, it is generally impossible to assess this possibility until such risks actually materialize. By then the damage, perhaps systemic, has already been done.

Finally, since the beginning of the crisis, another unwelcome phenomenon has been observed in financial markets; namely, Risk-On-Risk-Off (RoRo) trading. Within two sets of assets, those deemed risky and those deemed safe, correlations between asset class returns have risen sharply.<sup>119</sup> This reflects a new form of trading which seems to focus primarily on tail risks in a context of very ample liquidity which encourages leverage. When participants are feeling relatively sanguine, they rush into all the assets considered risky. When some event arouses fear in the future, there is a similar rush into all assets considered safe.

Clearly such behavior is unwelcome. First, the shift from “risk-on” to

“risk-off” has become almost entirely unpredictable. For example, recent political triggers have been developments concerning the future of the euro area and the US fiscal “cliff”. As discussed below, changes in perceptions about the future withdrawal (or not) of ultra easy monetary policies in the USA have also risen in importance as triggering events. Such sudden shifts in sentiment have raised the probability that someone with a highly leveraged position (perhaps even a firm deemed “too big to fail”) will eventually be caught out. Second, in a RoRo environment, “fundamentals” play virtually no role in portfolio decisions, which must have undesirable consequences over the longer term. Third, with high correlations, portfolio diversification provides few benefits in reducing risks. A world in which the first two moment of the



probability distribution of a portfolio no longer play a role in investment decisions would seem a very long way away from a classical world of “efficient” financial markets.

<sup>118</sup> For a discussion of the trading losses recently suffered by J. P. Morgan, see Tett (2012).

<sup>119</sup> See Williams et al. (2012).

### 3.4 Effects on Central Banks and Governments

Ultra easy monetary policies, whether very low policy rates or policies affecting the size and composition of their balance sheets, can also have longer run and unwelcome implications for central banks themselves. Some of these effects



are more technical. First, with very low policy rates, the likelihood rises that normal intermediation spreads in private markets will fall so far that these markets will collapse. The central bank may then find itself as the “market maker of last resort”. The current interbank market might fall into this category. Moreover, a similar experience in Japan in the 1990s indicates that restarting such private markets is not easy. Second, deeper questions can arise about central banks operating procedures in such an environment.<sup>120</sup> Third, with central banks so active in so many markets, the danger rises that the prices in

those markets will increasingly be determined by the central bank’s actions. While there are both positive and negative implications for the broader economy, as described in earlier sections, there is one clear negative for central banks. The information normally provided to central banks by market movements, information which ought to help in the conduct of monetary policy, will be increasingly absent. Finally, with policies being essentially unprecedented, wholly unexpected implications for central banks (as with others) cannot be ruled out over the longer term.<sup>121</sup>

Beyond these technical considerations, the actions undertaken by AMEs’ central banks pose a clear threat to their “independence” in the pursuit of price stability. First, as central banks have purchased (or accepted as collateral) assets of lower quality, they have exposed themselves to losses. If it were felt necessary to recapitalize the central bank,<sup>122</sup> this would be both embarrassing and another potential source of influence of the government over the central bank’s activities. Second, the actions of central banks have palpably been motivated by concerns about financial stability. Going forward, it will no longer be possible to suggest that monetary policy can be uniquely focused on near term price stability. Third, by purchasing government paper on a large scale, central banks open themselves to the criticism that they are cooperating in the process of fiscal dominance.<sup>123</sup>

<sup>120</sup> See Bank for International Settlements (2012) Box IV b.

<sup>121</sup> In mid 2012, some commentators suggested the ECB should start paying negative interest rates on reserves held at the ECB. The initial ECB resistance to this suggestion was based in part on the concern that this was wholly unexplored territory. Another worry, arising from recent Danish experience, was that banks would then have to recoup losses by raising rates on loans. In this way, monetary easing might actually prove contractionary.

<sup>122</sup> Leijonhufvud (2009) makes the related point that, in choosing who to support and who not, central banks are making choices with distributional implications. Issues of distribution fall more normally in the realm of politics and will attract the attention of politicians.

<sup>123</sup> Hanoun (2012) expresses concern that the focus of central banks on price stability will be diluted by financial dominance, fiscal dominance and also exchange rate dominance. This last concern refers to the “fear of floating”, referred to above, that has extended the credit driven problems in the AMEs to the EMEs as well.

It is easier to identify these possible implications for central banks than to assess their desirability. On recapitalization, it is not at all clear that central banks need positive capital to carry out their responsibilities.<sup>124</sup> On central banks being overly concerned with financial stability, many economists would argue that this was part (indeed the core) of the traditional mandate of central banks. They would note that, since financial instability can lead to deflation (which is not price stability either), the concerns about price and financial instability are simply two sides of the same coin.<sup>125</sup> Adrian and Shin (2008b) even insist that the link is growing ever stronger, given how policy rates drive the leverage cycle in the modern world of shadow banking. Finally, suppose that central bank purchases of government paper are a response to a market driven “run” that could become self fulfilling.<sup>126</sup> Is this not exactly the kind of situation when central banks ought to intervene? Evidently, such considerations are receiving a great deal of attention in the context of the euro area crisis.<sup>127</sup>

What are the implications of ultra easy monetary policy for governments? One technical response is that it could influence the maturity structure of government debt. With a positively sloped yield curve, governments might be

tempted to rely on ever shorter financing. This would leave them open to significant refinancing risks when interest rates eventually began to rise. Indeed, if the maturity structure became short enough, higher rates to fight inflationary pressure might cause a widening of the government deficit sufficient to raise fears of fiscal dominance. In the limit, monetary tightening might then raise inflationary expectations rather than lower them. While this dynamic was seen in the past in some Latin American countries, in this crisis the maturity structure of the debt in many AMEs has actually been lengthened not shortened.

A more fundamental effect on governments, however, is that it fosters false confidence in the sustainability of their fiscal position. In the last few years, in spite of rising debt levels, the proportion of government debt service to GDP in many AME’s has actually fallen. Citing as well the example of Japan, many commentators thus contend that the need for fiscal consolidation can be resisted for a long time. Richard Koo, Martin Wolf and others are undoubtedly right in suggesting that a debt driven private sector collapse should normally be offset by public sector stimulus. What cannot be forgotten, however, is the suddenness with which market confidence can be lost, and the fact that the

<sup>124</sup> The central banks of many countries have operated with negative capital for decades; e.g., Chile, Jamaica and others.

<sup>125</sup> This author, and Borio and others at the BIS, have been making this point for many years. The practical implication is that price stability targets should extend over a horizon long enough to allow imbalances to unwind. Thus, to lean against a credit bubble is to lean against some combination of possible near term inflationary pressures and/or the possibility of excessive disinflation (or even deflation) over the medium term. See White (2006a). Operationally, this implies that separating the price stability function from the financial stability function at central banks is logically wrong. See White (2012a). Issing (2012) reminds us, however, of some important political considerations that could qualify this conclusion.

<sup>126</sup> The problem is one of multiple equilibria. A sovereign may be solvent given reasonable interest rates, but not if a run pushes up rates beyond some limit.

<sup>127</sup> See in particular De Grauwe and Yuemei (2013) who argue that both the financial market and the official sector “panicked” (a bad equilibrium) and imposed fiscal austerity in Europe where it was not needed. Moreover, he argues that fiscal austerity has actually worsened prospects for government debt/ GDP ratios as the denominator has been significantly affected by Keynes’ “paradox of thrift”.

Japanese situation was initially highly unusual in a number of ways.<sup>128</sup>

What is clearer is that exiting from a period of ultra easy monetary policy will not be easy. In this area, the Japanese experience over the last two decades is instructive. Central banks using traditional models will hesitate to raise rates because growth seems sub-normal. Governments will also firmly resist higher rates, because they might well reveal that the level of government debt had indeed risen to unsustainable levels. Further, on the basis of recent experience, the entire financial community (with its formidable capacity for public communication and private lobbying) will oppose any tightening of policy as too dangerous. Their motives in this regard are questioned below. Presumably a sharp enough increase in inflation would lead to a tightening of policy. However, by then a lot of further damage – not least to the credibility of central banks – might well have been done.

Finally, the recognition that higher short rates might cause longer rates to “spike”, with uncertain effects on financial stability, will also induce caution.<sup>129</sup> In the first half of 2013, long bond rates around the world rose (and some equity markets fell) at the mere suggestion that the Federal Reserve might begin to “taper down” the pace at

which it was adding to the size of its balance sheet.<sup>130</sup> An explanation could begin with the recognition that “tapering” would only begin when it was clear that the US economy was on a sustainable growth path. The transition back to “normal” bond rates, from the very low rates associated with ultra easy monetary policy, thus implied an eventual need for very large rate movements indeed. Against this background, a certain skittishness in bond markets would not be unexpected, particularly if low policy rates had induced greater leverage. Similarly, a rush out of the currencies and assets in EMEs, also artificially stimulated by ultra easy monetary policies, might also be expected. It is more doubtful, however, that the effects of their policies on foreigners would exert any influence on the Fed’s policy decisions.

### 3.5 Effects on the Distribution of Income and Wealth

Income inequality has risen sharply in almost every country in the world in recent decades. This applies equally to AMEs and EMEs.<sup>131</sup> Moreover, after many years when distributional issues were largely ignored, these trends are now receiving increased attention. While arguments can easily be made for some degree of inequality to foster growth,<sup>132</sup> there is a sense almost ev-

<sup>128</sup> *The Japanese crisis of the 1990s began with a relatively low level of public debt, a very high household saving rate, the world’s largest trade surplus, and a very strong home bias for portfolio investment. Contrast this, for example, with the almost opposite position of the US today. A marked shift in market confidence in US Treasury debt could then well lead to a dollar as well as a bond crisis. Note further that the gross level of public debt in Japan has since risen to well over 200% of GDP, that the Japanese household saving rate has fallen virtually to zero, and that Japan has recently been running a current account deficit. Should all of this cause Japanese “home bias” to come unstuck, a similar crisis might yet be possible in Japan.*

<sup>129</sup> *This might be particularly the case in the USA. Recall the turmoil in the bond markets when rates were raised in 1994. Recall as well the concern to avoid financial instability implicit in the “measured” increase in policy rates between 2004 and 2007. Further, because of the problem of convexity hedging, which is unique to the United States, there might well be concerns that raising policy rates could have undesired consequences.*

<sup>130</sup> *Since it is generally thought that the long rate is influenced by the relative stock of debt in public and private hands, it was disconcerting that a “possible”, future, “change” in the “flow” could have such a substantial impact.*

<sup>131</sup> OECD (2011).

<sup>132</sup> *The classical argument is that richer people save more and this provides the basis for capital accumulation.*



erywhere that recent trends have gone too far. Picket and Wilkinson (2009) suggest that greater inequality has many undesirable social effects. It has also been suggested that greater inequality can lead to a concentration of political power in the hands of those who wish to use it for their own purposes. In the limit, such trends call into question the legitimacy of the whole democratic process. Further, by raising perceptions of unfairness, the trust that underpins all transactions in a market system can also be eroded. Evidently, these are crucially important social issues.

Given its global incidence and secular character, rising income inequality is most likely deeply rooted in technological change and globalization, both of which threaten the less well educated. Nevertheless, it is also worth asking whether, albeit to some lesser degree, this might be another longer term consequence of the stance of monetary policy. Not only has the share of wages (in total factor income) been declining in many countries, but the rising profit share has been increasingly driven by the financial sector. It seems to defy common sense that at one point 40% of all US corporate profits came from this single source.

To simplify a description of how such a process might work, distinguish between three classes of people. Class 1 (entrepreneurs and financiers) are those who are rich enough to save (equity) and they invest on a leveraged basis using funds borrowed from other savers. This second class of savers (Class 2) is also relatively well off, but more risk adverse than the first class. Class 3 con-

sists of the less well off who essentially borrow from the others. It is of interest to see who fares relatively well (and relatively badly) in the “boom-bust” phases of the credit cycle, and also how shadow banking practices play into this. As argued above, both developments have been encouraged by unnaturally easy monetary policies.

In the boom phase of the cycle, with interest rate low relative to expected rewards, members of Class 1 speculate, using leverage, and generally make substantial profits as asset prices rise and the economy expands. The momentum of this process continues even after policy rates begin to rise. Speculation is also encouraged by the safety net fea-



tures increasingly provided by governments.<sup>133</sup> Moreover, those in the financial sector systematically exploit knowledge asymmetries to increase both fees and gains from market movements. This process of extraction is facilitated by the inherent non transparency of the shadow banking system. Finally, members of Class 1 use their political influence to enhance these safety net fea-

<sup>133</sup> These would include the “Greenspan put”, and the assumption that some firms were too big/complex/interrelated to be allowed to fail. Another important advantage is that lenders in the USA and EU, with loans secured on financial collateral, have bankruptcy privileges. That is, in the case of bankruptcy, the holders of collateral can immediately seize it and sell it, thus jumping the normal queue of creditors. See Perotti (2012) and Johnson (2010). Fisher and Rosenblum (2012) and others feel that banks that cannot be allowed to fail in a disorderly fashion should be broken up. Needless to say, this suggestion has proven controversial.

tures and to drum up support for the “safety and soundness” of the shadow banking system upon which they increasingly rely.<sup>134</sup>

Members of Class 2 also profit, especially as interest rates rise, since they are net savers (creditors) with predominantly short term assets. Class 3 members suffer from higher interest rates as



the recovery continues, but to the extent they have borrowed to buy real assets (especially houses) they also seem to gain as the prices of those assets rise. Rajan (2010) contends that governments actively encouraged this process<sup>135</sup> to allow lower income people to continue to consume, even as their incomes and job prospects were being further squeezed by technological developments and globalization.

In the bust phase of the cycle, asset prices collapse and Class 1 speculators can lose part (though rarely all) of the wealth accumulated earlier. Sharply easier monetary conditions ease their burden materially. Again, there is lobbying to ensure that the other forms of support promised earlier by govern-

ments actually materialize. Members of Class 2 bear the main burden of this transfer from creditors to debtors, either directly (as their financial assets earn very little) or indirectly due to lower pensions and higher insurance cost. As debtors, members of Class 3 also benefit from ultra easy monetary policy.<sup>136</sup> Overall, however, they suffer the most because their net wealth is very low, their access to further credit disappears, and they are the most liable to lose their jobs in the downturn. Ironically, if Rajan’s thesis is correct, the policies originally designed to help the poor have hurt them the most.

This story is highly stylized and perhaps not true in certain respects. Nevertheless, it seems true enough to warrant further interdisciplinary research into the potential redistributive implications of our monetary policies.

## 4 Conclusions

The case for ultra easy monetary policies in response to the crisis has been well enough made to convince the central banks of most AMEs to follow such policies. They have succeeded thus far in avoiding a collapse of both the global economy and the financial system that supports it. Nevertheless, it is argued in this paper, that the capacity of such policies to stimulate “strong, sustainable and balanced growth” in the global economy has become very limited. Moreover, easy monetary policies can have a wide variety of undesirable longer term effects. They create malinvestments in the real economy, threaten the health of financial institutions and

<sup>134</sup> For two powerful works speaking to these issues, see Johnson (2009) and Wedel (2009).

<sup>135</sup> In the USA, the massive expansion of the remit of Government Sponsored Enterprises (especially Fannie Mae and Freddie Mac) before the crisis provided strong support for Rajan’s position.

<sup>136</sup> This would be limited, however, if the mortgage were fixed rate and long term. In the USA, refinancing opportunities would also be restricted if the value of the property fell below the value of the mortgage.

the stable functioning of financial markets, constrain the “independent” pursuit of price stability by central banks, encourage governments to refrain from confronting sovereign debt problems in a timely way, and redistribute income and wealth in a highly regressive fashion. Clearly, each longer term effect on its own might be questioned. However, considered all together they support strongly the proposition that aggressive monetary easing in economic downturns is not “a free lunch”.

Looking forward to when this crisis is over, the principal lesson for central banks would seem to be that they should lean more aggressively against credit driven upswings, and be more

prepared to tolerate the subsequent downswings. This could help avoid future crises of the current sort. Of course, the current crisis is not yet over, and the principal lesson to be drawn from this paper concerns governments rather more than central banks. What central banks have done is to buy time to allow governments to follow the policies<sup>137</sup> that are more likely to lead to a resumption of “strong, sustainable and balanced” global growth. If governments do not use this time wisely, then the ongoing economic and financial crisis can only worsen as the longer term and unintended consequences of past monetary stimulus increasingly materialize.

## References

- Adrian, T. and H. S. Shin. 2008a.** Liquidity and Financial Cycles – BIS Working Paper 256. Basel. July.
- Adrian, T. and H. S. Shin. 2008b.** Financial Intermediaries, Financial Stability and Monetary Policy. Federal Reserve Bank of New York Staff Reports 346. September.
- Alloway, T. 2011a.** Towards the Limits of covered bond funding. [ft.com/alphaville](http://ft.com/alphaville). 16 March.
- Alloway, T. 2011b.** Bank Collateral drying up in rush for security. Financial Times. 19 October.
- Altunbas, Y., L. Eambacortal and D. Marquez-Ibanez. 2010.** Does monetary policy affect bank risk-taking. BIS Working Paper 298. Basel. February.
- Antolin, P., S. Schich and J. Yermo. 2011.** The Economic Impact of Protracted Low Interest Rates on Pension Funds and Insurance Companies. OECD Journal: Financial Markets Trends 2011/1. Paris.
- Bailey, M. J. 1992.** National Income and the Price Level. Mc Graw Hill Book Company. New York.
- Ball, L. 2012.** Ben Bernanke and the Zero Bound. John Hopkins University. Mimeo. February.
- Bank for International Settlements. 2008.** Speech of the General Manager on the occasion of the Annual General Meeting. Basel. June.
- Bank for International Settlements. 2012.** Annual Report – Basel. June.
- Bech, M., K. Gambacorta and E. Kharroubi. 2012.** Monetary Policy in a Downturn: Are Financial Crises Special – BIS Working Paper 388. Basel. September.
- Beckworth, D. 2008.** Aggregate Supply Driven Deflation and Its Implications for Macroeconomic Stability. Cato Journal 28/3. Autumn.
- Beinhocker, E. D. 2006.** The Origin of Wealth – Harvard Business School Press. Boston
- Bernanke, B. S. 2000.** Japan's Slump: A Case of Self-Induced Paralysis? Paper presented at American Economic Association Meetings. January. Also in: Posen, A. and Mikitani, R. Japan's Financial Crisis and Its Parallels to US Experience. Institute for International Economics. September.

<sup>137</sup> For a fuller description of these recommended policies, see White (2012b).

- Bernanke, B. S. 2002.** Remarks at the Conference to Honor Milton Friedman. University of Chicago. Chicago. November.
- Bernanke, B. S. 2003.** Some thoughts on Monetary Policy in Japan. [www.frb.gov](http://www.frb.gov) (retrieved on 29 July). 31 May.
- Bernanke, B. S. 2010.** What the Fed did and Why – Washington Post. Washington. 4 November.
- Bernholz, P. 2006.** Monetary Regimes and Inflation: History, Economic and Political Relationships. Edward Elgar Publishing.
- Blanchard, O., G. Dell’Ariccia and P. V. Mauro. 2010.** Rethinking Macroeconomic Policy – IMF Staff Position Note SPN/10/03. Washington. 12 February.
- Blustein, P. 2012.** How Global Watchdogs Missed a World of Trouble. Centre for International Governance Innovation Papers 5. Waterloo. Ontario. July
- Borio, C. E. V. and W. R. White. 2003.** Whither Monetary and Financial Stability: the Implications of Evolving Policy Regimes? Presentation at the Symposium. Monetary Policy and Uncertainty: Adapting to a Changing Economy. Sponsored by the Federal Reserve Bank of Kansas City. Jackson Hole. Wyoming. August.
- Borio, C. and P. Disyatat. 2004.** Unconventional Monetary Policies: an Appraisal. BIS Working Paper 292. Basel. November.
- Borio, C. and H. Zhu. 2008.** Capital Regulations, Risk-taking and Monetary Policy, a Missing Link in the Transmission Mechanism. BIS Working Paper 268. Basel. December.
- Borio, C. and P. Disyatat. 2011.** Global Imbalances and the financial Crisis : Link or No Link ? BIS Working Paper 346. Basel. May.
- Brereton-Fukui, N. 2012.** Asian Rise in Borrowing Rings Alarms. In: Wall Street Journal. 24 December.
- Buchanan, M. 2002.** Ubiquity: Why Catastrophes Happen. Three Rivers Press. New York. November.
- Cecchetti, S., M. Mohanty and F. Zampotti. 2010.** The Future of Public Debt: Prospects and Implications. BIS Working Paper 300. Basel. March.
- Cecchetti, S. and E. Kharroubi. 2012.** Reassessing the Impact of Finance on Growth. BIS Working Paper 381. Basel. July.
- Chancellor, E. and M. Monnelly. 2013.** Feeding the Dragon: Why China’s Credit System Looks Vulnerable. GMO White Paper. January
- De Grauwe, P. and J. Yuemei. 2013.** Panic-driven austerity in the Eurozone and its implications. Vox 21. February.
- Clement, P. 2010.** The Term Macroprudential: Origins and Evolution. BIS Quarterly Review. March.
- Dickson, E. 2001.** The Implications of lower interest rates for insurers: a comment. Geneva Papers on Risk and Insurance 25. 1 January.
- Disyatat, P. 2010.** The Bank Lending Channel revisited. BIS Working Paper 297. Basel. February.
- Dugger, R. 2011.** GE’s Jeff Immelt understands FAC Discounting. Do you? Hanover Comment. 6 April.
- The Economist. 2008.** The Biggest boom in history. 7 June.
- European Union Chamber of Commerce. 2009.** Overcapacity in China: Causes, Impacts and Recommendations.
- Fahr, S., R. Motto, M. Rostagne, F. Smets and O. Tristani. 2010.** Lessons for Monetary Policy: Strategies from the Recent Past – Approaches to Monetary Policy Revisited – Lesson from the Crisis. Sixth ECB Central Banking Conference. 18. to 19. November. Frankfurt
- Financial Stability Board. 2012.** Securities Lending and Repo: Market Overview and Financial Stability Issues. Basel. April.

- Fisher, R. W. and H. Rosenblum. 2012.** How big banks threaten the economy. In: Wall Street Journal 4. April.
- Fisher, R. W. 2012.** The limits of the powers of central banks. Remarks at St. Andrews University. St Andrews Scotland. 5 June.
- Flynbjerg, B. 2009.** Survival of the unfittest: why the worst infrastructure gets built and what we can do about it. Oxford Review of Economic Policy 25/3. 344–367.
- French, D., R. de Haan, R. Luck and J. Mosbo. 2011.** The Impact of prolonged low interest rates on the Insurance Industry. Ernst and Young. New York. October.
- G30. 2013.** Long Term Finance and Economic Growth. Washington DC. February
- Galati, G. and W. Melick. 2004.** The evolving inflation process: an overview. BIS Working Paper 196. Basel. February.
- Galati, G., P. Heemeijer and R. Moessner. 2011.** How do inflation expectations form : New insights from a high frequency survey. BIS Working Paper 349. Basel. July.
- Galbraith, J. K. 1993.** A short History of Financial Euphoria. Penguin Books. New York.
- Gambacorta, L. 2009.** Monetary Policy and the Risk-taking Channel. BIS Quarterly Review. Basel. December.
- Geanakoplos, J. 2003.** Liquidity, Default, and Crashes: Endogenous Contracts in General Equilibrium. In: Dewatripont, M., L. P. Hansen and S. J. Turnovsky (eds.). Advances In Economics and Econometrics: Theory and Applications 2. 170–205. Econometric Society Monographs: Eight World Congress. Cambridge University Press.
- Geanakoplos, J. 2010.** Solving the Present Crisis and managing the leverage Cycle. Federal Reserve Bank of New York. Policy Review. New York. August.
- Gross, B. 2012.** Zero-Based Money Threatens and Traps Economic Recovery. Financial Times. 7 February.
- Haberler, G. 1939.** Prosperity and Depression. League of Nations. Geneva.
- Haberler, G. 1984.** Reflections on Hayek's Business Cycle Theory. In: Cato Journal 6. Autumn.
- Haddock, M. and G. Barnes. 2012.** Swaps : the Unintended Consequences. EMEA Viewpoint, CB RE. Quarter 1.
- Haldane A. G. 2012.** Tails of the Unexpected. Presentation at the Conference The Credit Crisis Five Years on: Unpacking the Crisis – University of Edinburgh Business School. 8 to 9 June.
- Hanoun, H. 2012.** Monetary Policy in the Crisis: Testing the Limits of Monetary Policy. Speech delivered at the 47<sup>th</sup> SEACEN Governor's Conference. Seoul. Korea. 13 to 14 February.
- Hoffman, A. 2012.** Zero Interest Rate Policy and Unintended Consequences in Emerging Markets. Mimeo. University of Leipzig. Institute for Economic policy. Leipzig. 10 May.
- Hughes, J. 2011.** Concerns grow over collateral swap deals. Financial Times. July.
- Independent Evaluation Office. 2011.** IMF Performance in the Run-up of the Financial and Economic Crisis. International Monetary Fund. Washington.
- Issing, O. 2012.** Central Banks – Paradise Lost. Centre for Financial Studies Working Paper 2012/06. Frankfurt, June.
- Johnson, R. 2010.** Credible Resolution: What it takes to end: Too Big to Fail. Roosevelt Institute.
- Johnson, S. 2009.** The Quiet Coup. In: Atlantic Magazine. May.
- Johnson, S. 2010.** Bond yield warning for UM Companies. Financial Times. 4 October.
- Jorda, O., M. Schularick and A. M. Taylor. 2012.** When credit bites back: leverage, business cycles and crises. Paper prepared for a conference on Debit and Credit Growth and Crises hosted by the World Bank and the Bank of Spain. Madrid. 18 to 19 June.
- Kaminska, I. 2012.** The terminal disease affecting banking. Ft.com/alphaville. 18 July.
- Keynes, J. M. 1936.** The General Theory of Employment, Interest and Money. Cambridge University Press. Cambridge.



- Kindelberger, C. P. and R. Z. Aliber. 2005.** Manias, Panics and Crashes. (Fifth Edition). Palgrave Macmillan. New York.
- Koo, R. C. 2003.** Balance Sheet Recession. John Wiley and Sons. Singapore.
- KPMG Global. 2012.** Automotive Executive Survey.
- Kregel, J. 2011.** Was Keynes's Monetary Policy, à Outrance in the Treatise, a Forerunner of ZIRP and QE? Did He Change His Mind in the General Theory? Policy Note 2011/4. Levy Economics Institute of Bard College.
- Laidler, D. 1999.** Fabricating the Keynesian Revolution. Cambridge University Press. Cambridge. UK.
- Lardy, N. R. 2012.** Sustaining China's Economic Growth after the Global Financial Crisis. Peterson Institute. Washington. January.
- Leijonhufvud, A. 1968.** On Keynesian Economics and the Economics of Keynes. Oxford University Press. London.
- Leijonhufvud, A. 2009.** Out of the Corridor: Keynes and the Crisis. Cambridge Journal of Economics 33. 741–757
- Leijonhufvud, A. 2012.** The Unstable Web of Contracts. Presentation at the INET Conference, Berlin. March.
- Lowe, P. 2012.** Bank Regulation and the Future of Banking. Remarks to the Australian Conference of Economists. Melbourne. 11 July.
- Mackintosh, J. 2012.** The Short View. Financial Times. October.
- Maddaloni, A. and J.-L. Peydro. 2010.** Bank Risk-Taking, securitisation, supervision and low interest rates: Evidence from the Euro Area and the US lending standards. ECB Working Paper Series 1248. October.
- Masters, B., P. Jenkins and M. Johnson. 2011.** Fears over Lenders Capital Tinkering. Financial Times 14. November.
- McGregor, R. 2010.** The Party: The Secret World of China's Communist Rulers. Harper Collins Books. New York.
- McGuire, P. and von P. Goetz. 2009.** The US dollar shortage in Global Banking. BIS Quarterly Review. Basel, March.
- McKinsey Global Institute. 2010.** Debt and Deleveraging: The Global Credit Bubble and its Economic Consequences. New York. January
- Merton, R. 2006.** Observations on innovation in Pension Funds Management in the Impending Future. Presentation at the 2005 NCREIF Conference.
- Meyer, G. 2012.** Zero Interest rates will force brokers to hunt for new revenues. Financial Times. 22 July.
- Mian, A. and A. Sufi. 2011.** What Explains High Unemployment ? The Agregate Demand Channel. NBER Working Paper 17830. February.
- Minsky, H. 1992.** The Financial Instability Hypothesis. Jerome Levy Institute. Working Paper 74. May.
- Muellbauer, J. 2007.** Housing, Credit, and Consumer Expenditure. Presentation at the Symposium "Housing, Housing Finance and Monetary Policy" sponsored by the Federal Reserve Bank of Kansas City. Jackson Hole. Wyoming. August.
- Obstfeld, M. 2010.** Expanding Gross Asset Positions and the International Monetary System. Presentation at the Symposium Macroeconomic Challenge: The Decade Ahead. Sponsored by the Federal Reserve Bank of Kansas City. Jackson Hole. Wyoming. August.
- OECD. 2011.** Divided We Stand. Paris.
- Ostry, J., A. R. Ghosh, K. Habermeier, M. Chamon, M. S. Qureshi and D. B. S. Reinhart. 2010.** Capital Inflows: The role of controls – IMF. Staff Position Note. SPN 10/04.

- Peek, J. and E. S. Rosengren. 2003.** Perverse Incentives and the Misallocation of Credit in Japan. NBER Working Paper 9643.
- Perotti, E. 2012.** The roots of shadow banking. VOX. 21 June.
- Pickett, K. and R. Wilkinson. 2009.** The Spirit Level. City More Equal Societies Almost Always Do Better. Bloomsburg Press. London.
- Posen, A. S. 2011.** Central Bankers: Do something. International Herald Tribune. 21 November.
- Pozsar, Z., T. Adrian, A. Askerft and H. Baesky. 2010.** "Shadow Banking" Federal Reserve Bank of New York. Staff Report 458. New York. July.
- Powell, J. 2003.** FDR's Follies, How Roosevelt and His New Deal Prolonged the Great Depression. New York: Random House.
- Rajan, R. G. 2005.** Has Financial Development Made the World Riskier? Presentation at the Symposium "The Greenspan Era: Lessons for the Future". Sponsored by the Federal Reserve Bank of Kansas City. Jackson Hole. Wyoming. August.
- Rajan, R. G. 2010.** Fault Lines: How Hidden Fault Lines Still Threaten the World Economy. Princeton University Press. Princeton.
- Ramaswamy, S. 2011.** Market Structure and Systemic Risks of Exchange – traded funds. BIS Workshop Paper 343. Basel. April.
- Ramaswamy, S. 2012.** The Sustainability of Pension Schemes. BIS Working Paper 368. Basel. January.
- Reinhart, C. M. and V. Reinhart. 2010.** "After the Fall" – Presentation at the Symposium "Macroeconomic Challenges: The Decade Ahead. Sponsored by the Federal Reserve Bank of Kansas City. Jackson Hole. Wyoming. August.
- Reinhart, C. M. and Rogoff K. S. 2009.** This Time is Different: Eight Centuries of Financial Folly. Princeton University Press. Princeton, N. J.
- Rogoff, K. S. 2011.** Global and Monetary Policy Overview and Recent Issues. Presentation to a Symposium on Which Regulation for Global Imbalances? Sponsored by the Bank of France, Paris. March.
- Shin, H. S. 2011.** Global Banking Glut and Loan Risk Premium. Mundell-Fleming Lecture. Princeton University. Princeton.
- Shirakawa, M. 2012a.** Deleveraging and Growth: Is the Developed World Following Japan's Long and Winding Road? Lecture at the London School of Economics. London, 10 January.
- Shirakawa, M. 2012b.** The Bank of Japan's Efforts toward Overcoming Deflation. Speech at the Japan National Press Club. Tokyo. 17 February.
- Singh, M. and J. Aitken. 2010.** The Sizable Role of Rehypothecation in the Shadow Banking System – IMF Working Paper 10/172. Washington. July.
- Singh, M. 2011.** Velocity of Pledged Collateral: Analysis and Implications. IMF Working Paper 11/256. Washington. November.
- Slovik, P. 2011.** Systemically Important Banks and Capital Regulation Changes. OECD Economic Working Papers 916. Paris.
- Smiley, G. 2002.** Rethinking the Great Depression. Chicago: Ivan R. Dee.
- Soros, G. 2010.** The Soros Lectures at the Central European University. Public Affairs. New York.
- Standard and Poor's. 2011.** Interest Rate Risk in 2012: With low rates persisting, Insurance Companies try to muddle through. November.
- Summers, L. and B. 2012.** Fiscal policy in a depressed economy. BPEA Spring.
- Svenson, L. 2003.** Escaping from the liquidity trap and deflation: the foolproof way and others. In: Journal of Economic Perspectives 17/4.
- Tett, G. 2012.** Size can be deadly in a low rate world. Financial Times. 17 May.

- Turner, A. 2013.** Debt, Money and Mephistopheles. How Do We Get Out of this Mess? Presentation of the Cass Business School. London. February.
- Turner, P. 2011.** Is the long-term interest rate a policy victim, a policy variable or a policy lodestar. BIS Working Paper 367. Basel. December.
- Waldrop, M. M. 1992.** Complexity – Lemon and Schuster Paperbacks. New York.
- Wedel, J. R. 2009.** Shadow Elite – Basic Books. New York.
- White, W. R. 2004.** Are changes in Financial Structure Extending Safety Nets? BIS Working Paper 250. Basel.
- White, W. R. 2006a.** Is Price Stability Enough? BIS Working Paper 205. April.
- White, W. R. 2006b.** Measured Wealth, Real Wealth and the Illusion of Saving. Presentation to a Conference Organized by the Irving Fisher Committee. Basel. August.
- White, W. R. 2008.** Globalization and the Determinants of Domestic Inflation. BIS Working Paper 250. Basel. March.
- White, W. R. 2010.** The Mayekawa Lecture: Some Alternative Perspectives on Macroeconomic Theory and Some Policy Implications. Monetary and Economic Studies. Institute for Monetary and Economic Studies. Bank of Japan 28. November.
- White, W. R. 2011.** Why All Central Banks Are Not the Same. In: Gokarn, S. (ed.). Challenges to Central Banking in the Context of Financial Crises. Reserve Bank of India and Academic Foundation. New Dehli. February.
- White, W. R. 2012a.** Macroprudential Regulatory Policies: The New Road to Financial Stability. In: Claessens, S., D. Evanoff, G. Kaufman and I. Kodres (eds.). Macroprudential Regulatory Policies: The New Road to Financial Stability. World Scientific Press. Singapore. 357–370.
- White, W. R. 2012b.** Credit Crises and the Shortcomings of Traditional Policy Responses. OECD. Economics Department. Working Paper 971. Paris.
- White, W. R. 2013.** Overt Monetary Financing (OMF) and Crisis Management. [www.project-syndicate.org](http://www.project-syndicate.org) (Retrieved on September 24, 2013).
- Williams, S., D. Fenn and M. McDonald. 2012.** Risk On-Risk Off: Fixing a Broken Investment Process. HSBC Global Research. April.
- Yamaguchi, Y. 1999.** Asset Prices and Monetary Policy: Japan's Experience. Panel Presentation at the Symposium. New Challenges for Monetary Policy organized by the Federal Reserve Bank of Kansas City. Jackson Hole. Wyoming. February.