ON TIME, STOCKS AND FLOWS: UNDERSTANDING THE GLOBAL MACROECONOMIC CHALLENGES

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Five years after the financial crisis, the global economy remains unbalanced and many of the advanced countries are still struggling to return to robust, sustainable growth. Taking a historical perspective, I argue that this predicament reflects a failure to adjust to profound changes in the economic landscape, which have given rise to the (re-)emergence of major financial booms and busts. The economic developments that really matter now take much longer to unfold – economic time has slowed down relative to calendar time – and yet the planning horizons of economic agents have shortened. The key problems arise from the cumulative effects of past decisions on stocks, and yet these effects are treated as short-term flow issues. The risk is that instability will become entrenched in the system. Policy needs to adjust.

Keywords: short horizons; debt; financial cycle; banking crises; balance sheet recessions

JEL Classifications: E30, E44, E50, G10, G20, G28, H30, H50

Or tu chi se', che vuo' sedere a scranna
Per giudicar di lungi mille miglia
Con la veduta corta di una spanna?

Now who art thou, that on the bench wouldst sit
In judgment at a thousand miles away,
With the short vision of a single span?
(Dante Alighieri, Divine Comedy, Paradise, XIX)

Introduction

It wasn't meant to be like this. The financial crisis that began in 2007 shattered the illusion of uninterrupted prosperity that had prevailed in much of the Western world. It was not the first time that this had happened. Doubtless, it will not be the last. Five years on, much of the advanced country world is still struggling to return to robust, sustainable growth. And the crisis has kept morphing before our eyes; it has now engulfed sovereigns too. The Euro Area is the new epicentre. But will the tremors stop there?

In what follows, I will seek to provide a broad framework for thinking these issues through. How did we get here? Why? Where might we go from here? How might we extricate ourselves from our predicament? These are hard questions. No one really knows the answers. But all of us have a perspective and a narrative that goes with it. This is just another one – one that draws heavily on work done at the BIS.

I will try to look below the busy and at times chaotic surface of the world economy. The idea is to identify what one might call the shifts in its 'tectonic plates' – those deep forces that, slowly but cumulatively, can fundamentally reshape what we see on the surface and that economists call 'economic regimes'. I will highlight three such forces: financial liberalisation, the establishment of credible anti-inflation monetary frameworks, and the globalisation of the real side of the world economy. Each of them, taken in isolation, is undoubtedly a good thing. All of them together are worth having and fighting for. Yet I will argue that a failure of policy to adjust to them has played an important role in the crisis and its aftermath. It has given rise to the re-emergence of powerful financial cycles, whose booms and busts have caused havoc in the economy and have left us where we are today.

But what is the link between all this and the title of my

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remarks? In fact, the title highlights two key aspects of the story.

First, time. As the three deep forces gained full strength from the mid-1980s, they shaped an environment where, in Burns and Mitchell's terminology, economic time has slowed down relative to calendar time.[1] That is, the macroeconomic developments that matter take much longer to unfold. The length of the financial cycle is much longer than that of the traditional business cycle, of the order of 16 to 20 years or more compared with up to eight years.[2] Yet the planning horizons of market participants and policymakers have not adjusted accordingly – indeed, if anything, they have shrunk. This is a critical reason why the current problems have arisen and why it has proved so hard to solve them. And it has major implications for the sustainability of growth, for financial regulation, for fiscal policy and for monetary policy.

We then come to stocks and flows. In the new environment, stocks have come to dominate economic dynamics, in particular the large stocks of assets and, above all, debt. Stocks build up above trend during financial booms, as credit and asset prices grow beyond sustainable levels, and generate stubborn overhangs once the boom turns to bust. Stocks raise serious policy challenges. In the presence of policy responses that react too little to booms and too much to busts – in jargon, that are asymmetric – stocks grow over consecutive business cycles. It takes longer to deal with them. And doing so is also politically more difficult, because of the serious impact on income and wealth distribution, both within and across generations. This is true of both private and public debt. Failure to deal with stocks effectively could entrench instability in the system.

If this diagnosis is right, the remedy is not hard to find, although it may be extraordinarily difficult to implement. In a nutshell, it is to lengthen policy horizons, to put in place more symmetrical policies, and to tackle the debt problems head-on. Much of my discussion will seek to make these guidelines more concrete. The ultimate risk of a failure to adjust is that of yet another epoch-defining shift in the tectonic plates – the risk of a reversal that will take us back to an era of financial and trade protectionism as well as inflation.

The structure of my remarks is as follows. The first section lays out the broad canvas. It considers the changing character of economic fluctuations, highlighting the role of the financial cycle and its link to structural institutional arrangements, policy decisions and horizons. The second section turns to the policy challenges. It begins with a brief summary of the current situation, seen through the lens of the financial cycle. It then explores, in turn, the immediate or more conjunctural challenge of how to return to self-sustaining and sustainable growth and then the longer-term or more structural challenge of how to adjust policy frameworks to address the financial cycle – not to be interpreted sequentially, though. The discussion covers financial (specifically prudential) regulation and supervision, fiscal and monetary policies. While my focus is on the global economy, I will also note the specificities of the European situation.

The broad canvas

Stylised facts: an economic historian's perspective

Imagine a future economic historian looking back at the big macroeconomic trends from the first oil shock of the early 1970s to our present day. What would he see as he cast his gaze over a longer historical timespan? Consider, in turn, the most salient outcomes, the intellectual backdrop, the features of banking crises, and institutional setups.

In terms of outcomes, he would no doubt be struck by the major shift in the behaviour of inflation: from high and variable to low and stable, with the inflexion point around the early 1980s. At the same time, he would also note a major increase in financial crises, especially banking crises, with serious macroeconomic consequences, in both advanced and emerging market economies.

Reading the contemporary economic texts to understand the intellectual backdrop, he would surely find it ironic that the view prevailing at the time had regarded price stability as a guarantee of macroeconomic stability. And that, in much of the West during the early 2000s, there had even been talk of a so-called Great Moderation: a golden age of stable output and low inflation. This conviction had hardly been dented by the banking crises that had hit emerging market economies and even some advanced ones during the 1980s and 1990s, not least the Nordic countries and Japan. To paraphrase Reinhart and Rogoff,[3] what seemed to be at work was not just the 'this-time-is-different' syndrome but the no less insidious 'we-are-different' syndrome. It had taken the Great Financial Crisis, as contemporaries had quickly called it, which had erupted in 2007 to shake this complacency.

The historian would also note that the experience of those years had been by no means unique. Similar economic fluctuations, where low inflation had coexisted with occasional banking crises, had been quite common in the Gold Standard days, when countries had pegged

their currencies to gold.[4] Indeed, a long economic boom with low and stable inflation had ushered in that other defining moment in economic history – the Great Depression in the United States in the early 1930s. Then, just as later on, there had been talk of permanent prosperity, of an end to the tyranny of the business cycle. *Plus ça change…*

Our historian would then go one level deeper. He would ask: "Are banking crises, like Tolstoy's famous unhappy families, all different? Or are they more like his happy ones, which are all alike?" It is all too easy, he would note, to spot the idiosyncratic features of a crisis. Structured products, for instance, had not existed in the early 1930s. Or, to take just another example, the crises in Japan and Nordic countries had caused havoc in bank-based financial systems; by contrast, the subsequent Great Financial Crisis had originated in the United States, with its securitisation-intensive, capital markets-based financial system. Or, again, the crisis in Finland had followed the collapse of its main trading partner, the Soviet Union; but no obvious external shock had been at work in 2007. And he could go on. Yet, he would quickly realise that focusing on idiosyncrasies would mean falling victim to the 'we-are-different' syndrome in another guise. A fuller understanding of crises requires a focus on what they have in common, not on how they differ. Only then can one find reliable remedies. After all, had not the Japanese bank-based financial system been hailed as superior ahead of the country's banking crisis? And had not much the same been said of the US market-based financial system ahead of its own meltdown?

Our historian would then look for common patterns. Soon enough, an obvious one would leap out at him: crises tend to be preceded by major financial booms and followed by protracted busts that leave deep scars in the economic tissue. In other words, they are closely associated with peaks in the financial cycle. The joint behaviour of credit and asset prices, in particular property prices, captures these cycles remarkably well. And since banking crises are rare events in any given country, it is natural for these cycles to be very long. Their order of magnitude is between 15 and 20 years.[5]

As he read further, our historian would realise that the close association between crises and financial booms and busts had, in fact, been recognised early on in the economics profession, as far back as the 19th century.[6] During the postwar period, economists such as Kindleberger and Minsky had kept the concept alive at the margins of the field.[7] Their work had inspired policy-oriented research ahead of the Great Financial Crisis.[8] But it had gone largely unheeded, drowned in the contagious enthusiasm for the Great Moderation. Memories are short; hubris long.

But our historian's intellectual curiosity could not stop there. He has established that financial cycles foment banking crises, with damaging macroeconomic consequences. He has also noted that financial cycles were a common feature both of the gold standard era and of the period running from the mid-1980s to our present day. Could the two periods have yet more in common?

"Yes", would be our historian's answer. And this conclusion would refer to the tectonic plates of the global economy – to the institutions that embody its 'economic regimes'. The two eras had seen the coexistence of monetary policy frameworks that delivered reasonable price stability with liberalised financial markets and highly integrated markets for goods, capital and labour. In fact, they had come to be known as the first and second waves of globalisation. The successful fight against inflation dated back to the early 1980s, and had gradually spread across the world thereafter. By the mid-1980s policymakers had largely liberalised domestic financial markets, and by the end of that decade, in the words of Padoa-Schioppa and Saccomanni, the global financial system had turned from government-led to market-led.[9] The integration of goods and factor markets had started much earlier in the postwar period, but it had taken a quantum leap in the 1990s, when the former communist countries had entered the capitalist production system. As Thomas Friedman had put it, the world had become flat – once again, he should have added.[10]

Stylised facts: an interpretation

Is this similarity between deep structures and economic outcomes just a coincidence? I would suggest not. But now it is best to part company with our economic historian, as we move further away from the realm of stylised facts to that of (we hope) informed conjectures and their policy implications.

It stands to reason that the three powerful forces have interacted so as to deeply shape economic fluctuations. Their conjunction has made economies more vulnerable to large and prolonged financial booms and busts – financial cycles – that can inflict severe damage on the economy. During the boom 'financial imbalances' develop: (private sector) balance sheets become overextended on the back of aggressive risk-taking. The imbalances sow the seeds of their own destruction, and hence of economic weakness, unwelcome disinflation and financial strains down the road. The boom can turn

to bust either because incipient inflation eventually does emerge, forcing the central bank to tighten or, more often, because the imbalances collapse under their own weight. One may call this property of the economy 'excess elasticity'.[11] The analogy is with an elastic band, which one can stretch further and further until at some point it snaps. These financial booms and busts necessarily take a long time to unfold. As they emerge, they slow down economic time relative to calendar time.

How might the tectonic forces interact to produce this outcome?[12] First, financial liberalisation makes it more likely for financial factors in general, and booms and busts in credit and asset prices in particular, to drive economic fluctuations. Rather than being tightly bound by cash flow constraints, the economy is propelled by loosely anchored perceptions of asset values and risks, critically supported by easier credit availability. Indeed, the link between financial liberalisations and subsequent credit and asset price booms is well documented.

Second, the establishment of regimes yielding low and stable inflation, underpinned by central bank credibility, can make it less likely for signs of unsustainable economic expansion to show up first in rising inflation and more likely for them to emerge first as unsustainable increases in credit and asset prices (the 'paradox of credibility'). After all, stable expectations make prices and wages less sensitive to economic slack; this is precisely what policymakers and economists have expected all along.

Finally, the globalisation of the real economy has given a major boost to global potential growth – what economists would call a sequence of pervasive positive supply shocks or an outward shift in the global economy's production possibility frontier. Think of the huge boost to production capacity as China and other former communist countries joined the world trading system. By the same token, however, it has surely helped to keep inflation down and provided fertile ground for credit and asset price booms.

Policy and horizons: pre-crisis role

So much for the big picture – the tectonic plates, so to speak. But what about the role of decisions made by the policymakers who were confronted with these forces? With hindsight at least, it has become clear that policymakers inadvertently added fuel to the fire ahead of the Great Financial Crisis. They put too much faith in markets' ability to self-correct. They failed to fully understand that the changing landscape called for adjustments in policy frameworks. And, even when they did understand, they found it too hard to change course; too much reputational capital was at stake and, anyway, why fix what ain't broken?

Consider, in turn, prudential, monetary and fiscal authorities. Prudential authorities converged on frameworks that concentrated too much on the safety and soundness of individual institutions and too little on that of the system as a whole – frameworks in which the macroeconomy and the financial cycle hardly figured. They focused too much on individual trees and too little on the wood. In current jargon, they had too much of a microprudential focus, as opposed to a macroprudential one.[13] Monetary authorities, still burnt by the Great Inflation experience, focused narrowly on stabilising near-term inflation. They could not justify raising interest rates if inflation was low and stable, let alone falling, even if financial imbalances were building up. As a result, the imbalances proceeded to grow unchecked. And fiscal authorities failed to realise that financial booms were hugely flattering the fiscal accounts and that the busts would at some point present them with a huge bill – a burden over and above the better known, but just as intractable, one resulting from ageing populations.

Underlying these failings was a natural tendency to overestimate sustainable output and growth. The notion that inflation was the sole harbinger of unsustainability was especially insidious. Financial factors, again, did not figure in this picture.[14] That was the relentless message of the prevailing intellectual macroeconomic paradigm, both a reflection of the *Zeitgeist* and a contributor to it.

Short policy horizons played a key role in all this. Much of macroeconomic policy centres on the notion of the business cycle. As conceived and measured, the business cycle has a duration of eight years at most. And yet we have seen that the financial cycle lasts at least twice as long. Since the financial cycle's booms and busts have major consequences for economic activity, not taking them into account can create serious biases in policymaking. It is as if, on the open sea, sailors successfully rode out the smaller waves but remained blissfully unaware of the tsunami rolling beneath them – a wave that would surge and crash only once it reached the shore.

To illustrate this, consider the experience of several advanced economies in the mid-1980s to early 1990s and in the period 2001–7. In both episodes, policymakers reacted strongly to collapses in equity prices – the global stock market crashes of 1987 and 2001 that ushered in economic slowdowns or actual recessions. They cut policy rates and, to a varying and smaller degree, loosened the fiscal reins. In both episodes, however, credit and property

prices – the most relevant indicators of the financial cycle – continued to increase, as if getting their second wind. Financial imbalances built up further. And a few years later, the credit and property price booms collapsed, in turn causing serious financial damage and dragging down the economy with them. This is what happened to Japan in the first episode and to the United States and United Kingdom in both. From a medium-term perspective, consistent with the length of the financial cycle, the slowdowns or contractions in 1987 and 2001 can thus be regarded as 'unfinished recessions'.[15] The initial over-reaction to short-term macroeconomic developments, followed by an under-reaction to the further build-up of financial imbalances, caused more serious problems down the road.

But short horizons are not just an issue for policymakers. They are an even bigger one for the private sector, especially for financial market participants. Here, traders' horizons may be as short as a day, or minutes or even microseconds. More generally, horizons rarely extend beyond one year, constrained by the rhythm of financial reporting conventions. Moreover, they have, if anything, been shrinking: technology has been surging ahead; the spread of fair value accounting has telescoped the indefinite future into the ephemeral present; tighter monitoring has come to mean more frequent monitoring. These short horizons are embedded in risk measurement tools, such as value-at-risk, in common trading strategies, such as momentum trading, and in credit techniques, such as securitisation. For instance, risk models rely on extraordinarily short data histories, hardly ever extending beyond a few years, and they project outcomes over a very short future, mostly days and at the very most one year. Short horizons are probably best captured by the famous words of Chuck Prince, then CEO of Citigroup, to the effect that "as long as the music is playing, you have to get up and dance". This was just before the crisis broke.

The end result is that market participants' expectations, once embedded in market prices, appear highly extrapolative; they follow the trend until it is too late. Hence what one might call the 'paradox of financial instability': the financial system looks strongest precisely when it is most vulnerable. Credit growth and asset prices are unusually strong, leverage measured at market prices is artificially low, and risk premia and volatilities sag to rock-bottom levels precisely when risk is at its highest. What looks like low risk is, in fact, a sign of aggressive risk-taking. The recent crisis has simply confirmed this all over again.

A vicious cycle has set in. The interaction between market participants' instincts, the relentless 24/7 media razzmatazz and the response of policymakers becomes ever stronger; as a result, horizons become ever shorter.

So, the search for the culprits for the Great Financial Crisis brings very much to mind Agatha Christie's famous thriller, *Murder on the Orient Express*. Who was the murderer then? As it turns out, all the passengers on the train were. Who is the culprit now? As it turns out, we all are.

Post-crisis challenges

The legacy of the crisis: a balance sheet recession

The foregoing analysis casts light on the recession that followed the financial crisis. Not all recessions are born equal. The typical postwar recession was triggered by tighter monetary policy to stop rising inflation or a balance of payments crunch. By contrast, a post-financial crisis recession is a *balance sheet recession*, linked to a financial bust against the backdrop of low and stable inflation.[16] This means that the preceding expansion is much longer, the subsequent debt and sectoral capital stock overhangs much larger, and the damage to the financial sector much greater. It also means that the policy room for manoeuvre is very limited; unless policy has actively leaned against the financial boom, policy buffers will be depleted. The capital and liquidity cushions of financial institutions will rupture; gaping holes will open up in the fiscal accounts; and policy interest rates will sag to near zero. Think of Japan in the 1990s.

A growing body of evidence suggests that balance sheet recessions are particularly costly.[17] They tend to be deeper, to give way to weaker recoveries, and to result in permanent output losses: output may return to its previous long-term growth *rate* but not to its previous growth *path*. Several factors are no doubt at work here: the overestimation of both potential output and growth during the boom; the misallocation of resources, notably the capital stock but also labour, during that phase; the oppressive effect of the debt and capital overhangs during the bust; and the disruptions to financial intermediation once financial strains emerge.

A full five years after the beginning of the financial crisis, the symptoms of a balance sheet recession are all too evident. Banks in Europe and, to a lesser extent, the United States remain weak – although in the United States it is Government Sponsored Enterprises (GSEs) that are more exposed to the mortgage market. To be sure, banks have significantly beefed up their capital ratios. But their credit default swaps, gauges of perceived creditworthiness,

have returned to levels that are not that far away from those that prevailed when Lehman Brothers collapsed. Meanwhile, their shares have lost ground against the rest of the stock market, and they have incurred downgrades across the board in both standalone and all-in ratings. Private sector debt-to-GDP ratios, a measure of aggregate leverage, are still very high. Sovereign debt has ballooned and sovereigns have been downgraded. The policy rates of leading economies languish at their effective zero lower bound while the balance sheets of their central banks have swelled enormously.

Globally, though, there are significant differences between countries. Those that have experienced *domestic* financial booms and busts have faced serious strains in *both* non-financial sector and bank balance sheets; to varying degrees, they are seeing deleveraging in both sectors. Clear examples are the United States, the United Kingdom, Spain and Ireland. Those whose financial institutions were exposed to financial booms *elsewhere* have also seen serious strains in their banks, but their non-financial private-sector debt-to-GDP ratios have typically risen further on the back of credit expansion. Notable examples are Germany, France and Switzerland. Indeed, in Switzerland a strong and possibly unsustainable housing boom is under way, despite rather weak economic growth. Those whose banks were not directly exposed to the financial busts in mature economies, after a brief slowdown, have proved very resilient; many of them have continued to see financial booms, sometimes eerily reminiscent of the pre-crisis ones in mature economies. These include several emerging market economies and some commodity-based advanced countries, amongst others.

The situation is particularly worrying in the Euro Area. It is there that the perverse feedback loop between the weaknesses in the balance sheets of banks and sovereigns has been most intense. An obviously incomplete economic and monetary union has brought it into the open and exacerbated it. That said, one should not confuse the symptoms with the disease. Markets can and do lull policymakers into a false sense of security. They are far too slow to react and, when they do, they react violently. There are other major countries whose underlying fiscal positions are hardly more sustainable than those in the Euro Area. And yet bond markets seem to be oblivious, at least for now.

The immediate policy challenge: returning to self-sustaining and sustainable growth

The immediate global policy challenge is to return to self-sustaining and sustainable growth. Seen through the lens of the financial cycle, this raises different issues across countries, depending on their specific situation. At one end, for those largely spared by the crisis, and that have been seeing signs of unsustainable financial booms, the challenge is to contain these excesses and to avoid overestimating the strength of fiscal positions. Where the cycle might have turned already, it is to contain the damage. At the other end, for those that were at the epicentre of the crisis and have experienced a *domestic* financial boom and bust, the challenge is to deal with twin weaknesses in the financial and non-financial sector balance sheets. Somewhere in between, for those whose banks have suffered from losses on exposures to financial busts *elsewhere*, the challenge is to solve the banks' problems, even as the non-financial sector may be in the process of leveraging up further. For all, the challenge is to ensure that the sovereign remains creditworthy or regains its lost creditworthiness.

In what follows, I will leave it to the reader to draw implications for *specific* countries. Instead, I will focus on the *general* challenges that balance sheet recessions raise, ie on how to address financial busts. I will then discuss how to address booms in the following sub-section, which considers the longer-term challenge of how to adjust policy frameworks; how to address booms is by now better understood and requires less elaboration.[18]

The main policy challenge in a balance sheet recession is to prevent a *stock* problem from morphing into a long-lasting *flow* problem, weighing down on income, output and expenditures. It is therefore critical to distinguish two phases, crisis management and crisis resolution, which differ in terms of their priorities. In *crisis management*, the priority is to prevent the implosion of the financial system, so as to ward off the threat of a self-reinforcing downward spiral in economic activity. Restoring confidence is essential. If there is scope to do so, policies should be deployed aggressively. This is the phase historically linked to central banks' lender-of-last resort function; together with interest rate cuts, such a course of action can be especially helpful in boosting confidence. In *crisis resolution*, by contrast, the priority is balance sheet repair, so as to lay the basis for a self-sustaining recovery. Here it is essential to tackle the debt overhang head-on. And policies need to be adjusted accordingly. Consider, sequentially, the roles of prudential, fiscal and monetary policy in this phase.

The priority for regulation and supervision should be to induce the thorough repair of banks' balance sheets and to support banks' return to sustainable profitability. This

means: enforcing full recognition of losses (writedowns); recapitalising institutions (subject to tough tests), including possibly via temporary public ownership; sorting institutions according to their viability; dealing with bad assets (including through disposal); reducing excess capacity in the financial system; and promoting operational efficiencies. This is precisely what the Nordic countries did when they faced their banking crises in the early 1990s, and it is what Japan failed to do around the same time. This difference was no doubt a key factor behind their divergent economic performance subsequently. Before the recent crisis, the response of the Nordic countries to their crisis was universally regarded as the right way to go.

Such a policy would have several benefits. It would restore confidence in the banking system. At present, for instance, market-to-book values are well below 1 and there is little uncollateralised funding on offer to banks, especially for European ones. Such a policy would also unblock interbank markets and relieve pressure on central banks – just think of the Eurosystem's extraordinary long-term unconditional liquidity support to banks. And it would restore incentives for allocating credit properly and avoiding inappropriate risk-taking. It is hardly a coincidence that volatile trading profits have been the main source of income since the crisis and that one global bank has recently made sizeable trading losses on its credit portfolio. Unless losses are fully recognised, viable institutions are recapitalised and unviable ones induced to exit, the incentives will stay in place for banks to take on the wrong risks at the expense of the good ones, and to overcharge healthy borrowers to the benefit of unhealthy ones. When the level of debt in an economy is too high and must be cut back to set the scene for a self-sustaining recovery, the allocation of credit is more important than its overall amount.

The priority for fiscal policy should be to create the scope for using the public sector balance sheet to support the repair of private sector balance sheets. This applies to the balance sheets of financial institutions, through injections of public sector money (capital) subject to strict conditionality on loss recognition and possibly through temporary public ownership. But it applies also to the balance sheets of the non-financial sectors, such as households, including through various forms of debt relief.

Such a prescription contrasts sharply with a widespread view among macroeconomists, who would regard pump-priming (increases in expenditures or tax cuts) as more effective during slumps. That view, however, assumes that people wish to borrow and cannot. But if they have already taken on too much debt, they are more likely to wish to cut that burden. Debt repayment would take priority over more spending. If so, even the short-term effect of untargeted fiscal expansion (the so-called 'fiscal multiplier') is likely to be small.[19] Rather than jump-starting the economy, it could end up building bridges to nowhere, as the Japanese experience suggests. By contrast, the targeted use of the fiscal room for manoeuvre to support the balance sheet repair of the financial and non-financial sectors, as needed, could remove a key obstacle to a self-sustaining recovery. Moreover, as an owner or co-owner, the sovereign could actually make capital gains in the longer term, as was the case in some Nordic countries.

Importantly, this is not a passive strategy, but a very active one. It inevitably substitutes public sector debt for private sector debt. It requires a forceful approach to addressing the conflicts of interests between borrowers and lenders, between managers, shareholders and debt holders, and so on. And it raises tricky distributional questions. It is not pure fiscal policy in the traditional macroeconomic sense; it calls for a broader set of measures, including legal adjustments, supported by the public purse.

But what if the country is already facing a sovereign crisis? My sense is that, even where immediate fiscal consolidation is necessary, this use of public money is critical. The Nordic countries did it, even as they cut elsewhere. One way of alleviating the trade-offs is to obtain targeted external support. There is a clear potential for that option in the Euro Area, especially as part of a well sequenced and comprehensive shift towards a more complete economic union. And even as short-term steps are taken, a long-term horizon is essential. The evidence indicates that any contractionary effects of fiscal policy dissipate over time. And restoring the creditworthiness of the sovereign is paramount. The sovereign is the ultimate backstop for the financial system and the economy. There cannot be lasting financial and macroeconomic stability if public finances remain on an unsustainable path.

What about monetary policy? The priority is to recognise its limitations and to avoid overburdening it. Monetary policy is likely to be less effective in a balance sheet recession. This applies as much to changes in short-term interest rates and guidance about future rates (interest rate policy) as it does to an aggressive use of the central bank balance sheet, such as through large-scale asset purchases and liquidity support (balance sheet policy). Overly indebted agents unwilling to borrow and a

banking system unable to function blunt the impact of such policies on expenditure. As a result, as policymakers press harder on the gas pedal, the engine revs up without traction. And this exacerbates any side effects that policy may have in the crisis resolution stage.

Several possible side effects may arise from a long period of extraordinarily accommodative monetary policy. First, easing can mask underlying balance sheet weaknesses. It makes it easier to underestimate the private and public sector's ability to repay in more normal conditions and delays the recognition of losses (eg evergreening). Second, it can blur incentives to reduce excess capacity in the financial sector and even encourage betting for resurrection. Third, it can undermine the earnings capacity of financial intermediaries, by compressing banks' interest margins and sapping the strength of insurance companies and pension funds. This, in turn, weakens the balance sheets of non-financial corporations, households and the sovereign. It is no coincidence that Japan's insurance companies came under serious strain a few years after its banks did. Fourth, it can atrophy markets and mask market signals, as central banks take over financial intermediation functions. Interbank markets tend to shrink and risk premia become unusually compressed as policymakers become large-scale asset buyers. Fifth, while it can help repair balance sheets by weakening the currency, this may be unwelcome elsewhere, as it may be seen as having a beggar-thy-neighbour character – a point to which I will return later. Finally, over time it may compromise the operational autonomy of the central bank, as political economy considerations loom ever larger. This is especially important for central banks' balance sheet policy, because of its quasi-fiscal nature.

The key risk is that central banks become overburdened and a vicious circle develops. Monetary policy can gain time, but it can also make it easier to waste time, because of the incentives it generates. As the policy fails to produce the desired effects and adjustment is delayed, central banks come under growing pressure to do more. An 'expectations gap' yawns, between what central banks are expected to deliver and what they can deliver. All this makes the eventual exit more difficult and may ultimately threaten the central bank's credibility. One may wonder whether some of these forces have not been at play in Japan, a country where the central bank has not yet been able to exit.

Recent evidence squares broadly with the view that macroeconomic policies are less effective in balance sheet recessions. BIS colleagues find that, when considering recessions and the subsequent recoveries, monetary policy has a smaller impact on output if recessions are linked to financial crises.[20] Moreover, in normal recessions, a more accommodative monetary policy in the downturn is followed by a stronger recovery, but this relationship is no longer apparent if a financial crisis occurs. In addition, the same study finds that in balance sheet recessions a faster pace of debt reduction ushers in a stronger recovery. And it concludes that, when used to alleviate a balance sheet recession, fiscal policy has limitations that are similar to those of monetary policy.

The longer-term policy challenge: adjusting frameworks

The longer-term policy challenge is to adjust frameworks to fully reflect the implications of the financial cycle. The financial cycle unfolds over a much longer horizon than the one that normally underpins policy decisions concerning output and inflation. Addressing its implications, therefore, requires lengthening the horizon and shifting the focus from period-by-period flows to their cumulative crystallisation in stocks. Let us first consider national policy frameworks and then broaden the view to the global context.

The overall strategy for national policy frameworks would be to ensure the build-up of buffers in the boom phase of the financial cycle so as to draw them down in the bust phase. The buffers would make the economy more resilient to a downturn. And by acting as a kind of dragging anchor they could also curb the boom's intensity. Put differently, the strategy would make policy less procyclical by making it less asymmetric with respect to the boom and bust phases of the financial cycle. For prudential policy, it would mean strengthening the systemic or macroprudential orientation of the frameworks, by adjusting instruments, such as capital standards or loan to value ratios, to reduce procyclicality. For monetary policy, it would mean providing for the option to tighten even if near-term inflation appears under control whenever financial imbalances show signs of building up. And for fiscal policy, it would mean extra caution when assessing fiscal strength during financial booms and taking remedial action.

Post-crisis, policies have indeed moved in this direction, but to varying degrees. Prudential policy is furthest ahead. Basel III, in particular, has introduced a countercyclical capital buffer for banks as part of a broader trend to put in place macroprudential safeguards. Monetary policy has shifted somewhat. It is now generally recognised that price stability is no guarantee of financial stability, and a number of central banks have been adjusting their frameworks

to incorporate the option of tightening during booms. A key element has been to lengthen policy horizons. That said, no consensus exists as yet on the desirability of such adjustments. [21] And the side effects of prolonged and aggressive easing after the bust remain controversial. Fiscal policy is probably furthest behind. There is so far little recognition of the need to incorporate the impact of the financial cycle in assessments of fiscal sustainability or to explore the limitations of expansionary fiscal policy in balance sheet recessions.

The main risk is that policies that fail to recognise the financial cycle will be too asymmetric, thus generating a serious bias over time. Failing to tighten policy in a financial boom but strong, if not overwhelming, incentives to loosen it during the bust would erode both the economy's defences and the authorities' room for manoeuvre. In the end, policymakers would be left with a much bigger problem on their hands and without the ammunition to deal with it. This is what economists call a 'time inconsistency' problem. The root cause here is horizons that are too short and a failure to appreciate the cumulative impact of flows on stocks. This would entrench instability in the system.

There are all-too-evident symptoms that this has been happening. Banks' pre-crisis capital and liquidity buffers have proved woefully inadequate; post-crisis, there have been calls not to raise them and to delay the implementation of the new regulatory standards. Sovereign debt levels have reached peacetime highs; the crisis and countermeasures have left a gaping hole in fiscal positions, which were already gradually deteriorating. No less worrying, most of the costs arising from ageing populations still loom ahead of us.[22] And monetary policy has been far from immune. In many advanced economies interest rates are now effectively at zero; in both advanced and emerging market economies, central banks' balance sheets have expanded to record highs. At the *global* level, policy rates, even adjusted for inflation, have been trending down for decades, even as the trend growth of the world economy – a common yardstick to gauge their appropriate level – has picked up. Likewise, more refined yardsticks that seek to take into account output and inflation – so-called Taylor rules – indicate that policy rates are globally unusually low.[23] And partly as a result of purchases at the long end of the yield curve and foreign exchange intervention, bond yields have never been as low as they are now.

This brings us to the global implications of national policies.[24] In a highly integrated world, any tendencies in national policies can easily spread worldwide through a variety of channels, including other countries' responses. In the case of monetary policy, exchange rates are a critical channel. Pre-crisis, easy monetary policy in the mature economies, notably in the United States, spread elsewhere, especially to emerging market economies such as China, partly through resistance to exchange rate appreciation. These other countries kept interest rates low or else intervened in the foreign exchange market and invested the proceeds in the countries with international currencies, in turn putting further downward pressure on yields there. Post-crisis, if anything, the same process has intensified.

This raises tough issues. Economically, the risk is that monetary conditions for the world as a whole end up being too loose. Signs that financial imbalances have been building up, especially in several emerging market economies, are a source of concern, particularly when large mature economies have not yet returned to self-sustaining growth. The world remains unbalanced. Politically, one obvious risk is that countries might revert to the modern-day equivalent of the competitive devaluations of the interwar years, which proved so divisive. Worryingly, post-crisis the term 'currency wars' has been all too often on policymakers' lips.

But the bigger risk is that yet another epoch-defining shift in the global economy's tectonic plates might take place. As historians such as Niall Ferguson and Harold James keep reminding us, such shifts often occur quite abruptly and when least expected.[25] So far, institutional setups have proved remarkably resilient to the huge shock of the Great Financial Crisis and its tumultuous aftermath. But there are also troubling signs that globalisation may be in retreat, as states struggle to come to grips with the *de facto* loss of sovereignty. This is true both globally and regionally. It is simply most visible in Europe, where a more ambitious historical experiment with greater integration has reached a watershed. Meanwhile, the consensus on the merits of price stability is fraying at the edges. As memories of the costs of inflation fade, the temptation to get rid of the huge debt burdens through a combination of inflation and financial repression grows. Taking all these hard-won gains for granted is the surest way of losing them. The future is not pre-determined – far from it. But we should not underestimate the challenges ahead.

Conclusion

A cyclist has made a strong start to the race. But, as it happens, he has overestimated his strength. After a while, he has to pedal harder just to avoid falling over. His energies are flagging and he is on the point of collapsing from exhaustion. His mistake was to treat a long-distance race as a series of ever-shortening sprints.

His horizon was too short; the cumulative effort is finally catching up. And yet, he struggles on.

The global economy is not so different from this sportsman. It gained new force from a powerful wave of globalisation and the suppression of inflation. But the resurgence of the financial cycle made it feel, for a while, stronger than it really was. Market participants and policymakers did not see through this illusion. And, every time that a financial boom turned to bust, they would simply try harder, re-applying the same old nostrums. Their horizons were too short, and the cumulative impact of their efforts is catching up with them; stocks of private and sovereign debt have been growing beyond sustainable levels and the policy room for manoeuvre has been shrinking dramatically.

Maybe it is time to change course. Maybe it is time to recognise the need to address underlying weaknesses head-on, to stop postponing adjustments to an ever-elusive better day, to stop calling for illusory monetary policy fixes for what are deeper balance sheet and structural problems. This would mean incurring some costs in the short run, but the alternative would risk creating much bigger costs further down the road. As the French say: "*reculer pour mieux sauter*". It would be a mistake, as some have noted, to believe in the confidence fairy, but it would be an even bigger mistake to believe in the free-lunch fairy.

Some signs are encouraging, others less so. Navigating the tricky waters ahead will require a balance between Gramscian "pessimism of the intellect and optimism of the will": pessimism to assess the challenges ruthlessly, never underestimating them; optimism to overcome them. And, as the late Tommaso Padoa Schioppa stressed, it will require a long-term view.[26] Keynes once famously said: "in the long run, we are all dead". But, one would hope, the next generation will be very much alive. What is at stake is nothing less than the legacy of the current generation to the next. This is as true at the global level as it is in Europe.

NOTES

1 See Burns and Mitchell (1946) and, for a more modern treatment, Stock (1987).
2 For a detailed treatment, see Drehmann *et al.* (2012).
3 See Reinhart and Rogoff (2009).
4 See, in particular, Goodhart and Delargy (1998).
5 These points are discussed in detail in Drehmann *et al.* (2012). Not surprisingly, these patterns permit the development of indicators that can help identify the build-up of financial risks in *real time* (ie, as they develop), including ahead of the Great Financial Crisis (eg, Borio and Drehmann, 2009). On the role of credit specifically, see Taylor (2012).
6 The tradition goes as far back as Lord Overstone (1857); but the role of credit expansions and relative prices was developed within a more sophisticated framework by economists of the Austrian school, notably von Mises (1912) and Hayek (1933). For a broad overview of these issues and of the different schools of thought, see Laidler (1999), Besomi (2006) and Zarnowitz (1992).
7 Classic contributions include Kindleberger (2000) and Minsky (1986).
8 This was specially the case at the BIS, eg Borio and Lowe (2002) and Borio and White (2003).
9 See Padoa-Schioppa and Saccomanni (1994).
10 See Friedman (2005).
11 See Borio and Disyatat (2011), who see this property, as opposed to global excess saving (or a global saving glut), as the key factor behind the Great Financial Crisis. On this, see also Shin (2011) and Obstfeld (2012).
12 For a further discussion of this point, see Borio (2009), who also refers to previous BIS work developing this perspective.
13 On this distinction, see eg, Crockett (2000), Borio (2011); Clement (2010) reviews the history of the term "macroprudential".
14 Not surprisingly, recent work indicates that incorporating information from proxies for the financial cycle (credit and property prices) makes it possible to develop real-time estimates of potential (sustainable) output that correct for these distortions; see Borio *et al.* (2013). These estimates indicate that output was growing well ahead of potential in the countries at the heart of the financial crisis.
15 See Drehmann *et al.* (2012).
16 Koo (2003) seems to have been the first to use such a term. He employs it to describe a recession driven by non-financial firms' seeking to repay their excessive debt burdens, such as those left by the bursting of the bubble in Japan in the early 1990s. Specifically, he argues that the objective of financial firms shifts from maximising profits to minimising debt. The term is used here more generally to denote a recession associated with the financial bust that follows an unsustainable financial boom. But the general characteristics are similar, in particular the debt overhang. That said, we draw different conclusions about the appropriate policy responses, especially with respect to prudential and fiscal policy.
17 See BCBS (2010) for a review of the empirical evidence, with specific reference to the impact of banking crises.
18 The following discussion on how to deal with a balance sheet recession draws heavily on Borio (2012); see that essay for a full set of references to relevant work.
19 More technically, the current generation of models assumes that during financial busts agents are finance/liquidity-constrained because of restrictions in the *supply* of credit. As a result, their marginal propensity to spend is one: if they receive an additional unit of income, they spend it. By contrast, if agents realise that they have borrowed too much (eg, because they are poorer than they thought, as the value of their property has collapsed and/or income prospects fall short of original expectations), they would wish to cut their *demand* for credit. If so, any additional unit of income would go to pay down the debt. In the limit, their marginal propensity to spend would be zero. For a further discussion of this point, see Borio (2012). Further empirical work is needed in this area.
20 See Bech *et al.* (2012).
21 There is a strong temptation to rely exclusively on macroprudential policy to ensure financial stability. As argued in, eg, Borio (2011), this is not prudent, given the limitations of

the tools; see also Caruana (2010).

22 For a discussion of debt levels and sustainability, see Cottarelli (2013) and Cecchetti *et al.* (2010).

23 See, in particular, Hofmann and Bogdanova (2012). The statement applies to the average level of policy rates globally, not necessarily to those in individual economies. Note also that these benchmarks do not take into account the impact of forward guidance concerning the future path of the policy interest rate or balance sheet policies, such as large-scale asset purchases. Doing so would imply that the policy stance is even easier than a simple Taylor rule would suggest. Nor do these benchmarks consider the possible need to lean against the build-up of financial imbalances and adjust measures of sustainable output accordingly, as argued in Borio *et al.* (2013). This would also imply that, in those economies that have seen financial booms recently, policy would need to be tighter than suggested by unadjusted Taylor rules.

24 See Borio and Disyatat (2011), Borio (2012) and Caruana (2012).

25 See Ferguson (2010) and James (2009).

26 See Padoa-Schioppa (2009), a long interview on the financial crisis, from which this essay's initial quotation is taken.

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