

Global finance after the crisis

By Alan M Taylor, Professor of Economics, University of California, Davis, Senior Advisor, Morgan Stanley and Houblon-Norman/George Fellow, Bank of England 2009/10.

This paper presents the text of the annual John Flemming Memorial Lecture, given at the Bank of England on 12 October 2010.⁽¹⁾

This lecture will address the topic of global finance after the crisis. There are numerous ways to think about that subject, but I want to suggest that we think about it not from a current, short-run perspective but from a very long-run historical perspective. Although much has been written on the events of the last few years in isolation, now, and especially as the dust begins to settle, I will argue instead that lessons from history are important as we take stock after the crisis. In particular, I want to use this perspective as we reassess two key areas in the field of economics: policymaking and economic research.

The role of comparative economic history

It is now more than three years since the world economy encountered financial turbulence of a kind not seen for a generation or two. It is more than two years since we entered the most extreme phase of the global crisis, when banks failed, markets crashed, and policymakers struggled to prevent an utter macroeconomic and financial meltdown.

From a short-run perspective, the crisis has been a tumultuous period of actions and reactions. It has been an alphabet soup of government programmes, and it has been the worst depression since the 1930s, a massive waste of economic resources, one that still isn't completely over. In this short view there is plenty to digest and there is vigorous debate among scholars and policymakers about what went wrong. But as an economist and especially as an economic historian, I am acutely aware that the full ramifications of these events may not be apparent for several more years. And I fear that if we only view the world through such a limited perspective it may obscure some of the deeper forces at work, leaving us unable to see the wood for the trees.

Instead, I think we also need to employ an approach that is central to my own research, an approach that is both empirical and historical, placing the crisis in a wider context as one part of a much broader sweep of events. That is the essence of comparative economic history. And if ever comparative economic history had a time when it could and should speak to issues of global importance, then that moment is surely

now. Inevitably, this approach is going to take us on a much longer and more circuitous journey, on a route that traverses more than a century of the history of the global macroeconomy. It will force us to think back to the first era of globalisation in the late 19th century, and reflect on the lessons of the turbulent inter-war years of deglobalisation, culminating in the Great Depression. It involves some detours through the long post-war era of the Bretton Woods regime and its collapse, and the more recent wave of reglobalisation, which brings us up to the present day.

Now you might ask: why should we care about this economic history? I think the key criterion is: is history useful in understanding the present?

I think the answer is yes. To quote a great comparative analyst of political economy questions: 'When the past no longer illuminates the future, the spirit walks in darkness'. I share de Tocqueville's optimistic view. I think that if we view this historical record, and probe it in a variety of ways, with both the quantitative tools of economics and the narrative and institutional insights of history and political science, then we can learn some valuable lessons about how and why we arrived in our present state of affairs.

But I think we can understand that one has to temper such optimism with the realisation that drawing lessons from the past is an exercise rife with pitfalls, since we are not in a real laboratory, but in a historical laboratory, where the experiments are not so clean and controlled. Or to quote another great thinker, and historian, A J P Taylor: 'He was what I often think is a dangerous thing for a statesman to be — a student of history; and like most of those who study history, he learned from the mistakes of the past how to make new ones'.

(1) This lecture series was inaugurated in 2005 in memory of John Flemming, who worked at the Bank of England between 1980 and 1991. A short biography can be found in the box on page 367. Past lectures have been given by Professor Michael Artis, Dr Adam Posen and Professor Thomas Sargent. This article reports the views of the author and does not necessarily reflect the views of the Bank of England or Monetary Policy Committee members.

John Flemming



John Flemming worked at the Bank of England between 1980 and 1991, for much of that time as Chief Economist. Prior to that he was a Fellow in Economics at Nuffield College, Oxford, a position to which he was originally appointed in his early 20s.

His association with the Bank began in 1975, when he took leave from Oxford for a year to work as a special adviser to the then Governor, Gordon Richardson. Commuting from Oxford, he took the opportunity the journey provided to write his influential book *Inflation*, a key theme of which was the importance of expectations in determining inflation.

John joined the Bank full-time in 1980 as Chief Economic Adviser, before becoming Chief Economist in 1984 and an Executive Director in 1988. He subsequently departed to

become Chief Economist of the European Bank for Reconstruction and Development in 1991 before returning to Oxford as Warden of Wadham College in 1993. Among other activities, he served for many years as a member of the Royal Commission on Environmental Pollution, his contributions to which were cited when he was appointed CBE in 2001.

John was an economist of great standing whose advice and work was much appreciated by his peers. He is best captured, perhaps, by the quote by fellow economist John Helliwell, who said:

'If one could choose parts to assemble someone to epitomise the best of Oxford and British Universities in general, the result would match Flemming. He was brilliant without being brassy, incisive in thought, precise in speech, encyclopaedic in knowledge, interested in everything he heard and saw, and a lively companion for all those lucky enough to share a journey, a job or a dinner with him.'

Bearing that in mind, we should by all means enter the laboratory and examine the experiments, but we need to remember to keep our sceptical guard up. There are occupational hazards here. For example, we run into small-sample problems all the time. And we have to be very careful to locate key differences as well as similarities between different historical episodes and what we see today. This, of course, is where economics and history tread the line between art and science.

But once we understand both the possibilities and the limitations of this approach, I believe that we still have much to gain, in two key areas. We have a lot to learn about research in economics and the new priorities we need to reach a better understanding. And we have a lot to learn about economic policy making, and how to reckon with the choices and constraints that face us.

Challenges for economic research

For the first question, how do we reassess economic research priorities? Here are three thoughts that come to mind.

First, consider the macrofinance nexus, or what used to be called 'money and banking' in the olden days. It has been somewhat neglected in macro teaching and research. Money has often been ignored, or only included in a non-essential fashion, in the benchmark models of the last two decades; and the role of banks and credit has been non-existent in virtually all theories, with finance simply seen as a veil. These areas now need modernisation and a full reintegration back into macro thinking. For sure, there has been plenty of research

into how banks and financial systems operate at a detached micro level. But it is the macro and systemic causes and consequences of financial structures that now clearly cry out for more study.

Second, it seems clear to me that new importance will be given to empirical macroeconomics. The old consensus was that one should proceed purely from introspection, perhaps guided by a few so-called stylised facts, and to assume that one could thus devise a sensible theory of how the macroeconomy worked, and how policy might be optimally conducted. The results have been mixed, as the previous point makes clear. The crisis and Great Recession have brought calls for rethinking our models, searching for new paradigms, or even abandoning hope altogether for economic theory. Some of this is overreaction. But what does seem likely is what my University of California colleague Barry Eichengreen has referred to as a shift from deductive to inductive approaches. Or put another way, an economics that really is more like the hard sciences, and where empirical evidence matters as much as a *priori* theory in guiding our understanding. Thus, we can hope to see a more evidence-based macroeconomics, which will place much stricter discipline on deficient theories before they get too far off the drawing board.

Third, in keeping with the first two points, I believe that these trends should raise the profile of economic history — and especially, I think, comparative economic history. One can already see this in the reaction to Carmen Reinhart and Ken Rogoff's bestselling book, *This time is different*. But other work is proceeding in this area too. One example would be the work by Robert Barro on extreme tail-events in equity markets.

It also includes my own work on credit crises, which I will mention in a moment. One common feature of all these studies is the recognition that for some economic problems we are dealing with what is called a 'rare event'. For example, recessions are pretty rare, once a decade; but crisis recessions are much rarer, every two decades on average; and globally synchronised crises even rarer still: there have been perhaps four or five in the last 120 years. So just to get a meaningful sample size containing more than a handful of such events, you need more data points: more countries (you need to be a comparativist) and more years of data (you need to develop the skills of an economic historian). These are not easy skills to acquire, but given the importance of the questions at hand after the crisis, I think macroeconomic history is a research area with high marginal product in the years ahead, and my hope is that professors and students will be attracted to it, and rewarded for it.

Challenges for economic policy making

Now consider the second question, how do we reassess economic policy making? Here too I think longer-run perspectives are vital.

One approach is to look *only* to the present and ask 'what went wrong'? Some may see in the recent crisis a black swan event, to use Nassim Taleb's term for certain kinds of extreme events in financial markets. But if our problems truly take the form of a black swan, then a historical laboratory is no use at all: we have one unique and unexpected data point. And it isn't even clear that studying this event is much use: if past and future crises are similarly swan-like, we can no more use the current laboratory to generalise than we can any past experience.

Thus, when the world is ruled by black swans, we risk only making new mistakes by drawing on the past; or, as Hegel so succinctly put it, 'we will learn from history that there is nothing to learn from history'. But in my opinion this is an unduly pessimistic and not very useful way to understand recent events and how they fit into a long-run record of financial instability over 200 years. Rather, I think there is much to be gained from using the past as a laboratory, for two reasons.

First, as we are now learning, crisis events have recurred numerous times — not with unique black swan features every time, but with many repetitive, familiar patterns to them, which are thus amenable to quantitative historical analysis. Second, even when there is some variation, history can still bring into sharp focus how the policy and institutional environment varies subtly between different episodes. These patterns — the commonalities and the contrast — can be put to empirical use. They can help us identify what policy

changes could make these events more or less likely, or more or less costly.

Thus, when we do find empirical regularities running through history from the past through to the present we should consider what such signposts might mean. And hopefully, once we have understood the signs and have a better understanding of the surrounding terrain, we can at least be somewhat better placed to navigate the macroeconomic policy challenges going forward.

What economic history has taught us about global finance and crises

The preceding thoughts about the intellectual agenda ahead are somewhat general. But with these thoughts in mind, I would like to narrow the focus, and draw on recent historical research to address two sets of policy-related questions:

- (i) How did we get here? (That is, how has the broad macro/finance environment evolved and changed risks?)
- (ii) What can we do differently? (That is, how can policy changes provide a beneficial shelter from crises without undue costs?)

So let me now put macroeconomic history to work, and discuss new and ongoing research that I think can help shed light on these questions.

The past

Let me spend some time establishing what we actually know. What does the long-run evidence from the global macroeconomy show? Given the scope of this lecture, I will focus on two key aspects of the historical record: the history of global monetary regimes and the history of financial crises. And under each of these headings I want to locate a few key pieces of quantitative evidence that satisfy two criteria. First, would we consider it a robust and established fact? And second, do we think it has something of first-order importance to say about how the global macroeconomy has evolved, how we got to where we are today?

But first, we could ask, why are these the key areas of interest? The reason is that policy choices surrounding financial liberalisation and exchange rates, and their relationship to the causes and effects of economic crises, are as important and controversial as ever; and are front and centre in public discourse now in many countries. For example, we can think of the heated debates on global imbalances, reserve accumulation, United States-China tensions, capital controls, currency intervention and currency wars. And we know that many of those forces are accused of playing a role in the last crisis, and perhaps in the next one.

But there is one more important thing to recall: which is that these are not in any way *new* debates; they are very, very old debates, as old as the global macroeconomy, and as we shall see the same tensions have existed for a century or more. The persistence of these issues gives us a strong motivation to draw lessons from what has been a unique historical laboratory with many important experiments. I now want to discuss a few important conclusions that can be drawn from recent research in this area with regard to two overarching issues of particular contemporary relevance: the constraints of the trilemma and the problem of financial crises.

The history of the trilemma

The first thing I want to talk about is the trilemma, a useful analytical framework for how to think about policy trade-offs. What is it? It is a bedrock, axiomatic principle in international macroeconomics. It says a government can't pick all three of the following list of potentially desirable policies.

- (i) A fixed exchange rate.
- (ii) Internationally mobile capital.
- (iii) Monetary policy independence.

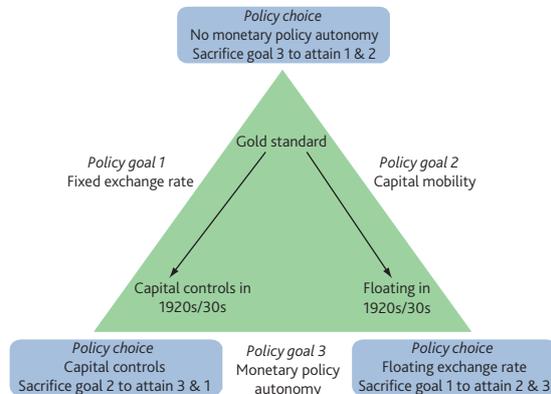
For example, a credible exchange rate peg (item i) means that you will not devalue and in that case interest arbitrage (item ii) locks your rate to the base country's rate, meaning a loss of monetary autonomy (sacrificing item iii). To break the tight link between the home and foreign interest rate (item iii) the authorities need to either stop arbitrage through capital controls (sacrificing item ii), or else allow the exchange rate to move by going from a peg to a float (sacrificing item i).

For clear-thinking policymakers, it is very well understood how these trade-offs operate in theory. But how hard do these constraints bind in practice? Sometimes it can be hard to see the implications of the trilemma if we zoom in for a high-frequency view, by looking at events on a daily, monthly, or even annual basis. Here history has an important role to play, because when we take a lower-frequency view a clearer picture emerges of what the trilemma means. To do that we need to pull back and zoom out to take in more historical timeframes that look back over the last century or more.

Figure 1 presents a stylised view of what we know about the trilemma before World War II. In the beginning, there was the gold standard, which a majority of countries eventually adopted during the period 1870 to 1913. As a solution to the trilemma this involved items i and ii: open pegs with no monetary policy autonomy. Then after World War I and the Great Depression, and some massive macroeconomic shocks, monetary policy experimentation began. Capital controls emerged in some countries; in others, floating exchange rates; both enabled countries to grasp the levers of monetary policy for the purposes of stabilising their

economies, which under the circumstances they desperately needed to do.

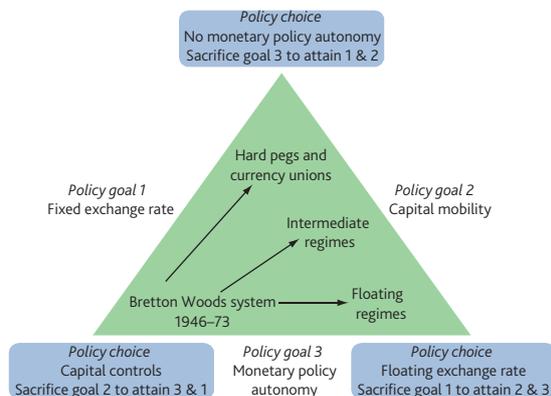
Figure 1 The evolution of monetary regimes and the trilemma before World War II



Source: Feenstra and Taylor (2011).

What happened next? **Figure 2** presents a stylised view of what happened to the trilemma after World War II. At this point there was a return to pegged currencies, but this was only a restoration of a kind of pseudo-gold standard, or rather, a dollar standard, but with very different rules. Now capital controls were applied everywhere, and the desire for monetary policy autonomy was a genie out of the bottle.

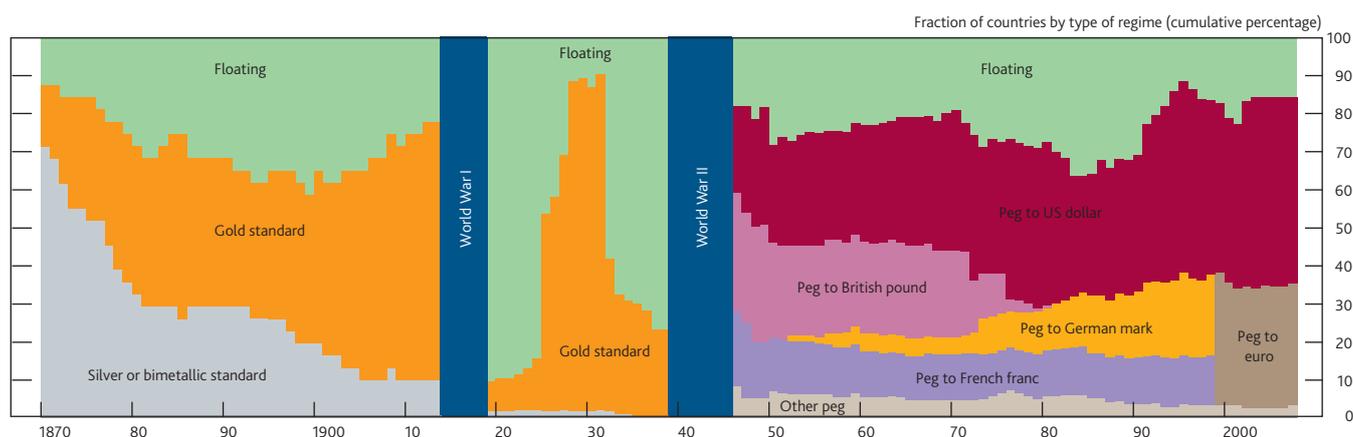
Figure 2 The evolution of monetary regimes and the trilemma after World War II



Source: Feenstra and Taylor (2011).

But then in the 1970s, tensions arose which broke the Bretton Woods system, including asymmetric shocks (calling for adjustable pegs), the leakiness of capital controls among the major currencies (bringing the threat of speculative attacks when a peg might move), and the inflationary trend of the United States (exporting inflation to the rest of the world).

We then saw another great wave of policy experimentation. Many developed market countries shifted toward exchange rate flexibility, although not within the eventual euro zone, where preferences for fixed rates were strong. Elsewhere, in

Chart 1 The evolution of exchange rate regimes

Source: Feenstra and Taylor (2011), based on Meissner and Oomes (2009).

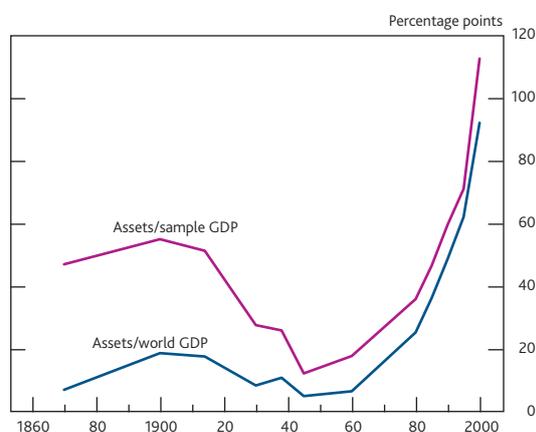
the emerging markets, a region of growing macro weight, there was more sentiment for both soft (intermediate) or hard pegs, and a 'fear of floating' mentality held sway.

The evidence in **Chart 1** backs up this account and shows the evolution of exchange rate regimes over time. The rise and fall of the gold standard is clear enough, as is the creation of the post-war dollar standard. But for all the talk of a 'collapse of Bretton Woods' the 1970s did not bring about a wholesale switch to floating rates. Even today the vast majority of countries are maintaining fixed not floating-rate regimes. The gold standard may be a long-abandoned 'barbarous relic' but the old-time religion is hard to cast off, and we still find a large number of policymakers worshipping at the fixed-currency altar.

We can also see from **Chart 2** how the story is consistent with the record of ebb and flow in capital movement between countries. And if we had time to go into the detailed narrative and legal histories, we could see it in the record of policy restrictions and capital flows too. An era of high mobility and high flows in finance came to an end in 1913; financial integration then became more and more limited in the 1920s and 1930s, reaching near-shutdown around the time of World War II. Subsequently, finance recovered only slowly under the Bretton Woods design, until a rapid expansion was unleashed when the constraints on capital mobility were dismantled starting in the late 1970s.

This has been only a very brief tour of the most significant trends in global macroeconomics and finance of the last century. But there are a few key lessons here and they can help us understand some aspects of the great and growing tensions in today's global economy.

In particular, history teaches us that the trilemma bites. As we have seen, countries that are financially open, and have elastic capital flows, can end up being faced with a choice: monetary policy autonomy or fixed rates. They can't have all their desires and so they end up fighting the trilemma. Thus we can understand how, when the Brazilian finance minister recently

Chart 2 International financial assets

Source: Obstfeld and Taylor (2004).

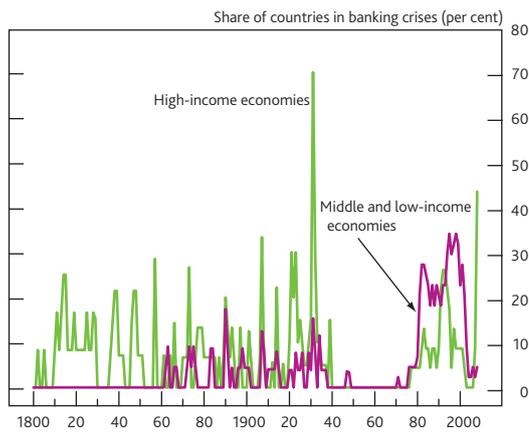
spoke of a 'currency war' and protested the money flowing into his country, the appreciation pressure, and the constraints that this puts on Brazilian macro policies, this was what he was really talking about.

But these challenges are nothing new. We have merely gone back to a financially globalised world with the resumption of large-scale capital flows and a level of financial integration not seen in more than 100 years and beyond. And we have paired that with a world that is trying to juggle fixed and floating currencies, but where the fixed-rate bloc is large and growing in scale. But in addition to these renewed trends, we have also gone back to the future in another way: we have found ourselves in a world of financial instability.

The history of financial crises

Thus, to round out this discussion of what we have learned from macroeconomic history I want to focus on the topic of banking crises, which is an extremely important issue in light of recent events. What do we know about these crises, what does the record show and what have we learned about their causes, and their consequences? **Chart 3** shows what we know about the frequency of banking crises over the last 140 years, and the picture is quite illuminating.

Chart 3 Frequency of banking crises



Source: Qian, Reinhart and Rogoff (2010).

Several features of the data stand out and deserve interpretation. First, it is clear that the post-war period of financial repression (including capital controls but also strict regulation of domestic finance) was a remarkable era in combining rapid economic growth and high investment with a crisis-free but strictly regulated and supervised financial system in most countries. This is a remarkable historical fact that warrants further study. It isn't obvious at all that countries paid a price for harsh financial regulation in that period, and this perspective is relevant as new financial regulations are devised going forwards.

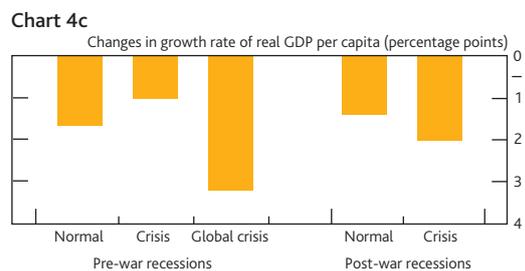
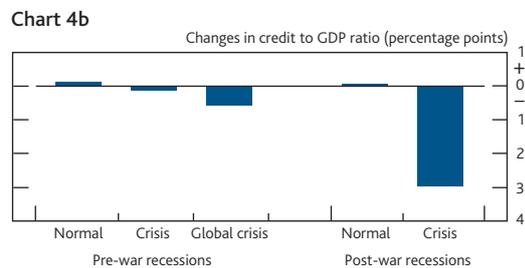
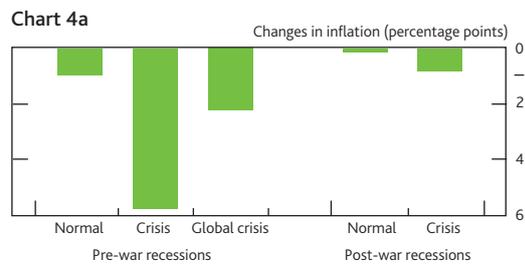
Second, in the 19th century, the emerging markets (low/middle income) generally avoided banking crises as compared to developed markets (high income). But this was not a sign of virtue, rather it was a sign of how small and underdeveloped their financial systems were that they could not, in general, muster enough destructive force to create a banking crisis worthy of the name.

Third, in the last 40 years, crises have been an 'equal opportunity menace', to quote Reinhart and Rogoff, and the similar frequencies in the developed and emerging groups undermine the view that somehow developed markets are different from emerging markets in this respect. They are not, and have proven to be remarkably financially fragile over a century or more, with the exception of one brief 20-year period. So while developed markets may seem to have conquered the problems of inflation and sovereign debt crisis (although sceptics might be worried about how long this can last), it seems clear that we still have much to learn about how to conquer banking and financial sector fragility.

We can use history to gauge not only how often crises happen, but also how costly they are and what other consequences they tend to have. **Chart 4** shows the changes in some key macroeconomic variables in the aftermath of a recession (comparing the four years after the business-cycle peak with the previous four years), breaking this comparison down into several groups: both pre-war and post-war recessions, and

also normal recessions versus crisis recessions (the latter associated with a financial crisis in the country) and global financial crises (when several countries simultaneously suffer a crisis, as in 1891, 1907, 1921 and 1929; the 2008 crisis is ignored since the data are incomplete as yet).

Chart 4 Changes in macroeconomic variables following recessions^(a)



Source: Jordà, Schularick and Taylor (2010).

(a) Four-year windows before/after recession peak.

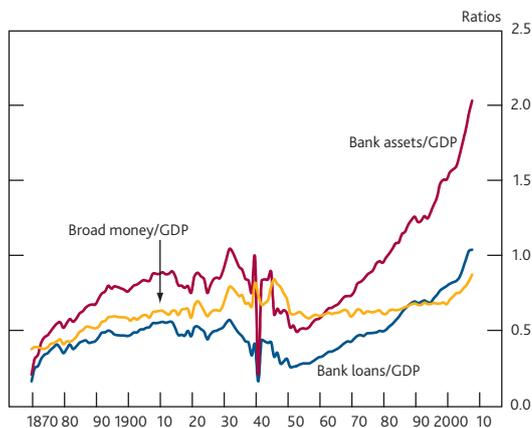
To make these comparisons I can draw on some of my recent collaborative work with Moritz Schularick to build a new massive data set on crises, credit and economic growth covering fourteen advanced countries from 1870 to the present. For brevity here I want to look at just three time series to gain some fundamental insight into what has or has not changed during crisis events. The three variables are inflation (annual rate), credit (change in banks loans as a share of GDP) and growth (of real GDP per capita), based on our results in joint work with Òscar Jordà.

Chart 4a shows a major change for the good in the response to crises, and indeed recessions of all kinds. Up to the Great Depression, adherence to gold standard orthodoxy and 'sound money' dogmas at central banks resulted in strong deflationary pressures during recessions, and especially so during crisis recessions. But central banks seem to have learned their lesson. Since the 1930s policy responses in an era of fiat money have generally been much more accommodative with the goal of preventing a repeat of the

same disinflationary, or outright deflationary, spirals. Judged by the evidence, these shifts in the conduct of monetary policy appear to have been successful in this regard. And although the data are not in from the post-2008 era, we can see that through quantitative easing and other measures central banks are again working hard to keep this record intact, and so ensure that Fisherian debt deflation is known only as a historical curiosity (one contrary case might be the euro-zone peripherals, but by not having central banks of their own, these are exceptions that prove the rule).

Chart 4b reveals a change for the worse, however, when we look at the reaction of credit to GDP ratios. While these ratios did fall in pre-war recessions, the drops are much, much larger in post-war recessions — and especially in crises. Thus, the damaging effects of debt deflation may have been mitigated, but the magnitude of credit crunches has if anything been exacerbated. There are multiple plausible explanations for this development, although at one level the explanation is simple — size and leverage. In today's major economies, the financial sector is very large relative to GDP, and within that sector, debts have grown astronomically relative to measures like broad money (**Chart 5**). Thus, whenever a crisis strikes today, the percentage decline in bank lending may not be that different, but the impact on the real economy is likely to be that much greater simply because we live in a more financialised world.

Chart 5 Money and credit aggregates relative to GDP^(a)



Source: Schularick and Taylor (2009).

(a) Fourteen-country averages by year.

After these two patterns are digested, the bottom line for growth in **Chart 4c** comes as not so much of a surprise. In a world of ever-larger debts with greater and greater leverage, the potential for a real economic downturn due to credit market failure is greater. Even if central banks have taken away some of that downside — through liquidity support, quantitative/credit easing, lender of last resort and 'too big to fail' policies, and so on — these new policies may offer at best only a partial risk offset in the face of any problems emanating from an expanding financial sector, as we

have recently seen. And so it would seem to be: measured by economic growth, crisis recessions are no less costly (in terms of lost growth) now than they were in the distant pre-war era. This is not to say simplistically that central banks help 'Wall Street' more than 'Main Street'. Rather, it seems that policymakers now have to run faster just to stand still, as the downside risks from financial crises have multiplied over time — although one could argue that some of those very problems are, by dint of the backstops offered, of the policymakers' own creation.

The broader lesson here is that the macrofinancial policy game between, roughly speaking, the central bank and the banking sector has over the last 100 years changed in many fundamental ways. The ability of the economy to originate and withstand real shocks, all else equal, may not have changed all that much; but with a much, much larger financial system in place (relative to GDP) the stakes in the game have grown much larger. If the financial system is a source of shocks, due to bad incentives, or imperfect information, or co-ordination failures, or whatever, then in a more financialised system, these shocks will have greater destructive power. But the same can also be said of a world in which shocks originate elsewhere but are magnified by the financial system's 'accelerator' mechanism.

The other lesson, from another strand of research, including my own work, is that all is not lost here. There is an accumulation of ample evidence, especially after the recent turn of events has provided empirical researchers with another set of unfortunate data points, that credit booms are causal for crises. In my work with Schularick on developed markets, this proposition emerges robustly from 140 years of data for fourteen countries; it has been seen time and again in other contexts using shorter panels from recent times including both emerging and developed markets, notably in the work of the researchers at the Bank for International Settlements. So while the bad news is that a larger financial system may pose a greater danger, the good news is that we now have at our disposal the signals that might tell us when we need policy to take more care, through macroprudential policies or otherwise, to take preventive steps to lean against the wind before a crisis occurs. Thus, in addition to asking rate-setting monetary policy makers to remove the punchbowl at last orders, we can also perhaps rely on credit-braking macroprudential policy makers to also pre-emptively water down the punch itself.

Put another way, the time is ripe for central banks to discover, or rather rediscover, their 'missing mandate' — at their inception, when not acting as fiscal agents of the state (*plus ça change*) the other main task of the central banks was to ensure financial stability by watching over fragile systems and standing ready to provide help in an emergency. But in recent years, this responsibility drifted away from many central banks' purview, often through a combination of regulatory

mission creep and/or benign neglect. The so-called ‘Great Moderation’ was built on rather weak foundations.

Now, however, the realisation has dawned that perhaps only the central bank itself, with its unlimited resources and (somewhat) intact political independence, can and should be entrusted with this vital role. Other mandates, such as the stability of inflation or output (however weighted in the loss function), are nice things to have, but they are of course completely unattainable in an economy whose financial system is prone to periodic implosion. Financial stability is not a sufficient condition for a sound macroeconomic policy regime, but it is a necessary one.

From the past to the present

That has been a bit of a whirlwind tour, covering a century or more of global macroeconomic history in only the briefest of surveys. It is interesting in its own right, but I think it also helps us understand how we got here and how different economic policy regimes have functioned. So in the time that’s left, I would like to draw on the lessons in the past, and focus on present challenges and future choices.

In looking at the present, where we are now, I want to keep in mind our two main themes, monetary regimes and crises. But I also want to focus on how they relate to what I think is the fundamental asymmetry of our own times. And that is the asymmetry between developed market (DM) and emerging market (EM) macroeconomic risk.

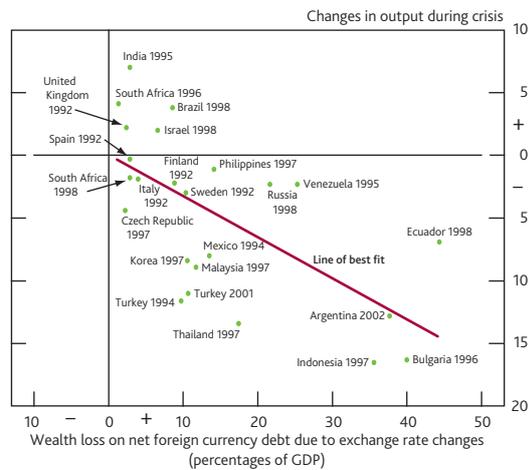
A little ancient wisdom from Asia may allow us to meditate on the question. So let me briefly discuss the *Guanzi*, a remarkable first-century BC Chinese text named after Guan Zhong, Prime Minister to Duke Huan of Qi. (I realise the temptation is to roll one’s eyes when an economic historian reaches for some distant analogy like this, but bear with me, it isn’t far fetched: believe it or not, the *Guanzi* was actually mentioned on Bloomberg last week.)

The *Guanzi* is all over the map, but is in some ways the earliest economics textbook we have, and those chapters are very focused on one thing: uncertainty and how to cope with it. For example, the text clearly warns that the government should keep abundant reserves of grain for hard times, and that this reserve needs to be very large indeed, maybe a year’s output.

What I find even more interesting is that many critical readers and interpreters have taken away one main message from those chapters: namely, that this is a principally mercantilist document. But I don’t think that’s the only way to read it, and that should inform how we think about the emerging market reserves today.

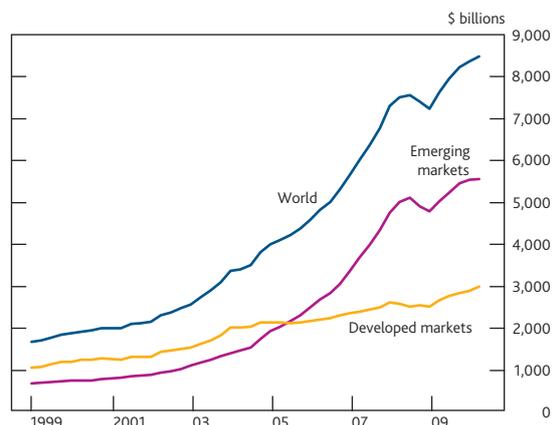
Emerging markets live in a very fragile world of ‘fear of floating’ and ‘original sin’: an inability to borrow in their own currency, leaving them open to contractionary devaluations and currency mismatch (**Chart 6**). And also ‘sudden stops’: the potential disappearance of capital market access, creating rollover/default risk. And also ‘capital flight’: the risk that local currency deposits attempt to escape at par in times of stress, leading to a devastating internal/external drain. These problems lay at the heart of the 1997 Asian crisis and other emerging market crises in times past. The lesson since 1997 has been clear for emerging markets: accumulate hard-currency reserves as a precaution to avert the sudden stop and also to hedge away the aggregate currency mismatch. And this policy has been extremely successful so far (**Chart 7**). The worst global recession in 80 years passed by the emerging markets, where there was hardly a downturn in real growth and no outbreaks of crisis dynamics. Once left to rely on the kindness of strangers (or the International Monetary Fund (IMF)) in cases like the 1997 crisis, emerging markets now find themselves with enough self-insurance to ride out unprecedented external shocks.

Chart 6 Output losses and wealth losses during contractionary devaluations



Source: Feenstra and Taylor (2011), based on Roubini et al (2004).

Chart 7 Foreign exchange reserves



Source: IMF International Financial Statistics.

This led EMs to the accumulation of a reserve buffer, both to protect against a run on currency or on bank deposits but also to cushion funding shocks. It was, in its own way, a form of 'Guanzi economics for the 21st century'.

Now (as with *Guanzi*) other interpreters could have said all of that in a different way, using a mercantilist frame of reference: saying that pegged were the same as 'manipulated' exchange rates, that pegs were driven by large reserve accumulations, and they were used to sustain export promotion. But I don't think that's the only explanation, or even the right one.

Instead, with some historical perspective, we can see some real economic forces and underlying policy regime choices arising from the trilemma. The key lesson is that since 1990 there has been a major shift in global economic equilibrium. We have been adapting all these years to the inclusion of EM countries into the global economy, and their need for *integration with insurance*. That is, I think, what's really been behind the global imbalances.

An old macro joke says: we can't trade with other planets, so the international accounts have to balance. Thus, the financial flows wash up in DM economies. Or, as central bankers have a tendency to say, we have a 'savings glut' problem.

Understanding this dynamic has posed challenges for economists and policymakers in the last two decades. There have been many unforeseen and certainly unintended consequences of this reconfiguration of the global economy.

Now for sure the lending flows from EM to DM had to go *somewhere*. And this is I think the big question. Where should all these savings have gone? Did they have to go to housing bubbles or overconsumption? That's just one example of malinvestment, but a big one. It really is a shocking outcome. Could we, could our supposedly advanced financial systems, our so-called efficient markets for allocating capital, really find no genuinely useful projects to invest these funds in? No projects with even a modest social rate of return to exceed the paltry real rate of return being required by patient and risk-averse managers of EM reserves? That we could not (and still can't?) is quite stunning.

The developed markets seemed to have forgotten the past: to think that, well, crises happen to 'them' not 'us'. And I think that complacency affected policymakers as well as financiers and citizens. Of course, EMs faced larger risks: they had pegs which entailed greater volatility and no ability to lean against such winds, and they had weaker institutional and regulatory frameworks. But by and large they have learned the lessons of the 1990s well and emerged in 2008–10 the stronger for it.

But DM leaders/economists/financiers thought they were immune. This was a complacent and ahistorical view, as we saw earlier. It ignored many of the deeper trends that are

enduring tensions in the global economy. In the future we shall not make that mistake again, surely?

The next logical question to ask is: will this state of affairs persist? EM countries are at a very different point now than they were 30, 20 or even 10 years ago, but many of their fundamentals are the same. It is their relationship to the external world and how they are managing it that has changed.

The obvious conclusion is that these reserve accumulations are not going away. So that leads to the final major question I want to address tonight: where does that leave the world economy, and the DMs?

Looking to the future

To conclude, I now want to move on to how we draw on the lessons of the past, not just to understand the events present, but to look forward and ask how a better, ie more stable, configuration of the global macroeconomy might be built. Let me group my concluding comments under two headings: the challenges facing the EMs, and those facing the DMs.

For the EMs, I think the key question is: will the process of reserve accumulation ever end, and what is the metric for deciding when you have 'enough' reserves? In 2008 these hoards dipped but now they are climbing again. To the extent they fed into the global imbalances they are, if not a cause, at least a necessary supporting force behind our last crisis. Will we now spend the next 10, 20 or 30 years having to cope with more such imbalances? I fear the answer is yes.

Why? First, reserves have been shown to work. They did insulate emerging economies from devastating shocks. Second, they enjoy even stronger political support, at least now their value is understood, and that understanding extends to popular political support (as the example of Chile's Andrés Velasco shows — possibly the first ever finance minister with countercyclical popularity ratings?). Third, there is as yet no credible alternative that doesn't involve major political risk: reserves mean never having to bow and scrape before the IMF, or some other global or regional body. You can control your own destiny and you will not end up signing your political life away as Indonesia's President Suharto did when he sat before the head of the IMF. An image of that photo is surely etched in the minds of all emerging market policy makers. The provision of additional flexible credit, with less onerous conditionality by the IMF could make a difference on the margin, but the sheer volume of insurance needed by EMs (and additional candidate EMs in the decades ahead) will dwarf the scale of any IMF facility. Self-insurance is here to stay, then, until countries somehow 'graduate' from EM status and no longer need such buffers. But that process remains distant and ill understood.

The other possible way in which the emerging world's reserve demands might abate is if they all switched from fixed to floating exchange rates. This might not remove all precautionary needs, but it could lead to some reduction in the need to hold reserves for the defence of a peg or to protect against broad money flight from the banking system. To believe this, however, one would have to think that the dangers of currency mismatch have been banished, leaving these countries no longer in a fear of floating positions. Recent data collected by Philip Lane and Jay Shambaugh say yes, currency mismatch has abated in aggregate. The last decade's reserve accumulation is part of that story on the asset side, along with, on the liability side, the voluntary choice and/or regulatory pressure convincing private sector agents to borrow less foreign currency.

But it is still important to note that in many countries this is only an aggregate story. They are not fully rid of currency mismatch at a micro level. Aggregate risks are now lower but the reserves are in the government sector, while many of the dollar liabilities are still in the private sector. So the hedging isn't on the same balance sheet as the foreign exchange exposure in many cases. For example, one thinks here of some Central and Eastern European or Baltic countries with heavy exposure to euro loans in the private sector but euro reserves on the government side. This configuration still poses a potential moral-hazard risk and thus a political risk going forward, and may still engender a fear of floating in emerging countries. Things may be much better in aggregate, but there is still a price to be paid for original sin.

And of course there remain plenty of other reasons for emerging countries to fix, such as the desire to gain a credible and transparent nominal anchor.

Thus, I expect continued fixing (or highly managed floating) to be an enduring feature of EM economies, and thus to see more reserve accumulation.

Turning now to the developed markets, the chief implication of this global financial architecture is obvious. The balance of payments has to balance, so where will these flows end up? If we are to avoid a repeat crisis, the excess official savings of the emerging world directed at us have to be put to better use. I think this means one of two things will happen. It means either putting a moderate brake on unproductive or bubble credit by DMs at home, or figuring out some mechanism to safely recycle EM official surpluses back as private flows to the EMs themselves. In all likelihood, we are going to get a little bit of both.

The brakes on credit and capital flows are already much discussed. As I have argued, the concept of a credit bubble was denied or forgotten for too long. And those bubbles are dangerous when they burst. I think going forward we may

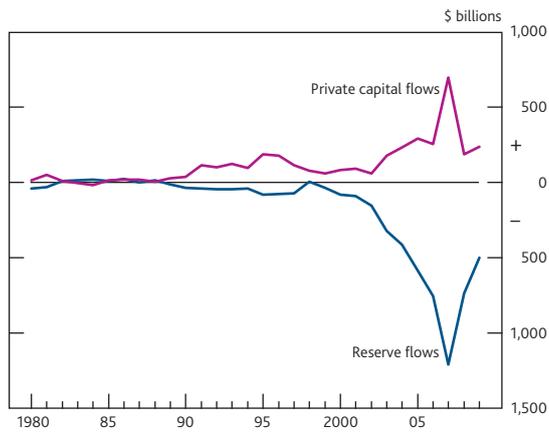
end up looking for some way to put sand in the wheels of credit growth (like taxes on credit growth as in Croatia, or countercyclical capital requirements as in Spain). We may also see sand thrown at the external imbalances themselves (in the style of the Chilean *encaje* or even the Goodhart-Tsomoocos proposal to have intra-euro zone penalties). But we need to be careful to avoid crude controls which are distorting for long-term investment incentives: harsh capital or credit controls could be bad, as compared to milder allocation-neutral frictions on hot flows which are now much more palatable to the international community and less likely to precipitate political tensions, as the post-crisis IMF and G20 leanings have shown.

The other option is recycling of the flows back to the EM via an increase in private capital flows. And, no surprise, this is already happening. But the key concern is this: can the flows to EMs be undertaken this time without a bubble and crash, as in previous episodes of heavy EM investment, like the 1970s and the 1990s? One hope would be more foreign direct investment (FDI) and less portfolio flow, an outcome that would be encouraged by some selective capital controls. But EMs would also need to make themselves more attractive to FDI, making improvements in institutions and policies to support long-term investment. They may not graduate but they do need to move up a few grades, and some have done so (eg Chile is now rated higher than several so-called developed markets). But lack of such institutions is what makes the EMs EMs in the first place. So that tension ideally needs to be reduced and we are moving in the right direction in some countries, even if for many others the trends are less clear.

Private capital flows of late have been very large back to EMs and growing — just never enough yet to eclipse the official flows in the other direction. But we might be getting near to a reversal of that situation. Which allows me to try to end on a positive note, by looking for signs of a benign rebalancing. The data show that we can already start to see the forces building that can push us towards rebalancing (**Chart 8**). Private financial flows are going downhill in greater volume, and uphill official flows starting to be offset. A reversal was starting to happen in the 1990s, then got massively derailed by crises, then picked up again, and then got derailed again by the global financial crisis. The Lucas paradox of uphill flows is, however, somewhat misleading in that all the way through private capital has been going in the downhill direction. Now various factors are creating an extra 'push' on capital leaving the DMs (high saving after financial crisis and low expected growth) and other forces are simultaneously pulling capital into EMs (higher growth prospects and enhanced macro stability on the back of enlarged reserve stocks as proven in 2008–09).

But as we end I also need to sound a cautious note before we get too optimistic. The adjustment of the world to dynamic EMs pulling capital away from sluggish DMs will be a political

Chart 8 Private capital flows and reserve flows in emerging economies



Source: IMF *International Financial Statistics*.

as well as an economic challenge. Think of the doubts about Britain's foreign investments during the Edwardian era of malaise 100 years ago, or think of less than 20 years ago when Ross Perot made headlines with his 'giant sucking sound'. Or think of Brazilian Finance Minister Mantega's warning after his 'currency war' remark, when a few days later he said that the real thing to fear was a trade war. EMs are well positioned to decouple and pull us along, but whether they will be able to do so is a political as well as an economic question. The rebalancing poses major economic challenges (avoiding a new bubble in the EMs) but also political challenges (ensuring that the pain of adjusting to new trade and capital flows does not create a backlash).

So I do worry that even more interesting times are ahead, and I just hope that I am not giving a lecture with exactly the same title ten years from now.

References

- Barro, R J (2009), 'Rare disasters, asset prices, and welfare costs', *American Economic Review*, Vol. 99(1), pages 243–64.
- Borio, C and White, W R (2003), 'Whither monetary and financial stability? The implications of evolving policy regimes', *Proceedings, Federal Reserve Bank of Kansas City*, pages 131–211.
- Calvo, G A and Reinhart, C M (2002), 'Fear of floating', *Quarterly Journal of Economics*, Vol. 117(2), pages 379–408.
- Eichengreen, B (1996), *Globalizing capital: a history of the international monetary system*, Princeton NJ: Princeton University Press.
- Eichengreen, B (2009), 'The last temptation of risk', *The National Interest*, 30 April.
- Eichengreen, B and Temin, P (2010), 'Fetters of gold and paper', *NBER Working Paper no. 16202*.
- Feenstra, R C and Taylor, A M (2011), *International economics*, New York: Worth, forthcoming.
- Feldstein, M (1999), 'A self-help guide for emerging market countries', *Foreign Affairs*, March–April, pages 93–109.
- Frankel, J and Saravelos, G (2010), 'Are leading indicators of financial crises useful for assessing country vulnerability? Evidence from the 2008–09 global crisis', *NBER Working Paper no. 16047*.
- Goodhart, C and Tsomocos, D (2010), 'How to restore current account imbalances in a symmetric way', *syndicated column, eurointelligence.com*.
- Jordà, Ò, Schularick, M and Taylor, A M (2010), 'Credit booms, and external imbalances: 140 years of lessons', *NBER Working Paper*, forthcoming.
- Kashyap, A K, Berner, R and Goodhart, C (2010), 'The macroprudential toolkit', *IMF Economic Review*, forthcoming.
- Kindleberger, C P (1978), *Manias, panics, and crashes: a history of financial crises*, New York: Basic Books.
- Lane, P R and Shambaugh, J C (2010), 'Financial exchange rates and international currency exposures', *American Economic Review*, Vol. 100(1), pages 518–40.
- Lucas Jr, R E (1990), 'Why doesn't capital flow from rich to poor countries?', *American Economic Review Papers and Proceedings*, Vol. 80(2), pages 92–96.
- Meissner, C M and Oomes, N (2009), 'Why do countries peg the way they peg? The determinants of anchor currency choice', *Journal of International Money and Finance*, Vol. 28(3), pages 522–47.
- Minsky, H P (1977), 'The Financial Instability Hypothesis: an interpretation of Keynes and an alternative to standard theory', *Challenge*, March–April, pages 20–27.
- Mishkin, F S (2008), 'How should we respond to asset price bubbles?', *Banque de France, Financial Stability Review*, No. 12, October.
- Obstfeld, M, Shambaugh, J C and Taylor, A M (2004), 'Monetary sovereignty, exchange rates, and capital controls: the trilemma in the interwar period', *IMF Staff Papers*, Vol. 51 (Special Issue), pages 75–108.
- Obstfeld, M, Shambaugh, J C and Taylor, A M (2005), 'The trilemma in history: tradeoffs among exchange rates, monetary policies, and capital mobility', *Review of Economics and Statistics*, Vol. 87, No. 3, pages 423–38.
- Obstfeld, M, Shambaugh, J C and Taylor, A M (2009), 'Financial instability, reserves, and central bank swap lines in the panic of 2008', *American Economic Review Papers and Proceedings*, Vol. 99(2), pages 480–86.
- Obstfeld, M, Shambaugh, J C and Taylor, A M (2010), 'Financial stability, the trilemma, and international reserves', *American Economic Journal: Macroeconomics*, Vol. 2(2), pages 57–94.
- Obstfeld, M and Taylor, A M (2004), *Global capital markets: integration, crisis, and growth*, Cambridge: Cambridge University Press.
- Qian, R, Reinhart, C M and Rogoff, K (2010), 'On graduation from default, inflation and banking crises: elusive or illusion?', *NBER Working Paper no. 16168*.
- Reinhart, C M and Rogoff, K (2009), *This time is different: eight centuries of financial folly*, Princeton, NJ: Princeton University Press.
- Roubini, N, Cavallo, M and Kisselev, K (2004), 'Exchange rate overshooting and the costs of floating', *Computing in Economics and Finance*, No. 62.
- Schularick, M and Taylor, A M (2009), 'Credit booms gone bust: monetary policy, leverage cycles and financial crises, 1870–2008', *NBER Working Paper no. 15512*.
- Taleb, N (2007), *The Black Swan: the impact of the highly improbable*, New York: Random House.
- Xiaochuan, Z (2009), 'Reform the international monetary system', speech by the Governor of the People's Bank of China, Bank for International Settlements, 23 March 2009.