THE FUTURE OF FINANCE

And the theory that underpins it

10 Will the politics of global moral hazard sink us again?

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Chapter 10
Will the politics of global moral hazard sink us again?

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During the last four decades governments in wealthy countries have built up large contingent liabilities due to the implicit guarantees they have provided to their financial sectors. Politicians are motivated to create near term growth and always reluctant to permit hardships that would otherwise arise from defaults and greater austerity. As a result, the industrialised world has experienced excessive and dangerous financial sector development. Including all promises, U.S. and European taxpayers back over 250% of their GDP in implicit obligations, all of which contribute to the development of moral hazard in lending around the world. If this incentive system remains in place and these liabilities continue to grow unchecked, the eventual end of this "Doomsday Cycle" – with repeated bailouts for distressed lenders – will be large sovereign defaults and economic collapse. The current round of regulatory reform is not sufficient to stop this trend.

I. Introduction

One of most widely held views within economics is that more financial development – as proxied, for example, by higher credit relative to GDP – is good for growth. Over the past four decades, a great of empirical evidence has been interpreted as pointing in this direction, and much supportive theory has also developed. At least since the Asian financial crisis of 1997-98, an increasing number of caveats have been attached to this view – particularly with regards to international capital flows – but the mainstream consensus remains that a larger financial sector relative to the overall economy is a sign of economic health, generally good for future growth and, at worst, not seriously harmful.

Events since September 2008 suggest this view needs substantial revision. It is now self-evident that the financial system in Europe and the U.S. has become dangerous – it is prone to catastrophic collapse in part because major private sector firms (banks and nonbank financial institutions) have a distorted incentive structure that encourages eventually costly risk-taking. Unfortunately, the measures taken in various US and European bailout rounds during 2008-2009 (and again in 2010 for the eurozone) have only worsened, and extended to far more entities, these underlying "moral hazard"

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incentive problems. The take-away for systemic creditors everywhere, whether they be executives and traders at big banks or profligate politicians in eurozone nations, is clear: they get bailed out with official finance and stimulus policies just after financial crises, so why fear a new cycle of excessive risk-taking and deficit spending?[2]

Not only have the remaining major financial institutions in North America and Western Europe, along with each one of the eurozone nations, asserted and proved that they are "too big to fail" – so they need to be saved at great taxpayer expense (both directly and through indirect off-budget measures), but they have also demonstrated that no one in leading governments is currently willing or able to take on their economic and political power. The financial reform process currently underway in the United States and other industrialised countries will result in very little (if any) effective constraint on reckless risk-taking by "too big to fail" financial institutions as the next credit cycle develops.

This cycle of boom followed by bailouts and bust amounts to a form of implicit taxpayer subsidy that encourages individual institutions to become larger – and the system as a whole to swell. Our preparation to bail out their creditors means systemic institutions are able to raise finance cheaply in global markets. The implicit subsidy to creditors encourages greater debt, which makes the system ever more precarious.

There are now major fiscal threats posed by the size of the largest institutions (easy to measure), as well as by the nature of system risk (for which the measures remain much more rudimentary). The fiscal impact of the financial crisis of 2008-09 in the United States will turn out to increase by around 40 percent points of GDP net federal government debt held by the private sector (from around 40 percent towards 80 percent). The IMF estimates that European debt will rise by similar amounts, albeit starting from higher levels.

However, this only captures a fraction of the total costs to taxpayers, savers and workers. Each time we have a new bust, our major central banks rush to relax monetary policy, thus lowering interest rates for savers while giving banks greater profits. These transfers from savers to financial institutions are an effective tax on savings – if capital had been allocated better, savers could have earned higher returns. We also suffer from the large unemployed resources that arise during economic dislocation associated during these crisis. If US and European unemployment rises by an additional 5% for five years, the total cost to society is 25% on annual workers' output.

[2] Financial sector bonuses in the United States were high in 2008, despite the financial crisis. Wall Street compensation as a whole was even higher in 2009. Some traders and executives lost their jobs (e.g., from the fall of Bear Stearns and Lehman Brothers), but most did very well.

We should be even more concerned about the contingent liabilities that arise from our failure to deal with this dangerous system. The potential liability arising from our collective failure to deal with "too big to fail" financial institutions, is of much larger magnitude since the liabilities of these entities are well above the size of GDP. In a bad crisis we could be on the hook for sums we simply cannot afford. In some West European countries, this contingent liability dwarfs US numbers – because European financial systems, such as in the United Kingdom, Germany and Ireland, are much bigger relative to their economies. "Too big to fail" is now enshrined at the heart of the global financial system. The euro zone countries have also, with their determination to prevent defaults inside the euro zone, taken on their collective shoulders the current and future debts of all member nations.

Having chosen to take on these contingent liabilities, with the dangerous incentives in place for these to expand and grow, our only course of action to prevent calamity is to build a regulatory framework which keeps dangers in check. This has primarily been the task of our national regulatory institutions, who themselves are guided by legislative bodies and political leaders. We have also attempted to coordinate such regulation through international agreements such as successive Basel accords.

Unfortunately, these systems of regulation have proven to fail repeatedly at their main task of checking excessive expansion and risk. As we outline in case studies, these failures arise in many institutional contexts, but the route cause is an array of powerful incentives which cause our political leaders, legislative bodies, and of course those being regulated, to dismantle regulation after each bout of tightening.

Tough regulations are naturally opposed by financial institutions who fight them aggressively in order to increase profits. Politicians receive donations from the financial sector, and they benefit from the booms that can be won with relaxed regulation. When one nation relaxes regulations, it harms others. Countries with tough regulators will see capital flow out to the less regulated economies as foreign banks bid up interest rates and take more risk. This in turn increases the call by local banks for relaxed regulation in order to maintain competitiveness. With such a global macroeconomic dynamic at play, there is invariably a race to the bottom across nations as regulatory standards are relaxed.

Despite attempts to reform the system now, politicians and regulators are once again performing the same errors that they made repeatedly during each cycle of boom and bust since the 1970s. The current reform process underway does not resolve the deep incentive problems that repeatedly have caused our regulatory system, which we badly need to prevent excess, to spectacularly fail after each attempt to fix it.

We can already imagine how the next cycle of our financial system will evolve.

Emerging markets were star performers during the 2008-09 crisis; in fact, most global growth forecasts made at the end of 2008 exaggerated the slowdown in middle-income countries. To be sure, issues remain in places such as China, Brazil, India and Russia, but their economic policies and financial structures proved surprisingly resilient and their growth prospects are now perceived as good. In the near term, these economies will grow relatively fast, at the same as generating significant savings in particular pockets (e.g., within the manufacturing export sector and/or in natural resource extraction). They will also demand capital, for investments in the private sector and in quasi-state backed activities. This global macroeconomic dynamic will push capital out of (some parts of) emerging markets and into perceived "safe havens" around the world, while also pulling capital from those havens back into other parts of those same (or other) emerging markets. This is a circle of debt, not equity, financing, which will lead to a build-up of financial claims both in industrialised countries and in emerging markets.

There are striking parallels with the "recycling of petrodollars" that occurred during the 1970s. In that episode, current account surpluses from oil exporting countries were placed on deposit in money centre banks (mostly the US), which then on-lent the funds to emerging markets in Latin America and to communist Poland and Romania. When the global macro cycle turned, due to monetary policy tightening in the US, short-term interest rates increased and most of these debtors faced serious difficulties. Major banks in the US were technically insolvent, but regulatory forbearance allowed them to continue operating.

We now seem likely to repeat a version of this scenario, but the major changes in the nature of the financial sector over the intervening three decades means that more capital will likely flow around the world (in absolute terms and relative to the size of key economies) and more leverage may be piled on, including in the nonfinancial sector.

This is our next "global doomsday cycle" or "debt super-cycle", following repeated rounds of boom-bust-bailout over the past three decades, and it seems likely to end badly. [3]

Section II explains the structure of this global doomsday cycle. Section III reviews recent case studies illustrating how crises can emerge from multiple and different source of failure around the world. Section IV discusses incentive problems in the eurozone in more detail. Section V reviews why the latest round of regulatory reforms for the financial sector is unlikely to make much difference. Section VI concludes with the implications for the global macroeconomy.

[3] Haldane and Alessandri (2009) discuss an economic "Doom-Loop" where they focus on the time inconsistency of promises to not bail out banks, and the dangers that arise from this for global financial stability.

II. The Global Doomsday cycle

Cycle Structure

The size of the US financial system, for example as measured by total credit relative to GDP, has more than doubled over the last three decades – and the changes in other industrialised countries are of the same order of magnitude (the solid black line in Figure 1 shows credit relative to GDP since 1980). Each time our financial system runs into problems, the Federal Reserve quickly lowers interest rates to revive it (the blue line in Figure 1 shows the Fed Funds target rate since 1980, including indications for the timing of particular cycles). These crises appear to be getting worse and worse: Not only are interest rates now near zero around the globe, but a significant number of industrialised countries are on fiscal trajectories that requires large changes in policy to avoid an eventual collapse of confidence in the government bond market. What happens when the next shock rears its head?

We may be nearing the stage where the answer will be, as it was during the Great Depression, a calamitous global collapse. The root problem is that we have let a Doomsday Cycle become central to our economic system. This cycle, as illustrated in Figure 2, has roughly five distinct stages.

At the start of the cycle (in the upper right part of Figure 2), banks and other financial intermediaries begin to build dangerous levels of leverage. For example, banks take risks as creditors and depositors provide cheap funding to banks because they know that, if things go wrong, our central banks and fiscal authorities will bail them out. In the cycle that ran through September 2008, banks such as Lehman Brothers and Royal Bank of Scotland used such funds to buy risky portfolios of real estate assets, and engineer massive mergers, with the aim of providing dividends and bonuses, or simply trophies, to shareholders and management. Through our direct (such as deposit insurance) and indirect (central bank and fiscal) subsidies and supports, we actually encourage our banking system to ignore large socially harmful "tail risks", i.e. those risks where there is a small chance of calamitous collapse. As far as banks are concerned, they can walk away and let the state clean it up. Some bankers and policy makers even fare well during the collapse they helped create.

Regulators are supposed to prevent this dangerous risk taking, but short-sighted governments often prefer to relax regulation thus promoting a credit boom, while banks wield large political and financial power and are hence able to outwit or over-rule regulators. The system has become remarkably complex, so eventually regulators are compromised and lose their ability to rein in or even measure risk-taking – but hardly anybody cares to notice. The extent of regulatory failure ahead of this last crisis was mind boggling. Many banks, such as Northern Rock, convinced regulators they could hold just 2% core capital against large, risky asset portfolios. The whole banking system built up

$70 trillion in interconnected derivatives exposures which meant that, when one large bank goes down, it could take the rest of the system with it.

These resulting risks were not the result of errors. For example it was easy to spot that derivatives had created massive systemic risk, and that lax rules on hybrid capital made those instruments ineffective.[4] Instead, our leading politicians and regulators took the easy route that so many have taken time and again in the past. They avoided confrontation with powerful banks, and financial sector lobbyists and donors, while paying lip-service to arguments that "efficient markets" would sort this out. When the financial sector argued that tough regulation made them uncompetitive against neighbours, regulators invariably relaxed regulations ever more.

Given the inability of our political and social systems to handle the hardship that would ensue with financial collapse, when things finally do go wrong, we rely on our central banks to cut interest rates and direct credits to bail out the loss makers. While the faces tend to change, each central bank and government has operated similarly. This time it was Ben Bernanke (in his dual role as monetary steward and regulator as governor and now chairman of the FED sine 2001), Tim Geithner (first as regulator while President of the Federal Reserve Bank of New York, and now as chief architect of the administrations strategy to refine regulation as Treasury Secretary), Mervyn King (Governor of the Bank of England since June 2003), and Jean-Claude Trichet (architect of the euro zone and President of the ECB since November 2003) who all regulated and oversaw policy as the bubble was built, and are now designing our rescue from the system that they helped create.

When the bailout is done, we start all over again. This is the pattern since the mid-seventies in many developed countries – a date which coincides with large macroeconomic and regulatory change, including the end of the Bretton Woods fixed

[4] Hybrid capital primarily differs from debt through its ability to absorb losses, so providing a buffer like common equity. Banks like hybrid capital because tax laws permit the interest paid on it to be deducted. When the crisis came most banks did their best to avoid cancelling coupons, or writing down hybrid debt, because they wanted to maintain reputations that they always paid in order to keep financing cheaper in the future, and because the investor base in these instruments was also invested in debt and other securities, so making good relations important. It was also soon revealed that some banks had issued hybrid capital instruments which could not legally be used to absorb losses. For example, the Belgium banking group KBC was ordered to not pay coupons on hybrid debt by the European Competition commission after it received a government bailout. The bank later paid the coupons because the language in their prospectuses made them obligatory. Commerzbank issued hybrid debt instruments with legal requirements that they pay coupons so long as they paid coupons on any similar seniority debt. After acquiring Dresdner bank, which had issued hybrid debt where coupons were legally required, Commerzbank will probably be forced to pay coupons on all similar seniority debt instruments with this "pusher" language. These clauses in the debt instruments made coupons obligatory, however, often banks paid coupons despite difficulties when they were not obligatory. This was accepted by the regulators due to the fact that pension funds and insurance companies are major owners of these securities and it would lead to systemic problems if these groups were to take large losses. See also Goodhart(2010) on contingent capital instruments as an alternative.

exchange rate systems, reduced capital controls in rich countries, and the beginning of 40 years of continuous regulatory easing (although during brief periods after each successive crisis some new rules are imposed only to find they get watered down soon after).

The real danger is that as this loop continues to operate, the scale of the problem is trending bigger. If each cycle requires a greater and greater public intervention, we will surely eventually collapse.

Why does regulation repeatedly fail?

There are really two broad ways to view the past regulatory failures which have brought us to today's dangerous point. One is to argue there were mistakes that can be corrected through better rules. This is the path of virtually all the reforms currently underway, including the Basel committee and the Financial Stability Board – backed by the G20 – which are now designing supposedly comprehensive new rules that will close past loopholes which permitted banks to effectively lower core capital, plus they are adding new rules that will ensure greater liquidity at banks. Even Ben Bernanke, who heads a Federal Reserve that will soon be empowered with far greater powers under regulatory reform, has argued that America simply needs "smarter regulations" to save the system. Having worked for many years in formerly communist countries, this reminds us of the repeated attempts of central planners to rescue their systems with additional regulations until it became all too apparent that collapse was imminent.

The second view is that the long-standing and repeated failure of regulation to check financial collapses reflects deep political and operational difficulties in creating regulation for modern finance. The most important point is that our politicians naturally like looser regulation. When we loosen regulation we give our borrowers, who are implicitly backed by taxpayers, the opportunity to borrow more and profit more. This generates a credit boom, which may be financed by bad credits, but does well for sitting politicians. The great era of deregulation under Gordon Brown and Bill Clinton/George Bush undoubtedly supported those unsustainable boom years which commentators wrongly attributed to strong fundamentals.

When regulation is tight, banks naturally spend much money and time lobbying against it. The banks have the money, they have the best lawyers, and they have the funds to finance the political system. Politicians rarely want strong regulators – even after a major collapse, they are more concerned about restarting growth than about limiting future dangers. So, politics rarely favours regulation.

The operational issues are also large: how should regulators decide the risk capital that should be allocated to new, arcane derivatives which banks claim should reduce risk? When faced with rooms full of papers describing new instruments, and their risk assessments, regulators will always be at a disadvantage compared to banks.

It is a great leap of faith to hope that this system will not be captured or corrupted again over time. So the fact that it has failed, in a spectacular manner, to successfully limit costly risk, should be no surprise. In our view the new regulations discussed in Basel 3 will fail, just as Basel 1 and Basel 2 already did. They sound "smart", as Mr. Bernanke would claim, because they are correcting past egregious errors, but, new errors will surface over the next 5-10 years, and these will be precisely where loopholes remain, and where the system gradually becomes corrupted, again.

The Growing Sources of Moral Hazard in our Doomsday Cycle

In addition to "too big to fail" banks in the US, Europe and many emerging markets, there are many other sources of moral hazard which contribute to rapid growth of credit and gross leverage. Each time creditors think that, if a debtor might fail, someone else is likely to bail creditors out, then creditors will be willing to price loans and extend funds to one party, with the hope that a third party might bail them out. If that third party can't adequately check the lending, we are all in danger of a debt cycle. Note that while the "third party" in developed countries is often a government, speaking broadly, in emerging markets the structures involved are often more complicated.

The relationship between Abu Dhabi and Dubai World is a nice example. Despite its limited oil revenues and funds, creditors provided over $100bn in loans and bonds to Dubai entities under the premise that Abu Dhabi was always likely to bail Dubai out. For many years billions of dollars in global savings were allocated to highly questionable ventures that Dubai World selected.

The International Monetary Fund is another potential source of moral hazard. It now has approaching $1 trillion available as loans. It is currently in the process of asking for far more funds in order to provide emergency bailouts to wealthy nations. Creditors can safely lend to nations that are likely to get IMF bailouts, so permitting such nations to build up larger debt burdens. It is entirely plausible that both Argentina and Russia's credit-led booms and busts in the 1990s were facilitated, and much larger than they would otherwise have been, due to the implicit backing of the IMF which creditors knew would forestall or prevent collapse.[5]

In the United States agency debt has proven a major source of moral hazard, helping fuel the housing boom and bust.[6] In Europe, the arrival of the ECB and the

[5] The IMF's Independent Evaluation Office determined that the IMF stayed engaged with Argentina too long in the late 1990s/early 2000s. Presumably this engagement allowed Argentina to borrow more money from foreign creditors than it would otherwise have been able to do.

[6] We do not subscribe to the theory that the financial crisis in 2007-08 was primarily due to Fannie Mae and Freddie Mac – in contrast, for example, to *See* Charles W. Calomiris and Peter J. Wallison,

common currency created a lender of last resort which dramatically increased access to international loans for member nations and their 1400+ banks, and has so financed large credit booms in nations such as Spain and Ireland, along with profligate spending in Greece and Portugal.

A rough list of governments, institutions and other entities involved in such moral hazard in industrialised countries is given in Figure 3. This figure shows examples of entities, such as commercial banks, that are implicitly backed by governments. It also shows the backing of entities, such as the IMF, that is available to support sovereigns or other entities. The sum of these provides an indication of the balance sheets themselves, or the "available credit line" that supports other balance sheets, with potential moral hazard issues if regulation fails.

These guarantees greatly expanded over the past 24 months as the Federal Reserve, ECB and Bank of England all provided effective bailouts to far more banks and other financial entities than ever before. By these crude but illustrative estimates, the grand total now stands around $65 trillion, which is roughly 2.5 times total North American plus European GDP.[7] The chart shows the bulk of the risks stem from bank balance sheets, and so prime focus should be on dealing with this issue. However, other areas are growing quickly. The IMF is now in the process of requesting much larger funding in order to provide emergency "liquidity support" to nations under much easier terms than current programs. This support is presumably aimed at bailing out wealthy European nations. The ECB and EU have repeatedly declared that no euro zone member will be permitted to default or restructure debts, so effectively telling global creditors that the EU nations stand jointly behind the risks of each nation?

The guarantees and other support exemplified in this chart each serve a good purpose, but they also pose severe dangers. To limit the dangers, we would need to design regulatory systems that monitor the risk and prevent it from growing. This is where we invariably, eventually fail.[8] The larger the sums "guaranteed" the greater should be the lobbying, and also the greater is the incentive for politicians to relax regulation in order to win a short term credit boom. As the case studies below show, the problems are deep institutional issues with a critical global dimension. We need reform in areas which today the official consensus is still unprepared to even consider.

"Blame Fannie Mae and Congress For the Credit Mess," *The Wall Street Journal*, September 23, 2008, available at **http://online.wsj.com/article/SB122212948811465427.html**.

[7] The gross liabilities protected are not the total potential losses of the guarantor as some of these are backed by good collateral. However, the large numbers show the importance for political incentives. A modest relaxation of regulation would conceivably generate a sizable rise in credit relative to GDP in nations where it occurred, and therefore it points to the strong incentives to abuse regulation in favour of a political business cycle, along with the sizable potential losses relative to GDP of such increases.

[8] In the US political context, this point has been made most clearly by Senator Ted Kaufman (D., DE). He argues that when regulators have failed, as with the US financial sector, it is not a good idea to just renew or expand their mandate. Legislators should instead write simpler, tougher rules that are easier to enforce, such as a size cap on the largest banks.

III. Fiscal Disaster From Financial Crisis: Case Studies

Iceland

Iceland long had a prudent sovereign with cautious fiscal policy and little debt. Ten years ago no one would have guessed this small island with a population of 317,000 could cause shock waves throughout the global financial system. Within the last decade, its banks started to expand – initially with financing from Europe, but more recently by taking positions in the CDO securitisation market in the United States. Ultimately, they took advantage of the European Economic Area rules that allowed them "passports" into the UK, the Netherlands, and parts of Scandinavia.

Figure 4 shows the huge increase in external debt since 2005 – mostly the result of borrowing by private banks. Total bank assets (and liabilities) peaked at between 11 and 13 times GDP right before the crisis of September 2008. How did Icelandic banks manage to raise such large funds? The answer lies in the structure of financial sector moral hazard in wealthy Europe and in the United States, along with our collective lax regulatory requirements for foreign bank branches under international treaty.

Icelandic banks first raised their finance by accessing European bond markets. Once it became difficult to raise funds there, banks turned to US markets. This came just as collateralised debt obligations came to the fore in the United States. These securitised obligations packaged together bonds of many nations. Icelandic banks were fortunate enough to be rated highly by rating agencies due to the implicit backing of its highly prudent sovereign, but they still carried high yields due to market concerns for their large debt.[9] [10]

To further gain funds Icelandic banks then turned to Nordic and UK deposit markets. Under EFTA rules these banks were permitted to set up branches and internet banking in European deposit markets without being fully regulated by those national supervisory agencies. By offering higher deposit rates, they attracted funds from the local banks.

The three main Icelandic banks used their funds to go on a global buying spree. Their main focus remained speculative real estate, but they also bought high street retailers in the UK, large industrial manufacturers in Europe, and much more. The local regulator turned a blind eye to the risk involved in these transactions, and to the lack of

[9] See Iceland's Truth Commission report, http://sic.althingi.is/ Executive summary and Ch. 21

[10] For example, in May 2007 Kaupthing Bank issued three year bonds in euros paying 7.7% and rated A- by Fitch at issuance, with a similar rating by Moodys. At the time European A/A- rate financial institution bonds had average yields of 4.7% on three year paper. This 300bp premium over the sector reflected bond markets view that rating agencies were too generous.

adequate reporting on connected loans which in retrospect dogged all the major banks. For Iceland, these were boom years, and there was a general feeling that nothing could go wrong.

Then credit markets began to dry up. Figure 5 shows deposit and loan rates in Iceland. The rising deposit rates in 2008 reflect the growing liquidity problems at Iceland's banks. The banks were gradually being cut from foreign wholesale credit markets, so they increased deposit rates in their foreign branches hoping to win funds away from UK and Nordic banks.

The collapse came in 2008. The government and banks were madly searching for alternative funding, including some calls to join the eurozone so the ECB could be the lender of last resort and thus give greater confidence to credit markets, but none of these actions came soon enough.[11] When creditors finally caught on to this large Ponzi game and stopped providing new funds, the banks collapsed. Senior creditors lost well over 90% of their funds as it became apparent the bank's assets were worth less than 1/5th their reported value.

Iceland may seem small and rather extraordinary, but its experience contains a much broader cautionary tale that is relevant for the global economy. The easy regulatory policies in Iceland can be interpreted as a form of "beggar thy neighbour" policy. Loose regulation creates a credit boom, but it is often taking funds from other nations and can lead to misallocation of capital. The Icelandic banks competition may have also weakened regulation elsewhere. With heavy competition coming from lightly regulated Iceland, banks in other nations naturally argue that they too need "light regulation" in order to survive and complete.

In the end, Iceland also played an important role sparking the financial panic and contagion that enveloped Europe and the United States in Autumn 2008 and 2009. If a small little island in the Atlantic Ocean can cause shockwaves through global finance, how could investors be confident there weren't much larger problems lurking ahead? After Iceland's fall, every creditor to other nations with large deficits and substantial external debt looked for ways to reduce exposure. The obvious risks included much of Eastern Europe, Turkey and parts of Latin America.

Iceland's crisis also made clear that creditors' rights and effective protection remain poorly defined in our integrated financial world. With European governments turning down his appeals for assistance, Iceland's prime minister, Geir Haarde, warned that it was now "every country for itself." This smacked of the financial autarchy that characterised defaulters in the financial crisis in Asia in the late 1990s. Similarly, when Argentina

[11] As the Icelandic Prime Minister famously reported, on returning home after a fruitless overseas search for a foreign economic bailout, "we are all going back to fishing."

defaulted on its debt in 2001-'02, politicians there faced enormous pressure to change the rule of law to benefit domestic property holders over foreigners, and they changed the bankruptcy law to give local debtors the upper hand. In Indonesia and Russia after the crises of 1998, local enterprises and banks took the opportunity of the confusion to grab property, then found ways to ensure that courts sided with them.

Canada

Defenders of the new banking status quo in the United States today – more highly concentrated than before 2008, with six megabanks implicitly deemed "too big to fail" – often lead with the argument, "Canada has only five big banks and there was no crisis." The implication is clear: We should embrace concentrated megabanks and even go further down the route; if the Canadians can do it safely, so can we.

It is true that during 2008 four of all Canada's major banks managed to earn a profit, all five were profitable in 2009, and none required an explicit taxpayer bailout. In fact, there were no bank collapses in Canada even during the Great Depression, and in recent years there have only been **two small bank failures** in the entire country.

Advocates for a Canadian-type banking system argue this success is the outcome of industry structure and strong regulation. The CEOs of Canada's five banks work literally within a few hundred meters of each other in downtown Toronto. This makes it easy to monitor banks. They also have smart-sounding requirements imposed by the government: if you take out a loan over 80% of a home's value, then you must take out mortgage insurance. The banks were required to keep at least 7% tier one capital, and they had a leverage restriction so that total assets relative to equity (and capital) was limited.

But is it really true that such constraints necessarily make banks safer, even in Canada?

Despite supposedly tougher regulation and similar leverage limits on paper, Canadian banks were actually significantly more leveraged – and therefore more risky – than well-run American commercial banks. For example, according to reported balance sheets, JP Morgan was 13 times leveraged at the end of 2008, and Wells Fargo was 11 times leveraged. Canada's five largest banks averaged 19 times leveraged, with the largest bank, Royal Bank of Canada, 23 times leveraged. It is a similar story for tier one capital (with a higher number being safer): JP Morgan had 10.9% percent at end 2008 while Royal Bank of Canada had just 9% percent. JP Morgan and other US banks also typically had more tangible common equity – another measure of the buffer against losses – than did Canadian Banks. There are differences in accounting that matter, for example different treatment of repo-loans and derivatives make JP Morgan look less leveraged

than it would be under Canadian accounting rules, but the general picture still remains that Canadian banks are highly leveraged.

If Canadian banks are highly leveraged and less capitalised, did something else make their balance sheets safer? The answer is yes – guarantees provided by the government of Canada. Today over half of Canadian mortgages are effectively guaranteed by the government, with banks paying a low price to insure the mortgages. Virtually all mortgages where the loan to value ratio is greater than 80% are guaranteed indirectly or directly by the Canadian Mortgage and Housing Corporation (i.e., the government takes the risk of the riskiest assets). The system works well for banks; they originate mortgages, then pass on the risk to government agencies. However, that does not change the total risk for the nation. Indeed, this only transfers the risk to taxpayers, and makes the role of regulators all the more important to prevent losses. The US, of course, had Fannie Mae and Freddie Mac, but lending standards slipped and those agencies could not resist a plunge into assets more risky than prime mortgages.

The other claimed systemic strength of the Canadian system is camaraderie between the regulators, the Bank of Canada, and the individual banks. This oligopoly means banks can make profits in rough times – they can charge higher prices to customers and can raise funds more cheaply. This profit incentive should induce banks to take less risk because their license to generate long run oligopolistic profits is valuable. However, the concentration can also generate risks for taxpayers as each bank is too big to fail. During the height of the crisis in early 2009, the CEO of Toronto Dominion Bank brazenly pitched investors: “Maybe not explicitly, but what are the chances that TD Bank is not going to be bailed out if it did something stupid?” In other words: don’t bother looking at how dumb or smart we are, the Canadian government is there to make sure creditors never lose a cent. With such ready access to taxpayer bailouts and a stable government that guarantees their riskiest mortgages, Canadian banks need little capital, they naturally make large profit margins, and they can raise money even if they act badly.

Proposing a Canadian-type model to create stability in the U.S. or European banking systems is hardly plausible given these conditions. Icelandic banks managed to blow up without all this direct government support – would the country have been better off if the nation had explicitly backed mortgages too and so recorded even less “risk” on their bank balance sheets? We doubt it. This would have only made creditors more ready to lend to the banks.

The United States would need to merge banks into even fewer banking giants, and then re-inflate Fannie Mae and Freddie Mac to guarantee some of the riskiest parts of the bank’s portfolios. Then, with this handful of new “hyper megabanks”, they’d each have to count on their political system to prevent banks from going running excessive risk.

Europe already has all the hallmarks of a Canadian system. For example the British have a handful of large banks that each earn long run rents which should, theoretically, check their risk-taking. These banks are close to the regulator too. However, to match the Canadian system, the British system would have needed to guarantee virtually all the new housing mortgages in the last years of the bubble as they soared above 80% loan to value ratios. Had Britain done that, we could be sure that the banking system itself would have been safer, but for the nation as a whole the implications are of course much more dire.

The stakes would be even greater with these mega banks. When such large banks collapse they can take down the finances of entire nations. We don't need to look far to see how "Canadian-type systems" eventually fail. Britain's largest bank, the Royal Bank of Scotland, grew to control assets equal to around 1.7 times British GDP before it spectacularly fell apart and required near complete nationalisation in 2008-09. In Ireland the three largest banks' assets combined reached roughly 3.0 times GDP **before they collapsed.**

So why did Canada not suffer a bank failure during this crisis when so many others did? Canada did provide an enormous liquidity program to banks as they bought mortgages from them, but they did avoid new capital increases,. Figures 6 and 7 show Canadian banks were more highly capitalised than other banks ahead of the crisis, but these levels of capital were, in reality, no higher than other entities that subsequently failed (including Lehman Brothers and Washington Mutual).

Figure 7 shows why Canada did well. As a natural resource producer, it suffered badly in the 1990s as oil prices troughed in 1998 around $10/bbl and other metals did similarly. In the early 90s Canadian banks had little capital, but they suffered when commodity prices fell in the last nineties and Canada suffered a severe recession. As always, banks raised their capital adequacy during the period while they avoided lending.

Only around 2005, when commodity prices started to take off, did the economy start growing rapidly. Western Canada, where the resources are concentrated, boomed. So did Toronto – the heart of the financial sector. Banks responded similarly: the total loan portfolio of the five major Canadian banks grew by 49% from 2005-2008 and their capital adequacy fell. During this period the Canadian Imperial Bank of Commerce entered into the sub-prime market, buying US mortgages. This probably would have ended in tears, like everywhere else, if it had been permitted to continue. What rescued Canadian banks and taxpayers was not good regulation or a "safer" system. Indeed, Canada's system is inherently very risky due to its taxpayer guaranteed mortgages that could finance an enormous housing boom plus their too big to fail banks. Rather, Canada simply got lucky because the commodity boom came so late in the cycle.

Today all the major Canadian banks have ambitious international expansion plans – let's see how long their historically safe system survives the new hubris of its managers. The lesson for policy makers is simple: the Canadian banking system is not the holy grail.

Ireland

How did a country once renowned as the "Celtic Tiger", with near the most rapid growth, and one of the most prudent governments in Europe, suddenly collapse? Ireland illustrates how all banking systems, regardless of the probity of their sovereigns, are capable of rapidly taking down national economies.

Irish annualised nominal GNP declined 26% to 1Q 2010 from its peak in 2007. House prices have fallen 50% and continue to fall. The government's official budget deficit in 2009 was 14.3% of GDP, or 17.8% of GNP.[12] While stuck in the eurozone, Ireland's exchange rate cannot move relative to its major trading partners – it thus cannot improve competitiveness without drastic wage cuts. Ireland provides a cautionary tale regarding what could go wrong for all of us.

Ireland's difficulties arose because of a massive property boom financed by cheap credit from Irish banks. Irelands' three main banks built up three times the GNP in loans and investments by 2008; these are big banks (relative to the economy) that pushed the frontier in terms of reckless lending. The banks got the upside and then came the global crash in fall 2008: property prices fell over 50%, construction and development stopped, and people started defaulting on loans. Today roughly 1/3 of the loans on the balance sheets of banks are non-performing or "under surveillance"; that's an astonishing 100 percent of GDP, in terms of potentially bad debts.

The government responded to this with what is now regarded – rather disconcertingly – as "standard" policies. They guaranteed all the liabilities of banks and then began injecting government funds. The government has also bought the most worthless assets from banks, paying them government bonds in return. Ministers have also promised to recapitalise banks that need more capital. The ultimate result of this exercise is obvious: one way or another, the government will have converted the liabilities of private banks into debts of the sovereign (i.e., Irish taxpayers).

Ireland, until 2009, seemed like a fiscally prudent nation. Successive governments had paid down the national debt to such an extent that total debt to GDP was only 25% at end 2008 (Figure 8) – among industrialised countries, this was one of the lowest. But the Irish state was also carrying a large off-balance sheet liability, in the form of three huge

[12] Regarding the large gap between GDP and GNP in Ireland, see Peter Boone and Simon Johnson, "Irish Miracle – Or Mirage," available at http://economix.blogs.nytimes.com/2010/05/20/irish-miracle-or-mirage/.

banks that were seriously out of control. When the crash came, the scale and nature of the bank bailouts meant that all this changed. Even with their now famous public wage cuts, the government budget deficit will be an eye-popping 15% of GNP in 2010.

The government is gambling that GNP growth will recover to over 4% per year starting 2012 — and they still plan further modest expenditure cutting and revenue increasing measures each year until 2013, in order to bring the deficit back to 3% of GDP by that date. The latest round of bank bailouts (swapping bad debts for government bonds) dramatically exacerbates the fiscal problem. The government will in essence be issuing 1/3 of GDP in government debts for distressed bank assets which may have no intrinsic value. The government debt/GDP ratio of Ireland will be over 100% by end 2011 once we include this debt. If we measure their debt against GNP, that number rises to 125%.[13]

Ireland had more prudent choices. They could have avoided taking on private bank debts by forcing the creditors of these banks to share the burden – and this is now what some sensible voices within the main opposition party have called for. However, a strong lobby of real estate developers, the investors who bought the bank bonds, and politicians with links to the failed developments (and their bankers), have managed to ensure that taxpayers rather than creditors will pay. The government plan is – with good reason – highly unpopular, but the coalition of interests in its favour it strong enough to ensure that it will proceed, at least until it either succeeds and growth recovers, or ends in complete failure with default of banks or the sovereign.

On its current program, each Irish family of four will be liable for 200,000 euros in debt by 2015. There are only 73,000 children born into the country each year. These children will be paying off debts for decades to come – plus, they must accept much greater austerity than has already been implemented. There is no doubt that social welfare systems and healthcare, plus education spending, will decline sharply. The calamity of the Irish banking system will be felt for decades and paid for by many yet unborn children.

How did Ireland manage to create such a spectacular failure? The answer is simple: when joining the euro, their banks gained access to the "implicit promises" of the euro zone system. Under this system, all banks regulated under their national supervisory systems can access lending programs of the ECB. This gives creditors great confidence

[13] Ireland has created a corporate tax system which permits companies to reduce their global tax burden by transferring profits through Irish subsidiaries. As a result, GDP includes a large amount of these profit transfers which are not related to local economic activity. These profit transfers contribute little to Irish tax collection since the subsidiaries are usually structured in a manner that their ultimate location for tax residency is a zero tax regime, such as Bermuda or Bahamas. Therefore, the tax base for Ireland is best represented by GNP rather than GDP. Irish GDP is 25% higher than GNP. The standard convention of reporting fiscal deficits and debt as a fraction of GDP, rather than GNP, therefore makes these burdens look less onerous for Ireland than they truly are.

that they will never fail: the ECB provides emergency finance, and, the ECB naturally does not want to see its member banks, which it may be lending billions to, fail to repay. So the ECB provided the moral hazard backstop that gave Irish banks nearly unlimited access to credit.

With that backing, Irish banks were able to rapidly expand their balance sheets, and so starting around 2002, the great Celtic Tiger turned into a simple, externally financed, real estate bubble. The banks enjoyed the bubble as they made profits, citizens were fooled into thinking their property and they became very wealthy, and the government enjoyed a tax boom driven off a myriad of property related taxes. When all this stopped – it has become clear the nation is, collectively, bankrupt.

When Irish-type banks fail, you have a dramatic and unpleasant choice. Either takeover the banks' debts – and create a very real burden on taxpayers and ever more drag on growth. Or restructure these debts – forcing creditors to take a hit. The government is attempting, through so far highly unsuccessful policies, to avoid default via transferring all the liabilities of the banks to future taxpayers.[14]

If the Irish continue with these policies, then in a few year's time the nation will be burdened with levels of debt to income that exceed most those ever seen in history for sovereign nations (Figure 9). The problems are strikingly reminiscent of Latin America in the 1980s. Those nations borrowed too heavily in the 1970s (also, by the way, from big international banks) and then – in the face of tougher macroeconomic conditions in the US – lost access to capital markets. For ten years they were stuck with debt overhangs, just like the weak eurozone countries, which made it virtually impossible to grow. Debt overhangs hurt growth for many reasons: business is nervous that taxes will go up in the near future, the cost of credit is high throughout society, and social turmoil looms because continued austere policies are needed to reduce the debt. In Latin America, some countries lingered in limbo for 10 years or more.

The lessons for the world are different: Banking systems like Ireland or Iceland, which are inherently less risky for taxpayers than Canada's – as those governments did not guarantee national mortgages – will regularly fail. The euro zone in this case acted as a litmus test: those nations prone to use excessive credit through banks, like Spain and Ireland, embarked on credit booms the moment credit markets were opened with the arrival of the euro zone (see Figure 9 for the size of banks relative to various eurozone economies when the crisis broke in September/October 2009). The less profligate, such as Germany, did not. The euro zone has 16 member nations and growing. No wonder many nations want to join this zone: its member banks will get cheap funds and a potential credit boom. It is a system that is doomed to regularly suffer similar failures.

[14] Honohan (2009), who is now the Governor of the Central Bank of Ireland, supports a view that equity holders and subordinated creditors should first take losses before the government.

IV. The Eurozone: will its moral hazard sink the world?

When the Soviet Union collapsed, an elite IMF team rushed to Moscow with a program to save the ruble zone. Creating money is not easy in a currency zone. The IMF came up with a voluntary solution. In essence: each new nation would have been able to print money as they wished, but with some oversight from other members and the IMF.

The Russians, rightly, rejected this plan. Their point was simple: other nations would abuse this system by printing too much money to finance their spending and credits to banks, and so destroy the value of the ruble. The Russians wanted complete control, or they would not accept it.[15]

This, in essence, illustrates the key flaw of the Euro zone today. The underlying problem is the rule for creating credit: in the euro zone, any government can finance itself by issuing bonds directly (or indirectly) to commercial banks, and then having those banks "repo" them (i.e., borrow using these bonds as collateral) at the ECB in return for fresh euros. The commercial banks make a profit because the ECB charges them very little for those loans, while the governments get the money – and can thus finance larger budget deficits. The problem is that eventually that the government and banks have to pay back its debt or, more modestly, at least stabilise its public debt levels.

This same structure directly distorts the incentives of commercial banks: they have a backstop at the ECB, which is the "lender of last resort"; and the ECB and European Union (EU) put a great deal of pressure on each nation to bail out commercial banks in trouble. When a country joins the eurozone, its banks win access to a large amount of cheap financing, along with the expectation they will be bailed out when they make mistakes. This, in turn, enables the banks to greatly expand their balance sheets, ploughing into domestic real estate, overseas expansion, or anything else they deem appropriate. Given the eurozone provides easy access to cheap money, it is no wonder that many more nations want to join. No wonder also that it blew up.[16]

To make this system safe, the eurozone has a herculean task. The eurozone needs to demand that all nations spend "within their means". This was the logic behind the growth

[15] See Dabrowski (1995) for a discussion of the contemporaneous debate and the reasons for the downfall of the ruble zone.

[16] As Iceland moved towards its disastrous collapse, Richard Portes in a Financial Times editorial in October 2008 argued that one solution for Icelandic banks was for the government to seek membership in the euro zone so that the banks could gain access to the ECB as a lender of last resort. This recommendation, which in retrospect seems unconscionable, reflects the great difficulty understanding whether a nation faces a solvency crisis versus a liquidity crisis in the midst of a collapse in credit markets. Such difficulties make it ever more apparent how hard it will be for the ECB to avoid bailouts and the substantial moral hazard that ensues as member states suffer more crises in the future.

and stability pact, however the politics of implementing that proved impossible in the euro zone. This failure to stick to tough standards is directly reflective of the failures to regulate banks well around the world, but, they are on a whole different political dimension. It is difficult to stick resolutely to tight regulation, but much harder to convince voters that you should tighten fiscal spending because politicians in Berlin and Brussels are demanding it.

The euro zone must also demand that all banks operate safely. For now, that task is largely devolved to the national regulators in each nation. Who can truly monitor each regulator in the sixteen euro zone nations to make sure each one is not permitting banks to take excessive risk? The answer so far is no one. The regulatory agencies at the euro zone level are simply too politically weak and confused to be able to maintain tough standards for decades, as required in the common currency zone. We already know it is difficult to do this at a national level, and we should be sure it will be ever more difficult when we add a layer of politics above that. The far more likely scenario is that, in a few year's time, we will start a new race to the bottom as some regulators relax regulations – so generating local credit booms – and political expediency then encourages other regulators to start relaxing too.

The problem today is ever more severe because even the route out of this short term fiasco is unclear. The ECB has created several new lending facilities, while keeping its repo window open, so as to allow profligate sovereigns to continue refinancing their banks and public debts by building more debts. The governments issue bonds, European commercial banks buy them and then deposit these at the ECB as collateral for freshly printed money. This is the pattern for Ireland, Spain, Greece and Portugal. The ECB has become the silent facilitator of profligate spending in the euro zone.

The ECB had a chance to dismantle this doom machine when the board of governors announced new rules for determining what debts could be used as collateral at the ECB. Some observers anticipated the ECB might plan to tighten the rules gradually, so sending a message that the institution would refuse to live up to the "implicit promises" of bailouts which credit markets have been fed on. But the ECB did not do that. In fact, the ECB's board of Governors did the opposite: they abolished ratings requirements for Greek debt in order for it to be used as collateral at the ECB, and they announced they would buy the debts of other troubled nations, and essentially made clear that every nation in the euro zone is backed by the money printing machine at the ECB.

What likely happens next? The euro zone authorities are hoping that further bailouts, matched by calls for near term fiscal austerity, will permanently solve the deep flaws in the structure of the euro zone. This seems highly wishful thinking. We have observed around the world how bank regulation, which is much simpler, is watered down over time as interest groups and governments collude to make changes. Now that the eurozone has upped the ante by bailing out all creditors, so making ever greater moral

hazard, why should anyone believe that they can dramatically raise regulatory standards permanently, as would be needed, to make such a system safe?

There seems to be no logic in the system, but perhaps there is a logical outcome. The EU, with more funding coming from the IMF, is now planning ever larger bailout programs. With each successive bailout the debts of the indebted nations will grow, while their economies will be held back by their "debt traps", such as we observe today in Ireland (and also Greece). Europe will eventually grow tired of bailing out its weaker countries. The troubles in the periphery will spill over into the core countries from time to time. Italy will one day have trouble rolling over debts, and France could easily lose its "safe-haven" status in bond markets. The potential bailout or liquidity requirements for these nations are enormous.

The Germans will probably pull that bailout plug first. The longer we wait to see true incentive structures established that convincingly encourage fiscal probity and safe banking, including through the operations and rules of the ECB and the EU, along with at each national level, the more debt will be built up, and the more dangerous the situation will get. When the plug is finally pulled, at least one nation will end up in a painful default; unfortunately, the way we are heading, the problems could be even more widespread.

This matters for the entire world because the eurozone is a large part of the global economy. Also, as eurozone banks are likely to exist on a form of life support for the indefinite future, this changes the competitive landscape – all major banks everywhere in world will demand similar levels of government support. And the eurozone remains fragile, thus forming a serious potential cause of future international financial instability.

V. Why the coming global regulatory reforms are unlikely to work

Based on experience over the past 40 years, it is clear that the current global financial system is at ever greater risk than it ever has been. The moral hazard in the system has undoubtedly risen: our recent bailout of all major financial institutions, the failure of regulatory reform in the United States, and the operation of the eurozone system have created levels of moral hazard which have never been seen before in history. Unless we prove to creditors that these systems do not provide implicit bailouts by letting creditors lose funds when they lend, then we need to create a tougher regulatory system than has even been seen in our history.

This regulatory system cannot break down as it has in the past. That means we need to somehow break the desire or ability of politicians to gradually permit the system be relaxed. They have a natural desire to do this due to the credit boom that comes with relaxation. We also need to make sure that, in our interconnected world, that our neighbours do not let their financial systems wrest out of control. The examples of Ireland and Iceland both show how small nations can, through multiple channels, cause large costs and encourage regulatory relaxation in other nations. Finally, we need to make sure that the financial system itself does not find new ways to circumvent our regulation. That means constant surveillance would be required.

When considering this list, it becomes obvious that current reforms will not work. The present reform program is based primarily on changes to national regulation. The program of the G-20's Financial Stability Board and the new Basel 3 plans all introduce tighter regulatory requirements. We are confident that capital requirements at banks are set to be raised, and many of the most egregious errors in bank regulation, such as the treatment of hybrid securities as capital, will be adjusted. There is no doubt liquidity requirements will be improved too.

However, none of these reforms change the incentive structures in the system. Politicians will still face a desire to relax the system in several years time in every single nation. Even if all nations agree to adhere to the G-20 recommendations, there is no chance we can enforce those regulations across nations. The troubles in Ireland and Iceland, and at Lehman Brothers, show how difficult it is to know whether these rules are being enforced.[17] So we need to assume that some nations will relax regulations, and we can also assume that that will encourage others to relax.

The political power of the financial sector also remains largely intact. It is still dominated by big, large banks that are too big to fail. They will be a major source of tax finance, employment, and campaign funds in all nations. They are now better able to access funds in credit markets due to their explicit backing from sovereigns. When banks complain that other nations are easing bank regulation, and so their authorities need to follow, who is going to stand up to this in favour of greater taxpayer protection? We can be certain that nations which depend on large financial centres, such as the UK and United States, will not be able to fight these pressures ad infinitum.

The Failure of Reform in the U.S.

At least in the United States, this is about the money at stake.18 From 1948 until 1979, average compensation in the banking sector was essentially the same as in the

[17] See Haldane (2010) for a regulator's view on the difficulties regulators face.

[18] The recent rise of Wall Street's political power is covered in detail by Johnson and Kwak (2010). Ideology was also important – as was the revolving door between Wall Street and Washington – but behind all this lies the vast fortunes that could be made in modern finance.

private sector overall; then it shot upward, until in 2007 the average bank employee earned twice as much as the average private sector worker.19 Even after taking high levels of education into account, finance still paid more than other professions. Thomas Philippon and Ariell Reshef (2008) analyzed financial sector compensation and found that, after correcting for differences in educational level and risk of unemployment, the "excess relative wage" in finance grew from zero in the early 1980s to over forty percentage points earlier this decade, and that 30-50% of that differential cannot be explained by differences in individual ability. They also found that the deregulation was one causal factor behind the recent growth of the excess relative wage. (Figure 10 shows the relationship between the relative wage in the financial sector -- the ratio between average wages in finance and average wages in the private sector as a whole -- and the extent of financial deregulation, as calculated by Philippon and Reshef.)[20]

Between 1978 and 2007, the financial sector grew from 3.5% of the total economy to (measured by contribution to GDP) to 5.9% of the economy.[21] Its share of corporate profits climbed even faster. From the 1930s until around 1980, financial sector profits grew at roughly the same rate as profits in the nonfinancial sector. But from 1980 until 2005, financial sector profits grew by 800%, adjusted for inflation, while nonfinancial sector profits grew by only 250%. Financial sector profits plummeted during the peak of the financial crisis, but quickly rebounded; by the third quarter of 2009, financial sector profits were over six times 1980s levels, while nonfinancial sector profits were little more than double 1980s levels (see Figure 11).

As of early 2010, there are at least six banks that are too big to fail in the United States – Bank of America, Citigroup, Goldman Sachs, JPMorgan Chase, Morgan Stanley, and Wells Fargo – even leaving aside other institutions such as insurance companies (see Figure 12). There is nothing in the package of financial reforms – likely to become law in July 2010 – that will substantively change this situation. The big banks were able to effectively block or substantially water down attempted reforms at every stage – in large part through their lobbying and through their actual and potential future political contributions. The same forces that pushed successfully for deregulation in the 1980s and 1990s – contributing directly to the development of a much more risky financial system in the United States – were able to effectively prevent reregulation.

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[19] Data are from Bureau of Economic Analysis, National Income and Product Accounts, Tables 1.1.4, 6.3, and 6.5, available at http://www.bea.gov/national/nipaweb/Index.asp. We begin with the finance, insurance, and real estate sector and exclude insurance, real estate, and holding companies. Figures are converted to 2008 dollars using the GDP price index.

[20] Note that the relative wage in Figure 5.2, which exceeds 1.7 at its peak, is *not* corrected for differences in education. The excess relative wage -- the difference between average finance wages and what one would predict based on educational differences -- reaches a peak of around 40 percentage points in the 2000s. See Figure 11 in Philippon and Reshef.

[21] Bureau of Economic Analysis, National Income and Product Accounts, Table 1.5.5, available at http://www.bea.gov/national/nipaweb/Index.asp.

In the Absence of Adequate Regulatory Reform

There is no simple solution to our problems, but we could reduce the potential troubles through reforms. Some combination of the following would undoubtedly make it easier:

1. A Treaty for International Financial Regulation

We should enshrine regulatory powers in an international treaty, similar to the World Trade Organisation for trade in goods and services, so that all nations are required to follow similar rules. This would make it harder for national legislatures and regulators to relax regulation, and so would reduce the "beggar-thy-neighbour" costs imposed on others when one nation deregulates. It would also reduce the incentives for a "race to the bottom" in regulation. The treaty would need to have simple rules, including large capital requirements. It would also need to have a body that monitored implementation, similar to the IMF or BIS today. This body would also need to have clear rights to impose new regulations so that rules can be modified to reflect changes in problems.

2. Macro-Prudential supervision needs to be enhanced at the international level

There is no doubt that moral hazard inherent at the national level, or in entities such as the euro zone, are threatening global stability. Despite this, very little is done at the international level to monitor and pre-empt these potential crises.

A good place to start would be to enhance the IMF's program of fiscal assessments to include measuring the potential fiscal obligations that arise from both implicit and explicit guarantees from such institutional and regulatory structures.

The overriding principle behind IMF fiscal assessments is the need to capture true total fiscal costs of existing policies. All subsidies and taxation – including the entire expected and potential costs of supporting the contingent liabilities should be reflected transparently so policy makers and tax payers understand the potential liabilities they face.

Our current accounting for guarantees and governments' assumption of other contingent liabilities create the impression that government actions to support the broad financial system are costless. Even Ben Bernanke, who surely knows better, recently remarked that "There will be no more public funds needed to bailout banks".[22] This is a dangerous illusion – as seen in the recent increase in government deficits and debts in the

[22] Speech at the Center for the Study of the Presidency and Congress, April 8, 2010. Bernanke is clearly referring to explicit spending lines on the federal budget, however proper accounting of the public costs of bailouts would need to include the transfers to banks from savers used to recapitalize banks outside the budget, along with the opportunity cost of buying mortgage-backed securities in open market operations. Of course, contingent liabilities which should bear an amortized cost as a result of future bailouts are never recorded in budgets.

most troubled nations. We are all at risk of private debt if we assume that, when crises come, our governments need to bail out this debt.

If we cannot be honest and recognise these costs explicitly, we run the risk of taking on ever more contingent liability. If the financial system reaches the point where its failure cannot be offset by fiscal (and monetary) stimulus, then a Second Great Depression threatens.

In order to achieve this, an international body, with a strongly independent manifesto, would need to be charged to monitor and report on these risks. It is not at all clear whether such an institution could trump the politics of denial. For example, while the IMF is the natural institution to conduct such work, it is conflicted by the European/US control of the institution that makes complete and full reporting of problems in those nations unlikely in our current political environment. To make the IMF work better, the process for selecting top management would need to be depoliticised. We do have institutions that function, such as the WTO, so perhaps this could be achieved. However, this specific task would be more controversial and more difficult.

Such an institution would need to be forward looking, and innovative, in a manner that is not common for international organisations. For example, in their prescient book, aptly entitled *Too Big To Fail*, Stern and Feldman (Brookings, 2004) mapped out exactly the kinds of problems that US policymakers later faced in the fall of 2008 and early 2009. But their lists of vulnerable financial institutions did not include any of those that just a few years later turned out to be the most prone to failure—Bear Stearns, Lehman Brothers, and AIG are not mentioned at all (although they do accurately foreshadow the issues around Fannie Mae and Freddie Mac).

Stern and Feldman provide compelling analysis with regard to regulated commercial banks, but they missed the interface between more lightly regulated investment banks and commercial banks, and they definitely did not foresee how an insurance company, operating in the derivatives market, could throw the global financial system into disarray.

3. Discouraging debt

Since our political system finds it difficult to let private creditors default on debt, we should consider ending the myriad of incentives to accumulate debt across the world. The most important change would be to end the deductibility of interest on debt for corporate and personal income tax purposes. This deduction currently biases corporations and individuals to use debt finance in favour of equity finance. If we end the tax deductibility of interest we would "level the playing field". This might discourage debt, and so reduce the growth of implicitly backed private debt. We could also discourage

debt contracts in our general financial system by putting large capital requirements on long term nominal promises. For example, the practice of defined benefit pension schemes needs to be reduced as much as possible, as these encourage large debt backing. To the extent we discourage debt and encourage equity, the global financial system will become less risky. This should reduce the volatility of equity and make it more of a debt-like instrument. Through these measures, we would therefore reduce some of the perceived risks in equity which reflect a historical period of higher leverage.

4. Letting defaults happen

Perhaps the most simple, but the most critical reform, is to relax the actual and perceived costs of letting defaults happen. The recent crisis illustrated how difficult it is for politicians to not bail out entities once a crisis starts. In the United States, the government could not even take the simple step of making sure equity holders were wiped out when they provided funds to Citigroup and Bear Stearns to keep them afloat. The creditors were fully recompensed. The US government argues that lack of a national resolution authority made it difficult to share burdens with creditors, but in reality the more important concern was that causing one entity to fail would lead to contagion in debt markets, so causing a large financial crisis. This second concern is not resolved with recent legislation in the United States that creates a bank resolution authority, and so creditors are fully aware that the US and European governments will almost surely bail out creditors at financial institutions each time they are in trouble in the future. We see little scope for this to change. The problem of contagion is a serious one, and we cannot expect creditors to anticipate that they will face losses when national costs of contagion are high. However, we can reduce the risks of contagion. The most important means to do this is to raise capital requirements so that the financial system as a whole is safer when single entities have problems. Second, we could, in the conjunction of an international treaty, introduce contingent debts which convert to equity when banks need assistance to meet regulatory capital. This would make it clear to those creditors buying contingent instruments that they do bear part of the costs. Such rules would require banks keep a substantial fraction of risk-weighted capital in such contingent instruments.

5. Depoliticising finance

One reason for repeated failures of our regulatory environment is the political strength of our large financial institutions. The close relations between Merkel and Deutsche Bank CEO Ackerman, or the legacy of Goldman Sachs' relations with the US Treasury, and the revolving door from the Treasury to Finance and back, each pose threats to sound regulation. We believe many steps need to be taken to reduce these threats. Big banks should be broken up into smaller entities. This will make them less able to lobby individually, and it will make it more apparent to creditors that there is a real risk the banks may be permitted to default. The usual counter-arguments to this policy, e.g. that nations with big corporations need big banks, are surely wrong. Large transactions can always be divided into several parts, or syndicated, meaning corporations may well be better off with competition.

There is little evidence that large banks gain economies of scale beyond a very low size threshold. A review of multiple empirical studies found that economies of scale vanish at some point below $10 billion in assets.[23] The 2007 Geneva Report on "International Financial Stability," co-authored by former Federal Reserve vice chair Roger Ferguson (2007), also found that the unprecedented consolidation in the financial sector over the previous decade had led to no significant efficiency gains, no economies of scale beyond a low threshold, and no evident economies of scope.[24] Finance professor Edward Kane has pointed out that since large banks exhibit constant returns to scale (they are no more or less efficient as they grow larger), and we know that large banks enjoy a subsidy due to being too big to fail, "offsetting diseconomies must exist in the operation of large institutions" -- that is, without the TBTF subsidy, large banks would actually be less efficient than midsize banks (Kane 2009). As evidence for economies of scope, Calomiris cited a paper by Kevin Stiroh (2000) showing that banks' productivity grew faster than the service sector average from 1991 to 1997, "during the heart of the merger wave." However, the paper he cites, and other papers by Stiroh (2002), imply or argue that the main reason for increased productivity was improved use of information technology -- not increasing size or scope.

A second reform would be to reduce the close relations between regulators and the financial sector. For example, there is a revolving door between the US Treasury and the financial sector. This is even encouraged through tax rules, such as a tax break which permits newly hired public servants to not pay capital gains tax on assets which they sell when they go to work for the Treasury. It should be no surprise that Goldman Sachs partners with large unrealised capital gains are pleased to take a stint at the Treasury!

We believe there should be legal requirements that no public officials involved in regulation, or legislation related to regulation, be permitted to work in industries that they were involved in regulating for extended periods before and after they join public services. This period could be 3-5 years. While such rules would reduce the number of experienced financial experts able to work in regulation, it would promote the cadre of sound regulators that are being built up in our systems.

[23] See Dean Amel, Colleen Barnes, Fabio Panetta, and Carmelo Salleo (2004); Stephen A. Rhoades (1994); Allen N. Berger and David B. Humphrey (1994).

[24] There remains an active debate on this topic – see David C. Wheelock and Paul W. Wilson (2009).

VI. Implications for the Global Economy

Of the five points listed above, we would argue that none are currently being implemented. The best we are achieving is to moderately tighten regulation, as we always do, after the fact of a major crisis. We are essentially driving the structural risks of our system underground for a temporary period, with predictable and potentially dangerous consequences for the future when they resurface, as they surely will.

This is the biggest danger – by seeking to decree "there shall be no more crises," we will in fact create exactly the conditions for an even more damaging crisis to develop, unseen until it is too late. This is a lesson that many emerging markets learned the hard way in the 1980s and 1990s – for example with various forms of offshore borrowing in Thailand, Indonesia and Korea – and the good news is that they are being careful to keep financial risks well within the perimeter of the regulated system. But will industrialised countries today be so careful?

The coming boom

We can already see the outline of the next crisis. The Federal Reserve is, just like in 2002 and 2003, preaching the need for low interest rates in order to recapitalise banks and encourage risk-taking. The deep dangerous flaws in Europe mean the ECB is also going to err on the side of keeping rate low and providing large liquidity. Our financial system, if Europe stabilises this time and avoids an immediate crisis, will be flush with cash.

Loose credit and money will promote good times and generate growth and more surplus savings in many emerging markets. But rather than intermediating their own savings internally through fragmented financial systems, we'll see a large flow of capital out of those countries, as the state entities and private entrepreneurs making money choose to hold their funds somewhere safe -- that is, in major international banks that are implicitly backed by U.S. and European taxpayers.

These banks will in turn facilitate the flow of capital back into emerging markets -- because they have the best perceived investment opportunities -- as some combination of loans, private equity, financing provided to multinational firms expanding into these markets, and many other portfolio inflows.

So our banking system will soon become a major creditor and debtor to the growing emerging markets. We saw something similar, although on a smaller scale, in the 1970s with the so-called recycling of petrodollars. In that case, it was current-account surpluses from oil exporters that were parked in U.S. and European banks and then lent to Latin America and some East European countries with current account deficits.

The recycling of savings around the world in the 1970s ended badly, mostly because incautious lending practices and -- its usual counterpart -- excessive exuberance among borrowers created vulnerability to macroeconomic shocks.

This time around, the flows will be less through current- account global imbalances, partly because few emerging markets want to run deficits. But large current-account imbalances aren't required to generate huge capital flows around the world.

This is the scenario that we are now facing. For example, savers in Brazil and Russia will deposit funds in American and European banks, and these will then be lent to borrowers around the world (including in Brazil and Russia).

Of course, if this capital flow is well-managed, learning from the lessons of the past 30 years, we have little to fear. But a soft landing seems unlikely because the underlying incentives, for both lenders and borrowers, are structurally flawed.

Misreading the Boom

Our largest financial institutions, in those nations where the sovereign is capable of and sure to back them, will initially be careful. But as the boom goes on, the competition between them will push toward more risk-taking. Part of the reason for this is that their compensation systems will remain inherently pro-cyclical and, as times get better, they will load up on risk. Equity holders will also demand that, since that raises short term returns on equity.

The leading borrowers in emerging markets will be quasi- sovereigns, either with government ownership or a close crony relationship to the state. When times are good, everyone is happy to believe that these borrowers are effectively backed by a deep-pocketed sovereign, even if the formal connection is pretty loose. Then there are the bad times -- think Dubai World today or Russia in 1998.

The boom will be pleasant while it lasts. It might go on for a number of years, in much the same way many people enjoyed the 1920s. But we have failed to heed the warnings made plain by the successive crises of the past 30 years and this failure was made clear during 2009.

The most worrisome part is that we are nearing the end of our fiscal and monetary ability to bail out the system. We are steadily becoming vulnerable to disaster on an epic scale.

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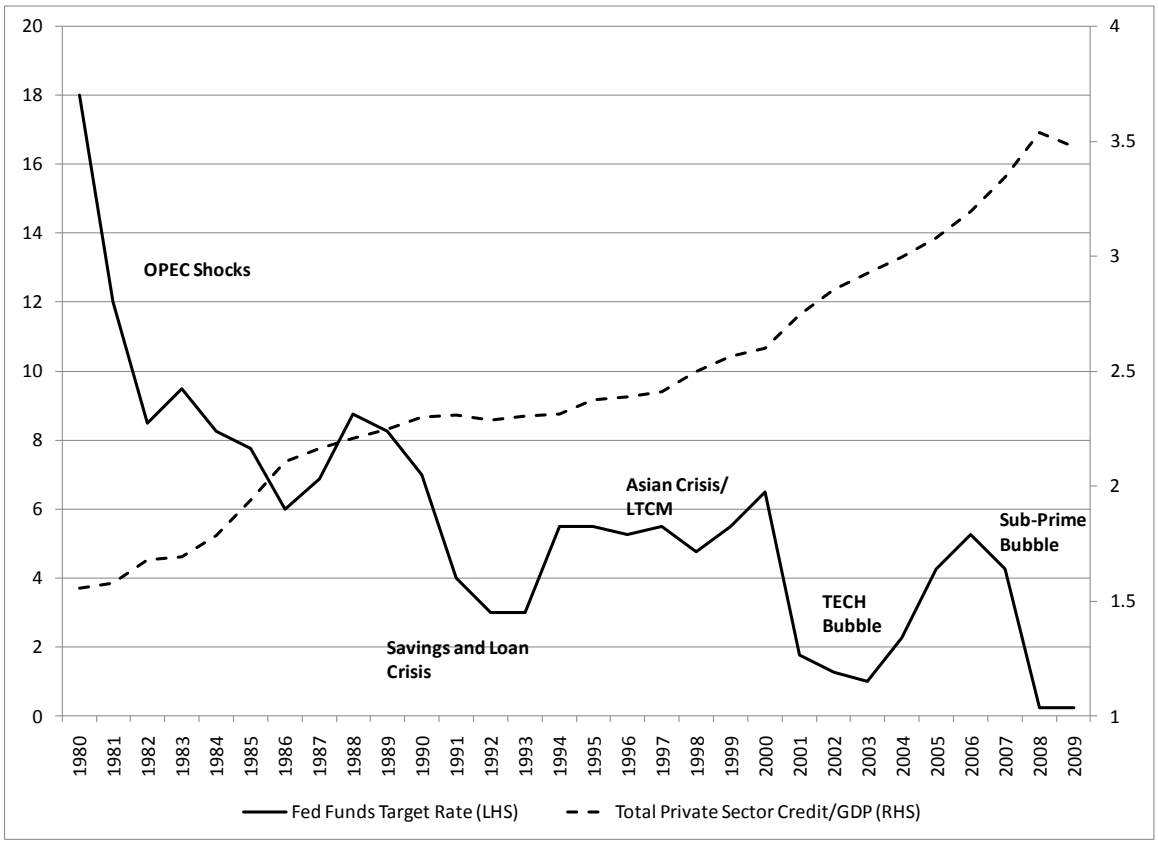
Figure 1: US Private Sector Credit as fraction of GDP and Fed Funds Rate



Source: Federal Reserve

Figure 2: The Doomsday Cycle

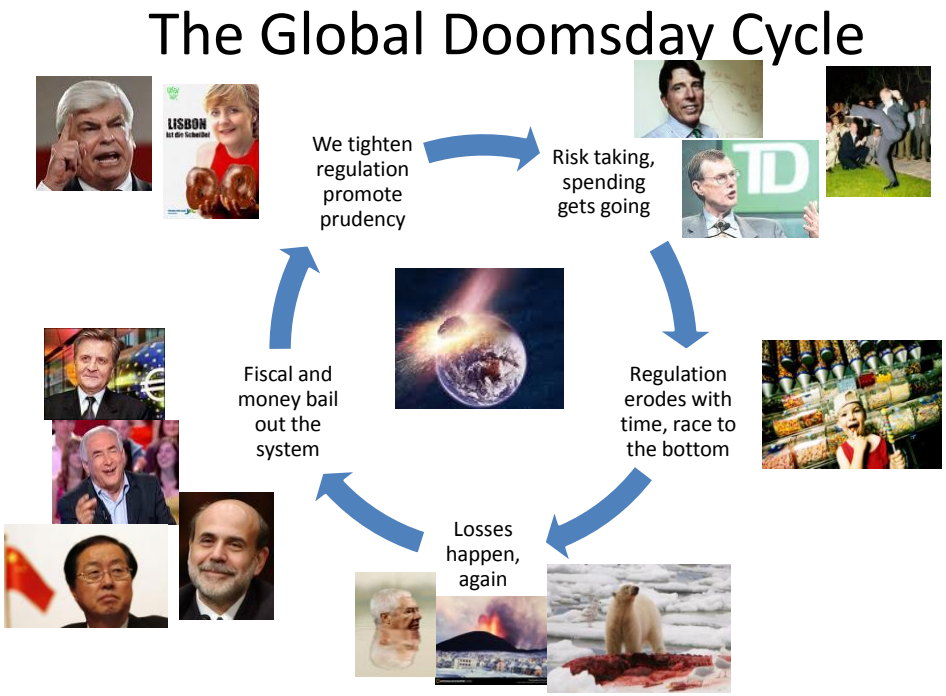
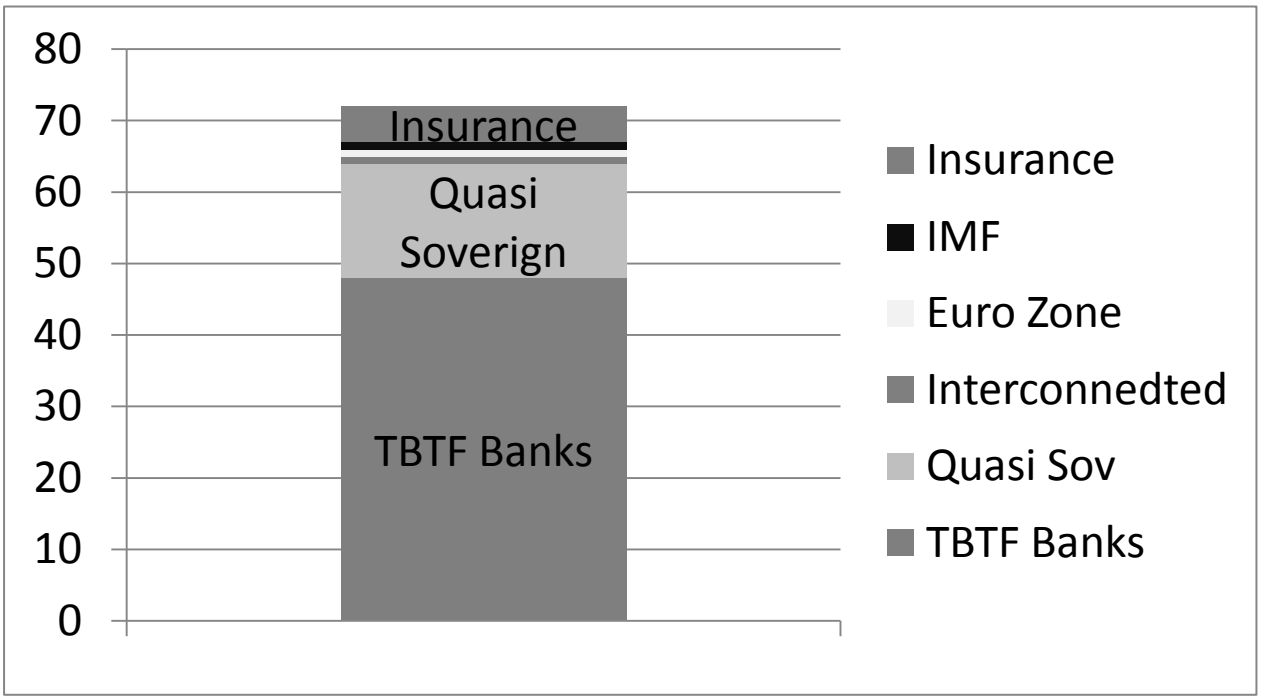


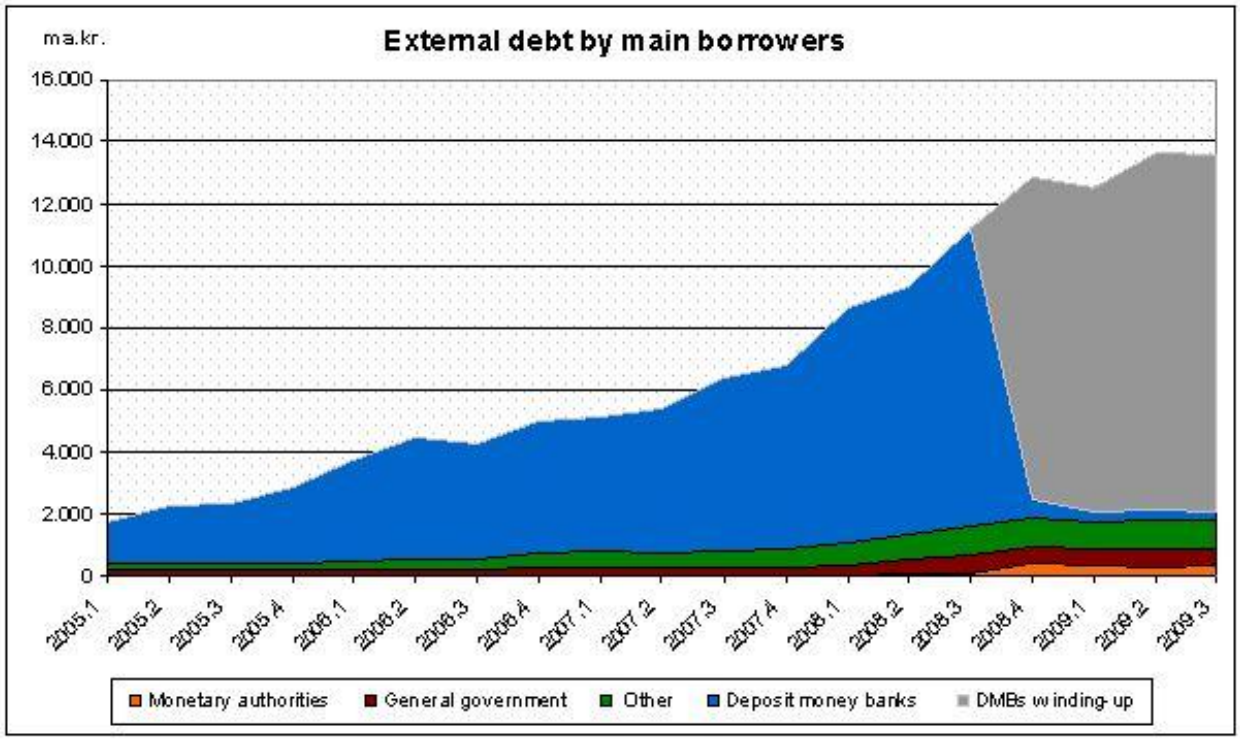
Figure 3: Estimates of Total Balance Sheets That Contribute to Global Moral Hazard in Europe and the United States ($ trillion)



Note: We have added the liabilities of "Too big to fail banks" + major quasi sovereign companies + companies that have proven interconnected so are likely to be bailed out + the balance sheet we estimate the euro zone is will to put behind members + capital at the IMF + liabilities of major insurance companies.

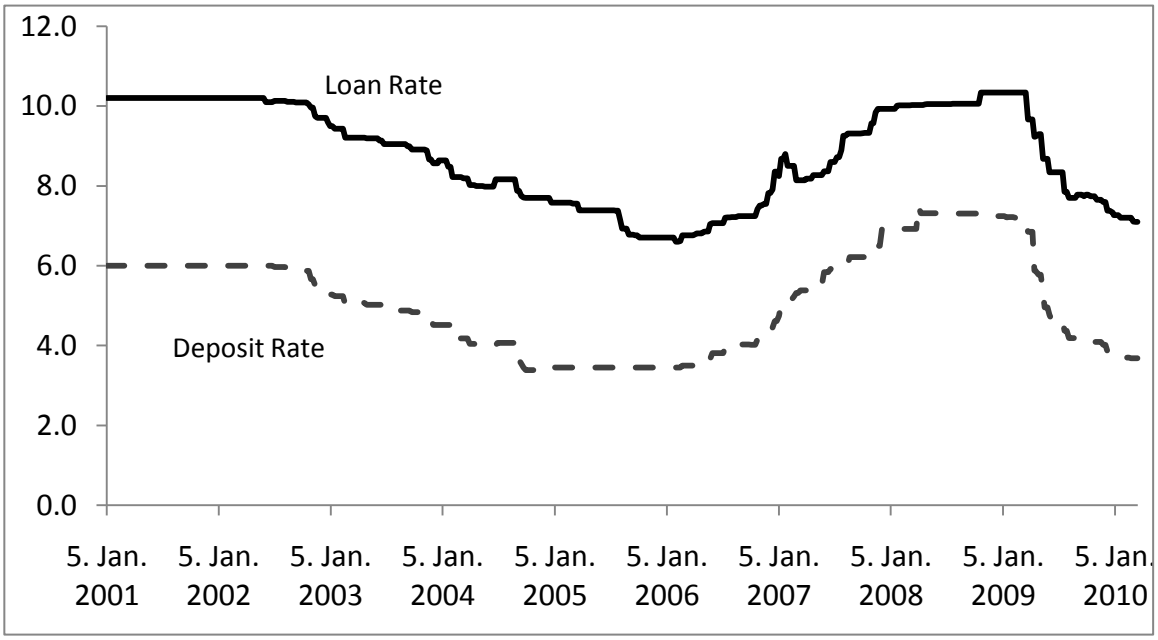
Source: Authors' estimates

Figure 4: External Borrowing by Icelandic Banks (bn kr)



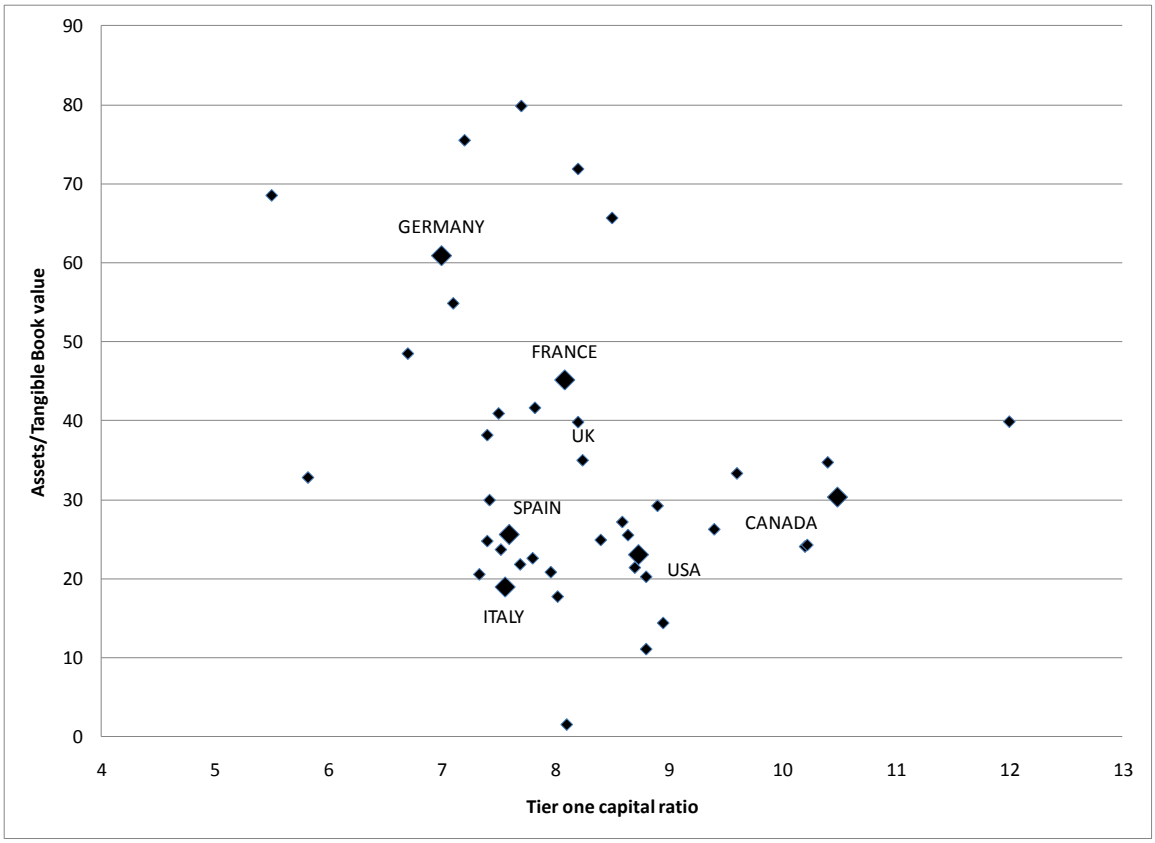
Note: GDP is 1,301bn kr at end 2007. The light grey area post 2008 Q3 shows the markdowns on bonds and securities that were defaulted on.

Figure 5: Average Domestic Deposit and Loans rates at Icelandic Banks



Source: Central Bank of Iceland

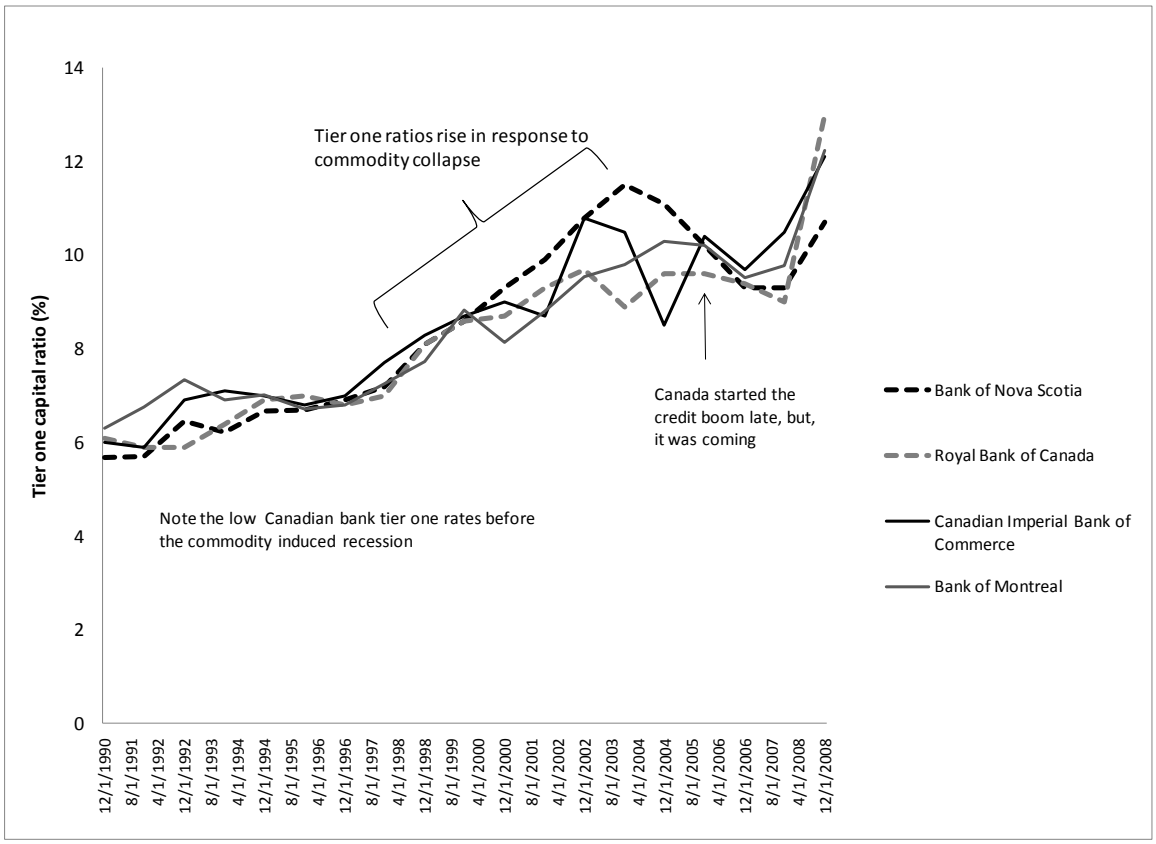
Figure 6: Leverage and Tier One Capital at top five Major Banks and Averages for Each Nation (end 2006 according to reported balance sheets)



Note: Data show levels for the top five banks in each nation. Country data shows the weighted average ratios for all five.

Source: Bloomberg and Authors Estimates.

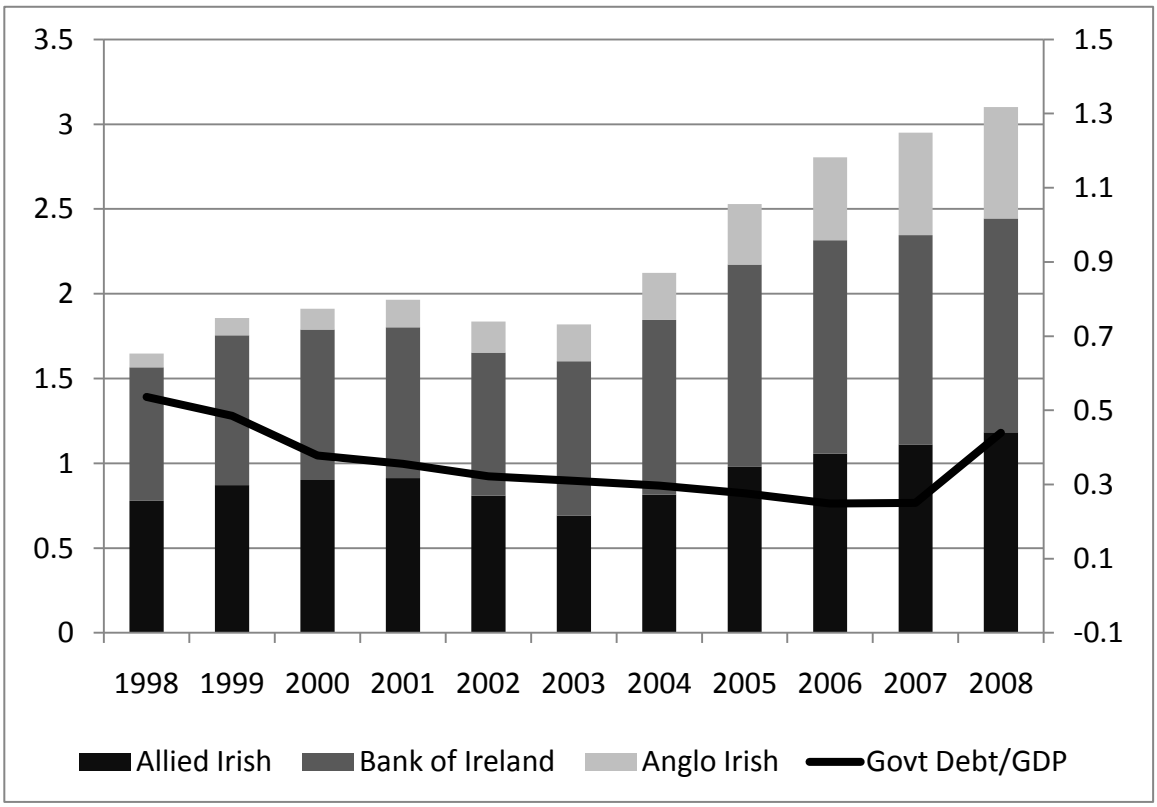
Figure 7: Tier One Capital over time at Major Canadian Banks



Note: Toronto Dominion was excluded due to accounting issues in 2003 which make the data incomparable. It generally followed similar trends to the other banks.

Source: Bloomberg

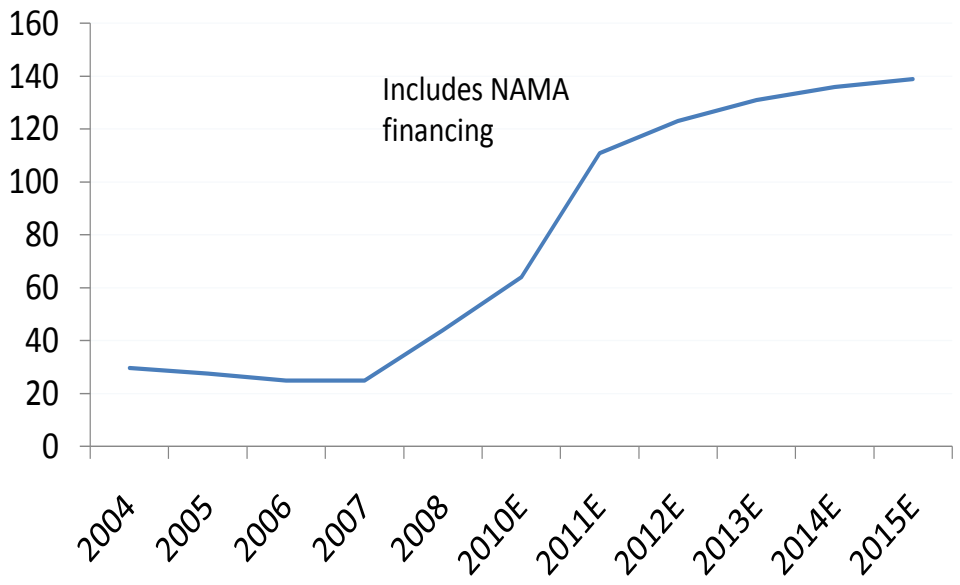
Figure 8: Ireland Bank Assets/GDP by bank (LHS) and Government Debt/GDP (RHS)



Source: Central Bank of Ireland; Department of Finance, Ireland; Bloomberg

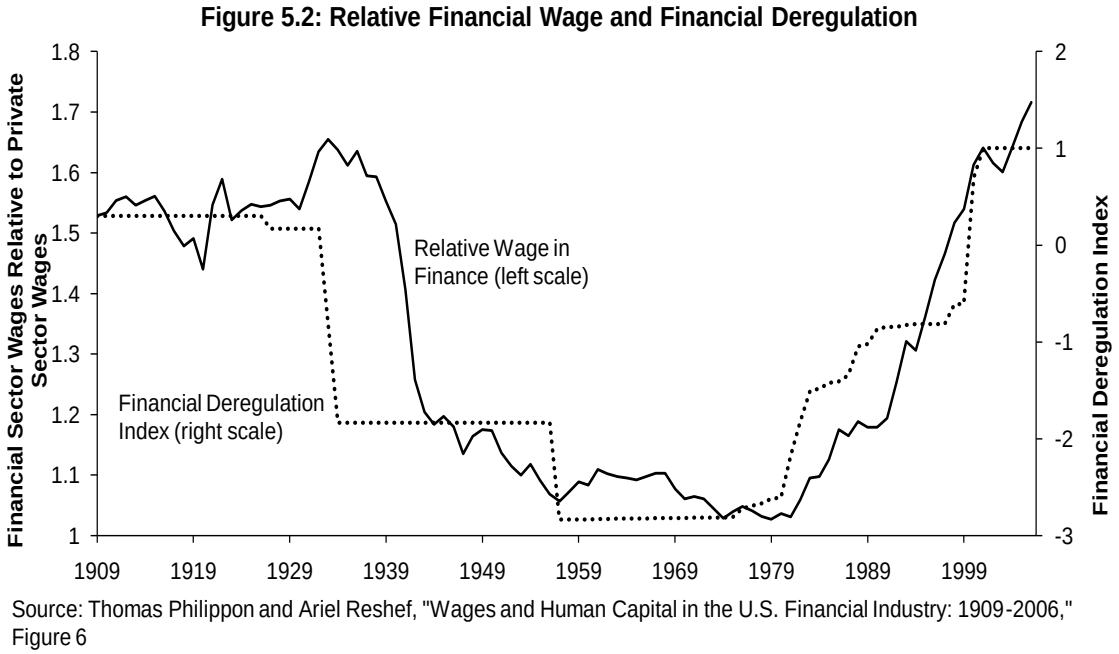
Figure 9: Irish Public Debt/GDP

(2004-2015E)



Source: Ireland Growth and Stability Program; Author's forecasts

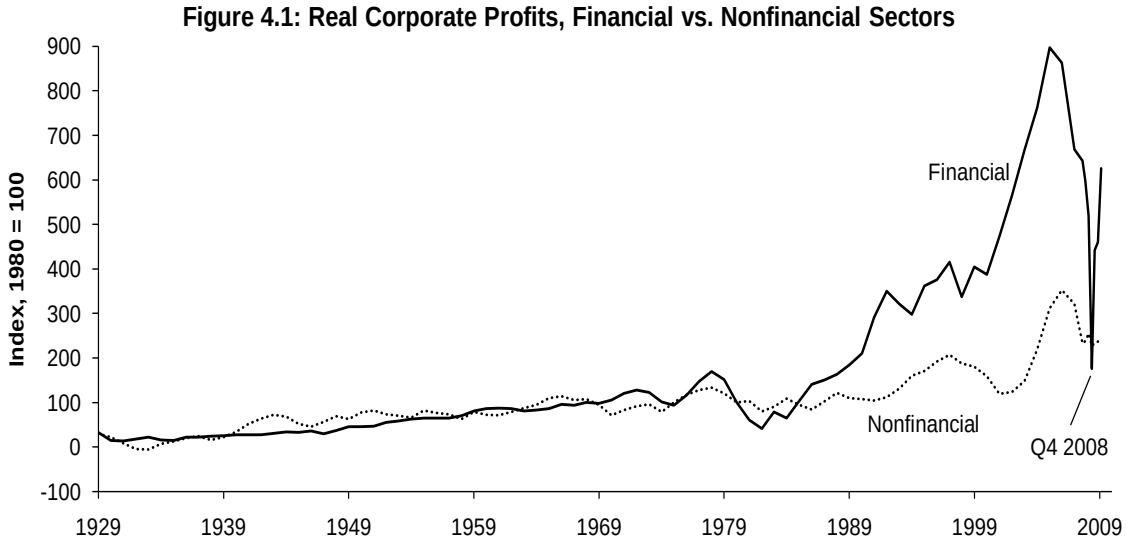
Figure 10
The Reagan Revolution, For Finance



Source: Thomas Philippon and Ariel Reshef, "Wages and Human Capital in the U.S. Financial Industry: 1909-2006," Figure 6

Source: Johnson and Kwak, *13 Bankers*.

Figure 11
Economic Power Becomes Political Influence

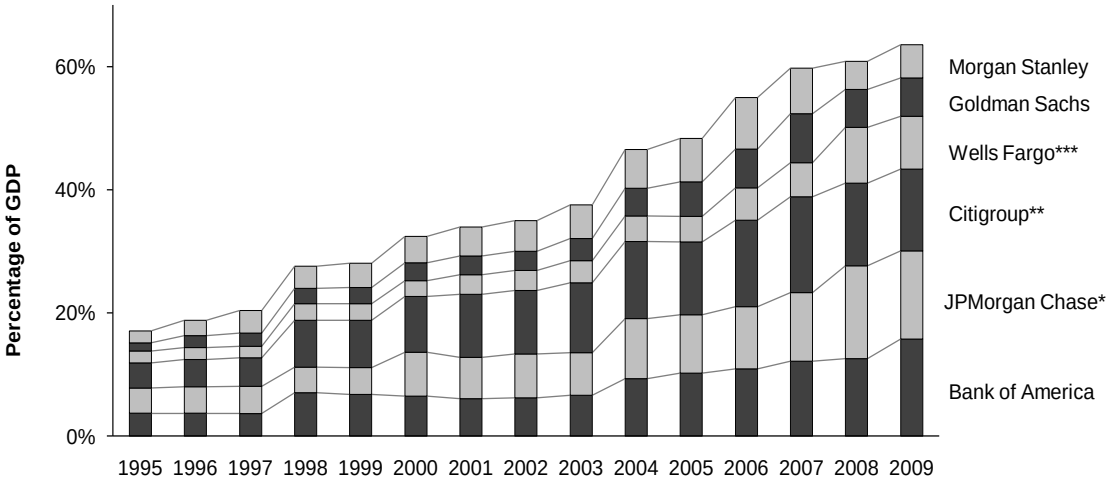


Source: Bureau of Economic Analysis, NIPA Tables 1.1.4, 6.16; calculation by the authors. Financial sector excludes Financial Reserve banks. Annual through 2007, quarterly Q1 2008-Q3 2009.

Source: Johnson and Kwak, *13 Bankers*.

Figure 12
Bigger Than Ever

Figure 8.1: Growth of Six Big Banks



* Chase Manhattan through 1999
** Travelers through 1997
*** First Union through 2000; Wachovia 2001-2007
Source: Company annual reports. 2009 is at end of Q3.

Source: Johnson and Kwak, *13 Bankers*.

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