

AUGUR
Challenges for Europe in the World in 2030
Project no. SSH-CT-2009-244565
Collaborative Project
SP1-Cooperation

DELIVERABLE 2.2 (WP 02)
Impacts of international regulation – hypotheses and evidence

Due date of deliverable: 31 March 2011
Actual submission date: 27 April 2011
Start date of project: 1st October 2009
Duration: 36 months
Lead contractor: Cambridge University
Revision: Zero Draft

Project co-funded by the European Commission within the Seventh Framework Programme (2007 - 2013)		
Dissemination Level		
PU	Public	
PP	Restricted to other programme participants (including the Commission Services)	
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Abstract

Financial stability is a global public good. But the financial regulation is a matter for national jurisdictions. Since the deregulation of financial markets in the 1970s there has been a persistent tension between liberalisation and regulation. Successive crises have resulted in the steady growth of international regulatory structures – embodied most clearly in the various Basel Accords, and the principles and codes that flow from them.

Whilst there has been a universal acceptance of the need to develop macro-prudential regulatory tools, there has been an almost total failure to do so. The regulatory framework proposed under Basel 3 has reverted to traditional micro-prudential concerns, with most of the financial characteristics of the pre-crisis and crisis years being ignored. In particular, developments have focussed on the traditional question of capital adequacy, and have almost totally ignored risks on the liability side of the balance sheet. An important factor shaping the future of financial markets will be how long it will be possible to ignore such risks, and what will be the reaction when they are manifest in financial crises.

This deliverable undertakes 3 tasks:

First, the intellectual failure of Basel 3 is exposed through an analysis of the changes in the structure of bank balance sheets that was a fundamental characteristic of the crisis.

Second, other fundamental economic and institutional factors inducing financial instability are identified.

Third, four scenarios are proposed that confront empirical characteristics of the international financial system with the analytical issues that have been identified as central to the attainment of financial stability.

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Introduction

Financial stability is a global public good. But the financial regulation is a matter for national jurisdictions. Since the deregulation of financial markets in the 1970s there has been a persistent tension between liberalisation and regulation. Successive crises have resulted in the steady growth of international regulatory structures – embodied most clearly in the various Basel Accords, and the principles and codes that flow from them.

The recent crisis has resulted in further attempts to develop and extend the international regulatory architecture, attempts that have so far not resulted in a satisfactory response to the deficiencies exposed by the crisis. The fundamental reason for the lack of progress is the macro-economic nature of the deficiencies. The relevant macro-economy is the global economy – what form of jurisdiction can there be over global markets? And macro-financial issues cannot be separated from the wider concerns of macro-economic policy whether domestic fiscal balances, monetary policies, or international balances. Hence the problems go beyond what might be seen as technical regulatory matters.

Moreover, the impact of the crisis, and of subsequent measures, was and is far from uniform across countries at different stages of (financial) development in different regions of the world. The crisis has been predominantly centred in Western countries with highly developed wholesale financial markets. The impact on the East has been mainly via the impact of Western financial disruption on trade and investment. It is not obvious that in these circumstances a uniform response is required. Yet that is what was pursued, with limited success, in Seoul. A major question for the future will be: can the global financial market survive, or will there be different market structures and different regulatory frameworks in East and West?

Financial regulation.

The financial crisis exposed serious failings in the content of financial regulation. As early as April 2007, the G7 finance ministers had noted that:

“A striking aspect of the turmoil has been the extent of risk management weaknesses and failings at regulated and sophisticated firms”.

This observation implied that there was something very wrong with the then content of regulation, a implication that was reinforced by Alan Greenspan’s evidence to the US House of Representatives in October 2008 that:

“The modern risk-management paradigm held sway for decades. The whole intellectual edifice, however, collapsed in the summer of last year.”

The “intellectual edifice” that Greenspan referred to was the familiar Basel 2 regulatory trilogy of greater transparency (in products), more disclosure (of firms’ operating procedures), and best practice risk management by firms. This “micro-prudential” approach to regulation was based on the related propositions that the task of regulation was to remove market imperfections, and that efficient risk management by firms would ensure that risks were minimised for the system as a whole. It was the intellectual foundation of Pillars One and Three of Basel 2. It implied that risk was priced efficiently by the market.

The main regulatory tool used in the implementation of Basel 2 was the setting of risk-weighted capital requirements, where the weights were to be determined by the risk models of firms, supplemented by the ratings of ratings agencies, and (for firms without satisfactory risk models of their own) the use of a standard risk model.

The failure of the Capital Accords.

The Basel Accord of 1988 stipulated minimum capital requirements for banks. For ordinary credit risks the capital charge amounted to 8 % of the loan, 4 % for credit risks on mortgage loans or loans to other banks, 0 % for loans to sovereign debtors (hence “risk-weighted” capital requirement). Banks were required to have equity capital exceeding the sum of capital charges.

In 1993, the Basel Committee presented a proposal for extending capital requirements to market risks, i.e., the risks from changes in market prices of assets held in the trading books of banks. This proposal was rejected by the industry. The rigid capital ratios that it stipulated were deemed inferior to the risk management that sophisticated banking institutions had already achieved by means of quantitative models, models that precisely assessed the risks that different assets posed. So the 1996 Amendment to the Capital Accord gave banks the option to determine regulatory capital on the basis of their own risk models. Basel 2 provides a similar option for credit risks as well as market risks.

The various modifications of Basel 2 since the mid-nineties have all been designed to improve the risk calibration of capital requirements. Regulatory capital should be ever more closely attuned to “actual” risks in banking. These modifications enabled the large, internationally active banking institutions to reduce regulatory capital, or rather to use their capital for ever more levered activities. The result was that at the onset of the crisis most large banks had equity amounting to only 2 % of their balance sheets. The Basel Committee ascribes this finding to various deficiencies of risk models and risk management. It fails to consider the possibility that the very

attempt to calibrate regulatory capital towards measured risks might be responsible for the insufficiency of bank equity capital.

The fact that the equity of many banks is much lower than it was before the mid-nineties is not so much due to deficiencies in risk modelling as to the incentives that bank managers have to expand the business of their banks. “Economizing on equity” is a euphemism for a strategy that tries to capture the excess returns to equity that are associated with high leverage. If the balance sheet is forty or fifty times equity, even small margins between asset returns and refinancing costs can be turned into substantial returns on equity. The deficiencies of risk modelling and risk management that we have seen should at least partly be ascribed to these incentives.

The illusion of measurability of risks

The Basel Committee is certainly right in finding that many of the risks that were revealed in the crisis had not been properly accounted for in the various risk models that were used to determine regulatory capital under the model-based approach:

- Insufficient account was taken of risks arising from correlations of credit risks in mortgages or mortgage-backed securities and other derivatives. Such correlations arise naturally from a common dependence on underlying factors of macroeconomic significance such as market rates of interest, real-estate prices, or the business cycle.
- Insufficient account was taken of risks arising from correlations between counterparty credit risks and underlying risks in derivatives and other hedge contracts. Such correlations arise naturally when the counterparty is concluding many similar contracts at the same time. The problem arose when monoline insurers and AIG proved to be vulnerable to the correlated defaults on the mortgages and mortgage-backed securities with respect to which they had entered into credit default swap contracts.
- Insufficient account was taken of the possibility that asset prices might collapse because important institutions holding these assets were unsoundly financed and might have to sell.

The Basel Committee is wrong, however, in looking at these deficiencies as technical flaws that can be corrected by improvements in rules and procedures. These deficiencies are symptoms of more fundamental problems which raise doubts about the model-based approach to capital regulation altogether:

Ever since it started, with the deliberations about Basel I, discussion about the development and refinement of capital regulation has suffered from the following deficiencies:

- The precise objective of the regulation is unclear.

- The dynamics of implementation over time have not been given sufficient attention.
- Systemic risks have been neglected.

The crisis exposed the failure of this approach. The analytical foundations of micro-prudential, capital regulation have been criticised for the failure to assess risk comprehensively, to understand the relationship between risk and the trade cycle, and to incorporate an estimation of systemic risk into the overall assessment of social risk. Indeed, the impact of the Basel 2 reliance on micro-economic risk calibration and the enforcement of common techniques of “best practice” risk management *increased* market instability at times of stress. A series of policy reviews - the UK FSA’s “Turner Review”, the US Treasury’s “Financial Regulatory Reform: A New Foundation”, and the report of the “High Level Group on Financial Supervision in the EU” chaired by Jacques de Larosière - all came to the same conclusion: that the foundation of future financial stability should be macro-prudential regulation.

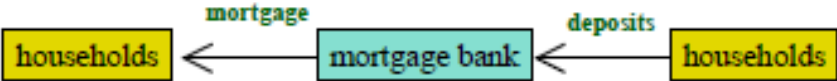
The liability side of the banking balance sheet.

Empirical analysis of the boom that preceded the crisis suggests that the key elements were:

- A. Excessive asset growth
- B. A regulatory system that was focussed solely on the asset side of the balance sheet, and paid little attention to how asset purchase was funded, and consequently the vulnerabilities associated with the reliance on unstable short-term funding and short-term foreign currency debt.
- C. An apparent failure to take into account the transformation of the structure of banking that has taken place over the past three decades, a failure that persists in recent proposals for regulatory reform.

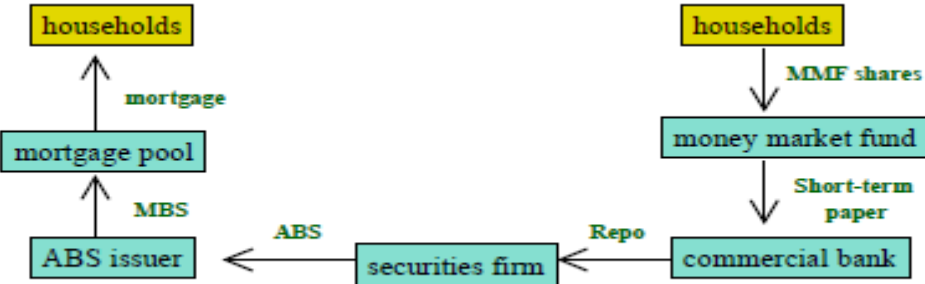
Prior to the financial liberalisation of the 1970s banking was characterised by relatively short intermediation chains (See Figure 1). But even the simple case of mortgage lending has been transformed in recent years, so that now the intermediation associated with a mortgage is more likely to correspond to the

Figure 1: Short intermediation chains



structure shown in Figure 2, in which the same underlying transaction is supports a series of financial sector transactions, all of which are deemed to increase liquidity, or reduce risk, and consequently reduce cost. They also tend to increase leverage.

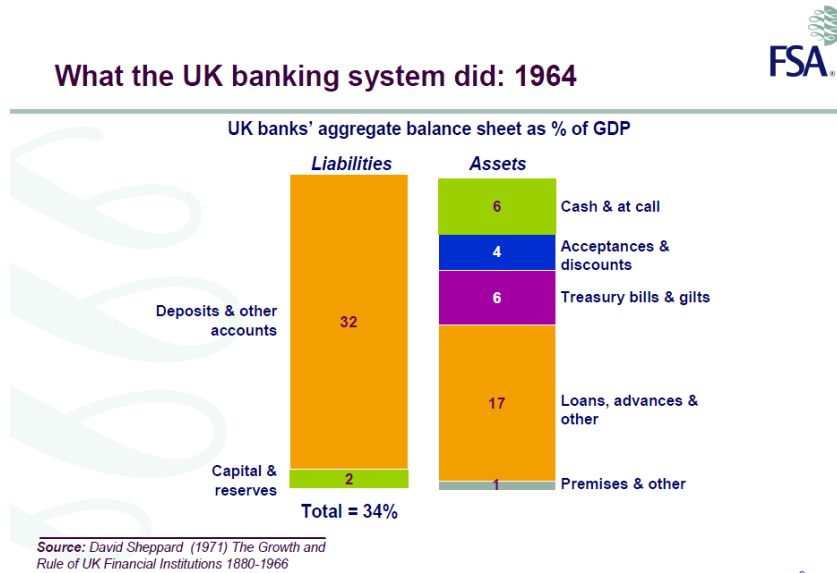
Figure 2: Long intermediation chain



However, the lengthening of the intermediation chain has not only been associated with increased leverage, it also results in a decline in the ratio of *core-liabilities* (deposits by households and firms) to *non-core liabilities* (wholesale funding of the balance sheet).

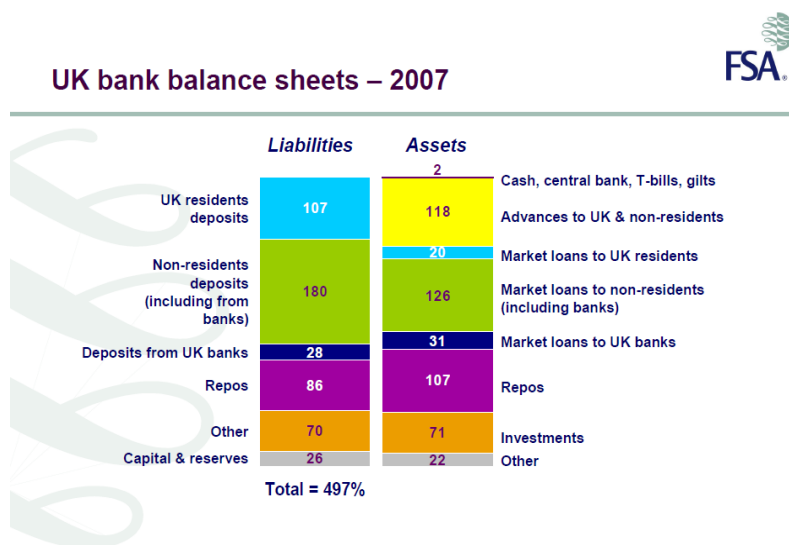
Consider the typical balance sheet of a UK bank in 1964 (Figure 3). The liabilities consist of deposits and capital, whilst assets consist predominantly of loans and advances, plus holdings of government stock and some short-term commercial paper (acceptances). The aggregate balance sheet is worth 34% of UK GDP.

Figure 3.



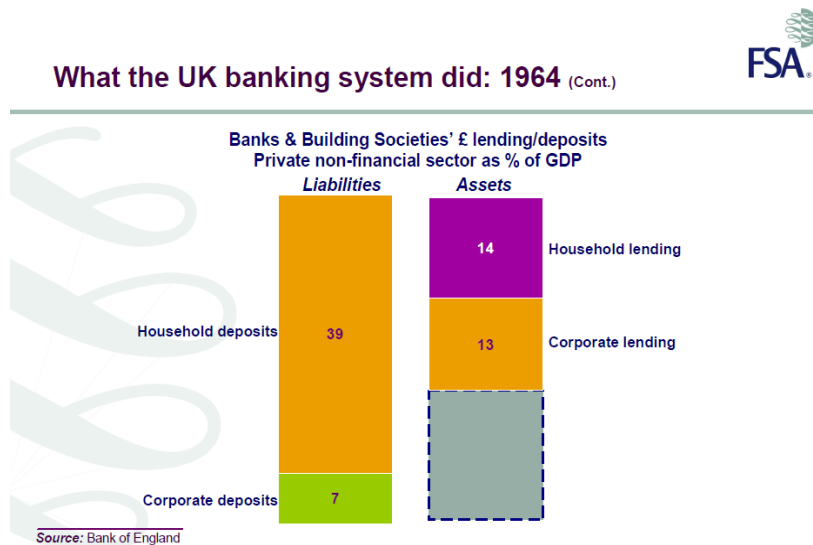
By 2007, the structure of the balance sheet has changed radically (Figure 4). Deposits by UK residents now amount to only a fifth of total liabilities, which are now boosted by deposits from overseas and domestic banks, and by repos. On the asset side, holdings of government paper are extremely small. Assets consist predominantly of market loans (rather than advances) and repos. The total balance sheet amounts to nearly 500% of GDP (though the internationalisation of UK banking means that UK GDP is not the only underlying supporting the financial transactions embodied in the balance sheet).

Figure 4.



The transformation in British banking may also be demonstrated by focussing on the relationship between household and corporate deposits, and lending to households and corporates. In 1964 deposits exceeded lending (Figure 5), the difference being predominantly invested in government paper. By 2007, there is a “customer funding gap”, as lending to the private non-financial sector exceeds deposits from that sector, the difference being funded in the wholesale markets (Figure 6). What is remarkable

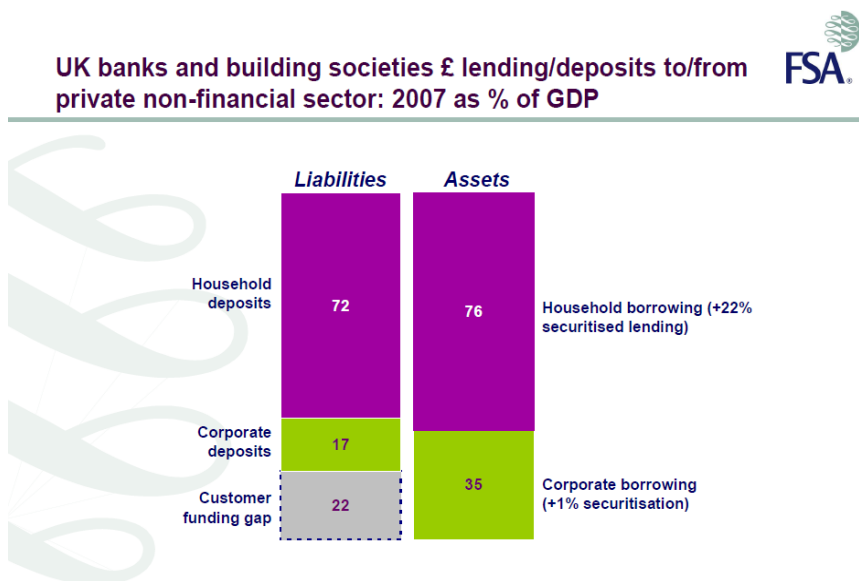
Figure 5.



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gap”, as lending to the private non-financial sector exceeds deposits from that sector, the difference being funded in the wholesale markets (Figure 6). What is remarkable

Figure 6.

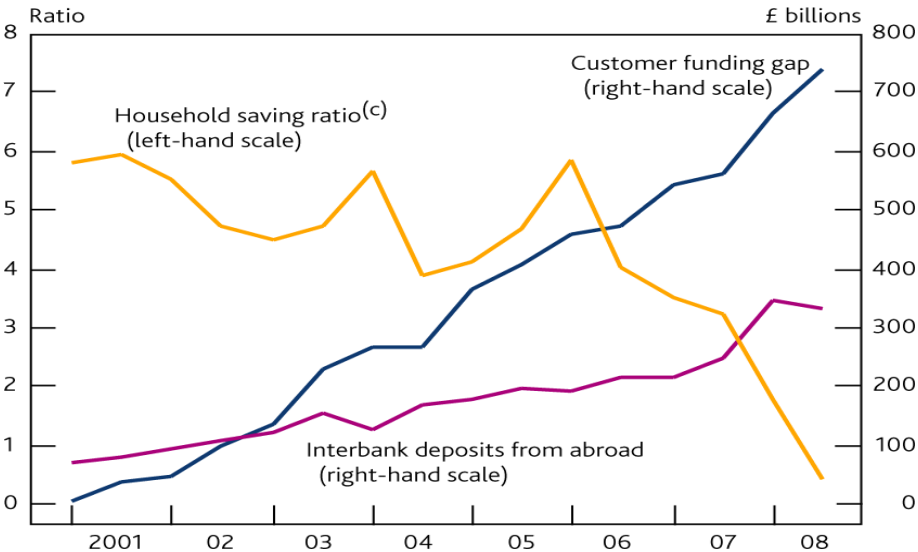


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is the growth of the customer funding gap since 2000. Figure 7 illustrates the divergence between asset accumulation funded by deposits (core funding) and short term funding at British banks over the period 2000 in 2008. In 2000 lending (asset accumulation) was almost exactly balanced by core funding. The so-called funding gap was zero. By 2008 the funding gap had risen to in excess of £700 billion, around two-thirds of UK GDP, and about half of that wholesale funding came from overseas.

Figure 7: UK "customer funding gap"



Whilst deposits by households and firms are typically "demand deposits", and hence one side of a very significant maturity transformation as funds are lent longer term, in fact they tend to be far more "sticky" than is the case of funding via wholesale markets. Even in the case of Northern Rock, the queues of customers withdrawing deposits formed *after* the bank's business model had been destroyed by the freezing of wholesale markets.

$$\text{Liabilities} = \text{equity} + \text{retail deposits} + \text{wholesale}$$

$$\text{Core liabilities} = \text{equity} + \text{retail deposits}$$

$$\text{Total Core Liabilities} = \sum_i e_i z_i \lambda_i$$

$e_i = \text{equity of bank } i$

$z_i = \text{core liabilities/total liabilities}$

$\lambda_i = \text{leverage} = \text{total assets/equity}$

$$\text{Total Core Liabilities} = \sum_i z_i a_i$$

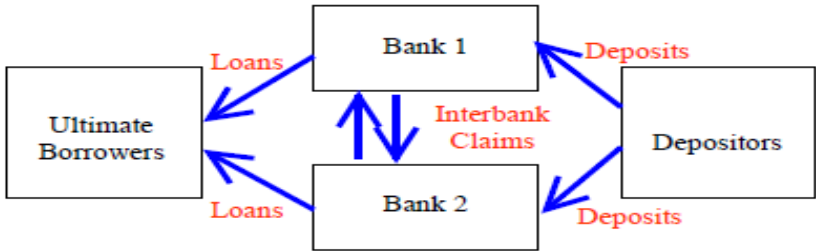
$$\therefore g_{tc} = g_z + g_{ta}$$

where $ta = \text{total assets}$

Typically, household deposits grow in line with the aggregate wealth of the household sector. In a lending boom when credit is growing very rapidly, the pool of retail deposits is not sufficient to fund the increase in bank credit. Other sources of funding are tapped to fund rapidly increasing bank lending. *The state of the financial cycle is therefore reflected in the composition of bank liabilities, z .* When total assets, ta , grow faster than total core funding, tc , z the ratio of core liabilities to total liabilities must fall.

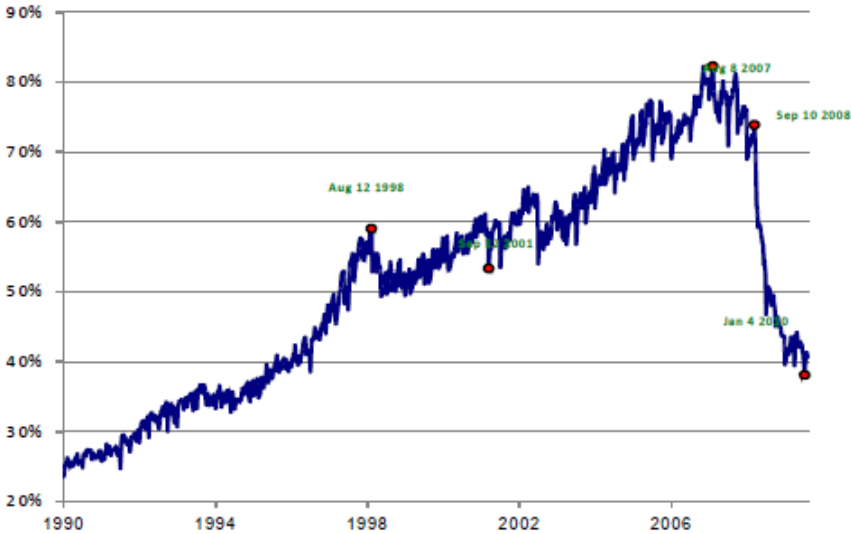
Excessive asset growth and greater reliance on non-core liabilities are closely related to systemic risk and interconnectedness between banks. In a boom when credit is growing rapidly, the growth of bank balance sheets outstrips available core funding, and asset growth is mirrored in the greater cross-exposure across banks. Consider a stylized banking system in Figure 8 with two banks – Bank 1 and Bank 2. Both banks draw on retail deposits to lend to ultimate borrowers. They also hold claims against each other. Imagine a boom where the assets of both banks double in size, but the pool of retail deposits stays fixed. Then, the proportion of banking sector liabilities in the form of retail deposits must fall, and there must be increased cross-claims across banks. In this sense, the growth in bank assets and increased interconnectedness are two sides of the same coin.

Figure 8.



The role of non-core liabilities in signalling the stage of the financial cycle can be seen in the accounts of individual banks and at the aggregate level. Figure 9 plots the US stock of repurchase agreements (repos) of US primary dealers plus the stock of financial commercial paper – the two major sources of wholesale funding – expressed as a proportion of the M2 money stock. M2 consists of retail deposits and holdings in money market funds, and thus can be regarded as retail depositors’ claims on the broader banking system. As recently as 1990, repos and financial CP were only a quarter of the size of M2. However, the ratio rose rapidly and reached over 80% by August 2007, only to collapse with the onset of the financial crisis.

Figure 9. Repos and Financial Commercial Paper as Proportion of M2



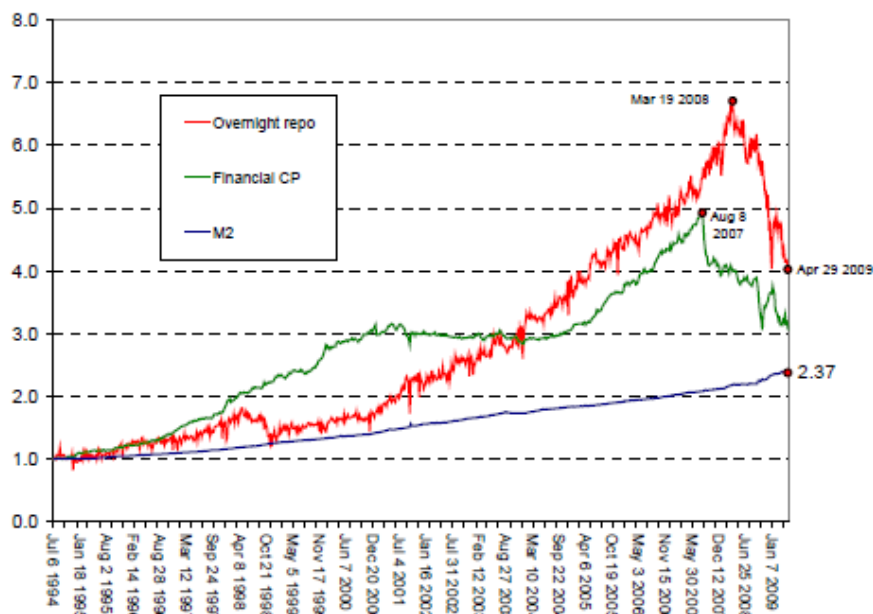
There are close conceptual links between procyclicality, interconnectedness and the stock of non-core liabilities of the banking system. In a boom, we have the conjunction of three features:

- Total lending increases rapidly
- Non-core (including foreign currency) liabilities increase as a proportion of total liabilities
- Systemic risk increases through greater cross-holdings between intermediaries.

In this respect, systemic risk is procyclical and excessive asset growth lies at the heart of the increase in bank interconnectedness.

The growth in non-core liabilities is accompanied by the shortening of maturity of the liabilities. Figure 10 plots three series for the US: the size of the *overnight* repo stock, the total stock of financial commercial paper and M2, all normalized to 1 on July 6th, 1994. M2 grows by a factor of 2.4, but overnight repos grow seven-fold before collapsing with the onset of the crisis in 2008.

Figure 10.





Basel 3: an intellectual failure

It is clear from the analysis that the relative neglect of the growth of liabilities in recent regulatory arrangements has been an important contributory factor in financial instability. This neglect is being reproduced in Basel 3.

At the heart of the new capital and liquidity framework for banks known as Basel 3 is a strengthened common equity buffer of 7% together with newly introduced liquidity requirements and a leverage cap, to be phased in over an extended timetable running to 2019. The elements that were most promising in living up to the macroprudential aims of regulatory reform – the countercyclical capital buffer and the capital surcharge for the systemically important financial institutions (SIFIs) – proved most controversial and have yet to be finalized.

What was particularly striking about these new proposals was that capital holdings of most major banks are not only today substantially in excess of Basel 3 levels, they were before the crisis. The capital ratios of Allied Irish Bank, displayed in Table 1, suggest that reliance on risk-weighted capital ratios, whilst ignoring asset growth is not likely to provide an adequate foundation for stability.

Table 1: AIB capital ratios

Table with 7 columns (years 2004-2009) and 2 rows (Tier 1 capital ratio, Total capital ratio).

In its current agreed form, Basel 3 is almost exclusively micro-prudential in its focus, concerned with the solvency of individual banks, rather than being macroprudential, concerned with the resilience of the financial system as a whole. The language of Basel III is revealing in this regard, with repeated references to greater "loss absorbency" of bank capital. However, achieving greater loss absorbency by itself is almost certainly inadequate in achieving a stable financial system, for two reasons.

- Loss absorbency does not address directly excessive asset growth during booms.
➤ Preoccupation with loss absorbency diverts attention from the liabilities side of banks' balance sheets and vulnerabilities from the reliance on unstable short-term funding and short-term foreign currency debt.

The proposals that related directly to the professed macro-prudential aims of regulatory reform – the counter-cyclical capital buffer and the capital surcharge for the systemically important financial institutions (SIFIs) – proved most controversial

and no agreement on them was reached in Seoul. They are still on an agenda, but it now seems unlikely that progress will be made. However, measures to manage liquidity, which necessarily involve linking the structure of assets with the structure of liabilities, could, if appropriately used, have macro-economic impact.

Excessive asset growth funded by non-core liabilities is at the heart of increased financial sector vulnerability. The problem is knowing when asset growth is “excessive”. Simple rules of thumb such as the ratio of total debt to GDP may be useful, but more promising measures can be derived from the liabilities side of banking sector balance sheets.

For example, the ratio of non-core to core liabilities of the banking sector may be especially useful in gauging the stage of the financial cycle. Monetary aggregates and other liability measures of the banking sector could be developed with the particular task of tracking potential vulnerability. Whereas the traditional role of monetary aggregates has been through any effect on inflation, the macro prudential role of monetary aggregates has to do with the behavioural and stability properties of such aggregates. The legal form of the claim does not coincide with the behavioural properties of the claim. Household deposits have empirical traits that differ from interbank deposits (they tend to be much more “sticky”), even though the legal form of the claims is identical.

Measures of cross-exposures across intermediaries may be useful complementary indicators, bearing in mind that cross-exposures themselves are pro-cyclical, and track non-core liabilities.

Macro-prudential policy tools to mitigate vulnerability should ideally be designed to fit closely with the early warning indicators and the conceptual underpinnings for the relevant economic externalities. Examples of macro prudential policy tools include:

Loan to value and debt service to income caps:

Administrative rules that limit bank lending such as caps on loan to value ratios and debt service to income ratios may be a useful complement to traditional tools in banking supervision.

Leverage caps.

Caps on bank leverage may be used as a way to limit asset growth by tying total assets to bank equity. The rationale for a leverage cap rests on the role of bank capital as a constraint on new lending. Note that leverage caps do not include any risk weighting.

A Levy on Non-Core Liabilities.

The stock of non-core liabilities reflects the stage of the financial cycle and the extent of the under-pricing of risk in the financial system. A levy or tax on the non-core liabilities can serve to mitigate pricing distortions that lead to excessive asset growth. The Financial Stability Contribution (FSC) recommended by the IMF in its report on the bank levy to the G20 leaders is an example of such a corrective tax.

A levy on non-core liabilities has many desirable features. First, the base of the levy itself varies over the financial cycle. The levy bites hardest during the boom when non-core liabilities are large, so that the levy has the properties of an automatic stabilizer even if the tax rate itself remains constant over time. Given the well-known political challenges to the exercise of discretion by regulators, the automatic stabilizer feature of the levy has important advantages.

Second, a levy would address financial vulnerability while leaving unaffected the essential functioning of the financial system in channelling core funding from savers to borrowers. By targeting non-core liabilities only, the levy addresses externalities associated with excessive asset growth and systemic risk arising from interconnectedness of banks.

Third, the targeting of non-core liabilities addresses the vulnerability of open emerging economies to sudden reversals in capital flows due to deleveraging by banks. Indeed, for emerging economies, the levy on non-core liabilities could be aimed more narrowly at the foreign currency denominated liabilities only. A levy on the FX liabilities of the banking sector will have an impact on foreign currency flows, but such a policy is a macro prudential tool aimed at financial stability, rather than a tool for capital controls or a tool to manage exchange rates.

Liquidity management.

The essential task of liquidity management is to align the structure (currency, maturity, risk etc) of liabilities with the structure of assets. The essential task of banks is maturity and risk transformation. If maturities and risk were precisely matched on both sides of the balance sheet then the bank would not make any money. Some mismatch is fundamental to banking. Indeed, it is very difficult to conceive of perfect matching. However, the more closely matched the two sides of the balance sheet the less risky is the bank's position likely to be. The more cash or short term government paper that banks are forced to hold the less severe will be the consequences of mismatches. Limiting currency mismatches is also important and should be part of an effective macro prudential risk management system, especially in developing countries.

Other risks to the stability of the financial system

Macro-economic imbalances

The trade imbalance between the United States and China, and the consequent flow of funds into US Treasuries, has been cited as an important stimulant to the expansion of credit in the US during the boom. This is but one example of the role of macro-economic balance in the maintenance of financial stability – the imbalances in the Eurozone being another. As Jacques de Larosière argued in evidence to the House of Lords Economic Affairs Committee in March 2009:

“When you exercise macro-prudential regulation you are bound to ask yourself questions of economic policy. Let us not hide ourselves from reality. Often...fiscal policies can be part of systemic risk”.

Hence the distribution of fiscal surpluses and deficits and related international imbalances are fundamental components of financial stability.

Institutions

It is not clear, at the international level, what is to be the institutional locus of financial regulation. The Financial Stability Board (transformed from the Financial Stability Forum, and now with G20 membership) has been given the responsibility of developing macro-prudential rules, but it is a purely consensual body, without treaty powers. The IMF, which has been re-inventing itself as a financial regulator, does have treaty powers, but is not widely accepted as an enforcing body – particularly in the Far East. The current solution seems to be to have the FSB develop the rules, and the IMF enforce them – following agreement by the G20. But this is not a sound structure on which to build as complex and potentially controversial an activity as international financial regulation.

The EU is in the process of rationalising its financial regulation. Macro-prudential supervision is to be the responsibility of a European Systemic Risk Board (ESRB). Micro-prudential supervision will be dealt with by three European Supervisory Authorities (ESAs) to oversee different kinds of financial institution: the European Banking Authority (EBA), the European Securities and Market Authority (ESMA) and the European Insurance and Occupational Pensions Authority (EIOPA). How these institutions will relate to existing regulators, particularly in jurisdictions outside the Eurozone is not yet clear. However, it might be noted that current proposals for UK regulatory reform do not “match” the new EU structures.

Financial Structures and Scenarios



A breakdown of international structures?

The perception that the financial crisis has been a predominantly “western” phenomenon, that has nonetheless imposed costs, via depressed trade and investment, on the “east”, has led to some questioning of the international regulatory project: are rules appropriate for US banks needed, or appropriate in China or India? What is to be the future of China’s “export dependency”? What role should Australia, China, India and Indonesia adopt within the councils of the G20? Tensions around these questions are exacerbated once the links between macro-financial stability and fiscal/trade imbalances are recognised. There has already been discussion around the establishment of an “Asian Monetary Fund”. This made no sense when Asian countries were typically heavily indebted in dollar terms. Today, when most are significant lenders to the US, regional monetary arrangements are viable.

Scenarios

Despite the severe constraints on the scenario framework imposed by the nature of financial markets, it is possible to sketch out four credible patterns that market regulation, and consequently market structures might take.

- 1. Muddling through:** little more is achieved beyond Basel 3. The focus of regulation remains the traditional approach of capital charges, with little attention to the liability side of the balance sheet. There is unanimous international resistance to any form of “interference” in national macro-policies. Adjustment to national and international imbalances is predominantly via deflation in debtor economies, enforced by pressures in international bond markets. Financial markets in general continue to display sharp swings from euphoria to crisis, driven by persistent expansion and diversification of wholesale funding. There are two major financial crises in the western banking system between 2011 and 2030. The Eurozone collapses after the first crisis, and exchange rates fluctuate between the core (northern Europe) and the rest of the former Eurozone.
- 2. Macro-prudential regulation:** within national jurisdictions (including the EU) there are new measures introduced to limit the destabilising impact of wholesale financial markets. These include pro-cyclical provisioning, leverage collars, and a variety of devices to separate commercial banking from investment banking. However, these regulatory actions are not accompanied by any new approach to macro-economic imbalances. The pressures of international bond markets continue to exert deflationary pressures on deficit countries. Growth is restrained by the failure to tackle macro-economic imbalances within the European Union. The Eurozone collapses after the second crisis, and exchange rates fluctuate between the core (northern Europe) and the rest of the former Eurozone.
- 3. Regional balances:** regional groupings emerge that seek to stabilise macro-financial relationships within the region. These groupings comprise not just the EU and NAFTA, but also new groupings in Asia and Australasia. Concerted macro-economic policy is accompanied by common measures to limit instability generated by financial markets, notably by quantitative controls on the expansion of wholesale funding (leverage collars and the like) and by regulation of liquidity. The international environment is characterised by negotiation between regional groupings. Over the next 20 years the dollar remains the predominant international currency, but the relative decline of the United States and the regionalisation of the world economy, steadily weakens the dollar’s position, resulting in destabilising swings in financial markets toward the end of the period, culminating in a major currency crisis between 2025 and 2028. There is a clear divergence of interest between East and West.



4. **International agreement:** a World Financial Authority is established to regulate financial markets. The WFA has treaty powers inherited from the IMF, and an approach to regulation based on the structures of the Financial Stability Board, i.e. bringing together regulators, central banks and treasury departments. The WFA has wide ranging policy making powers and there are agreed enforcement procedures mediated through national jurisdictions. A balance of payments deficit ceiling is agreed between major states, enforced by currency depreciation. In addition international imbalances are tackled by expansionary policies in surplus countries There is a concerted attempt to limit the cyclical instability generated by wholesale financial markets, via a levy on non-core funding and tight leverage controls..