Banks' disclosure and financial stability

By Rhiannon Sowerbutts and Peter Zimmerman of the Bank's Financial Stability Directorate and Ilknur Zer of the Board of Governors of the Federal Reserve System.[1]

- Inadequate public disclosure by banks contributed to the financial crisis. This is because investors, unable to judge the risks that banks are bearing, withdraw lending in times of systemic stress.
- This article presents quantitative indices which allow for the comparison of disclosure between banks and over time. Internationally, disclosure has improved since 2000, particularly around banks' valuation methods and funding risk.
- However, more information alone is not sufficient to solve the problem. More needs to be done to ensure that the information provided is useful to investors, and that investors are incentivised to use this information. The ongoing reform agenda aims to address this.

Overview

Investors in banks need information about the risks that they are exposed to, in order to be able to assess and price those risks properly. However, during the recent crisis, investors found that they did not have enough information to assess these risks, which led to a dramatic increase in funding costs, intensifying the crisis. During good times, too, disclosure allows debt investors to ensure that banks do not take on too much risk. This mechanism is known as market discipline. If it does not function properly, then the banking system can become more leveraged — and thus more fragile — than is optimal.

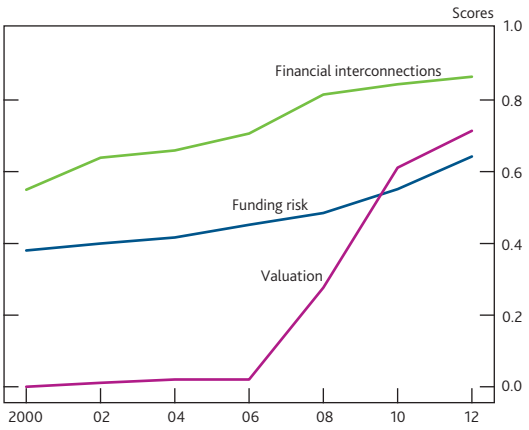
There are four requisites to ensure that the market discipline mechanism functions effectively. Investors must have:

- sufficient information to assess the risks that banks take;
- the ability to process this information;
- powers to be able to discipline banks; and
- incentives to exercise these powers.

This article provides a quantitative assessment of improvements in the first of these criteria. As shown in the **summary chart**, banks from around the world have increased the amount of information they publish, assessed against certain areas which were identified as needing improvement in the Bank's December 2009 *Financial Stability Report*. In particular, disclosure of information relating to asset valuation has improved greatly compared to the period prior to the crisis.

Since the crisis, UK banks have shown particularly strong improvements in the amount of information that they report. Disclosure has been a particular focus of the Bank's Financial Policy Committee. But more information is not by itself sufficient to solve the problem of ineffective market discipline, especially if banks are 'too big to fail'. The international reform agenda is addressing this problem.

Summary chart Average disclosure scores in selected categories



Sources: Banks' reports and Bank calculations.

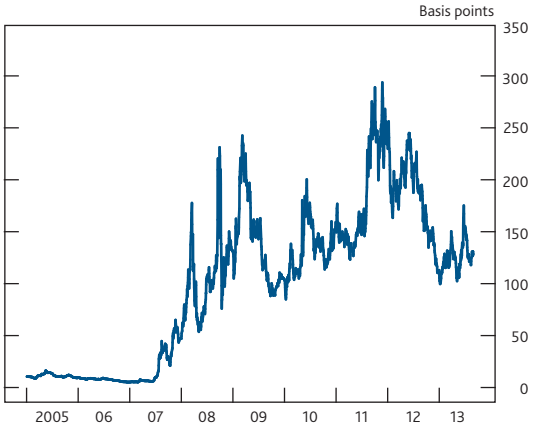
Notes: Based on disclosures by 50 banks from around the world. A score of 1 indicates that banks disclosed information relating to all criteria for that category.

(1) Ilknur Zer worked on this while an intern at the Bank of England. The authors would like to thank Adriana Fernandes for her help in producing this article.

Inadequate disclosure by banks was a contributing factor to the recent global financial crisis.(1) In plain terms, banks did not report enough information about the assets they were holding or the risks that they were exposed to. The advent of the crisis caused investors to focus on risks that they had previously considered to be of relatively minor importance. Inadequate disclosure meant that investors were less able to judge risks to a bank's solvency than bank insiders, such as managers.

This lack of transparency is likely to have intensified the crisis — for example by leading to much higher funding costs, even for relatively healthy banks. This is illustrated by **Chart 1**, which shows that the cost of insurance for lenders to UK banks increased dramatically during the crisis. Increased disclosure can help to alleviate the problem of asymmetric information between banks, who have good information about their own financial resilience, and investors that provide funding to banks, who have less information. This can be likened to the well-known 'lemons' problem described by Akerlof (1970), as explained in the box on page 328.(2)

Chart 1 Cost of default protection for major UK banks(a)



Sources: Markit Group Limited and Bank calculations.

(a) Unweighted average of five-year senior credit default swap premia for Barclays, HBOS, HSBC, Lloyds TSB, Royal Bank of Scotland and Standard Chartered.

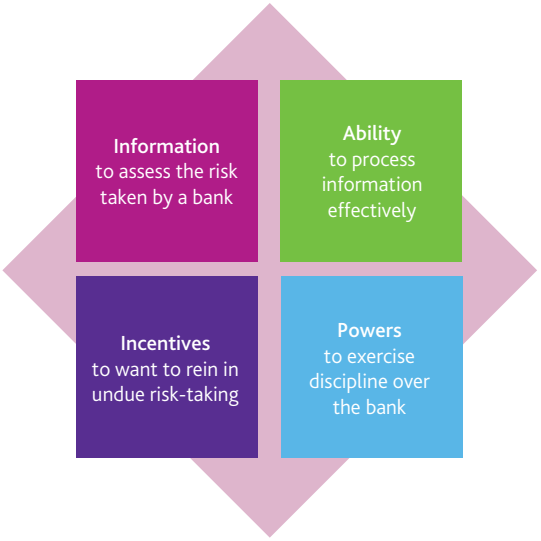
Better disclosure can be beneficial to financial stability in non-crisis times, too. With good information, debt investors are able to price risk more accurately and, if the incentives are right, this can act as a disciplining force on banks. As debt investors become aware of the risks that banks are taking, they are less likely to provide funding to banks that are not providing an attractive trade-off between risks and returns. This can affect the risk-taking decisions of bank managers. This **market discipline** mechanism empowers investors to ensure that managers are acting in their interests, and reduces the likelihood that a bank takes risks that its investors are not aware of. Therefore publishing better information may reduce the probability of future financial crises, as it can make sudden changes in investor sentiment less likely.(3)

But simply publishing a greater quantity of information is not necessarily a solution, particularly if it is 'noisy' or unimportant information. And in some cases greater disclosure might not be in the best interests of financial stability. For example, during periods of stress, disclosure of certain information — such as the temporary use of central bank liquidity insurance facilities — could undermine their effect and exacerbate investor panic (see Bank of England (2012)).

Disclosing information can also have consequences for the structure of banks and the ability of the financial system to absorb shocks. In their seminal 1984 paper, Myers and Majluf show that when managers have more information than outsiders, the cost of issuing equity increases (Myers and Majluf (1984)). Easley and O'Hara (2004) show the same result when some investors have more information than other investors. When equity is more expensive, firms are likely to be more leveraged, which can make the financial system less resilient.

Figure 1 shows four requisites for investors in order for this market discipline to be effective. Debt investors need to have the right information to understand the risks that banks are taking, and they need to be able to process this information. They must also have incentives and powers to discipline banks.

Figure 1 Requisites for investors to exert effective market discipline



Source: Crockett (2001).

This article introduces quantitative indices to assess basic progress on the provision of information. It then assesses each

(1) See, for example, Gorton (2008) or Bank of England (2009).
(2) Dudley (2009) suggests that disclosure of the methodology and results of the Federal Reserve's Supervisory Capital Assessment Program (SCAP) helped increase confidence in US banks and made it easier for them to raise more capital.
(3) The focus of this article is on debt investors. Debt investors, like bank regulators and supervisors, are principally concerned with the risk that the bank is unable to repay its debt and finds itself in financial distress. In contrast, equity investors are likely to be more concerned with the trade-off between bank profitability and greater risk-taking.

Akerlof's lemons

Probably the best-known economic paper on information asymmetry is George Akerlof's 1970 paper 'The market for lemons: quality uncertainty and the market mechanism'. Akerlof jointly received the 2001 Nobel Prize in economics for his research in this area. The paper discusses the problem of information asymmetry, using the market for used cars as an illustration.

Akerlof argues that information asymmetry in the used-car market can lead to 'lemons' — that is, poor-quality cars — being the only goods traded. When considering a used car for sale, the buyer does not know whether it is of good quality or a lemon. But the seller — who has already had experience driving the car — is much more likely to know whether it is a lemon or not. This is an example of an information asymmetry. Since buyers cannot distinguish between good cars and lemons, both types of car will be sold at the same price, which must be somewhere between the 'true' value of good cars and lemons. But that means that good cars would be sold below their true value. Owners of good cars would then be better off by keeping their cars, rather than selling them. Only lemons are left in the market.

How does this relate to disclosure for banks? Seeking to borrow, managers of banks issue debt in the bond markets. If public information is inadequate, investors may not be able to distinguish between banks of good and bad quality. But bank managers have more information about the risks that their bank faces. Therefore there is a problem of asymmetric information. And higher-quality banks would face the same borrowing rates as those of lower quality.

One difference with the used-cars example is that managers of higher-quality banks could try to improve disclosure, in order to reduce the extent of information asymmetry. But there may be reasons why they choose not to do this. For example, banks may be concerned that disclosure could reveal information that is useful to the banks' competitors. And it may be expensive to upgrade internal systems to improve the quality of reported information, in which case banks may choose to disclose less information than is optimal. Regulatory requirements to improve disclosure can help to overcome these frictions. Bank of England (2012) describes how policy action can help to overcome market failures in disclosure.

of the other three criteria in turn. The article also discusses UK and international policy initiatives on disclosure.

Availability of information

The Bank of England, in its December 2009 *Financial Stability Report*, discussed banks' disclosure practices and said that 'better information would have constrained excessive risk-taking behaviour in the run-up to the crisis'. And it suggested that UK banks were behind their international peers in this regard.

The *Report* identified five areas where significant improvements in reporting information would be desirable: **funding risk**; **group structure**; **valuation methods**; **intra-annual information**; and **financial interconnections**.[1] These are important to financial stability because:

- **Funding risk** relates to the possibility the bank may not be able to raise new funding or repay its existing creditors. A decomposition of funding sources helps creditors to understand the risks that could lead to non-payment.

- Many banks have a complex structure, so information on the banking **group structure** helps investors to understand the risks and to assess the likelihood that a failing bank can be resolved efficiently by the authorities, minimising bankruptcy costs.

- Information about the methods used for **valuation** of the bank's assets allows creditors to assess the reliability of those valuations, and thus the probability of accounting losses. And **intra-annual information** — that is, balance sheet data relating to positions between reporting dates — allows creditors a broader view of risks than is available merely from a snapshot of the balance sheet on the annual reporting date.

- Finally, an understanding of **financial interconnections** can help creditors to assess the 'network risk' of adverse feedback loops within the financial system, and the risk of explicit or implicit exposures to off balance sheet entities, which may not have been properly addressed in the accounting or regulatory frameworks.

These areas were all highlighted at an international level in the report of the Enhanced Disclosure Task Force (EDTF).[2] It contains specific recommendations and principles on the disclosure of these categories (aside from group structure) and many others.

(1) The *Financial Stability Report* had six areas, but we combine 'frequency' and 'intra-period information' into a single category entitled 'intra-annual information'.
(2) The EDTF was formed at the initiative of the Financial Stability Board (FSB). It is a private sector initiative bringing together senior officials from financial institutions, investors and audit firms. The FSB published its recommendations in October 2012, and a progress report in August 2013. The EDTF recommendations go much further than it is possible to do with quantitative indices, and include proposals in a range of other areas, such as disclosure of risk management procedures. See Enhanced Disclosure Task Force (2012).

Construction of indices for bank disclosures

We introduce quantitative indices to measure progress on disclosure in the five areas mentioned above and apply it to a sample of 50 major banks from around the world. These indices are focused only on information that is expected to be relevant to debt investors, and to financial stability. The indices are composed of fourteen indicators, which measure disclosure in those five areas. **Table A** lists these indicators.

Table A The disclosure indices

Funding risk
- Breakdown by funding type.
- Breakdown by funding maturity.
- Breakdown by funding currency.
- Funding stress.
- Asset encumbrance.

Group structure
- Risk positions of main group subsidiaries, branches or business lines.
- Balance sheet information of main group subsidiaries, branches or business lines.

Valuation methods
- Financial assets and liabilities classified by valuation method.
- Sensitivity of the valuation to different assumptions.

Intra-annual information
- Frequency of comprehensive reporting.
- Average balance sheet between reporting dates.

Financial interconnections
- Interbank exposures.
- Off balance sheet exposures.
- Implicit support to off balance sheet entities.

A bank scores between 0 and 1 for each indicator, depending on whether the necessary information was disclosed in its annual public report. The box on page 330 describes the methodology in greater detail. We only look at information which is currently over and above that required by international standards; compliance with these standards is compulsory and, as such, all banks should receive perfect scores in this regard. In some cases, national standards may require all banks in a country to disclose information over and above international standards.

The indices are constructed by a simple assessment of whether the relevant information is disclosed or not. There are no value judgements made on the quality of that disclosure. Some disclosure on each of the indicators in **Table A** is likely to be useful to investors and beneficial to financial stability, but it is difficult and subjective to evaluate how much is required for investors to make a full assessment.

The indices aim to measure disclosure, to the extent that this disclosure is likely to be beneficial to financial stability. This means that it may be more valuable to capture high-level — rather than specific — information. For example, disclosure of asset encumbrance can help unsecured debt investors to assess the risk of not being repaid in the event that the bank fails, but detailed disclosure could have unintended negative consequences.(1) In addition, the indices focus on those areas identified previously as requiring improvement, rather than providing a comprehensive assessment of all aspects of a bank's publicly reported information.

For each of these banks and for each point in time, we can construct a score for each of the five areas identified earlier, by taking a simple average of the indicators in that category. For example, the funding risk score is calculated as the average of the five funding risk indicators, to give a number between 0 and 1, and so if a bank discloses all five indicators then it scores 1 for funding risk.

How have banks' disclosures changed over time?

On a global level, there has been a broad improvement in disclosures over time. **Charts 2a, 2b** and **2c** show the average disclosure scores for the funding risk, valuation and financial interconnections categories over the period 2000–12. Each line shows the average for the group of banks in that jurisdiction. There is an upward trend in all three categories. Most marked is the improvement in information about valuation methodologies from 2008. The charts suggest that UK banks were, relative to their international peers, fairly poor at disclosing information prior to the crisis, but have improved since then.

The post-2008 improvements could be a result of action by national authorities, or investor demand, or a combination of the two.(2) For example, the increase in the financial interconnections scores (**Chart 2c**) is mainly driven by better disclosure of off balance sheet entities. Support to off balance sheet entities was a key driver of bank distress in 2007 and 2008, so it may be that investors have begun to demand better disclosure of this risk as a result. Alternatively, this improvement may be driven by anticipation of changes to regulatory requirements, which were weak prior to the crisis.(3)

There are fewer signs of improvement in the group structure and intra-period information categories (charts for these categories are not shown). For example, there is no change at all in the group structure score between 2000 and 2012 for more than half of the banks in the sample. This has two possible implications. It may be that a bank's local supervisor

(1) European Systemic Risk Board (2012) contains guidance that the disclosure of asset encumbrance should not reveal the use of central bank liquidity insurance facilities, which may stigmatise a bank. Consistent with this, our indicator only captures whether or not total encumbrance is disclosed and not, for example, the reason for encumbrance.
(2) Improvements in national standards would lead to an upward shift in the graph of a particular country. And improvements in international standards would set floors to the graphs, shifting many upwards.
(3) Basel II — the global capital regime for internationally active banks — was augmented by an amendment in 2009 which, among other things, required banks to improve disclosure on interlinkages with entities outside of their balance sheets. These had not been fully implemented in all countries by 2012. See Basel Committee on Banking Supervision (2009).

The construction of the indices

The sample of 50 banks was chosen from a list of the largest credit institutions in the world in terms of total value of assets as of December 2006: these are from the United States (9 banks), United Kingdom (8 banks), Canada (5 banks), Australia (4 banks), and the rest of Europe (24 banks). Data are gathered from annual reports for these banks, for even-numbered years between 2000 and 2012. **Table 1** gives the full list.

Table 1 List of banks in the sample

Abbey/Santander UK	Credit Suisse	Morgan Stanley
ABN Amro	Danske Bank	National Australia Bank
ANZ	DEPFA	National Westminster
Banco Santander	Deutsche Bank	Nordea
Bank of America	Dexia	Rabobank
Bank of Montreal	Dresdner Bank	Royal Bank of Canada
Bank of Nova Scotia	DZ Bank	Royal Bank of Scotland
Barclays	Goldman Sachs	SEB
BBVA	Handelsbanken	Société Générale
BNP Paribas	HBOS	Standard Chartered
BPCE	HSBC	Toronto-Dominion
CIBC	ING Bank	UBS
Citigroup	JPMorgan Chase	UniCredit
Commerzbank	KBC	Wachovia
Commonwealth Bank of Australia	Lehman Brothers	Wells Fargo
Crédit Agricole	Lloyds	WestLB
	Merrill Lynch	Westpac

Some of these banks fail or merge during our time period of 2000–12. Excluding these banks from the overall sample does not substantively change the patterns over time seen in **Charts 2a, 2b and 2c**.

Table 2 shows how scores are assigned for each indicator. Banks achieve a score of 1 if the minimum required information is clearly presented in a public report. If not, the score is 0. The exception is 'frequency of comprehensive reporting'; here a bank scores 0 if it produces comprehensive reports only annually; 0.5 if it produces two comprehensive reports a year; and 1 if its comprehensive reports are more frequent than this.

The methodology has been chosen to be as simple as possible, in order to reduce the degree of subjectivity in the assignment of scores.(1) Only data from annual reports — rather than separate regulatory reporting or other sources — has been used, in order to ensure a focus on the main source of information for investors.

Table 2 The disclosure indices

Description	Minimum requirement
Funding risk	
Breakdown by funding type	Distinguish between retail and wholesale funding.
Breakdown by term	Distinguish between short and long-term funding.
Breakdown by currency	Decompose funding into at least two currencies.
Funding stress	Disclose any kind of quantitative liquidity ratio that helps investors assess the bank's ability to withstand funding stress.
Encumbrance	Disclose the overall level of encumbered assets.
Group structure	
Risk positions	Disclose risk ratios of the main group subsidiaries, branches or business lines (such as capital, liquidity or loan loss reserves).
Balance sheet information	Disclose balance sheet information of the main group subsidiaries, branches or affiliates.
Valuation	
Valuation method	Classification of financial assets and liabilities by valuation method.
Sensitivity to assumptions	Disclose the sensitivity of asset valuations under various assumptions, such as changes in interest rates.
Intra-annual information	
Frequency of comprehensive reporting	Score 0 for annual, 0.5 for semi-annual, 1 for quarterly or more often.
Average balance sheet	Disclose information about the average level of balance sheet items between reporting dates.
Financial interconnections	
Interbank exposures	Disclose amount of outstanding loans extended to, and funding received from, other banks.
Off balance sheet exposures	Breakdown of contingent liabilities or financial guarantees.
Implicit support to off balance sheet entities	Disclose the extent of use of special purpose entities to issue securitisation bonds.

(1) This is, by its nature, a judgement-based process, so care has been taken to ensure consistency across the sample.

Chart 2a Funding risk category scores

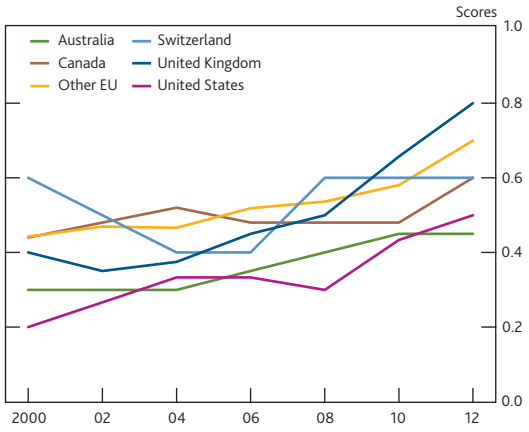


Chart 2b Valuation category scores

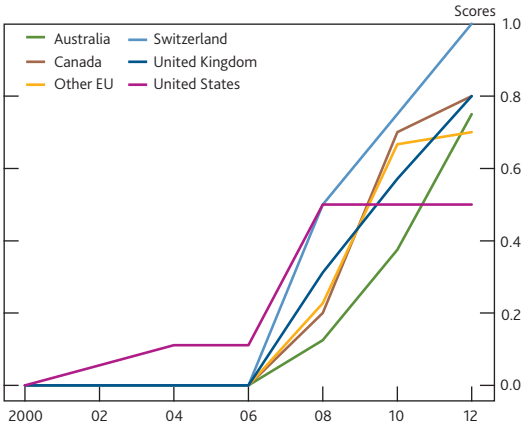
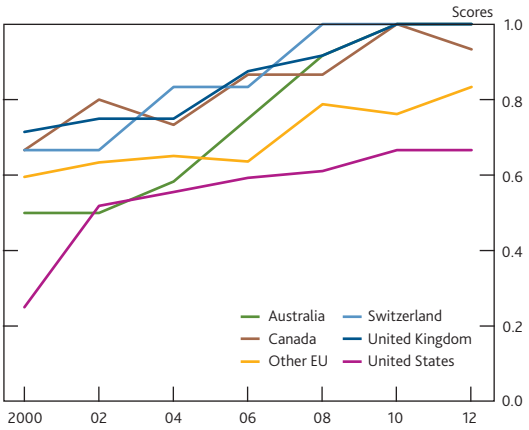


Chart 2c Financial interconnections category scores



Sources: Banks' comprehensive reports and Bank calculations.

— or market practice — requires it to disclose the information. In that case, all the banks in that jurisdiction would score 1 for that indicator.

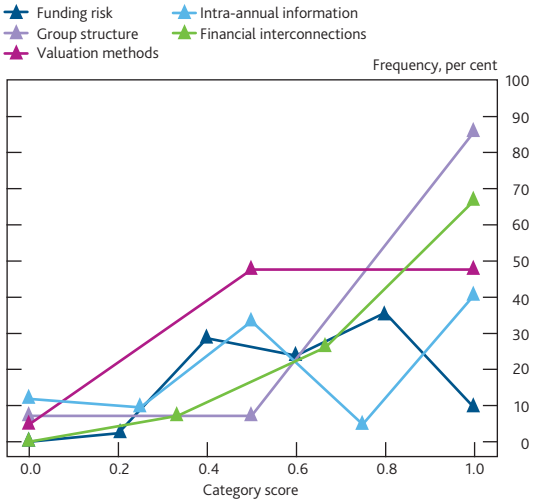
Alternatively, it may be that the value of this information to investors is low and that the cost of collecting and providing this information to the bank outweighs the benefits. If so, one might expect most scores to be 0 at all times. In the case of frequency of comprehensive reporting, we find that the indicator score is well-predicted by the jurisdiction (that is, banks within a given country tend to have similar scores), so it seems that all banks simply accord with either minimum requirements or market practice.

Why do banks' disclosures differ?

As discussed, at the market-wide level, changes in regulatory requirements and investor demand can lead to changes in bank disclosure. However, it is also useful to identify what factors lead different individual banks (within the same jurisdiction, say) to disclose different amounts of information. One point to note here is that accounting standards vary between countries and are often principles-based. Management must use its judgement in providing reliable and relevant information, and this could lead to substantial variation between banks.

This is illustrated in **Chart 3** which shows the frequency distribution of banks' 2012 scores in each of the five categories. For an individual bank, the category score is the mean of all indicator scores within that category (as shown in **Table A**). There is a wide range of variation between different banks, and for most metrics the scores span the full range between 0 and 1.

Chart 3 Frequency of 2012 category scores(a)(b)(c)



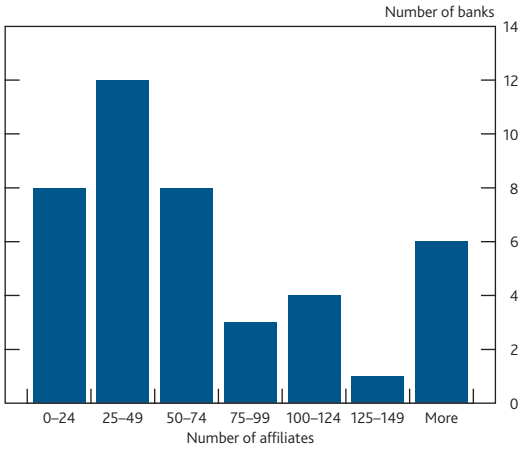
Sources: Banks' comprehensive reports and Bank calculations.

(a) The chart shows, for each score, the proportion of the banks in the sample whose category score takes the value on the horizontal axis. For example, 48% of the banks in 2012 had a valuation methods score of 1.
(b) Triangles mark feasible values of the category scores — for example, it is only possible to achieve a score of 0, 0.5 or 1 on valuation methods because there are only two components to the indicator, each scoring 0 or 1.
(c) Eight of the banks in our full sample had either failed or been taken over by 2012, and so are not used here. This chart is based on the scores of the remaining 42 banks.

Our sample includes a wide variety of banks with different business models, and for some of the banks certain information may not be as relevant as it is for others. To illustrate this, **Chart 4** shows the distribution of the number of 'significant affiliates' for the institutions in the sample in 2012, calculated by counting the subsidiaries or affiliates in each bank's organogram. Most banks in the sample have over

50 different significant affiliates, with over a quarter of the banks having more than 100. Although this partly reflects regulatory and tax reasons, it also reflects the number of businesses and products that these institutions undertake and thus, to some extent, significant affiliates can be used as a proxy for the complexity of a bank's business.

Chart 4 The number of 'significant affiliates' for the banks in the sample in 2012[a]



Sources: Moody's and Bank calculations.

(a) Some banks have been removed from the sample following mergers or resolution.

This suggests that, while many banks in our sample are very complex financial institutions, others have much simpler structures. For these banks, certain information may be less relevant to assessing their risk, and so might not be demanded by investors.

In addition, disclosures may be 'path-dependent' in the sense that investors and counterparties expect reported information to be provided on an ongoing basis once it has been instigated. Ceasing to disclose an item could increase uncertainty for investors or stigmatise the bank. This would suggest an upward trend in the 'path' for bank disclosure, consistent with the increase that can be observed in the indices.

Other requisites for effective market discipline

As **Figure 1** suggests, while greater disclosure is a necessary ingredient for effective market discipline, it may not be sufficient. Other factors need to be present to ensure that there are the desired benefits for financial stability. These are examined in turn.

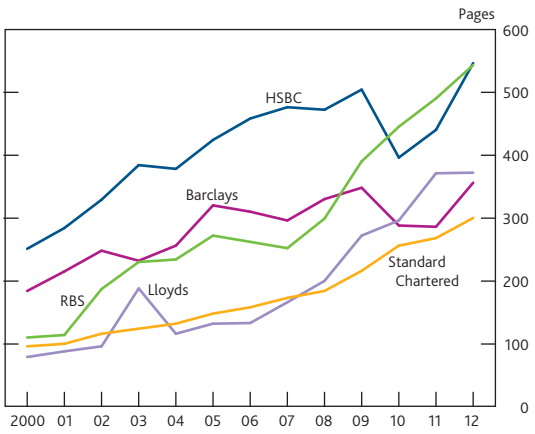
Investors' ability to process information

As well as having information available, investors must have the ability to process this information. Simply disclosing more information is not always helpful to investors. Large amounts of 'noisy' data that are not key to understanding the risks banks are taking may make it more difficult for investors to extract the key information. Producing a lot of noisy public data could cause investors to pay less attention to their own, private information (Morris and Shin (2002)).

Investors may find it easier to analyse the riskiness of a bank if the information it discloses is consistent and easily comparable to that of its peers. This allows investors to benchmark institutions more easily, lowering the cost of monitoring. Although not captured by our indices, the US 10-Q and 10-K reports provide standardised templates for financial reporting, potentially making it easier for investors to evaluate US banks. However, it may be challenging to devise a template that is suitable for a diverse set of banks over an extended period of time.

As **Chart 5** shows, banks' annual reports have increased considerably in length since 2000. The average length of major UK banks' annual reports is currently over 300 pages: this is over three times the average length of UK companies' annual reports (Deloitte (2011)). This can make it difficult to extract the indicators above, which are typically scattered around each report rather than collected conveniently together. The length of the reports could be driven by various factors, such as increased regulatory demands or business complexity. Pillar 3 of Basel II allows regulators to require banks to publish additional information, which may complement annual reports.[1]

Chart 5 Lengths of selected UK banks' annual reports



Source: Banks' comprehensive reports.

It is difficult to judge whether investors find this additional information useful. While it could be a natural consequence of banks' business models becoming more complex, it does nonetheless suggest that it may have become more difficult for investors to read and analyse a typical bank's annual report over time.

(1) Pillar 3 disclosures supplement annual reports and contain disclosures on capital, risk exposure and capital adequacy.

If risk assessment becomes too difficult for investors, they may prefer to delegate it to external analysts, such as credit rating agencies. But this can create the risk of herding behaviour, since a decision by a rating agency to upgrade or downgrade a bank could lead to a large group of investors changing their holdings of the downgraded institution's debt. This could have negative implications for financial stability if these trades lead to large and unexpected movements in asset prices, especially during periods where markets are relatively illiquid.

Investors' incentives to rein in undue risk-taking

Debt investors only price in the risks that they actually face. If these differ substantially from the risks that the bank is taking, then this could undermine the market discipline mechanism. The financial crisis showed that the consequences of allowing certain banks to fail would have imposed unacceptably high economic costs; in other words, these banks were 'too big to fail'. As a result, holders of certain banks' debt were shielded from losses as governments intervened to support these banks. Anticipation of this government support means that a debt investor may be more concerned with the solvency of the government than the bank.

This expectation of government support can be considerable, especially for the banks in our sample, which comprise 50 of the largest banks in the world by total assets. Without reforms to address this 'too big to fail' problem, their size alone means that many of the banks in the sample used for this article would be very costly to let fail.(1) This support means that investors assess bank debt as being less risky than their balance sheets would suggest, leading to a reduction in banks' funding costs.

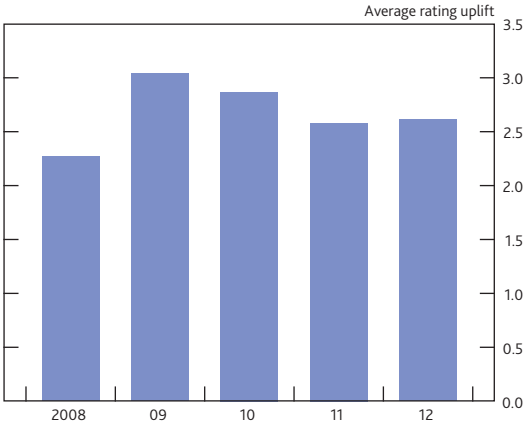
One way to gauge the expected level of government support is to inspect banks' credit ratings. Credit rating agencies often issue two credit ratings for a bank: a 'stand-alone' rating, and a (higher) 'support' rating.(2) Both the stand-alone and support rating reflect an external assessment of the probability of a bank defaulting on its debt, but only the latter includes the possibility of a bank receiving government support. **Chart 6** plots the average difference between the stand-alone and support ratings for the banks in our sample. For example, in 2012 banks' support ratings were, on average, nearly three notches higher than their stand-alone ratings.

This support from sovereigns to banks means that investors may choose to focus on sovereign risk rather than bank risk. In turn, this could mean that all banks in a jurisdiction may face funding stress simultaneously, since they are all driven by the sovereign's ability to repay.

Investors' powers to exercise discipline

Finally, for market discipline to be effective, investors need to be able to influence managers' actions, either directly or indirectly (**Figure 1**). Typically, only equity holders have

Chart 6 Average difference between 'stand-alone' and 'support' ratings for the banks in our sample(a)(b)(c)



Sources: Moody's and Bank calculations.

(a) Some banks have been excluded due to the lack of a suitable rating, or due to mergers or resolution.
(b) Ratings uplift is defined as the number of rating notches by which the support rating exceeds that of the stand-alone. In some cases, where separate data were not available, this includes support from within the group.
(c) Moody's has since removed all uplift from US government support in the ratings for bank holding company debt.

control rights that can influence managers' actions directly, such as by voting against their actions in shareholder meetings, electing the board or engaging in negotiations with management. Debt holders are unable to influence management actions in the same way.

But relying on equity holders to discipline management may not be sufficient: debt and equity holders often have different and *conflicting* interests when it comes to the risk that a firm takes. For equity holders, option value theory would suggest that the value of their stake typically increases with risk, all else equal, since there is no theoretical upper limit to returns. Their worst outcome is that they lose their stake — this is known as 'limited liability' (Haldane (2011)). In contrast, for debt holders, the value of their stake decreases as the bank takes more risk, because the default probability of the bank increases while the returns are fixed.

Debt holders are able to restrict management actions at the point of issuance of loans and bonds, by insisting on covenants. But it can be difficult to monitor a bank's actions or to write sufficiently complete covenants to cover all the ways in which a bank might increase its risk.

There is a greater ability for debt holders to influence management action *indirectly*. If debt holders respond to the risk that managers are taking — by demanding a higher return to hold bank debt — then this increased price of taking risk should restrain managers from taking excessive risk.

(1) Of these banks, 22 were designated as global systemically important banks by the Financial Stability Board in November 2013. See Financial Stability Board (2013). These are banks whose distress or disorderly failure would cause significant disruption, which tends to require public solvency support.
(2) See Noss and Sowerbutts (2012).

The position of debt investors relative to other investors in the bank's capital structure can be important. For example, investors in subordinated debt are more exposed to the risks of the bank's actions than senior debtors, so they should react more strongly to new information. This reaction provides additional information for other investors who may be less able to monitor the bank, so that a bank which has issued a lot of subordinated debt should be more constrained by market discipline. Conversely, investors in secured debt or government-insured retail deposits may respond more weakly to the risks that the bank is taking, and as such exert little discipline on management.

Policy developments

A number of policy developments, in the United Kingdom and internationally, are likely to lead to further improvements in the requisites for market discipline. The Bank of England's Financial Policy Committee (FPC) — which works to protect and enhance the resilience of the UK financial system — has issued a number of recommendations relating to public disclosure, as summarised in **Table B**.(1)

Table B FPC recommendations relating to disclosure

2011 Q2	Improved disclosure of exposures by major UK banks.
2011 Q4	Disclosure of leverage ratios.
2012 Q2	Work towards consistent and comparable Pillar 3 disclosures.(a)
2013 Q2	Implement EDTF recommendations.

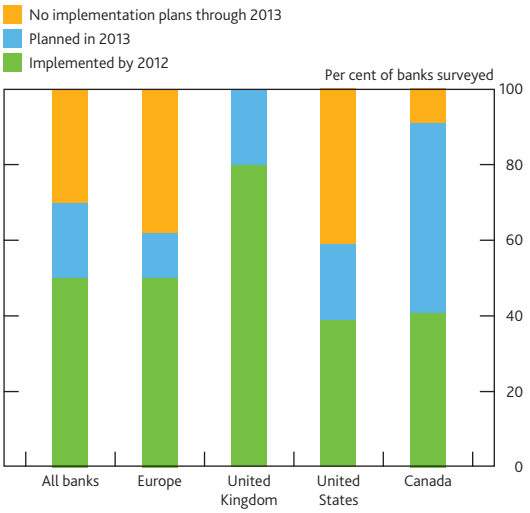
(a) This recommendation was restated by the FPC in 2013 Q2.

In June 2013, the FPC recommended that all major UK banks and building societies should comply fully with the EDTF recommendations in their 2013 annual reports. And it restated a recommendation to improve the comparability and consistency of the Pillar 3 disclosures of the major UK banks and building societies. These will further improve the information available to investors, and make it easier for them to process information about banks' risk-taking, enhancing their ability to exert market discipline.

These recommendations build on earlier work that the Financial Services Authority had done to improve banks' disclosures; in particular by co-ordinating with the British Bankers' Association (BBA) in implementing the BBA Code to ensure banks' financial statements provide useful, high-quality information. Since April 2013, the Prudential Regulation Authority within the Bank of England has continued the ongoing engagement with the BBA, its members and their auditors on the implementation of the Code.

At the international level a number of bodies are working to improve banks' disclosures. The Basel Committee on Banking Supervision considers disclosure in a number of its working groups. It is also reviewing Pillar 3 reporting; this latter review builds on work undertaken by the European Banking Authority. And the G20 Finance Ministers and Central Bank Governors have welcomed the October 2012 recommendations of the EDTF, with some national authorities actively encouraging banks to adopt it. The first progress report of the EDTF was issued in July 2013 and found that its recommendations are already beginning to make a positive impact on the reporting practices of global banks. Further improvement is expected in 2013, although as **Chart 7** shows there is considerable variation across regions.(2) The report notes that the high uptake of the EDTF recommendations in the United Kingdom and Canada is partly due to expectations set by domestic regulators.

Chart 7 Planned implementation of EDTF recommendations by region(a)



Source: Enhanced Disclosure Task Force (2013).

(a) The EDTF sample is slightly different to that used in this article. The EDTF sample comprises 31 institutions, including two responses from Asian banks.

Measures to address the 'too important to fail' problem should increase incentives for investors to exercise market discipline. For example, effective and credible resolution regimes should reduce the perceived likelihood of government support, thus weakening the link between sovereigns and banks.(3)

Conclusion

The academic literature suggests that firms' disclosure can be effective in reducing information asymmetries and incentivising firms to manage their risks more effectively. This may lead to a less leveraged and more resilient financial system.

(1) For more information on the FPC see Tucker, Hall and Pattani (2013).
(2) See Enhanced Disclosure Task Force (2013).
(3) See Bank of England (2013), in particular Table 3.D, which summarises reforms to address risks from systemically important institutions, and Section 5 which contains the FPC's recommendations.

The indices presented in this article provide a simple way of summarising and assessing the extent of disclosure by banks. It appears that disclosure has increased in several of the areas identified in the December 2009 *Financial Stability Report* as needing improvement: namely funding risk, valuation techniques and financial interconnections. UK banks have, on average, improved relative to their international peers, although there is still room for further improvement.

With hindsight it is relatively simple to identify areas of inadequate disclosure; the challenge is to future-proof disclosure in an innovative industry and where the incentive structure encourages the build-up of new types of risks which may not be covered by existing rules and guidance. Policymakers therefore need to build disclosure frameworks that keep up to speed with the current evolution of bank business models and emerging risks.

Policy developments should mean not only that disclosure continues to improve, but also that investors have stronger abilities and incentives to exercise market discipline. This should help reduce excessive risk-taking by banks, leading to positive outcomes for financial stability.

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