



Introduction: Banks and systemic risk

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The papers in this special issue were presented at a conference on Banks and Systemic Risk held at the Bank of England from 23–25 May 2001. ¹ The papers covered three broad areas – banks and systemic risk; theory and evidence of market discipline and signals of bank fragility; and capital requirements and crisis prevention.

The view that weakness in the banking sector may have serious systemic effects on the economy more generally hinges on several issues. Since the early 19th century (Thornton, 1802), it has been recognised that problems in one bank can spill over into more widespread difficulties in the sector. The nature of the contracts banks hold (short-term deposits and longer-term loans) exposes them to the possibility of runs; and linkages between banks combined with information asymmetries between counterparties and banks make them vulnerable to contagion. A number of papers have focussed on bank runs (e.g. Diamond and Dybvig, 1983) and the transmission mechanism of problems from one bank to others (e.g. Freixas et al., 2000). Other papers (e.g. Bernanke, 1983) have focussed on the wider costs to the economy if banks fail. This reflects the central position of banks in the payments system and their special role in intermediating flows of funds to small firms and the retail sector.

One issue addressed at the conference was whether banking crises do in fact impose externalities on the system. It has been suggested that, with the growth of substitutes for bank intermediation particularly through the development of securities markets, bank failures may not impose substantial costs on economies. Hoggarth, Reis and Saporta ('Costs of banking system instability: some empirical evidence') review the estimates of fiscal costs incurred in dealing with a banking crisis and also

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¹ The conference was hosted by the Bank of England in co-operation with the Financial Services Authority, the Board of Governors of the Federal Reserve System, the Federal Reserve Bank of New York and the Office of the Comptroller of the Currency.

produce estimates of output losses during 47 crises in 37 countries. They find that output losses during banking crises are indeed large – amounting to around 15–20% of annual GNP. They also find that, on some measures, the costs are as high or higher in developed as in emerging markets.

Nicolo and Kwast ('Systemic risk and financial consolidation: are they related?') consider whether consolidation of the financial system has increased systemic risk. They find that over 1988–1999 there was a substantial increase in consolidation of the US banking sector, with the aggregate market share of the large and complex banking organisations (LCBOs) increasing from 34% to 73%. They also found an upward trend in the correlation of stock returns between pairs of LCBOs (which is their measure of interdependency) that seems at least in part to reflect consolidation.

The widely held official view that the banking sector can pose threats to the system has led to various public policy prescriptions from provision of lender of last resort arrangements by central banks to supervision of banks to reduce the likelihood of individual bank failures.

Since the introduction of the 1988 Basel Accord, internationally agreed minimum capital requirements have played a central role in the supervision of banks. The requirements were originally established for internationally active banks in the G10 and have since been adopted in over 100 countries worldwide. One question has been whether these minimum requirements may have induced credit crunches in some periods imposing costs on the economy. There were two aspects to this issue. One was whether the introduction of the Basel Accord forced some banks to cut lending to boost their capital ratios to meet the standard and the second was whether the Accord placed a binding constraint on some banks in recessions (when capital comes under pressure because of write-offs/provisions) which might also lead to a reduction in lending.

A Basel Committee Working Paper (Jackson et al., 1999) looked at the impact on G10 banks and found some limited evidence of economic effects of this kind for the US in the early 1990s. Chiuri, Ferri and Majnoni ('The macroeconomic impact of bank capital requirements in emerging economies: past evidence to assess the future') look at the effect of the introduction of the Basel standard on the deposit and lending activity of banks in emerging markets. They find that the minimum capital requirements reduced the supply of loans over a number of years, particularly in the case of more weakly capitalised banks. The adverse effect on lending was somewhat smaller for foreign-owned banks.

The current Basel Accord is being substantially revised to introduce a regime that much more closely reflects the actual riskiness of different loans. Several of the conference papers examine the implications of the new regime in two respects: (1) whether the proposed requirements do in fact reflect the riskiness of different portions of the loan book; and (2) what is the minimum solvency standard implied for banks by the requirements. The various papers assess both the New Accord's proposed standardised approach (based on external ratings) and the more sophisticated internal ratings based approach (IRB) that uses banks' own credit assessments. Altman and Saunders ('Credit ratings and the BIS reform agenda') look at the stan-

standardised approach. They use simulated portfolios and data on default and loss given default drawn from the US bond market to analyse the appropriateness of the proposed risk weights. They argue that, while the capital charges for low credit quality exposure (sub-BB) are, in their terms, “about right”, those for high credit quality exposures are too high, and hence banks will still have an incentive to engage in risk shifting.

Carey (‘A policymaker’s guide to choosing absolute capital requirements under an IRB approach’) gives an overview of the choices policymakers must make in determining risk-based capital requirements for corporate loans. Rather than using a conventional calculation of the capital required to maintain the bank’s survival probability in excess of a given solvency standard, Carey conducts a pseudo-stress test, asking what capital levels would have been associated with particular numbers of bank failures in the US recession of the early 1990s. Assuming that only losses from defaults (rather than economic losses) matter, he finds that the proposed 10% capital requirement for loans with a 1% expected default rate, under the IRB, over a one year horizon is consistent with an average failure rate of one IRB bank in two hundred (0.5%) during the 1989–1991 recession.

The Basel Committee has decided that the final calibration will be set to deliver on average the same amount of minimum capital across the G10 as the current Accord. Jackson, Perraudin and Saporta (‘Regulatory and “economic” solvency standards for internationally active banks’) employing an economic loss credit risk model find that the current Accord delivers a solvency standard for a large bank with a high quality portfolio of around 99.9% and 99% for banks with lower quality portfolios. Using the banks’ own Tier 1 ratios and credit ratings it is possible to show that this would not be a binding constraint. Banks are targeting higher solvency standards probably because of concerns about access to essential markets. For large systemically important banks this raises the question whether authorities should set a higher early warning capital level.

Although there has been an increasing focus in recent years on supervisory intervention (fine tuning bank capital requirements and enhancing checks on systems and controls) to reduce the likelihood of bank failure and systemic problems, there has also been growing interest in the development of approaches to enhance market discipline to reduce reliance on regulation. There has been an active debate over whether banks should be required to issue subordinated debt to improve the availability of market indicators of riskiness resulting in requirements in both the US (for some large banks) and Argentina for mandatory issuance. But there is also a debate over whether market discipline for banks is actually effective in terms of raising the cost or restricting the funding of risky banks and therefore whether market indicators of fragility can be relied upon.

Crockett in his paper (‘Market discipline and financial stability’) argues that there are four pre-requisites for market discipline of banks to be effective – the market must have sufficient information, the ability to process it, the right incentives to process it and the mechanisms to enable them to exercise effective discipline.

On the first, there are major gaps in the type of information published by banks. Book value accounts do not disclose embedded interest rate losses or economic losses

caused by a deterioration in credit quality (until provisions are made) and there is in general limited disclosure of the risk profile of the banks. To help to address this, the Basel Committee is including new provisions on required disclosure in the Basel Accord amendment including, for larger banks, disclosure of the loan book split down by probability of default band. But the issue of incentives will remain. There is anecdotal evidence that some institutional investors rely on the regulators of banks to assess risk and extensive safety nets in some countries may completely undermine market discipline. Subordinated debt will only convey information on riskiness if the subordinated debt holders believe that they will not be bailed out.

There is therefore considerable interest at present in how successful the market is at assessing the riskiness of banks and whether market indicators do reflect relative riskiness. Several papers in the conference addressed these issues. Evanoff and Wall ('Measures of the riskiness of banking organisations: Subordinated debt yields, risk-based capital, and examination ratings') examine the costs and benefits of basing regulatory interventions on subordinated debt yields as has recently been proposed in the United States. They conclude that subordinated debt yields could be made an integral part of the bank supervisory process but that data problems and Lucas-critique uncertainties about how yields would be affected when market participants know they are used by regulators mean that a cautious reliance on such yields would be more appropriate.

Bongini, Laeven and Majnoni ('How good is the market at assessing bank fragility? A horse race between different indicators') compare the forecasting ability of traditional early warning indicators of bank fragility (CAMEL type balance sheet variables) with market indicators (default probabilities estimated from equity data using a Merton model and credit ratings) for banks which were active in the South East Asian countries. They conclude that the indicators they consider had little predictive power although balance sheet indicators provided information about the cross sectional pattern of failures and non-failures across banks. Their results may point to the need for greater focus on the quantity and quality of data released by banks in emerging markets and changes in expectations about possible safety nets.

Swidler and Wilcox ('Information about bank risk from option prices') also looked at how a particular market indicator (the volatility of a bank's share price implied by the prices of options on the shares) varies with other market indicators – changes in the share price and subordinated debt yields. They conclude that the implied volatilities do contain significant additional information.

Sironi ('Testing for market discipline in the European banking industry: evidence from subordinated debt issues') examined spreads on new issues of subordinated debt in Europe to assess if investors were discriminating between banks according to credit quality. He uses credit ratings and published accounting data as a measure of bank riskiness. His results suggest that subordinated debt investors rationally discriminate between the risk profiles of different banks although differences in the degree of public support and in the liquidity of markets lead to differences in spreads. These factors limit the dependence that may be placed on spreads by regulators especially when comparing banks from different countries.

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