

REDUCING SYSTEMIC RISK THROUGH THE REFORM OF CAPITAL REGULATION

Hal S. Scott^{*}

ABSTRACT

Capital requirements are a key element in containing systemic risk. This article argues that the market needs to play a more significant role in determining these requirements. The Basel process has a bad track record and there are inherent methodological and political difficulties in a group of regulators, particularly an international one, determining the appropriate amount of capital for a given risk. An added role for the market depends, however, on fuller disclosure by banks of their risks and minimization of the moral hazard created by bailouts, so creditors and counterparties bear a fuller measure of the risk.

I. INTRODUCTION

This article concentrates on the central problem for financial regulation that has emerged from the 2007–2009 financial crisis—the prevention of systemic risk. It is largely based on the work and recommendations of the Committee on Capital Markets Regulation (CCMR) in its May 2009 Report entitled ‘The Global Financial Crisis: A Plan for Regulatory Reform’.¹ This article addresses what I regard as two of the most important policies for dealing with systemic risk: the imposition of capital requirements (or limits on leverage) and the use of market discipline in calibrating, enforcing and regulating these requirements.

II. DEFINING THE CENTRAL PROBLEM: SYSTEMIC RISK REDUCTION

The central objective of financial regulation (conceived as the prescription of rules, as distinct from supervision or risk assessment) is to reduce systemic risk.² Systemic risk can be defined in many ways. Most broadly, it is the risk

^{*} Nomura Professor of International Financial Systems, Harvard Law School; Director, Committee on Capital Markets Regulation (CCMR). E-mail: hscott@law.harvard.edu

¹ Committee on Capital Markets Regulation, ‘The Global Financial Crisis: A Plan for Regulatory Reform’ (2009) (CCMR Plan for Regulatory Reform). The CCMR is an independent, nonpartisan research organization with 32 members, founded in 2005 to improve the regulation of US capital markets.

² See Hal S. Scott, ‘The Reduction of Systemic Risk in the United States Financial System’, 33 *Harvard Journal of Law and Public Policy* 671 (2010).

that a national, or the global, financial system will break down. But this can occur for a variety of reasons, ranging from a broad external shock resembling 9/11 or war, to narrower causes more closely related to the financial system, such as lending failures. In a narrower context, systemic risk can arise because of broad lending mistakes affecting many banks, as was the case with the US banking system during the sovereign debt and thrift crises in the 1980s, or the Japanese financial crisis beginning in the 1990s and extending into the turn of the century. These crises occurred as a result of the highly correlated activities of many important institutions—e.g. all lending to Latin America (sovereign debt crisis) or to affiliated companies (Japan). Now in the subprime crisis, many banks that made subprime loans or invested in derivatives based on such loans experienced significant losses. A growing body of literature seeks to measure overall risk in the financial system, principally on the basis of the degree of correlation risk among financial institutions.³

Financial crises can also arise from the problem of interconnectedness and the ensuing risk of contagion.⁴ That is, the failure of one institution could lead to the failure of others. For example, at the time of the AIG bailout, it was thought that the failure of AIG could cause the failure of its in-the-money counterparties on credit default swaps (CDS). Also, the failure of one institution could trigger a financial system run, particularly on institutions lacking the support of a deposit insurance system or the assurance that central banks would be lenders of last resort (even if solvent). The most dramatic examples during the subprime crisis were liquidity runs on US money market funds, which were only stopped by a combination of new types of federal lending and government guarantees.

In all these cases of systemic risk, the ability of financial institutions to withstand losses is crucial. With the first line of defense against losses being capital, this article focuses on capital requirements in light of the financial crisis.

³ See e.g., Monica Billio, Mila Getmansky, Andrew Lo and Liorana Pelizzon, 'Measuring Systemic Risk in the Finance and Insurance Sectors', (MIT Sloan School, Working Paper 4774-10, 17 March 2010); V. Acharya, Lasse Pedersen, Thomas Philippon and Matthew Richardson, 'Measuring Systemic Risk' (10 March 2010), <http://ssrn.com/abstract=1573171> (visited 5 March 2010); see also 'Systemic Regulation, Prudential Matters, Resolution Authority and Securitization: Hearing Before the House Committee on Financial Services', 111th Congress (29 October 2009) (statement of Andrew W. Lo, Director, MIT Laboratory for Financial Engineering), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1497682 (visited 5 March 2010).

⁴ See Jan Lorenz, Stefano Battiston and Frank Schweitzer, 'Systemic Risk in a Unifying Framework for Cascading Processes on Networks', 71 *European Physical Journal* 441 (2009) for an attempt to model chain reaction failures. Nodes of a network are exposed to failure as a result of their fragility and the thresholds that determine their failures.

III. CURRENT CAPITAL REQUIREMENTS: BASEL AND LEVERAGE RATIOS

The highly regulated nature of capital requirements is not a new phenomenon. Since 1988, the requirements have been adopted for large international banks of the G-10 countries by the Basel Committee on Banking Supervision (Basel Committee or BCBS), and have been adopted by more than 100 other countries outside the G-10.⁵ The USA implemented Basel I and is in the process of implementing the Basel II advanced internal-rating-based approach—known as A-IRB—for 20 or so of its largest banks and their holding companies, with implementation scheduled for April 2011.⁶ But US implementation of the A-IRB regime requires minimum capital floors during transition and higher levels of capital than Basel would otherwise have required, because of concerns that Basel II's required capital levels were too low. Unlike the European Union (EU), the USA has rejected applying the Basel II Agreement to the rest of its banking system.⁷ The standardized approach, designed for most banks, was found to be too complicated for small US banks—with the Foundation IRB alternative to A-IRB judged not to be a useful middle ground.

The Securities and Exchange Commission (SEC) implemented a version of Basel II for securities firms' holding companies, on a voluntary basis, in 2004, before the onslaught of the credit crisis.⁸ This was the result of the enactment of the EU Conglomerate Directive requiring all conglomerates, including investment banks, to be regulated at the holding company level by the EU unless the conglomerates were subject to 'equivalent' regulation elsewhere.⁹ US investment banks were free of any holding company regulation at the time, being subject only to SEC regulation of their broker-dealers or investment company affiliates. The US investment banks convinced the SEC to allow them to be regulated on a voluntary basis to escape EU regulation, and capital was a key part of that regulation. Since the EU was adopting Basel II, the SEC applied Basel II to its investment banks, thus all but assuring that the equivalence requirement would be satisfied.

These capital requirements proved inadequate. The SEC's Basel II-based rules permitted the top five major investment banks to achieve leverage of

⁵ See BCBS, 'International Convergence of Capital Measurement and Capital Standards' 3 (1988), <http://www.bis.org/publ/bcbsc111.pdf?noframes=1> (visited 5 March 2010).

⁶ See Federal Reserve Board Of Governors, 'U.S. Implementation of the Basel Accords', <http://www.federalreserve.gov/generalinfo/basel2/USImplementation.htm> (visited 2 April 2010).

⁷ The Basel II Agreement only requires applying the standards to large international banks, so this decision of the US does not actually violate the Agreement.

⁸ 17 C.F.R. §§ 200.30-3, 240.3a4-2 to -6, 240.3a5-1, 240.3b-17 to -18, 240.15a-7 to -9 (2004).

⁹ Directive 2002/87/EC of the European Parliament and of the Council on the Supplementary Supervision of Credit Institutions, Insurance Undertakings and Investment Firms in a Financial Conglomerate and Amending Council Directives 73/239/EEC, 79/267/EEC, 92/49/EEC, 92/96/EEC, 93/6/EEC and 93/22/EEC, and Directives 98/78/EC and 2000/12/EC of the European Parliament and of the Council, OJ 2003 L 35.

over 30 to 1.¹⁰ Insufficient capital was a significant cause of the failure of Lehman Brothers and Bear Stearns,¹¹ and also played a major role in forcing Merrill Lynch to sell itself to Bank of America.¹²

One of the interesting features of capital regulation is that the leverage of depository banks turned out to be much lower than the leverage of investment banks, which do not take deposits. This was because depository banks were subject to leverage ratios in addition to their Basel I requirements. Indeed, the top five depository banks were leveraged at 13 to 1, compared to the leverage of over 30 to 1 of the investment banks.¹³ While Basel II imposed a minimum 8% capital requirement on risk-weighted assets (which the USA increased to 10% for banks seeking to engage in riskier non-banking activities),¹⁴ the USA also imposed its own leverage requirement of 5% on all assets, without risk-weighting, for consideration as a 'well-capitalized' bank.¹⁵ The leverage ratio, which was not applied to investment banks, turned out to be a more binding constraint on banks than the more 'sophisticated' Basel approach. European and Asian banks, which were not subject to leverage ratios, were more exposed to failure, but the subprime crisis had a more dramatic impact in the USA than elsewhere.

IV. BASEL II REVISIONS

The Basel Committee¹⁶ is in the process of revising Basel II capital requirements and adding liquidity requirements in light of the financial crisis. First, in July 2009, the Basel Committee adopted new capital requirements for 'resecritizations'¹⁷ and increased capital required to support institutions' trading books.¹⁸

As for securitization, the basic reforms, effective from December 2010, increased the risk-weightings of Basel II, which will require more capital against such exposures. Under the A-IRB, estimates of the risk of holding most assets have been generally left to bank credit models; but in the case of

¹⁰ CCMR Plan for Regulatory Reform, above n 1, at 60.

¹¹ Joint Economic Committee Majority Staff, 'From Wall Street to Main Street: Understanding How the Credit Crisis Affects You', 2008, at 4 http://jec.senate.gov/index.cfm?FuseAction=Files.View&FileStore_id=b2087603-5883-4777-b13e-6b30845d4265 (visited 5 March 2010).

¹² Ibid.

¹³ CCMR Plan for Regulatory Reform, above n 1, at 60.

¹⁴ 12 C.F.R. § 208.43(b)(1)(i).

¹⁵ 12 C.F.R. § 208.43(b)(1)(iii).

¹⁶ The Committee was first established by the central bank governors of the -10 countries in 1975. It is now composed of banking supervisory authorities and central banks of 27 jurisdictions.

¹⁷ Resecritizations include collateralized debt obligations (CDOs), in which existing asset-backed securities are repackaged into new securities.

¹⁸ BCBS, 'Enhancements to the Basel II Framework', July 2009, <http://www.bis.org/publ/bcbs157.pdf> (visited 5 March 2010).

securitizations and resecuritizations, most of which are externally rated, Basel II specifies the risk-weights for securities with different seniority and diversification. These risk-weight revisions raise the general question as to whether we can expect the Basel Committee to appropriately determine risk-weights, particularly when these weights are geared off credit ratings whose reliability must be severely questioned in light of the financial crisis. Indeed, a provision of the recently enacted Dodd-Frank Wall Street Reform and Consumer Protection Act¹⁹ (Dodd-Frank Act) prevents US regulators from relying on credit ratings in any regulation—thus making the implementation of these revisions in the USA impossible. Not only is the risk-weighting process methodologically suspect, it is also subject to political pressure. Can there be any other reason why all residential mortgages (prime or subprime) were risk-weighted at 50% in Basel I, while all other secured debt to the private sector was risk-weighted at 100%? Indeed, Basel II was even worse, dropping the risk-weight on residential mortgages to 35%. Clearly, assigning low risk-weights for residential mortgages was part of the strategy of the USA to promote home ownership, using risk-weights as a means of credit allocation.

In addition, the latest revision to Basel II in July 2009, also effective in December 2010, increased capital for market risk (changes in value) of a bank's trading book. These changes also include a stressed value-at-risk (VaR) requirement, which the Committee believes will help dampen the cyclicity of the minimum regulatory capital framework.²⁰ Again, the issue is whether regulators can get these capital charges right. While in the past capital requirements seem to have been too low, the risk for the future may be that they are too high, which would unnecessarily dampen economic recovery. An impact study conducted on 43 banks in 10 countries by the Basel Committee found that changes in market risk requirements alone would require an average increase in capital holdings by 11.5% and a median increase of 3.2%. Similar increases were reported for stressed VaR.²¹ Are these too little, just right, or excessive? Who knows?

V. BASEL III PROPOSALS ON CAPITAL AND LIQUIDITY

The capital and liquidity standards proposed by the Basel Committee in December 2009 and revised in July 2010 have come to be referred to as Basel III. At its meeting in September 2010, the Committee intends to

¹⁹ Pub. L. 111–203 (21 July 2010), § 939A(b) (Dodd-Frank Act).

²⁰ BCBS, above n 18.

²¹ BCBS, Analysis of the Trading Book Quantitative Impact Study', October 2009, <http://www.bis.org/publ/bcbs163.pdf?noframes=1> (visited 5 March 2010).

calibrate the requirements by adopting the required capital ratios and phase-in arrangements. Final details of the Basel III reforms will be issued before the end of 2010.²² Implementation of the capital proposal of the basic capital framework is planned for 2012, while the leverage proposal should be implemented in 2018. No timetable has yet been set for the liquidity ratio.

A. Capital

The Basel III capital proposal begins by narrowing the definition of Tier 1 capital to engender more reliance on pure equity (which remained unchanged in Basel II from Basel I). In particular, it provides that unrealized gains or losses on available-for-sale assets, which result from the use of fair value accounting, should be reflected in equity for regulatory purposes.²³ This may be resisted by the EU, and particularly France, where many banks and policymakers oppose fair value accounting on the grounds that it is inappropriate to use mark-to-market accounting for unimpaired debt.²⁴ Indeed, it may not be appropriate for regulatory and accounting measures of capital to be the same, as discussed further below.

The second part of the capital proposal is to require more capital for counterparty risk where over-the-counter derivatives are not centrally cleared, while concurrently setting a 'modest' 1% to 3% risk-weight on those that are centrally cleared. This system would strongly promote central clearing. Further, the Committee proposes to increase the risk-weights on derivative exposures of banks to financial institutions as compared to exposures to the non-financial sector on the ground that correlation risk is higher for the former. This is to be supplemented by improved collateral risk management practices. While the overall thrust of this approach is sensible, it is questionable whether there should be a low risk-weight on centrally cleared

²² BCBS, 'Press Release: The Group of Governors and Heads of Supervision Reach Broad Agreement on Basel Committee Capital and Liquidity Reform Package' 26 July 2010, <http://www.bis.org/press/p100726.htm> (visited 16 September 2010).

²³ BCBS, 'Strengthening the Resilience of the Banking Sector', at 23 para. 96, (Consultative Document, December 2009), <http://www.bis.org/publ/bcbis164.pdf> (visited 5 March 2010).

²⁴ In his report to the President of the French Republic, French General Commissioner for Public Investment, René Ricol described fair value accounting as having a 'detrimental effect on market information and the comparability of financial statements' which, 'when markets break down and become illiquid [may result in] a vicious circle, in which massive sales of impaired assets with insufficient buy-side counterparties drive prices downwards until the assets are worth little or nothing'. René Ricol, 'Report to the President of the French Republic on the Financial Crisis' 30, 52 (September 2008). The response of the EU has been more muted, calling for flexibility in the use of fair value. Charlie McCreevy, 'Keynote Address: Financial Reporting in a Changing World' (7 May 2009), <http://europa.eu/rapid/pressReleasesAction.do?reference=SPEECH/09/223&format=HTML&aged=0&language=EN&guiLanguage=en> (visited 5 March 2010). Also, the Chairman of the UK Financial Services Authority, Adair Turner, has questioned the use of fair value for banks. Adair Turner, Chairman, UK Financial Services Authority, 'Remarks to the Institute of Chartered Accountants in England and Wales' 21 January 2010, http://www.fsa.gov.uk/pages/Library/Communication/Speeches/2010/0121_at.shtml (visited 5 March 2010).

derivatives, as clearinghouses are not impervious to risk and may have to issue a capital call on clearinghouse participants.

The third part of the capital proposal is an international leverage ratio. The December leverage proposal focuses on what assets should be counted in the denominator while using the new capital measures in the numerator. Although there is strong support for using Tier 1 capital as the base for the leverage ratio, the July revision indicated that ‘the Committee also will track the impact of using total capital and tangible common equity’. A minimum Tier 1 leverage ratio of 3% will be tested during the ‘parallel run period’ of 2013–2017.²⁵ While it is true that the leverage ratio helped to protect the US banking system during the crisis more than the Basel requirements, this is more an indictment of the Basel methodology than grounds for endorsing crude leverage ratios. Indeed, dissatisfaction with the leverage ratio as a measure of capital adequacy was a major impetus in the development by Basel of a risk-weighted approach.²⁶ If there is to be a leverage ratio, however, it would clearly best be done internationally through Basel, rather than through disparate national requirements.²⁷

The fourth part of the capital proposal would promote counter-cyclical capital requirements—that is, a system in which more capital would be raised and held in good times than in bad times.²⁸ The CCMR has also recommended the adoption of techniques to ensure that capital ratios are counter-cyclical, with ratios being higher when markets are rising than in times of falling valuation and liquidity.²⁹ One element of this approach is to allow an expected, rather than an actual, loss approach to provisioning. Counter-cyclical ratios could be implemented through an expected loss model of provisioning, as in Spain.³⁰ The CCMR has suggested that this

²⁵ Bank for International Settlements, BCBS, Annex (26 July 2010), <http://www.bis.org/press/p100726/annex.pdf> (visited 16 September 2010).

²⁶ In a statement before the Senate Banking Committee, Federal Deposit Insurance Corporation (FDIC) Chairman, Sheila Bair, stated ‘It is highly likely that the advanced approaches of Basel II would have been implemented much more quickly and with fewer safeguards, and banks would have entered the crisis with much lower levels of capital. In particular, the longstanding desire of many large institutions for the elimination of the leverage ratio would have been much more likely to have been realized in a regulatory structure in which a single regulator plays the predominant role. This is a prime example of how multiple regulators’ different perspectives can result in a better outcome’. See: ‘Strengthening and Streamlining Prudential Bank Supervision: Hearing before the Senate Committee on Banking, Housing & Urban Affairs’, 111th Congress, 4 August 2009, at (statement of Sheila Bair, Chairman, FDIC).

²⁷ See Dodd-Frank Act, above n 19, § 1103(g)(3) which limits ‘systemically important’ financial institution holding company leverage ratios to 15–1.

²⁸ BCBS: Countercyclical Capital Buffer proposal (6 July 2010), <http://www.bis.org/publ/bcbs172.pdf> (visited 16 September 2010).

²⁹ CCMR Plan for Regulatory Reform, above n 1, at 81.

³⁰ See Financial Services Authority, ‘The Turner Review: A Regulatory Response to the Global Banking Crisis’ 63 (March 2009), http://www.fsa.gov.uk/pubs/other/turner_review.pdf (visited 5 March 2010) (discussing the Spanish dynamic provisioning system).

could be accomplished without violating current accounting standards and securities regulation rules by providing that estimated losses do not run through the income statement.³¹ Under current accounting rules, premised on the incurred loss model, only known impairments, but not expected future losses, are provided for and reflected in an institution's financial reporting.³² In addition, the CCMR has argued that financial institutions should be required to maintain some form of contingent capital to address the cyclicity that is characteristic of existing requirements.³³ Two promising proposals for contingent capital should be explored—one for catastrophic insurance based on a systemic trigger, and another for reverse convertible debentures based on a bank-specific market value trigger.³⁴ All contingent capital proposals are crucially dependent on what triggers a conversion or call, and specifying appropriate triggers has proved difficult.³⁵

³¹ CCMR Plan for Regulatory Reform, above n 1, at 81. Financial Accounting Standards Board (FASB) Chairman Bob Herz has also endorsed this approach. Robert H. Herz, 'Remarks to AICPA National Conference on Current SEC and PCAOB Developments' 8 December 2009, at 15 http://www.fasb.org/cs/ContentServer?c=Document_C&pagename=FASB/Document_C/DocumentPage&cid=1176156571228 (visited 5 March 2010).

³² Both US (GAAP) and IFRS accounting rules operate according to an incurred loss model (embodied, for example, in Financial Accounting Standards or FAS 5 and FAS 114) under which a financial institution records an impairment only after the associated financial asset is known to have incurred a loss. This principle governs even when the exact amount of the loss is not known with specificity and must be estimated based on past experience (for example, in the case of receivables, losses on which may be known to have been incurred but not identified specifically). Expected future losses, by contrast, are not reserved against under the incurred loss model and thus are not deducted from income. Financial Accounting Standards Board, 'Statement of Financial Accounting Standards 5, Accounting for Contingencies'; 'Statement of Financial Accounting Standards 114, Accounting by Creditors for Impairment of a Loan, Amendment to FASB Statements No. 5 and 15'. The incurred loss model is a staple of both US GAAP and IFRS accounting, but has been subject to recent criticism and challenge, for example, in the International Accounting Standards Board's November 2009 exposure draft outlining a proposed expected loss model to replace the incurred loss model in connection with financial asset reporting. IASB Press Release, International Accounting Standards Board (IASB) publishes proposals on the impairment of Financial Assets 5 November 2009, <http://www.iasb.org/News/Press+Releases/IASB+publishes+proposals+on+the+impairment+of+financial+assets.htm> (visited 5 March 2010); IASB, 'Financial Instruments: Amortised Cost and Impairment' (Exposure Draft, November 2009), <http://www.iasb.org/NR/rdonlyres/9C66B0E5-E177-4004-A20B-C0076FCC3BFB/0/vbEDFIImpairmentNov09.pdf> (visited 5 March 2010).

³³ CCMR Plan for Regulatory Reform, above n 1, at 81; see also Anil K. Kashyap, Raghuram G. Rajan and Jeremy C. Stein, 'Rethinking Capital Regulation', (prepared for Federal Reserve Bank of Kansas City symposium on 'Maintaining Stability in a Changing Financial System', Jackson Hole, Wyoming, 21–23 August 2008); Mark Flannery, 'No Pain, No Gain? Effecting Market Discipline via Reverse Convertible Debentures', in Hal S. Scott (ed), *Capital Adequacy Beyond Basel: Banking Securities and Insurance* (Oxford: Oxford University Press, 2005).

³⁴ CCMR Plan for Regulatory Reform, above n 1, at 81; Kashyap et al., above n 33; Flannery, above n 33.

³⁵ Standard & Poor's research on contingent capital draws out these criticisms. It states that since bank capital ratios are typically not comparable, any specific ratio (such as a 5% Core

The fifth part of the capital proposal envisions the building of ‘capital buffers’ through ‘capital conservation’. This proposal envisions that banks should hold capital above the regulatory minimum in good times and that, when capital has been drawn down, discretionary distributions of earnings—through dividends or share buybacks, for example—should be restricted. First, a capital conservation range, of an unspecified amount, would be established above the minimum requirement. Then, for example, if a bank’s capital fell to a level above the minimum requirement equal to 30% of the capital conservation range, a bank might be required to conserve 80% of its earnings.

B. Liquidity

In 2008, the Basel Committee issued ‘Principles for Sound Liquidity Risk Management and Supervision’ focusing on management of liquidity.³⁶ While this included the principle that banks should maintain a sufficient cushion of high quality liquid assets to meet contingent liquidity needs, no methodology was presented for making this determination. A similar process-oriented approach was adopted by US regulators in 2010.³⁷

In its liquidity proposal of December 2009, such a methodology was put forward for internationally active banks.³⁸ Two objectives are formulated: (i) that banks should have sufficient high quality liquid resources to survive an acute stress scenario lasting one month, formalized in a Liquidity Coverage Ratio and (ii) that banks should have stable funding in the longer term, formalized in a Net Stable Funding Ratio.³⁹ The Liquidity Coverage Ratio, on which I focus here, requires that the stock of ‘high quality

Tier 1, for example) would not apply equally to all banks. Standard & Poor’s capital analysis, for example, would take account of how likely a conversion would be to happen in a time of stress—this depends on what type of financial stress scenario the trigger ratio would represent. For contingent capital to be effective in a time of stress, the conversion would need to happen quickly, which may be difficult depending how often the trigger ratio is monitored. Expectations about the likelihood of a conversion may also negatively affect the share price and market confidence. If the conversion trigger is set at a level that would lead to a conversion occurring too late, then Standard & Poor’s treats the contingent capital security as having minimal equity credit. Standard & Poor’s Research, *Contingent Capital is not a Panacea for Banks* 10 November 2009, at 2–3 www2.standardandpoors.com/spf/pdf/.../FITcon1110Article4.pdf (visited 5 March 2010).

³⁶ BCBS, ‘Principles for Sound Liquidity Risk Management and Supervision’, (June 2008), <http://www.bis.org/publ/bcbs138.pdf> (visited 5 March 2010).

³⁷ Department of the Treasury, Federal Reserve System, FDIC, National Credit Union Administration, *Interagency Policy Statement on Funding and Liquidity Risk Management*, 75 Fed. Reg. 13656 (22 March 2010), <http://www.federalreserve.gov/boarddocs/srletters/2010/sr1006a1.pdf> (visited 5 March 2010) 2010.

³⁸ BCBS, *International Framework for Liquidity Risk Measurement, Standards and Monitoring*, (Consultative Document, December 2009), <http://www.bis.org/publ/bcbs165.pdf> (visited 5 March 2010).

³⁹ In a tacit acknowledgement of the difficulty of setting liquidity standards, the proposal made in December 2009 for a Net Stable Funding Ratio (*ibid*) was abandoned by the Basel

assets' is 100% of net cash outflows over the 30-day time period, where outflows are predicated on a stress scenario.

This scenario covers 'both institution-specific and systemic shocks' modeled on circumstances encountered in the global financial crisis. The scenario entails: (i) a significant downgrade of the institution's public credit rating; (ii) a partial loss of deposits; (iii) a loss of unsecured wholesale funding; (iv) a significant increase in secured funding haircuts; and (v) increases in collateral calls for derivatives and substantial calls on contractual and non-contractual off-balance sheet exposures. The methodology goes on to specify what instruments qualify as high quality liquid assets, e.g. cash or sovereign debt, and what haircuts should be given to other instruments (corporate bonds would receive a 20–40% haircut depending on quality). Net cash outflows would be assumed to occur at different rates for different liabilities—e.g. at least 5% for stable retail deposits and 75% for unsecured wholesale funding provided by non-financial corporate customers, and other unsecured wholesale funding at 100%.

These particular quantitative standards are untested and no clear justification of them is provided in the proposal. They are sure to have a major impact on financial institutions. Given the poor track record for capital requirements, is there any reason to believe the Basel Committee can do better on liquidity, which is, if anything, a more difficult subject? One significant issue in the methodology is its failure to factor in the role of central banks as lenders of last resort. Traditionally, we have not required a solvent bank to have sufficient liquidity to survive a run on banks caused by the insolvency of other banks. Of course, with a deposit base and deposit insurance, such runs are much less likely than for institutions with more wholesale funding. The Basel proposal quite properly recognizes this, even if it is hard to justify particular run-off percentages. But runs on banks with a high percentage of liabilities in deposits can still occur either because deposit insurance is limited in amount or because depositors are irrational. In such circumstances, central banks have acted as lenders of last resort to banks that can post adequate collateral. Put another way, the system is dependent, and should be dependent, on liquidity coming from central banks in certain circumstances—a fact that the Basel Committee does not address or factor into its calculations. Of course, we witnessed this at work in the crisis where central banks met the liquidity needs of banks and other financial institutions that were able to supply adequate collateral. In my view, this was perfectly proper.

One major overall problem in the Basel Committee's approach to both capital and liquidity is that its requirements are only focused on banks. As we

Committee in its July 2010 revisions. While the Committee reiterated its intention to introduce such a standard, it admitted that the original proposal needed to be modified.

saw in the crisis, these are not the only institutions that can trigger or be the victims of a liquidity crisis. The assisted acquisition of Bear Stearns, the conservatorship of AIG, and the failure of the Reserve Primary Fund, a money market fund, triggered liquidity runs whose victims included, but were not limited to, banks. While the conversion of US investment banks to banks serves to diminish the scope issue with the Basel rules, future runs could still be caused by liquidity problems experienced at non-banks, including hedge funds (c.f. Long-Term Capital Management). The G-20 and Financial Stability Board, together with the Basel Committee, need to address this problem.

VI. THE NEED FOR ADDITIONAL APPROACHES TO CAPITAL ADEQUACY

A. The determination of the proper amount of capital

The most fundamental issue—how much capital banks or other financial institutions should be required to maintain—has gone largely unaddressed. Basel I ‘back-solved’ into an 8% requirement in 1988 to prevent an increase in bank capital as a result of implementing the new regime.⁴⁰ Basel II basically adopted the same approach following several quantitative impact studies.⁴¹ So the general question is, regardless of how capital is measured, how much capital should be required? More fundamentally, can regulation really determine what the right amount of capital is? This is unlikely, based on the poor experience with the somewhat analogous endeavors to regulate prices of goods and services in the USA and elsewhere.⁴² Even more daunting is the determination of the correct capital ‘price’ on risk.

Not surprisingly, regulatory capital requirements (including leverage ratios) have not acted as a binding constraint on the amount of capital banks actually hold, given the lack of a solid foundation.⁴³ In 2007, before the crisis, the regulatory capital ratio for the top 20 US banks (accounting

⁴⁰ BCBS, above n 5; CCMR Plan for Regulatory Reform, above n 1, at 62.

⁴¹ See: Bank for International Settlements (BIS), Quarterly Review, 2 (September 2009); see also BCBS, Results of the Second Quantitative Impact Study (November 2001), <http://www.bis.org/bcbs/qis/qishist.htm> (visited 5 March 2010); BCBS, Results of the Quantitative Impact Study 2.5 June 2002, <http://www.bis.org/bcbs/qis/qis25results.pdf> (visited 5 March 2010); BCBS, Quantitative Impact Study 3, Overview of Global Results (May 2003), <http://www.bis.org/bcbs/qis/qis3.htm> (visited 5 March 2010); BCBS, Results of the Fourth Quantitative Impact Study (March 2005), <http://www.bis.org/bcbs/qis/qis4.htm> (visited 5 March 2010); BCBS, Results of the Fifth Quantitative Impact Study (June 2006), <http://www.bis.org/bcbs/qis/qis5.htm> (visited 5 March 2010).

⁴² See H. Boissevain et al., ‘The Effectiveness of Phase II Price Controls’, 5 *Interfaces* 33 (1975); Fiona M. Scott Morton, ‘The Problems of Price Controls’, *Regulation* 50, Spring 2001, 50, <http://www.cato.org/pubs/regulation/regv24n1/morton.pdf> (visited 5 March 2010); Dwight R. Lee and Richard B. McKenzie, *Failure and Progress: The Bright Side of the Dismal Science* (Washington, DC: Cato Institute, 1993), 56.

⁴³ Andrew Kuritzkes and Hal Scott, ‘Markets are the Best Judge of Bank Capital’, FT.COM, 23 September 2009, <http://www.ft.com/cms/2ca160b0-a870-11de-9242-00144feabdc0.html> (visited 5 March 2010).

for almost two-thirds of the nation's banking assets) averaged 11.7%.⁴⁴ This figure was nearly 50% above the minimum regulatory requirement of 8 and 17% above the 'well-capitalized' standard of 10%.⁴⁵ As a result, banks held more capital than regulation required due to the constraints of their own internal economic models and market demands.⁴⁶

On the other hand, new proposals for more capital risk being excessive, as the regulatory pendulum swings in the direction of being more constraining in light of the financial crisis. The calls for more capital are not restricted to Basel. The G-20 and US regulatory reform call for capital above Basel levels for systemically important institutions to combat the too-big-to-fail problem.⁴⁷ But the actual systemic risk charge and how to assess it, has yet to be determined.⁴⁸ Increased capital requirements could dampen economic activity at the very moment when recovery is in the balance. While it is true that the new proposals do not envision implementation until the end of 2012, banks cannot wait that long to alter their businesses and will begin to plan their activities now in light of higher capital requirements in 2.5 years.⁴⁹

In light of the difficult challenges facing regulators attempting to specify the appropriate amount of capital for a given quantum of risk, governments should explore expanded use of market forces as a complement to regulation to address the capital problem for publicly traded financial institutions.⁵⁰ For example, market forces could be harnessed to impose greater discipline and give regulators a market-based warning of bank difficulties (signaled by the spread from a Treasury benchmark on the subordinated debt yield) provided two conditions are met: (i) the market must have better information about the institutions' riskiness, and (ii) investors in institutions must be forced to bear some risk for their failure due to holding 'unbailable' unsecured credit instruments, such as subordinated debt, and the prospect of experiencing eventual substantial losses on 'bailable' instruments, such as unsecured

⁴⁴ See also: Klaus Schaeck and Martin Cihák, 'Banking Competition and Capital Ratios', IMF, Working Paper No. WP/07/216, 28 March 2010), <http://ssrn.com/abstract=1579625> (visited 5 March 2010).

⁴⁵ Kuritzkes and Scott, above n 43.

⁴⁶ *Ibid.*

⁴⁷ G-20, 'Leader's Statement: The Pittsburgh Summit', 24 September 2009, 13 <http://www.pittsburghsummit.gov/mediacenter/129639.htm> (visited 5 March 2010) 2010. See also Bair, above n 26; Dodd-Frank Act §171(b)(1)-(2).

⁴⁸ The IMF has suggested two possible approaches, each with substantial methodological difficulties: using a 'standardized approach' based on an institution's systemic risk rating or assessing an institution's additional contribution to systemic risk and its probability of distress. IMF, 'Global Financial Stability Report', April 2010, ch. 2. See also: Jorge Chan-Lau, 'Regulatory Capital Charges for Too-Connected-to-Fail Institutions: A Practical Proposal' (IMF, Working Paper WP/1098, April 2010).

⁴⁹ See bank criticisms in BNA's Banking Report, 94 BBR 736 (20 April 2010).

⁵⁰ CCMR Plan for Regulatory Reform, above n 1, at 27.

short-term debt or in-the-money derivative positions. The Shadow Financial Regulatory Committee recommended the subordinated debt approach in 2000,⁵¹ although some have criticized this proposal as impractical given the poorly developed market in the USA for subordinated debt.⁵² Hart and Zingales have proposed that market signals could alternatively be provided by the spreads on CDS referencing banks, instruments where payment is triggered when banks default on their debt.⁵³ This proposal would sidestep the practicalities of banks issuing subordinated debt. However, if creditors of failing or failed banks do not experience losses, CDS spreads will not be accurate. Losses for writers of CDS depend on an event of default and on the value of auctioned debt under International Swaps and Derivatives Association protocols if there is a default because the more the debt is worth, the lower the CDS payoffs.⁵⁴ If debt is bailed out, the exposures of CDS writers will be distorted. Thus, as a complement to these market mechanisms, it would be imperative to design a resolution system that imposes losses on debt holders.

Market signaling through benchmark spreads is only as useful as the information on which the signals are based. There are critical inadequacies in the information presently disclosed by banks. The results of supervisory examinations are generally not revealed to the market, and bank disclosures are difficult to compare from bank to bank. However, as part of government rescue efforts during the financial crisis, the US Treasury and the Federal Reserve sought to subject banks to a so-called 'stress-test' (Supervisory Capital Assessment Program, or SCAP) to measure the amount of capital they would need to operate soundly in the near term. Most immediately, the

⁵¹ US Shadow Financial Regulation Committee, 'Reforming Bank Capital Regulation' 2000 at 42.

⁵² See, e.g., Bert Ely, 'Sub debt – Silver Bullet or Big Dud?', 5 Financial Regulation 32 (2000), <http://www.ely-co.com/reports/SubDebt.pdf> (visited 5 March 2010).

⁵³ Oliver Hart and Luigi Zingales, 'A New Capital Regulation for Large Financial Institutions' (Center for Economic Policy Research, Discussion Paper No. DP7298, September 2009), http://faculty.chicagobooth.edu/luigi.zingales/research/papers/a_new_capital_regulation.pdf (visited 5 March 2010). There would be significant issues with using these market signals as a basis for federal intervention into the affairs of a bank, as suggested by the authors, due to the unreliability of CDS spreads in a crisis resulting from the lack of liquidity and trading in the instrument. This was the case during the past crisis when, for example, Goldman Sachs and Morgan Stanley saw their CDS spreads shift hundreds of points in a single trading day. J.P. Morgan, too, saw its spreads widen to levels approaching those of junk bonds. See eg, Alistair Barr, 'Fate of Remaining Big Independent Brokers in Focus', MarketWatch.com, 15 September 2008, <http://www.marketwatch.com/story/fate-of-remaining-big-brokers-in-focus-after-lehman-collapse> (visited 5 March 2010); Ryan Vlastelica, 'Morgan Stanley CDS Spreads Plunge' 183 BPS; Goldman Sachs, Merrill, Wachovia CDS Fall, Forbes.com, 19 September 2008, <http://www.forbes.com/feeds/afx/2008/09/19/afx5446908.html> (visited 5 March 2010); John Beck, 'CDS Spreads Tighten' as Bailout is Revised, Risk.com, 1 October 2008, <http://www.risk.net/risk-magazine/news/1503631/cds-spreads-tighten-bailout-revised> (visited 5 March 2010).

⁵⁴ CFA Institute, Derivatives and Alternative Investments G-11 (2008).

results of these tests were used to determine which banks could safely repay their Troubled Asset Relief Program (TARP) funds. Broadly, the stress tests sought to assess the performance of bank capital for 19 US banks under two scenarios, one based on a consensus economic forecast, the other on a 'worst-case' outcome. The stress test applied a common methodology to all of the banks, modeling patterns of bank earnings, investment losses, and macro-economic conditions. Where certain banks were found to be wanting, the stress tests were used to specify the amount of additional capital that they would be required to raise to place their future operations on a sounder footing.

Most importantly for future policy, the overall results of the stress test were publicly disclosed on a bank-by-bank basis, though the level of the disclosure was fairly general.⁵⁵ Rather than spooking the market and triggering bank runs—a common justification for not revealing the results of bank examinations—the disclosure had a calming effect. This may be because the market abhors uncertainty even more than poor results or because the stress test results were generally positive.

We need to explore the feasibility of regularly disclosing stress tests results to improve market information. Apart from the disclosure issue, we need to explore the design of the test. The 2009 test was designed for the specific purpose of determining what institutions should be free to exit TARP by repaying the US government investments.⁵⁶ Regular stress tests would be designed for a different purpose, to provide additional information to the market as well as to give regulators notification of potential problem institutions. The design of scenarios is a key component of a stress test, and it can be argued that it is inherently difficult to predict the future, particularly as one departs from market predictions in the form of consensus forecasts. Indeed, as we now know in hindsight (see Table 1), the SCAP forecasts were unduly pessimistic.

Beyond what can be learned from periodic stress tests, there may also be a need for more periodic disclosure by banks of key information that is presently not made available. Such disclosure could include more information from models (including sensitivity assumptions) and inputs, internal loan ratings, positions in risky securities (like CDOs) and large concentrations.

⁵⁵ Board of Governors of the Federal Reserve System, 'The Supervisory Capital Assessment Program: Design and Implementation' (April 2009), http://www.federalreserve.gov/news_events/press/bcreg/bcreg20090424a1.pdf (visited 5 March 2010).

⁵⁶ Daniel K. Tarullo, Governor, Federal Reserve Board, Remarks at the Federal Reserve Board International Research Forum on Monetary Policy (26 March 2010), <http://www.federalreserve.gov/newsevents/speech/tarullo20100326a.htm> (visited 5 March 2010).

Table 1. Economic scenarios: baseline, more adverse and actual

	2009	2010
Real GDP		
Average baseline	-2	2.1
More adverse	-3.3	0.5
Actual	-2.4	n/a
Civilian unemployment rate		
Average baseline	8.4	8.8
More adverse	8.9	10.3
Actual	9.3 ^a	9.7 ^b
House prices		
Average baseline	-14	-4
More adverse	-22	-7
Actual	-2.4	n/a

^aUnemployment hit 10.1% in October 2009, before closing the year at 9.3%.

^bThrough 26 February 2010.

Source: Andru Wall, Paper for International Finance Seminar, Harvard Law School (2010).

B. Regulatory and accounting measures of capital

Let me return to the issue of the relationship between regulatory and accounting measures of capital. Currently, an important difference between the Basel definition of Tier 1 capital and the accounting measure of capital is that the Basel measure ignores equity losses or gains attributable to mark-to-market available-for-sale assets, as required by the accounting rules of the Financial Accounting Standards Board and the International Accounting Standards Board. This is because bank regulators have traditionally believed that mark-to-market changes do not fairly portray bank capital. As discussed, the Basel Committee is now proposing to include these marks in measurement of capital in order to unite the regulatory and accounting standards more firmly, but this remains highly controversial.

It is puzzling how this difference has survived under current legislation in the USA. Since the thrift crisis, regulatory accounting principles (RAP) have generally had to conform to general accounting principles—the 1991 FDICIA legislation requires that RAP cannot be ‘less stringent’ than generally accepted accounting principles (GAAP).⁵⁷ But, this has placed

⁵⁷ The Federal Deposit Insurance Corporation Improvement Act of 1991, H.R. 3768, 102nd Congress, generally requires that accounting principles applicable to reports or statements required to be filed with US banking agencies ‘result in financial statements or reports of condition that accurately reflect the capital of such institutions.’ 12 U.S.C. §1831(n)(a)(1)(A) (2006). The Act further provides, in subsection (n)(a)(2)(A), entitled ‘Uniform accounting principles consistent with GAAP’, that ‘reports and statements’ required to be filed by depository institutions shall be uniform and consistent with US GAAP. Furthermore, subsection (n)(a)(2)(B), entitled ‘Stringency’, provides that if a banking agency determines that US GAAP does not accurately reflect capital, it may prescribe a different accounting principle, but one ‘which is no less stringent’ than US GAAP. US banking regulators apparently take the view that the ‘reports and statements’ do not apply to regulatory capital requirements.

enormous regulatory and political pressure on accounting standards to accommodate regulatory and political concerns that stem from banks not having adequate capital, and the resulting need for public money. Indeed, at the very time that the Basel Committee is seeking to import more fair value accounting into the measurement of bank capital, many in industry and the EU itself have been trying to diminish the role of fair value accounting for accounting purposes⁵⁸ given the general unification between regulatory and accounting measurement. Bifurcation of these two standards may be a better solution, while also ensuring that regulators cannot invoke this authority as an excuse for forbearance. A neutral third party—whose identity would have to be decided—would have to determine that a regulatory approach, diverging from GAAP, was reasonable.⁵⁹ I do not believe regulators will adopt the same fair value accounting as is presently described under accounting standards, and it would be bad for investors to have their accounting shaped by the concerns of bank regulators.

VII. CONCLUSION

However elusive a concept ‘systemic risk’ may be, capital requirements reflecting true balance sheet values and market risks are indisputably necessary to shore up a financial system against the threat of a chain-reaction collapse arising from a bank or large financial institution’s inability to meet its obligations.

The ability of the Basel methodology to protect the financial system from future risk without excessive limits on financial (and therefore economic) activity is doubtful. Is there any reason to believe regulators can be more successful in pricing risk than bureaucrats have been in pricing goods? The world is too complicated and fast changing for this to work. We must, therefore, harness market discipline to play a key role in this process. But this has its own set of challenges. Without eliminating all but assured bailouts for systemically important institutions, creditors will not adequately police financial institution’s capital. And further, without the right information, the market will be unable to estimate the right amount of capital.

However, since reports and statements required to be filed with the agencies include those reflecting regulatory capital requirements, this interpretation would seem to be quite weak. Furthermore, the legislative history seems to belie this interpretation. The House Conference Report on H.R. 3768 states that the appropriate Federal banking agency or the FDIC is authorized to prescribe accounting principles applicable to insured depository institutions that are more stringent than GAAP. H.R. Rep. No. 102-330 (19 November 1991). There is no statement that they can be more lax.

⁵⁸ See above n 24.

⁵⁹ Herz, above n 31, at 7.