Regulation of the Financial Sector

What Future for Basel II?

Andrea Resti* and
Andrea Sironi*

Introduction

The financial crisis that severely hit the international banking industry during the last few years has clearly highlighted a number of problems and weaknesses associated with the prudential regulatory framework centred on risk-weighted capital adequacy requirements. Indeed, the system generally known as "Basel 2" has been strongly criticised by many observers who consider it as partly responsible for the financial and economic crisis originated by the US subprime mortgages. While we believe that most of this criticism is not well grounded, if not for the simple reason that Basel 2 was not yet effective when the crisis originated (and fully came into force in January 2008), we also recognise that the current capital adequacy framework suffers from a number of weaknesses that were clearly highlighted by the recent crisis. These very weaknesses gave rise to the recent proposals by the Basel Committee to revise the capital adequacy framework (Basel Committee 2009) and can be summarised as follows.

- *Quality and amount of bank capital*. Most of the banks that suffered significant losses and required government support were apparently well capitalised – according to the risk weighted capital ratios – a few months before the crisis. E.g., the average Tier 1 ratio of the European large and complex banking organisations was approximately equal to 8 percent – well above the minimum 4 percent required by the Basel rules, at the end of 2006. Also, most of the hybrid and innovative instruments counted as regulatory capital proved to be poor loss absorbers during the financial crisis.
- *Banking versus trading book regulatory capital arbitrage*. During the recent financial crisis a number of large financial institutions suffered significant losses on their trading portfolios. These losses were mostly credit losses related to debt instruments that were originally shifted from the banking book to the trading book, due to relatively lower risk capital requirements – especially under the internal model approach.
- *Pro-cyclicality*. One of the weaknesses of the Basel 2 capital adequacy framework is its intrinsic tendency to exacerbate economic fluctuations. This is due to the fact that risk-based capital requirements tend to increase during recessions, thereby pushing banks to cut lending and therefore exacerbate the downturn. The opposite occurs during economic expansions: capital requirements tend to decrease and banks have wider margins to increase lending. This phenomenon played a role during the recent financial crisis as many banks were capital-constrained and went through a "deleveraging" process, which in turn exacerbated the downturn both of financial markets and of the real economy.
- *Liquidity risk*. One of the major issues that clearly emerged from the crisis was the need to improve the measurement and management of liquidity risk. Indeed, a number of large banks, implicitly relying on the traditional huge liquidity of the interbank market, went through a liquidity stress period and were able to overcome the crisis only thanks to the significant amount of cheap liquidity made available by central banks.
- *Systemic banks*. During the recent financial crisis a number of institutions have been bailed out by governments through direct financial support, due to the high risk that their bankruptcy might generate a systemic crisis. These institutions were generally considered as significantly interconnected to others through the interbank market or other credit exposures such as OTC derivatives.

In the next sections, we discuss each of the above issues in more detail and briefly describe the proposals recently put forward by the Basel Committee and other international bodies such as the Financial Stability Board.

* Centre for Applied Research in Finance (CAREFIN), Bocconi University, Milano.

The quality of capital

During the last 20 years banks have increasingly resorted to "hybrid" or "innovative" capital instruments, that is, to funding instruments which lie between equity capital and debt (e.g., they have no voting rights and entail a fixed coupon, like bonds, but interest payments may be deferred or cancelled, depending on the bank's current profits, and even the principal may be slashed against losses "on a going concern basis").

This drift towards hybrid capital was motivated by a number of causes: first, equity holders wanted to raise new capital without diluting their control rights; second, hybrid capital qualifies as debt for the taxman, hence provides the bank with a fiscal shield; third, innovative capital could better fit the risk/return profile of some classes of large institutional investors which would not have put their money in common equity.

However, hybrid and innovative capital instruments were plagued by an intrinsic ambiguity: while regulators were willing to consider them as capital (although within some quantitative limits), investors were confident that banks would in the end treat them as plain debt and would refrain from cancelling any interest or principal payments to avoid reputation costs and future squeezes on funding. Indeed, even during the recent financial crisis a surprisingly small amount of institutions made use of the cancellation clauses embedded in hybrid securities.

Furthermore, while the crisis highlighted the fragility of these forms of capital and their "low equity content", banks increased their demand for innovative instruments. As noted by Acharya, Gujral and Shin (2009): "Even as banks and financial intermediaries have suffered large credit losses in the financial crisis of 2007–09, they have raised substantial amounts of new capital. However, the composition of bank capital has shifted from [...] common equity to [...] debt-like hybrid claims such as preferred equity and subordinated debt. The erosion of common equity has been exacerbated by large scale payments of dividends". Interestingly enough, during the crisis even governments promoted and underwrote new classes of hybrid securities in a attempt to rescue banks without meddling too much with their management, while preserving a reasonable expectation that public money would be paid back.

The Basel Committee is currently envisaging a new regulation on hybrid instruments to curb down excesses and ensure that an adequate share of a bank's capital consists of "plain vanilla" common equity, with full loss-absorbing potential. Such a reform would include: a simplification in the definition of capital (both "Tier 1" and "Tier 2"), focusing on financial instruments which can absorb losses on a going concern basis; a further international harmonisation of the way hybrid and innovative capital is defined and dealt with by regulators; a simpler and more consistent definition of (upper) Tier 1, aimed at ruling out non-perpetual securities as well as securities embedding call options or step-up clauses.

As a way to improve capital quality, regulators may also consider the introduction of "reverse convertible" subordinated bonds, which could/should be converted into common equity upon occurrence of some trigger which cannot be controlled by the bank (say, a large drop in the share price or in the stock market index).

Regulatory arbitrage between banking and trading book

During the recent financial markets turmoil, a number of major banks experienced large losses, mostly on their trading books. Such losses often were not captured in the 99 percent, 10-day VaR measures underlying the market risk capital requirements for banks with an internal model validated by their supervisors. More specifically, these losses were related to sudden, unexpected price changes that affected credit-related products such as the ones resulting from securitisation transactions. These price changes were in turn due to defaults but also to other sources of price risk, such as credit migrations and significant moves of credit spreads and equity prices.

More generally, a regulatory arbitrage issue clearly emerged, as a significant number of credit-related positions had been included in the trading book because of the relatively lower capital charge associated to market risk capital requirements for banks using a validated internal model.

In order to face these problems, in July 2009 the Basel Committee has put forward a number of proposals mostly aimed at strengthening the capital requirements associated to market risk and, more specifically, at better capturing default, migration and spread risks. Two new additional requirements are going to be introduced: the Incremental Risk Charge

(IRC) and Stressed VaR. The former is based on a one-year, 99.9 percent confidence value at risk measure and should adequately reflect the liquidity of the positions. The latter is intended to replicate VaR for the bank's current portfolio if the relevant market factors were experiencing a period of stress. Such a period must be approved by the supervisor and regularly reviewed. More specifically, this additional requirement takes into account a historical period with significant losses and is based on a ten-day value at risk with 99 percent confidence level. Both these additional requirements are aimed at reducing incentives for regulatory arbitrage between the banking and trading books.

While the other proposals of the Basel Committee briefly discussed below are expected to be subject to a consultative process and may not become effective before the end of 2012, these two new requirements should come into force by the end of 2010. They will have a significant impact on the relative convenience – in terms of capital savings – of the internal models-based approach, as opposed to the standardised one, for market risk capital requirements.

Procyclicality

Financial systems have an intrinsic tendency to exacerbate business cycle fluctuations rather than smoothing them out. A certain degree of such pro-cyclicality is a natural and sensible outcome when it reflects changes in the real economy. However, the financial system is excessively procyclical when it unnecessarily amplifies swings in the real economy and by doing so undermines the stability of financial institutions; the 2007/9 crisis was a good case in point.

Risk-based minimum capital requirements tend to have a procyclical effect, as the deterioration of the quality of bank loan portfolios during economic downturns inevitably increases banks' risk – and therefore the level of capital requirements – exactly when capital becomes more expensive or simply unavailable to weaker institutions. This effect, which may lead to a credit crunch, can be expected to be particularly evident under the new Basel Accord, as capital requirements are based on ratings, and hence more risk-sensitive.

However, cyclical shortages of banks' capital may not only be due to Basel II but also to a lack of risk-based regulations on the banks' loan loss provisioning practices. The widely-accepted idea that bank capital should provide a buffer against unexpected losses is in fact based on the implicit assumption that expected losses have already been absorbed by properly-set loan loss reserves. When, instead, loan loss reserves are inadequate, losses will sharply affect banks' capital and the impact of capital shortages on the real economy will be magnified. As a result, for economies where proper provisioning norms are not embedded in bank practices – as is the case for almost all countries – the lack of a coherent and internationally accepted regulation of loan loss provisions could reduce the effectiveness of minimum capital regulation and further increase pro-cyclicality.

Regulators have recently been discussing four possible reforms to contrast procyclicality. Such mechanisms, which might complement each other, can be briefly summarised as follows:

- banks may be asked to "stress" their internal estimates of the borrowers' PDs (probabilities of default) by multiplying them by some scalar greater than one, to make them consistent with a possible economic downturn (so-called "through-the-cycle" PDs); such proposals have been put forward by the CEBS and the FSA;
- banks may have to set aside mandatory provisions each time their actual write-offs are below some regulatory estimate of the expected loss "implied" by their current loan portfolio; to achieve this, accounting standards (namely, IFRS 39) would have to be updated so that they allow for provisioning against losses which have not already been incurred (such a proposal has been circulated by the International Accounting Standards Board);
- similarly, minimum capital requirements may be made countercyclical by requesting that a buffer be built up in times of economic expansions; such a proposal is expected to be presented in detail by the Basel Committee by July 2010;
- "capital conservation" rules may limit dividends (and other capital outflows) so that banks retain more capital in periods of economic growth.

Liquidity

Liquidity risk is the risk that a bank may not be able to pay back its liabilities in a timely manner because of an unexpectedly high amount of claims; or that, more realistically, it may be able to meet those

requests only by quickly selling ("fire sale") large amounts of assets, at a price that is below their current market value, thereby suffering a loss.

Accordingly, liquidity risk includes two different profiles: funding risk (the bank is not able to orderly face expected or unexpected cash outflows) and market liquidity risk (to liquidate a sizable amount of assets, the bank causes a significant price fall due to the low depth, or due to a momentary disruption, of the securities markets). Although separate in principle, those two risks are deeply connected, as a bank wishing to face unexpected cash outflows may have to sell a large amount of securities on the market, causing prices to drop and prompting further liquidity outflows (e.g., due to margin calls on collateralised debts).

According to many experts (Institute of International Finance 2007) liquidity risk has increased, over the last few years, because of several factors. The globalisation of large financial groups has led them to have assets and liabilities in place with a large number of counterparties, also through subsidiaries operating in emerging countries; this makes it harder to keep a complete and updated picture of all possible future cash flows. Technology has increased the speed at which funds can be moved away from banks; this is true not only for large, professional counterparties but also, due to internet banking, for retail customers. Securitisations made it possible for banks to turn into liquid funds those assets (like mortgages or instalment loans) that could hardly be traded on a secondary market; yet, they often involved, for originating banks, the commitment to provide liquidity lines upon request. The increased role of investors, like hedge funds, using leverage to carry out "arbitrage" strategies, makes it more likely for markets (especially less developed and more peripheral ones) to witness sudden liquidity crises. The mergers and acquisitions among large financial groups have created a small number of large institutions, accounting for a large share of the overall banking system; a default – or even a momentary withdrawal from trading and settlement systems – of these mega-banks would have deep implications for the whole financial system. The rise in competition on banking products and the shift from relationship banking to transaction banking have increased the role, on both sides of banks' balance sheets, of products that are sensitive to market conditions (such as interest rates and the banks' ratings) and therefore have quite volatile volumes.

The recent financial crisis has shown how severe liquidity shortages can become when confidence collapses, counterparty risk explodes and OTC markets dry up, and when the marketability of thinly-traded securities is disrupted by increased price opaqueness. The large liquidity crashes that occurred in the interbank market after the summer of 2007 have prompted The Economist to resurrect an old Woody Allen's joke: "Not only is there no God, but try getting a plumber on weekends".

As a response to the crisis, the Basel Committee has recently proposed two measures of liquidity risk which are expected to become formally-adopted standards for internationally-active banking organisations; these are the "liquidity coverage ratio" (an algorithm for estimating the amount of unencumbered, high quality liquid assets an institution could use to offset its net cash outflows during an acute, short-term stress scenario) and the "net stable funding" ratio (a formula to compare the amount of long-term, stable sources of funding available to a bank to the liquidity profile of its assets, accounting for contingent calls on liquidity arising from off-balance sheet commitments). The Committee has also put forward a number of monitoring tools to be used by supervisors to check the liquidity risks of individual institutions.

Systemic banks

One of the problems that emerged during the recent financial crisis relates to the interconnectedness or "entangledness" of some large financial institutions. This phenomenon exacerbated the crisis by favouring the transmission of the shocks from one institution to the others, and indeed represents the very reason why governments and regulators felt obliged to intervene and bail out a number of financial institutions. More generally, as stated by the Basel Committee itself, while procyclicality amplified shocks over the time dimension, the interconnectedness of many large banks and other financial institutions transmitted negative shocks across the financial system and economy.

Bear Stearns is a good case in point. As clearly highlighted by The Economist back in March 2008: "Bear is a counterparty to some $10 trillion of over-the-counter swaps. With the broker's collapse, the fear that these and other contracts would no longer be honoured would have infected the world's derivatives markets. Imagine those doubts raging in all the secu-

rities Bear traded and from there spreading across the financial system; then imagine what would happen to the economy in the financial nuclear winter that would follow. Bear Stearns may not have been too big to fail, but it was too entangled."

The Basel Committee has acknowledged this problem and is developing practical approaches to assist supervisors in measuring the importance of banks for the stability of the financial system and the real economy, as well as reviewing policy options to reduce the probability and impact of failure of systemically-important banks. The Committee is also considering the possibility of a capital surcharge and a liquidity surcharge for systemically important banks. The problem lies in the proper understanding of what factors make a bank a "systemic" one. Theoretically, one could argue that the most relevant factor is represented by the size of a financial institution, as proxied by its total assets. However, other factors may also play a role, such as the amount of interbank liabilities, the number and amount of OTC derivatives positions with a negative mark to market, the role played by the institution in the custody business or in securities underwriting. Recent empirical evidence (e.g., Adrian and Brunnermeier 2009) shows that banks with a larger maturity mismatch, a higher leverage, a larger size and a higher market to book ratio are also the ones with a more significant contribution to systemic risk. More research is needed to understand what factors – both from a microeconomic and macroeconomic point of view – make a financial institution a "systemic" one and whether an additional capital charge is the correct solution to this issue.

Summing up, the current debate on how Basel 2 should be reformed seems to be correctly focusing on the main weaknesses highlighted by the crisis, and the proposed remedies look appropriate, at least in their overall structure. However, the time needed to come to an international agreement on these reforms may reduce their effectiveness; also, the fear that more stringent capital requirements may lead to some form of credit crunch may induce regulators to water down their proposals before they finally come into effect.

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