

# **Deleveraging, capital instruments, and capital adequacy measures: key issues in the financial crisis and specific features of Italian banks**

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## Deleveraging, capital instruments, and capital adequacy measures: key issues in the financial crisis and specific features of Italian banks

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## Abstract

The purpose of this paper is to illustrate several issues in the debate on deleveraging and capital strengthening. Throughout the world, bank capital is subject to continuous pressure due to the unbroken cycle of write-downs to financial assets and of loan losses. More and more capital has had to be injected because the capital safeguards have proven to be inadequate. The crisis has revealed misbalanced financial structure, with high leverage and underestimated risks, notably in global and investment banks. Deleveraging, in its various forms, has become a priority. As the crisis intensified, capital strengthening has become a necessity. Within this perspective, the use of hybrid capital instruments has increased, especially among US banks, causing concern about the quality of capital raised. Another relevant topic is the proposal of setting EU common rules on hybrids. With respect to capital adequacy and deleveraging, the paper highlights the specific features of the Italian banking industry in the context of the global financial crisis. Finally, it shows several reform proposals regarding capital regime, capital adequacy measures and possible mechanisms for mitigating pro-cyclicality, focusing on the leverage ratio to complement Basel standard capital ratios, variable capital requirements over time, and dynamic provisioning.

## 1. Introduction

The financial crisis has drawn attention to several bank management issues that had been on the back burner during the previous cycle of sharp credit expansion, high liquidity, and low interest rates.

The crisis of confidence on the interbank market and the lack of liquidity, the squeeze on primary market issuance of bank bonds, the shuttering of the securitisation market and for structured products in general, and the across-the-board and indiscriminate increase in risk premiums have revived such issues as liquidity risk, funding problems and capital strength. The focus has shifted from growth to stability, from lending to funding, from so-called shareholder-friendly policies to deleveraging. Buy-back policies and dividend pay-outs, primarily extraordinary but in some cases even ordinary, have been suspended.

The losses and write-downs to loans and securities recorded by the banks most hit by the crisis have required appropriate capital strengthening measures. The capital increases have been engineered in the markets, with the support of SWFs, until the summer of 2008. However, though a significant amount of capital has been raised, it has only been enough to offset part of the write-downs and losses. In the face of this gap and forecasts of further losses and write-downs to loans, as the financial crisis extended to the real economy, the profitability outlook in the banking industry was increasingly downbeat, especially from the perspective of a prolonged recession. The capacity to generate profit was hampered by high funding costs, the decline in fees, losses on financial assets, and the deterioration, even going forward, in credit quality.

Deleveraging policies, through both capital increases and asset sales, together with the need to restore adequate liquidity margins in a context of expensive funding, contributed to triggering a downward spiral in asset prices, dragging down with them even the highest quality instruments.

Liquidity, funding, and capitalisation became key issues. Supervisory authorities, rating agencies, investors, analysts, and the market in general focused their attention on banks' soundness and capital adequacy, mostly on global banks and on major banks in domestic markets.

Over time, opinions converged over the need to strengthen the capital base among the main banks in an attempt to restore confidence in their solvency. With the outlook for earnings dimming and the emerging recessionary environment, it has become clear that banks need to

strengthen their ability to face the crisis and external shocks through more robust capital reserves.

As Governor Draghi has emphasised, for the bigger banks the capital reserves demanded by the market have increased due to the mounting uncertainty and murky transparency surrounding balance sheets. In mid-September 2008, Mr Draghi affirmed, "We estimate that banks are likely to need to raise at least once again the amount of capital raised since the crisis began" (Draghi 2008a).

In the context of the global credit crisis, eurozone banks on the whole were in better shape than US and UK banks, with some exceptions. Italian banks in particular stood out in a positive light because of their lower exposure to risky assets, their more conservative business model, and low financial leverage.

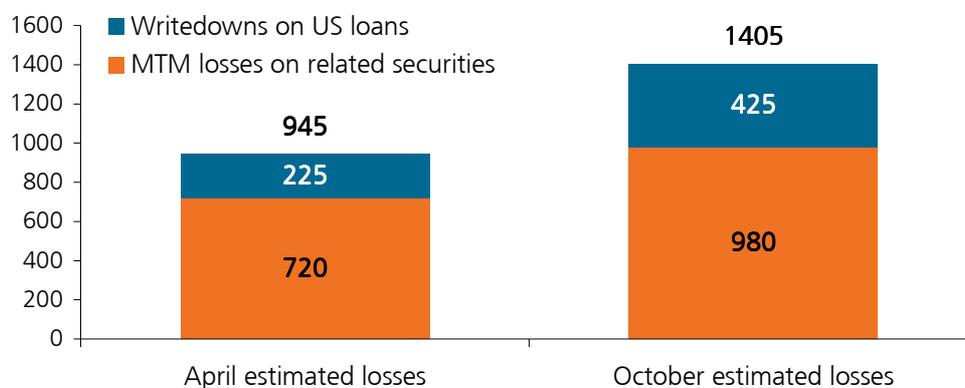
The purpose of this paper is to illustrate several issues in the debate on deleveraging and capital strengthening. Section two contains some aggregate measurements of the losses that have been recognised and of estimated losses, illustrating the situation of banks at the international level in terms of their financial leverage and capital adequacy ratios. Section three examines the role of hybrid instruments in capital strengthening transactions, focusing on two topics of special relevance: the proposal of setting EU common rules on hybrids and the issue of the quality of capital. With respect to capital adequacy and deleveraging, section four highlights the specific features of the Italian banking industry in the context of the global credit crisis. Section five shows several reform proposals, focusing on regulatory capital and possible mechanisms aimed at mitigating the typical pro-cyclicality forces on bank balance sheet. Section six summarises the main ideas in the paper and concludes.

## 2. From loss recognition to deleveraging

Throughout the world, bank capital is subject to mounting pressure due to the continuing cycle of write-downs to financial assets and the recognition of loan losses due to default. The numbers on incurred losses are constantly being revised upwards, while estimates of future losses are also constantly updated as the crisis extends to different segments of the financial sector and from there to the real economy.

The International Monetary Fund (IMF) updated its estimate of aggregate losses in early October 2008, raising the toll to USD 1.4 trillion (including losses not yet recognised), up from USD 945 billion in its previous estimate in April 2008 (IMF, 2008). More specifically, these figures include the estimate of write-downs to un-securitised US loans (residential and commercial mortgages, consumer credit, corporate loans and leveraged loans), and the estimate of mark-to-market losses on securities linked to the aforementioned US loans held worldwide. The figures calculated by the IMF do not include losses on loans and securities originated in other geographical regions, hence the losses may be underestimated in terms of the global aggregate. According to the same source, 50%-60% of the total losses are carried by banks. Taking this into account, the IMF estimates that to support private sector credit growth, even if modest, and at the same time to strengthen capital ratios, in the coming years (basically in 2009 and 2010), the major global banks will have to raise USD 675 billion in fresh capital.

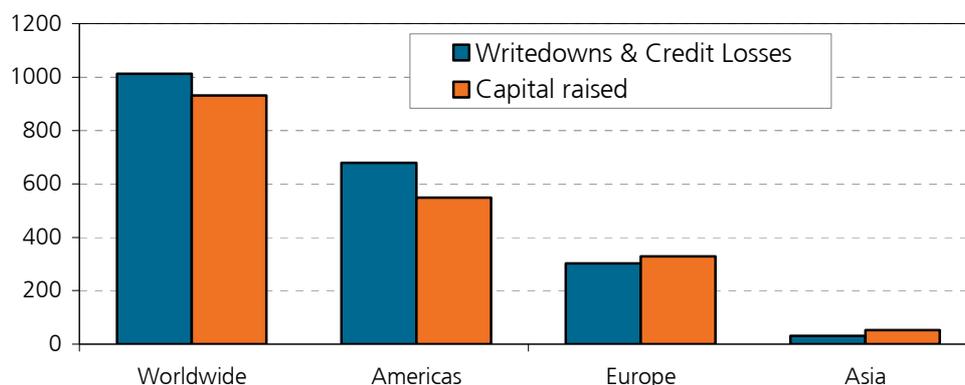
Fig. 1 - IMF estimates of losses on US loans and related securities (in billions of USD)



Source: IMF, GFSR 7 October 2008.

Though on the constant rise, reported losses are less than estimated, but they have by now exceeded the estimates that the IMF had made in April 2008. At mid-December 2008, write-downs and credit losses recognised by financial institutions around the world totalled over USD 1 trillion, of which more than 70% (around USD 750 billion) attributable to banks and brokers.

Fig. 2 - Accumulated losses and capital raised in the financial sector by geographical area (in billions of USD, to 17 December 2008(\*))

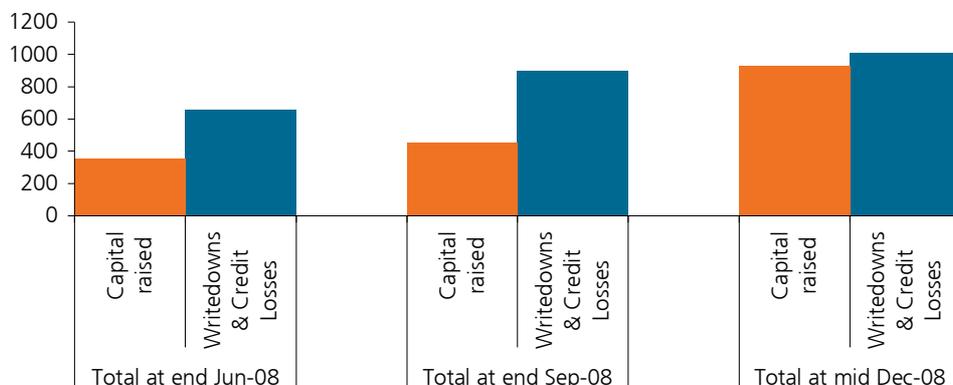


Source: Bloomberg. (\*) Capital data begins with funds raised in July 2007.

Against these losses, financial institutions have raised about USD 930 billion, including common equity and hybrid instruments. As illustrated in the chart below, as at September 2008, fresh capital was much lower than recognised losses. Since then, mainly as the result of government capital injections into banks, the flow of new capital has been significant. For European financial institutions in particular, the capital raised has exceeded total recognised write-downs and losses. But the gap remains in the US financial sector.

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Fig. 3 - Trend in accumulated losses and capital raised in the financial sector (in billions of USD; capital data begins with funds raised in July 2007)



Source: Bloomberg. Intesa Sanpaolo Research Department calculations.

More and more capital has had to be injected because the capital safeguards have proven to be inadequate in the face of recognised and estimated losses.

In comparison to historical standards, the recent experience shows that international banks have operated with low capital levels in these years. Though it is difficult to establish optimal levels of capital, the crisis has highlighted that capital safeguards at individual banks were insufficient in the face of a spiral of losses on financial assets emerging with the collapse in confidence and the increase in perceived risk on securitised loans.

The causes of the financial crisis and its unfolding from its origins have been amply covered in the recent literature (see Borio, 2008; FSF, 2008a; Masera, forthcoming). Here it is worth underlying two factors that contribute to explaining why banks have been undercapitalised in the face of the crisis.

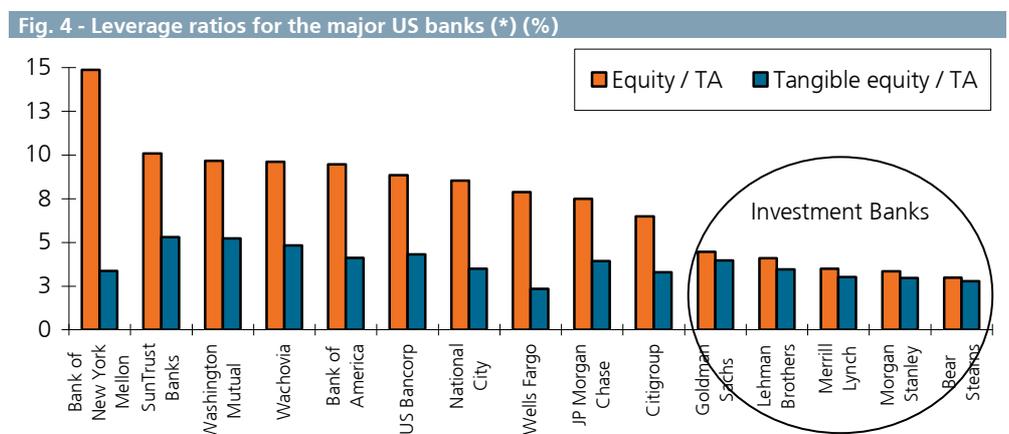
First, international banks, especially US banks, in recent years have developed their business models largely based on market funding, especially short-term.

Accompanying this, the originate to distribute model (OTD) based on securitisation allowed for the transformation of loans to securities, passing assets from the banking book to the trading book or to off-balance sheet vehicles. With the explosion of the liquidity crisis and the problem of pricing illiquid securities, it became clear that the risk-transfer mechanism at the basis of the model was an illusion. Over time, the real riskiness of the business became increasingly clear.

Many causes, both macroeconomic and microeconomic, have concurred in the increase in leverage, among which low interest rates, ample liquidity, tight credit spreads, combined with the spreading of innovative forms of leverage developed by financial engineering (see Masera, forthcoming). Nonetheless, the fundamental factor of the huge increase in short-term debt is the agency problem at banks (Kashyap, Rajan, Stein, 2008), in other words, conflicts of interest among managers, shareholders and creditors due to the different objectives of each group. This goes back to the issue of setting up incentive schemes for management and internal audit systems, i.e. the underlying question of governance. Agency problems play a key role in the formation of a bank's capital structure. Equity is perceived as a burdensome form of funding, hence there is the tendency to limit it. One of the reasons for the premium embedded in the cost of capital is the fact that management has wide discretion in the use of it, especially when equity is at a high level. In contrast, while shareholders are subject to the risk that their investment will be dissipated, short-term creditors are better protected, especially if backed by

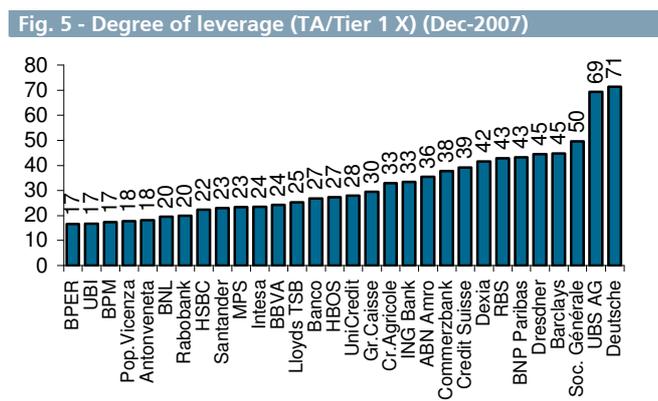
specific assets (collateralised borrowing). Hence the cost of short-term debt is lower. Taking that into account, the literature highlights that high leverage may be the response to agency problems. But when governance problems emerge, high leverage becomes the mechanism through which a crisis at one bank spreads to the economy. Hence the need for regulators to impose appropriate capital requirements, and also to address the issue of corporate governance, and appropriate checks and balances between risk takers and risk controllers (Masera, 2008).

US banks, especially the investment banks, have done business with a very high level of financial leverage, as reflected by the ratio of equity to total balance sheet assets. If we exclude intangible assets from the numerator, basically goodwill, for the purpose of obtaining a proxy for core capital (core Tier 1), the leverage ratio thus calculated is high also for the commercial banks.

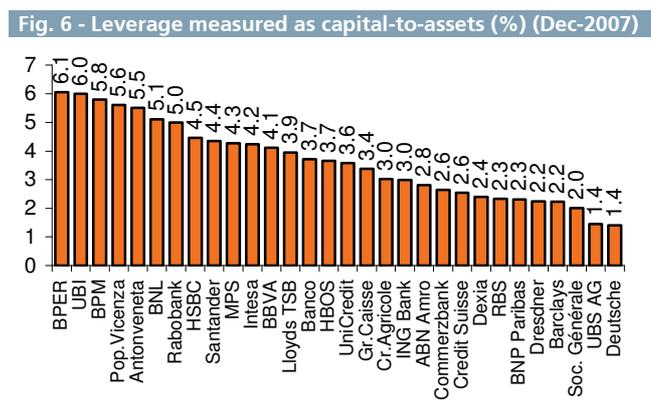


Source: Intesa Sanpaolo, Research Department calculations, on Bankscope data.  
 (\*) Data as at June 2008 except: Bank of New York Mellon, Dec-07; Bear Stearns, Feb-08; National City and Merrill Lynch, Mar-08; Goldman Sachs, Lehman Brothers and Morgan Stanley, May-08.

A business model based on high leverage has been the hallmark also of several European banks, especially the big universal banks. It is not coincidental that banks featuring very high leverage are also those that have been hardest hit by the crisis, although with some exceptions.



Source: Bankscope and financial statements. Intesa Sanpaolo, Research Department calculations.



Source: Bankscope and financial statements. Intesa Sanpaolo, Research Department calculations.

The apparent paradox is that several big universal banks, such as the two major Swiss banks, stand out for having at the same time high financial leverage and high regulatory capital ratios. UBS, for example, at year-end 2007 had a leverage ratio of 69x (measured as the ratio of total assets to Tier 1 capital) and a Tier 1 ratio of 8.8% (according to Basel I), rising to 11.6% at end-June 2008 (Basel II), with 55x leverage, thanks to a rights issue. Similarly, Deutsche Bank at year-

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end 2007 had 71x leverage and an 8.6% Tier 1 ratio, rising to 9.3% at end-June 2008 (Basel II) while leverage was mostly unchanged at 70x. This inconsistency of the capital strength metrics indicates that capital is not adequate for the risks taken on. In other words, risk-weighted assets (RWA) are “underestimated”, as highlighted by the low ratio of RWA (Basel measurement) to total balance sheet assets (Onado, 2008).

In short, regulatory arbitrage and the development of a shadow banking system allowed for the hiding of the real risks facing the financial system (Masera, forthcoming), with the result that capital safeguards were undersized. The combination of the OTD business model and high leverage, and on top of that skewed towards the short term, explains the inconsistency between high regulatory capital ratios and high accounting leverage (measured as total assets to capital).

The underlying idea was that through the risk distribution in the financial sector, over a vast array of investors, bank capital could be used more efficiently and, as a result, the supply of credit could increase, as in fact happened. A weakness of this approach lay in the fact that the risk was not really distributed. In addition, the tight interconnection between financial institutions was not taken into account. On top of that, with the adoption of IFRS, the extensive use of mark-to-market pricing introduced higher volatility into financial statements.

The switching of balance sheet assets from loans to securities had the effect of increasing the sensitivity of bank financial statements to valuation techniques. The growth of trading books and the adoption of the market-to-market pricing standard thus generated more uncertainty over banks' net incomes. With the introduction of international accounting standards and fair value accounting, it was clear that banks' net income and net equity would be more volatile. The international financial crisis has highlighted this problem, exacerbated by the interconnections in the global financial system. While it is easier to incur losses, it is not as easy to recapitalise, especially in unfavourable market conditions. As a result, it has become clear that banks must have wider capital reserves during upturns in the business cycle so that they have an adequate buffer against higher volatility.

The recognition of losses, whether realised or due to valuation, has highlighted the effective risks, and deleveraging has become necessary and inevitable.

Several options are possible when implementing a deleveraging policy, but they face significant obstacles during a period of financial crisis. The first option is to increase share capital, a path that met with success until the crisis intensified and it became increasingly difficult to ask shareholders for funds in view of the tensions on the equity markets and the deterioration in the earnings outlook. In the face of a crisis, and especially when there are losses, also the dividend policy must play its part through a reduction in the pay-out or even the suspension of pay-outs in order to retain earnings to strengthen capital. Even this method can run into obstacles in view of the sharp deterioration in the capacity to generate capital internally, due to the slowdown in lending, the high cost of funding, the sharp drop in fees, trading losses, and the increasing cost of risk. From the regulatory point of view, capital can be strengthened also through the issuance of hybrid capital instruments, within the quantitative limits allowed by the regulations. Deleveraging may also take place through intervention on the assets side of the balance sheet, namely through the sale of non-strategic assets. However, management's aims meet with obstacles to implementing asset sales programs in a market context where there are many sellers and few buyers. The illiquidity of portfolio securities also keeps assets frozen. Finally, deleveraging can come through a decrease in customer lending or by concentrating on less risky forms in the Basel II framework, triggering the feared credit crunch.

The deleveraging process is taking place through a combination of the above methods. The fact remains, however, that strengthening capital is seen as the best way because it can contribute

to limiting the procyclical effects of the process itself. Deleveraging is highly procyclical mainly because: i) it triggers a drop in asset prices, causing losses which in turn reduce capital; ii) it can lead to a credit crunch which has a negative impact on the economy and, with a certain lag, again on asset values. The fear is that the crisis could spiral because the procyclical effect of deleveraging comes on top of the coming into effect of the Basel II regime, with the risk of significant restrictions on the supply of credit. In fact, growing need for capital is predictable given the deterioration in the credit rating of takers during an economic recession, i.e. the well known procyclical effect of Basel II.

In adjusting course, banks have to take into account the fact that investors, supervisory authorities, regulators, and the rating agencies are demanding higher capital ratios. Moreover, in view of government bailouts and support for banks, the bar for capital ratios has been raised. It is not yet clear what stance the regulatory authorities will take on any new capital adequacy standards and how much time they will give the banks for the possible adjustment. Financial analysts' assumptions for the core tier 1 ratio range from 7% to 8%. In its estimation of capital increases that are still needed (basically in 2009 and 2010), the IMF assumed a common equity to RWA ratio of 8% and a tier 1 capital to total assets ratio of 4.5%, equivalent to 22x leverage (IMF, 2008).

However, the imposition of particularly tight capital requirements may be counter-productive, causing an excessive slowdown in lending and increasing incentives for evading the limits. Ultimately, the demand for more capital seems in part to respond to an almost insurance-type aim in the face of the climate uncertainty in the industry. To restore confidence, more transparency may be useful, but most of all the market is demanding more capital, as indicated by Governor Mario Draghi: "What we have seen is that higher cushions above the regulatory minimum become a new de facto market requirement. Indeed, banks' efforts to raise new capital in the past year have been not just to meet regulatory minima but also to respond to the need to reassure markets. This is, at least in part, because of festering uncertainty over risk exposures, valuations and earnings prospects. ... If banks can credibly assure markets that risks to their asset values and earnings prospects are being soundly managed and contained, then they may be able to survive a temporary decline in capital levels when needed, while still remaining above their regulatory minimum" (Draghi, 2008a).

The solution should be found in a pragmatic approach that combines calibrating strengthening of capital safeguards, rigorous supervision, and market discipline.

### 3. The role of hybrids in capital strengthening

It is hard to raise capital when the equity market is in a downward spiral, and this has led to greater use of hybrid capital instruments<sup>1</sup>. Not only are these instruments countable towards banks' Tier 1 capital, within certain limits, they also have the advantage of not diluting ownership for existing shareholders and they allow the issuer to widen and diversify its range of investors. However, increasing use of hybrids to strengthen capital may clash with the concerns of supervisory authorities and rating agencies, focused on the quality of the capital raised. Another obstacle to the use of these instruments is that the primary market may not well receive them, especially during a credit crisis. Moreover, some banks may already have reached the limit of countable hybrids.

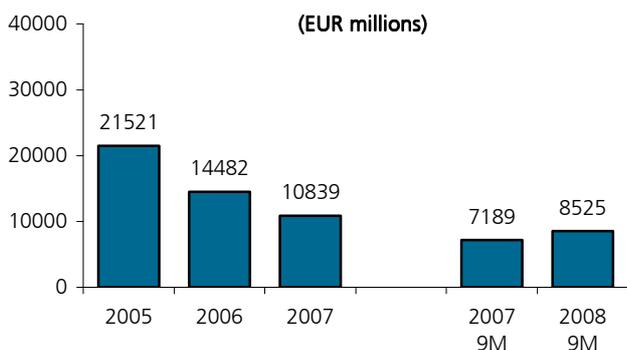
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<sup>1</sup> Here this term refers to instruments eligible for counting towards banks' Tier 1 capital. Since there is no clear terminology, we adopt the guidelines from the CEBS which include three categories of instruments among hybrids: i) innovative instruments, i.e. with redemption incentives such step-up clauses; ii) non-innovative instruments, i.e. that do not have redemption incentives; iii) non-cumulative perpetual preference shares, that some European supervisory authorities treat as core Tier 1 capital (CEBS, 2008).

## Deleveraging, capital instruments, and capital adequacy measures

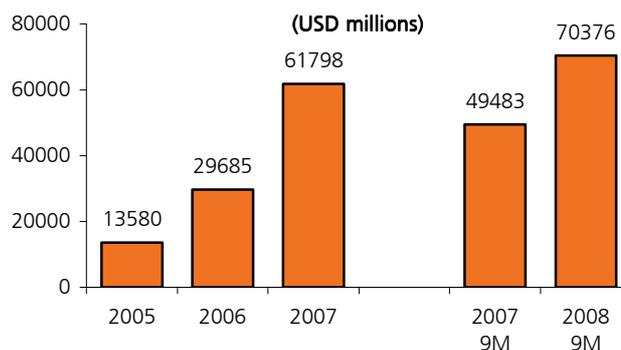
US banks have made the most use of hybrid instruments. In the first nine months of 2008, while overall issuance on the global debt capital market has declined by almost 30%, gross issuance of Tier 1 securities has increased more than 29% compared to the same period in 2007 (global figures are in USD). USD-denominated issuance in particular has increased 42%.

Fig. 7 - Gross issuance of Tier 1 instruments in EUR



Source: Intesa Sanpaolo Research calculations on Dealogic-DCM Analytics data.

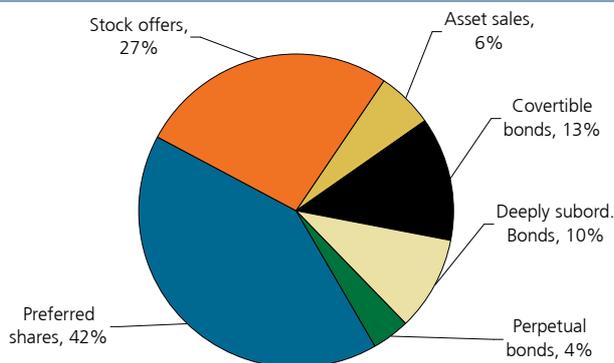
... and in USD



Source: Intesa Sanpaolo Research calculations on Dealogic-DCM Analytics data.

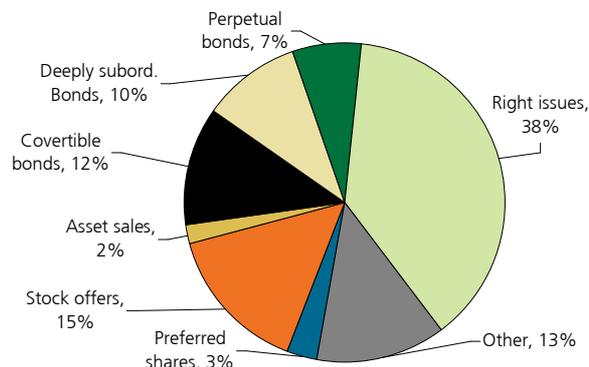
Looking at the breakdown of new capital by type of instrument, 42% of the capital raised since July 2008 by North American banks is in the form of preferred shares. However, hybrid capital instruments become increasingly less attractive now that they have reached a high percentage of total capital. Commenting on this in an August 2008 report on second quarter data from US securities firms, the rating agency Fitch noted a shift in the capital mix towards hybrid instruments, in parallel with the reduction in leverage (FitchRatings, 2008b). The agency also reported that hybrid instruments dominated recent capital issuance, to the point where in some cases they exceeded the limit countable towards capital that Fitch set for them. Fitch limits the contribution of hybrid instruments (in terms of "equity credit", i.e. the weighted value of hybrids based on their equity content) to 30% of "eligible capital" because it believes that a high rating must correspond to a strong level of common equity. As a result, Fitch expects hybrid reliance to be temporary, as common equity is rebuilt through retained earnings and debt conversion.

Fig. 8 - Capital raised by type of instrument: North American banks ...



Source: IMF, Global Financial Stability Report, October 2008.

... European banks



Source: IMF, Global Financial Stability Report, October 2008.

In terms of the breakdown by instrument, capital raised by European banks is noticeably different compared to the case of their North American counterparts: 38% of European issuance has been in the form of rights issues, while, at least through the summer of 2008, they have issued limited amounts of preferred shares (3%).

The increased use of hybrid instruments to strengthen capital and the renewed interest in them also in Europe, in relation to government intervention in support of banks, raise two issues worthy of in-depth examination: the lack of common rules on hybrid instruments and the quality of capital.

### 3.1 Towards European harmonisation on hybrid instruments

Despite the significant stock of hybrid securities outstanding and their relative importance in the composition of banks' Tier 1 capital<sup>2</sup>, there are no common European rules. The Basel committee has not formally addressed the issue in the framework of the Capital Accord and European legislators have only recently taken up the issue of hybrid harmonisation.

The lack of common rules on hybrids has led to various eligibility criteria and quantitative limits among EU countries, despite the competitive level-playing-field principle, leaving open the possibility of regulatory arbitrage.

This gap is filled in the framework of the proposed revision of bank capital requirements rules (the so-called Capital Requirements Directive – CRD which includes directives 2006/48/CE and 2006/49/CE), issued by the European Commission in early October 2008, designed to strengthen financial stability, reduce exposure to risk, and improve supervision of banks that operate in more than one EU member-state. Among other things, this proposal addresses harmonisation of the standards for defining hybrid capital, with the objective of improving the quality of bank capital.

The proposal affirms the importance of hybrid instruments in bank capital management because they allow for diversification of the capital structure and access to a vast range of financial investors. The proposal sets common standards valid at the EU level for these instruments and, in particular, it defines: i) the features that hybrids must have to be recognised as Tier 1 capital; ii) the quantitative limits on their countability towards Tier 1 capital.

The definition of hybrid instruments countable towards Tier 1 capital is based on principles, because a detailed description of such instruments would rapidly become obsolete due to financial innovation. They are defined by distinguishing them from core capital and listing a series of features that determine their eligibility for being recognised as Tier 1 capital (eligibility criteria). To be considered Tier 1 hybrids, such instruments must be permanent, i.e. undated or have a duration of more than 30 years, they must be able to absorb losses, allow for the cancellation of interest payments in times of stress, and be deeply subordinated in case of liquidation. They can be callable earlier only at the issuer initiative, but they shall not be redeemed before five years after the issue date. If a redemption incentive is included (a step-up clause), such incentive shall not occur before ten years after the issue date. In any case, the supervisory authority must authorise the call or the redemption in advance. If necessary, banks may suspend interest payments on a non-cumulative basis, i.e. sums not paid are no longer due. Interests must not be paid when the capital requirements are not met. Based on their own evaluations of a bank's financial situation and solvency, supervisory authorities may require the cancellation of interest payments. If the bank is liquidated, hybrid holders are subordinate to all other creditors, i.e. hybrids are senior to ordinary share capital but junior to other hybrid instruments included in Tier 2 capital.

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<sup>2</sup> Based on a survey conducted by CEBS of European Economic Area regulatory authorities, the stock of hybrid instruments outstanding at 31 December 2006 was estimated at EUR 213Bn. As regards the eight countries reporting to CEBS the highest amount of hybrids, hybrids contribution to Tier 1 capital after deductions was 18% (CEBS, 2007b).

As for quantitative limits, the European Commission proposal calls for two ceilings, 35% and 50%, depending on the quality of the individual instruments: hybrids with mandatory conversion into ordinary shares are countable towards Tier 1 up to 50% and other instruments up to 35%, provided that they too are undated. In addition, dated hybrids and instruments that provide for any type of redemption incentives (like step-up clauses) must not exceed 15% of Tier 1 capital. The total quantitative limit is 50% of Tier 1 capital. To limit the impact of new regulations, the proposal allows banks that do not meet the quantitative limits to gradually adjust to the new rules over a period of 30 years.

### 3.2 Quality of capital

Alongside the issue of desired levels of capital, another topical issue is the quality of capital, whose features must allow it to be effectively used during times of stress. In detail, it must be able to absorb losses and be permanent. In the experience of the financial crisis, the market seems to have judged that the capacity of the capital held by banks to absorb losses has not been adequate. According to Basel regulations, Tier 1 capital may include hybrid capital instruments, in addition to core capital consisting essentially of ordinary shares and reserves, but, in the absence of common rules, national regulations may be more or less restrictive. The stance of admitting a relatively low share of hybrid instruments into Tier 1, as in Italy, reflects a more conservative attitude by supervisory authorities in terms of the quality of capital. The rating agencies too have a selective approach to hybrid capital instruments and they may assign different degrees of equivalence to Tier 1 (so-called equity credit content) in relation to the features of individual instruments, such that they may be admitted to Tier 1 capital even partially (Fitch assigns five weight levels from 0% to 100% of the amount issued).

The doubts expressed by the market on hybrid instruments' real capacity to absorb losses is one of the reasons why, under the recent UK bank recapitalisation scheme, most of the capital injection will be in the form of common equity (Bank of England, 2008b). In fact, as was indicated, the market has focused on more conservative metrics for measuring the capital position of banks, such as the leverage ratio, defined as the capital-to-asset ratio, and the core Tier 1 ratio. The return to using the leverage ratio, as discussed in section 5 of this paper, reflects doubts on the real capacity of risk-sensitive measures as defined by the regulations to capture effective risks. In turn, the focus on core Tier 1 reflects concerns by some over the capacity of hybrid instruments to absorb unexpected losses. In this direction a key factor is the degree of permanence, leading regulators to prefer undated instruments over dated instruments and those with redemption incentives. The concern mentioned above regards the case of so-called innovative capital. Not only does innovative capital have a call option that allows the issuer to pay back the instrument (subject to supervisory authority authorisation), it also has a step-up clause that calls for an increase in the coupon on preset dates and, hence, it provides an incentive for the issuer to call the security (always subject to authorisation), impairing its permanence, a feature that hybrid capital instruments must have to ensure that unexpected losses are absorbed at any time that may be necessary. For this reason, international regulations have placed a limit on innovative capital instruments, which may not exceed 15% of Tier 1 capital.

With the spreading of hybrid capital instruments, the expectation has consolidated on the market that issuers of instruments with step-up clauses would call the securities on the first eligible date for exercising the call option. But as the financial crisis intensified, the certainty that affirmed itself in practice began to be shaken. As a result of the sharp rise in market rates, which made it less convenient to make early repayment of hybrid instruments with step-up clauses, and due to the growing need to strengthen capital, concern spread among investors that, contrary to their original expectations, the call option would not be exercised. However, the possible extension of the duration of hybrid instruments affects the issuer's reputation with

investors, with the undesired effect of increasing the cost of future issues or closing the funding channel completely, likewise sending the market a signal of financial difficulty. Thus, possible reputational damage has become a strong incentive for issuers to exercise the call option, but at the same time it has weakened the permanence feature that capital instruments should have. The paradoxical consequence is that the market, on the one hand, fears the extension of the duration of such instruments, but, on the other, it views them as capital components of lower quality. Due to the uncertainty surrounding the call option attached to these instruments, the market has focused on the core Tier 1 ratio (BoE, 2008b), which, not by chance, excludes hybrid capital instruments. The conclusion is that, due to the improper use that has been made of the instrument so far, banks' capacity to absorb unexpected losses is underestimated. It would be paradoxical to think that in situations of financial stress and in the face of the need to activate all available capital instruments, supervisory authorities could authorise the early repayment of hybrids with call options and step-up clauses.

#### 4. Specific features of Italian banks

In the first stage of the credit crisis, the impact on Italian banks was more indirect than direct and on the whole they were hit only with the side-effects. With a few exceptions, write-downs to high risk assets were contained because exposure to US subprime mortgages and related structured instruments was limited. However, as the financial turbulence persisted and intensified and the credit crisis spread globally and from the financial sector to the real economy, the problems spread also to the Italian banking industry, mainly through markets with a negative impact on asset values, the gradual deterioration in credit quality, and steep downward corrections to earnings forecasts. In any event, when the crisis exploded Italian banks were relatively solid and efficient as a result of restructuring starting in the 1990s.

Viewed against the crisis and in comparison to foreign competitors, Italian banks present some special features that, on the one hand, may contribute to explaining their partial protection against the factors that triggered the crisis and, on the other, shape their relative position. We focus here on the factors that, in our view, justify the reasons why Italian banks have a lower level of capitalisation than their European competitors.

More than a year since the crisis broke out, we can summarise the situation as follows.

Despite funding difficulties on international markets, until September 2008 lending continued to grow at a good pace, up 7.9% yoy in September, though slowing from 9% and 10% (and even higher) up to March 2008. Taking securitisation into account, loans to Italian corporate customers increased 13% in September (Draghi, 2008c). Interest income was once again the only revenue component that was increasing.

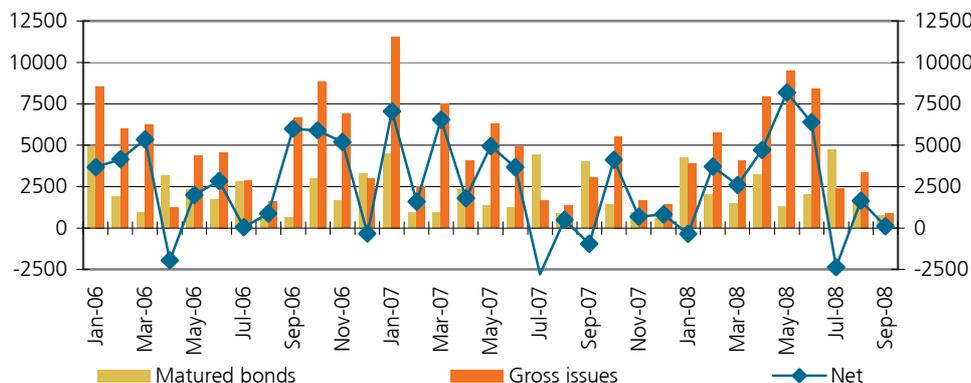
Italian banks showed no signs of significant liquidity problems, in part because of their prudent management policies in this regard. Based on indicators taken from the accounting data, Italian banks were not subject to any tensions or imbalances, except in cases of institutions that did not raise retail funding. The ratio of loans to customer deposits averaged around 94% for the top 40 Italian banks based on 2007 financial statements.

As for medium/long-term funding, Italian banks too, like their European competitors, starting in the summer of 2007 implemented a very selective policy for issuing bonds on the international market, seizing and profiting from windows of opportunity. After the sharp drop in public issuance in the second half of 2007 and the first quarter 2008 in comparison to the same period a year before, in the second quarter 2008 gross issuance by Italian banks reached a significant level, EUR 26Bn. But as the credit crisis exploded, in September gross issuance fell to new lows, contracting sharply in comparison to 2007 volumes which were already trending downwards.

## Deleveraging, capital instruments, and capital adequacy measures

Nonetheless, gross funding overall in the first nine months 2008 through public issuance reached EUR 46Bn, easily covering the EUR 31.5Bn in refinancing needs for the entire year through the same channel.

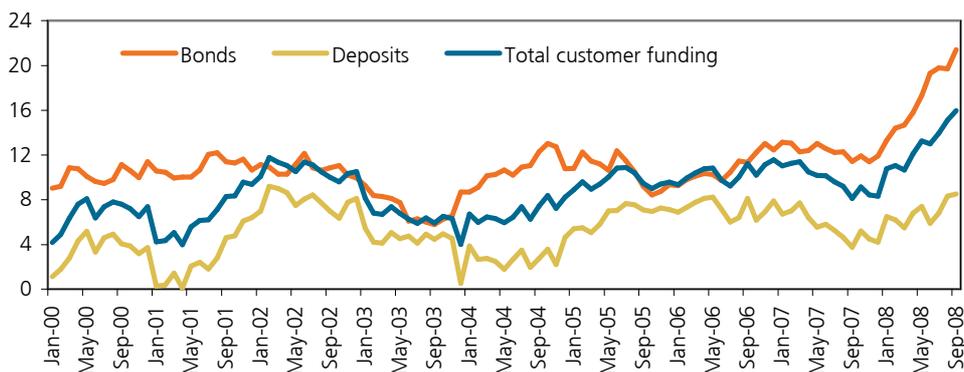
Fig. 9 - Italian Banks' Gross Issuance and Maturing Bonds (EUR M)



Source: Intesa Sanpaolo Research calculations of Dealogic – DCM Analytics data.

In the face of mounting difficulties in market funding, Italian banks made increasing use of retail customer funding. In a context of risk aversion, preference for liquidity and persistent disaffection for all forms of managed assets, bank funding continued to increase at a good pace, more than 13% yoy in September 2008, driven by the 21% yoy increase in bonds in September, much higher than the average eurozone rate (up 7.2% yoy in August 2008). Some of this growth in the stock of Italian bank bonds is explained by the shift in issuance from the international institutional market to the domestic retail market, in part even through the offer of highly subordinated debt instruments.

Fig. 10 - Italian Banks' Retail Deposits Growth (yoy % change)



Source: Intesa Sanpaolo Research calculations on Bank of Italy data.

More detailed data at June 2008 confirm, in part indirectly, that bank bond growth was sustained by placement with domestic retail customers: in June 2008, the stock of bonds issued by Italian banks and held by eurozone monetary and financial institutions decreased 15%, compared to a more than 40% increase in the same month in the two previous years. In contrast, the stock of bonds underwritten by ordinary resident customers (i.e. excluding Italian banks) increased 20.5% yoy in June 2008, accelerating sharply from 5.9% in June 2007 and 3.9% in June 2006 (Bank of Italy, 2008a).

These developments are clear evidence of one of the strengths of Italian banks in comparison to their European competitors: the wide market for domestic retail funding allows Italian banks to dampen the impact of the financial crisis, at least in terms of the fallout on liquidity and funding caused by interbank market difficulties and on public bond issuance. In short, retail funding has contributed to sustaining credit to the economy.

But some weakness was reported in terms of capitalisation, especially in light of the intensification of the financial crisis.

Until the summer of 2008, Italian banks' capitalisation was not considered a source of particular concern, with a few exceptions. But, after Lehman Brothers collapsed and the adoption of bank capital support measures by the main governments, pressure mounted on Italian banks to strengthen their capital as well. The capital ratios of the major Italian banks attracted market attention, even though the need to recapitalise was less urgent than elsewhere because they had less exposure to toxic assets.

Over the past 10 years, Italian banks have kept their capital ratios above the Basel I minimum requirements, though remaining below average European levels. Moreover, if we look closely, the capitalisation of Italian banks in the 2005-2007 period declined in aggregate terms, especially among the top Italian banks, mainly as a result of mergers.

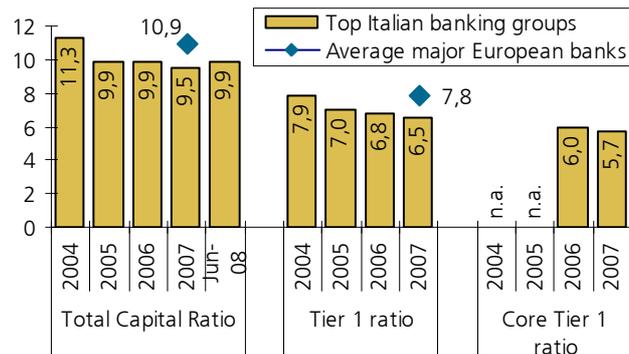
Bank supervisors did not fail to stress prudence in capital management as the central factor in maintaining stability at individual banks and of the entire system. Since 2001, the Bank of Italy has been encouraging the top Italian banks to target a Core Tier 1 ratio of at least 6% and a total capital ratio of at least 10%. The Bank of Italy also expects that, with Basel II, the top banks will continue to maintain capital ratios above the regulatory minimums. During crises, capital cushions allow flexibility in managing operations, the absorption of losses, and they help to avoid the adoption of measures that reduce assets, which has procyclical effects.

Fig. 11 - Capital ratios in the Italian banking system (%)



Source: Bank of Italy.

... and of the top banks (%)



Source: Bank of Italy

As already mentioned, in comparison to European competitors, Italian banks' capital ratios have been on average lower. Moreover, after the support measures implemented by several European governments, the gap has widened.

But two aspects of the European comparison are worth highlighting because they are especially relevant in light of the current financial crisis. First, Italian banks have much lower financial leverage than their European competitors (see figure 5 and 6 for their position based on year-end 2007 data). At end-June 2008, the leverage of the top five Italian banks, measured as the ratio of total balance sheet assets to Tier 1 capital, was on average less than 30, compared to 40

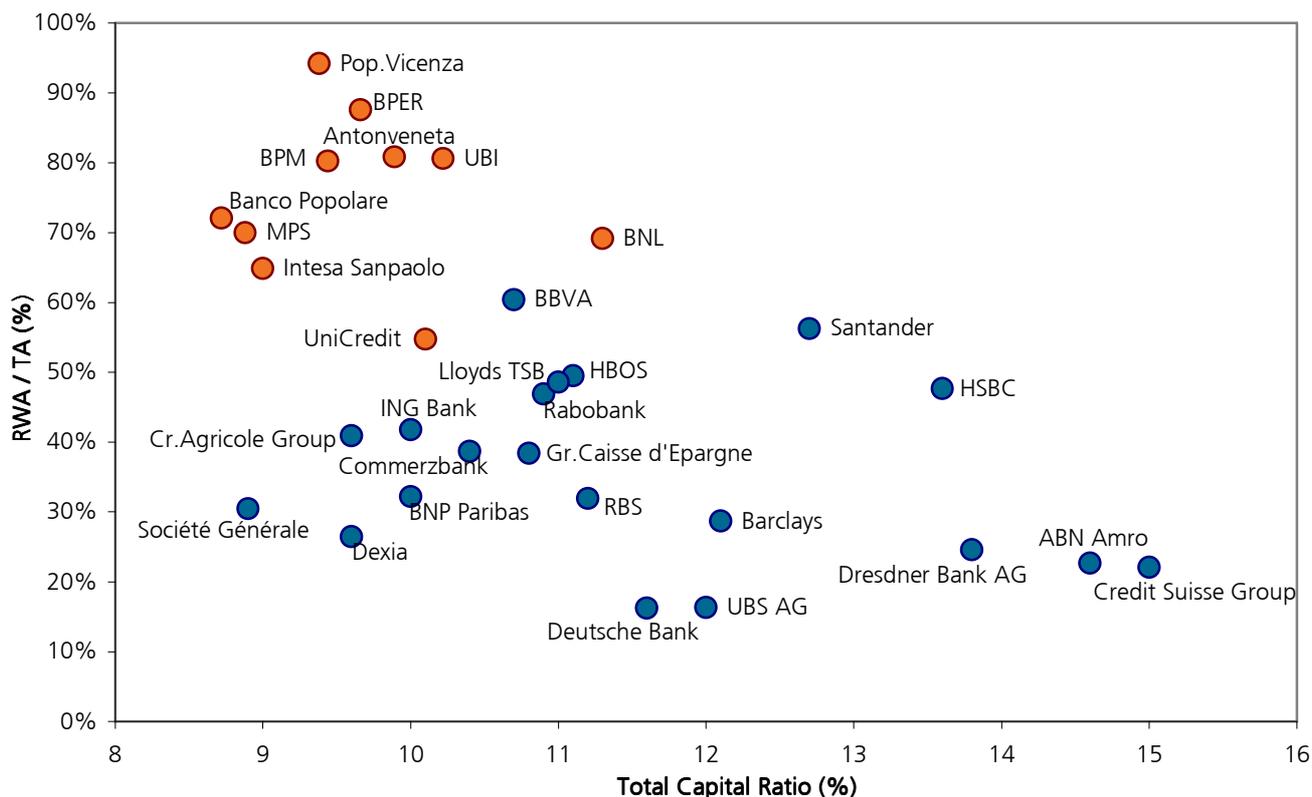
## Deleveraging, capital instruments, and capital adequacy measures

for the top 13 European banks (Draghi, 2008c). Second, Italian banks have kept the risks on their balance sheets. This is because Italian banks apply a more traditional (B&H) business model, still highly centred around risk warehousing and with little inclination to transform assets and transfer them outside, a model that, in the final analysis, puts emphasis on long-term customer relationships.

The specific feature of Italian banks is well shown by the ratio of risk-weighted assets (RWA) to total assets. At year-end 2007 this ratio on average was 64% for the top ten Italian banks, as compared to 34% for the top European banks.

The chart below also illustrates that high RWA/total asset ratios at Italian banks correspond to relatively low total capital ratios. In contrast, at several European banks, including Credit Suisse, ABN Amro and UBS, very low RWA/total asset ratios are accompanied by high capital ratios. In the light of the significant losses recorded by several top European banks and the resulting financial support measures, it is reasonable to argue that their regulatory capital was not adequate for the risks they took on, because the actual size of these risks was underestimated. In short, in our view, examining the degree of capital adequacy, regulatory capital ratios should be assessed by also taking into account the features of the business models and the degree of effective externalisation of the risks.

Fig. 12 - Ratio of RWA to TA and capital ratios. Main European and Italian banks (year-end 2007)



Source: Bankscope and financial statements. Intesa Sanpaolo, Research Department calculations

A further distinctive feature of Italian banks is their capital mix, on average of better quality than their European competitors, consisting of a significantly higher percentage of core components, in part the result of stricter rules on capital instruments than abroad.

The Bank of Italy has always focused particular attention on the quality of bank capital and especially its stability. In late December 2006, "New regulations for the prudential supervision of banks" set down new rules for capital instruments countable towards Tier 1 capital<sup>3</sup>, such as preference shares, that moved closer to European practices but remained more restrictive. In detail, the Bank of Italy raised from 15% to 20% the percentage of these instruments that may be recognised as Tier 1 capital, though the limit on instruments with step-up clauses (called "innovative" at the international level) remained unchanged at 15%. In the absence of common European rules, each country has its own practices. In France, for example, the first limit is 25% and in Germany it is 50%, while the limit on innovative instruments is 15% in most European countries (CEBS, 2007b). On October 2008, French regulators announced that they would increase to 35% their tolerance level for hybrids within the Tier 1 capital to make the Government support measures effective for banks already close or at the 25% hybrid ceiling.

Despite the regulatory changes introduced in late 2006, only few Italian banks issued hybrid instruments, whether innovative or not, that are recognised as Tier 1. According to our calculations, before the change in rules, the proportion of preference shares and innovative instruments was around 11% of Tier 1 on average for the top banks, with only some of them reaching the 15% limit. At year-end 2007 the scenario did not change: on average for the top banks the higher quality components accounted for 88% of Tier 1 capital, "a relatively high proportion on the international comparison among big banks" (Bank of Italy, 2008b). This is consistent with CEBS quantitative survey of eligible capital, according to which hybrids accounted for 11% of Tier 1 capital after deductions for Italian banks at end-2006 versus 18% for the sample of eight major European countries. Netherland and UK showed the highest proportion of hybrids, 28% and 25% of Tier 1 respectively (CEBS, 2007b).

As a result, Italian banks have still room for issuing more Tier 1 securities, but the Bank of Italy's stance on these instruments remains cautious, in view of the stability and certainty that should distinguish the components countable towards regulatory capital. These strengths are diluted by systematic early repayment of instruments with step-up clauses when the call date occurs.

In summary, in the face of the financial crisis, Italian banks stand out for: wide availability of retail funding which has sustained lending growth; traditional business model geared towards risk warehousing; limited exposure to toxic assets and, in general, to financial assets held for trading, and thus to a negative impact from losses on them; low financial leverage; modest capital ratios, but, in normal situations, substantially adequate to the risks taken on; good quality of Tier 1 capital in terms of stability and certainty. All these factors must be taken into account when evaluating the degree of capital adequacy of Italian banks, while making due distinctions among them individually. The assessment cannot be limited to mechanical comparisons of the usual capital adequacy indicators.

Nonetheless, the widespread crisis of confidence that has compromised the functioning of the financial markets has not spared Italian banks. The exceptional features, spread, and systemic reach of the crisis require extraordinary responses. One of the lessons from the crisis is that it has reminded that capital is the prime resource for staving off external shocks. Hence there is a convergence of opinion on the need to strengthen the capital adequacy of the main banks globally so as to restore confidence in their solvency. Government bailouts and measures to

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<sup>3</sup> As for terminology, it is worth pointing out that in the Bank of Italy supervisory provisions, instruments countable towards Tier 1 capital are called "innovative capital instruments". But internationally, it is customary to refer to the wider concept of hybrid instruments, i.e. securities that have features of both equity and debt. This category comprises both hybrid instruments countable towards Tier 1 capital and hybrids included in Tier 2 capital. In this paper, for simplicity we use the term hybrid to refer to capital instruments countable towards Tier 1 capital. This is consistent with CEBS terminology. For details on the features of hybrid capital instruments, see section 3 in this paper.

support bank funding, liquidity, and capital have been huge and widespread in the United States and Europe. One negative impact of these interventions is that they alter the competitive landscape. In this context, Italian banks, though sounder and more prudent than many of their foreign competitors, are called to exercise any option available and, most of all, feasible in such a difficult financial context to strengthen their capital base, also to meet with predictable need in the face of a weakening real economy.

### **5. Reform proposals regarding capital regime and measures for mitigating procyclicality**

Together with the emergency responses implemented by central banks and governments (see Masera, forthcoming) and, at the microeconomic level, by individual banks, regulatory and supervisory officials have started to debate and work on rules: the European Commission, in agreement with the European Council, has created a high level group to suggest proposals to be implemented in March 2009 by the Council.

The global financial crisis has highlighted weaknesses in the regulatory and supervisory framework. Policymakers have become increasingly aware that, though the foundations of the system should not be turned over, the tools available for supervisory activity must be adapted to the new context and be designed to ensure that, going forward, the financial system is better capitalised. There is no lack of ideas and proposals.

The purpose of this section is to summarise some lines of intervention proposed, with a special focus on capital regime and procyclicality.

The following considerations outline the context in which the need to revise capital adequacy rules has arisen. The financial crisis has had its origins in a system still governed by Basel I rules, which have proven to be insufficient and inadequate in the financial context that has developed. The crisis has revealed that several international banks (investment banks), among which many of the biggest, have operated with low levels of capital in recent years. Insufficient levels of capital reflect the fact that banks and their supervisors have underestimated the risks that they have taken on, and that in part is due to the inadequacies of Basel I prudential rules, but also to regulatory arbitrage. Investment banks in the US were exempted until 2008 from relevant constraints of the Basel approach (Firpo and Maino, 2008). The new Basel II rules, designed to fill the gaps in the first accord and not-coming into effect until January 2008 (for major US banks the adoption of Basel II is scheduled for 2009), are more sophisticated than the previous ones and the scope for regulatory arbitrage has been reduced. Had Basel II been in place, "the exposures to conduits and SIV's through liquidity lines would have been much better captured" (Borio, 2008). However, the new rules too have defects revealed by the financial crisis, such as the treatment of assets in the trading book and risks on off-balance sheet positions. The revision process on these issues in Basel II is already ongoing.

In general, the fundamental purpose of the suggested reforms is to improve the financial system's resilience to external shocks, while at the same time avoiding excessive regulation.

In this sense, the aim is to strengthen prudential rules and regulations, hinging them on more robust capital defences. An intense debate has developed also on the procyclicality issue that is a feature of financial systems, in part due to prudential rules based on capital, but not only.

At individual bank level, the objective is to ensure that capital and liquidity margins are big enough and of good enough quality to ensure strong capacity to resist external shocks. This is a complex issue because, on the one hand, imposing too strict limits should be avoided, while on the other hand adequate capital margins could change over time in relation to the systemic

context, but also to individual transitory situations, as in the case of extraordinary transactions such as M&As.

In its April 2008 report, the Financial Stability Forum came up with a series of recommendations to enhance the markets' and financial institutions' resilience and strength, identifying five key areas of intervention: strengthen prudential oversight of capital, liquidity, and risk management; improve transparency and valuation; introduce changes to rating agencies' operations and to how investors use ratings; strengthen the Authorities' capacity to face risk situations and empower cooperation agreements to address situations of systemic financial instability (FSF, 2008a). Since then, there has been concrete progress in the implementation of the recommendations (FSF, 2008b), among which the proposals issued in July 2008 by the Basel Committee and the IOSCO for additional capital requirements for credit exposures held in trading books, and the guidelines issued in May 2008, also by the Basel Committee, concerning liquidity risk management. These guidelines call for a raising of standards for liquidity risk management and measuring, requiring banks to maintain a cushion of high quality liquid assets as a safeguard against periods of prolonged stress. As for credit exposure in trading books, which is part of the Basel II adjustment measures, the July 2008 proposal starts from the consideration that most of the losses suffered by the big banks during the crisis have originated in the trading book. So the reform calls for strengthening of capital regime for positions in the trading book by introducing a new charge for risks that are incremental to VAR (incremental risk charge – IRC). The proposal is aimed at better capturing the risk factors that have an impact on the prices of assets held for trading. In detail, IRC should allow for the capture also of the losses suffered during the financial crisis in CDOs of ABS and other forms of re-securitisation held in the trading book (FSF, 2008b).

As to capital, the FSF Report affirms that the starting point for improving capital adequacy among the big banks is prompt application of Basel II (FSF, 2008b). The FSF Report likewise maintains that supervisors should evaluate the need for additional capital buffers or supplementary capital strength measures, complementary to risk-based measures. In this regard, the Report reiterates that several countries have proposed such supplementary measures like the leverage ratio based on balance sheets, with the aim of better containing leverage in the system, guard against risk measurement errors and strengthen banks' overall capacity to absorb shocks.

In addition to the five intervention areas mentioned above, the FSF has started to examine the forces that contribute to procyclicality, its impact on the financial system, and possible ways to mitigate it. This issue is of notable interest because the financial crisis has highlighted the summation of several factors that together multiply and amplify the already well known Basel II procyclical effect. The work being done by the FSF focuses on four areas.

- The capital regime. In the Basel II framework, capital requirements are more strictly bound to the riskiness of assets, which typically increases in downward phases of the business cycle and decreases in the expansionary phases. The experience of this financial crisis has led to the awareness that capital adequacy does not remain unchanged as the cycle develops. In a context of high risks, the levels of capital required and desired are higher than what is deemed adequate in periods of lower risk. However, at the same time there is awareness that in downturns in the economic cycle, the imposition of tighter capital requirements would have a highly procyclical effect. Hence the need has arisen to identify mechanisms that allow for more flexible management of capital defence so as to encourage the built-up of capital cushions even above the minimum requirements during good times and to allow to dip into them, up to a point, during recessions. As stated by Borio (2008), this principle would have, inter alia, the merit to track the time dimension of risk. "While it has been common to think of risk as falling in booms and rising in recessions, it is better to think of it as rising in booms, if and when imbalances develop, and as materialising in the bust, as the disruption unfold".

- Provisions for credit risks. This issue is linked to the previous one and is complementary to it. In the current regulatory system, while capital defences are calibrated to offset unexpected losses, write-downs to loans are designed to cover expected losses. The procyclical effect of a loan loss provisioning system plays on the concept of expected losses, whether only effective losses or even contingent losses are considered. In other words, provisioning systems have different impacts in terms of procyclicality whether they are based only on incurred losses or even on expected future losses. Procedures based on effective losses tend to be procyclical because losses are higher during recessions, having a greater impact on the income statement and, with a domino effect, weakening capital and triggering credit-tightening policies. From here the need to identify solutions that mitigate the procyclical effect of the recognition of loan losses during recessions. The FSF intends to examine how provisions are determined and promote mechanisms that are more effective during the different phases of the economic cycle, so that, when the economy is in a downturn, banks are capable of absorbing the losses instead of rationing credit.
- Corporate governance and compensation. One of the issues raised by the financial crisis is the distorted incentives linked to variable compensation mechanisms based on bonuses that award short-term results rather than the sustainability of long-term results. The FSF notes that on this issue there is a converging interest on the part of bank shareholders and supervisory and regulatory authorities.
- Valuation and leverage. In the wake of financial innovation, these two issues have become increasingly interconnected and it has been observed that, aided by accounting standards, they too are a source of procyclicality. The procyclicality of accounting standards, especially mark-to-market pricing, is another crucial issue that has come out of this financial crisis (see, for example, Adrian and Shin, 2008; Rochet, 2008; IMF, 2008, especially chapter 3 "Fair value accounting and procyclicality"; and Masera (forthcoming) on the issue of valuation models in the crisis).

The FSF initiative to address in depth procyclicality is part of a wider debate on this issue that involves, among others, the Basel Committee, as well as national supervisory bodies. The problem has several facets, including improving market discipline as a tool for mitigating procyclical tendencies or tighter liquidity standards that limit, for example, the possibility for banks to expand credit very quickly, funding themselves through potentially volatile sources, such as some types of wholesale funding (Bank of England, 2008b). But, in addition to the already cited fair value issue, the debate has focused on procyclicality and regulatory capital requirements, with the aim of identifying the mechanisms that can make the financial system better equipped to face crises. The main proposals in this direction regard the leverage ratio, so-called dynamic provisioning, variable capital requirements over time, and insurance-like instruments.

**Leverage ratio.** The crisis has led to the rediscovery of the financial leverage ratio, measured as the simple ratio of net equity to total balance sheet assets, with appropriate adjustments for intangible assets, especially goodwill. The underlying idea is to accompany the Basel standard ratios with a floor for the capital-to-asset ratio below which banks may not go, thus limiting the growth of assets as a ratio to capital, in turn mitigating periods of sharp expansion. The leverage ratio is already adopted in the United States, where banks must comply with a capital-to-asset ratio of 5% as a complement to the Basel standards.

In Switzerland, the bank and market supervisory authority (Swiss Federal Banking Commission – SFBC), in close collaboration with the Swiss National Bank (SNB), has recently tabled a proposal that goes in this direction, as part of a wider Swiss bank regulatory reform that should come into effect in 2013. According to the SNB, the financial crisis has demonstrated that risk management models are not infallible, risk measurement is still difficult, and realistically capital requirements will never fully reflect banks' underlying risks. Taking this into account, with the

aim of improving the financial system resilience to shocks and the effectiveness of bank capital adequacy rules, the SFBC has decided increasing the capital requirements applicable to the country's two big banks, UBS and Credit Suisse, and introducing a leverage ratio floor of 3% at group level for both banks, measured as the capital-to-asset ratio, where the numerator is core capital. According to the SNB, strengthening the two big banks' capital base, that comply with the current minimum regulatory requirements, is desirable because the regulation "seriously underestimated market risks" (SNB, 2008). Moreover, mis-evaluation of the risks is possible. The combination of tighter prudential requirements and a minimum leverage ratio should improve the big banks' resilience to shocks. The floor on the leverage ratio would guarantee a minimum safety buffer, set in proportion to the bank's size and independent from risk weights that are "complex and almost impossible to verify" (SNB, 2008). In this sense, a leverage ratio should offer protection against unexpected shocks that are not, or not sufficiently, covered by capital ratios measured by taking risk-weighted assets into account.

Financial leverage (measured by excluding the intangible components) has the advantage of being a simple metric, but it also has some significant shortcomings that lead to suggest using it with caution and in any case combined with the Basel II capital ratios. First of all, when a capital requirement begins to bite, the ratio limit can trigger investment in higher risk assets for the purpose of maintaining profitability. In the second place, the leverage ratio does not take into account off-balance sheet positions and so the denominator should be adjusted to incorporate them, otherwise it would create an incentive to bring the risks off the balance sheet. In addition, as the financial leverage ratio is insensitive to risks, it does not reflect the banks' various business models, as illustrated by the Bank of England, according to which the riskiness of assets of large complex financial institutions in the United Kingdom that have a large trading books is fundamentally different from that of small banks focused on mortgages (BoE, 2008a). Based on the Basel II regime, the smaller UK banks at end-2007 had an average Tier 1 ratio of 8.5%, higher than the 7.7% average for the top five banks, while their average leverage ratio (measured as capital-to-assets) was 2.9%, lower than the 3.7% average for the top five.

Risk-sensitive capital requirements reduce distortions in undifferentiated metrics such as the leverage ratio, but some doubts are risen due to the fact that, in the scope of Basel II, the measurement of risks is left to the banks, which, especially the most risky ones, have incentives to hide risks because they want to save in terms of the cost of capital (for a discussion of this issue, see Blum, 2007). But sceptics of the role of the leverage ratio emphasise the importance of the second pillar of Basel II, which allows the supervisory authorities to monitor banks' capital adequacy. Finally, it should be observed that the use of the leverage ratio in the United States did not prevent the origin and the explosion of the Great Financial Crisis.

**Dynamic provisioning.** According to this rule, during good times banks should accumulate reserves against credit risks based on lending growth at the time they issue loans and on the rate of provisioning and losses experienced in the past. Herein the terminology dynamic or statistic provisioning. This rule too could be supplementary to the current loan loss provisioning system and capital requirements (Bank of England, 2008b). The anti-cyclical effect of such a mechanism is clear: banks set aside general provisions during upturns in the business cycle when lending increases and losses on them are low, thus accumulating reserves to use when incurred losses are high. As a result, there will be less need to raise new capital on the market during downturns, when it is more difficult.

However, such a scheme clashes with current accounting standards by which write-downs to loans are made if there is an actual loss event and full recovery is not possible. The estimate of impairments must be based on observable and quantifiable factors or events at the time of the valuation (incurred loss) and not on possible events (expected loss). There is no recognition of expected loss as a result of future events. Hence current accounting standards do not allow

banks to accumulate reserves against future losses that they expect to face, but for which there is not yet material evidence.

Spain<sup>4</sup> has adopted a dynamic provisioning system for banks that have accumulated a stock of write-downs to loans that exceeds impaired loans. For most big banks, coverage of impaired loans was more than 200% at end-2007, to a large extent from general loan reserves required by the Bank of Spain (FitchRatings 2008). The regulation's prudential approach is deemed to be one of the strengths of the Spanish banking system, allowing for the formation of a resource buffer that makes the system better equipped to face the financial crisis, including the difficulties experienced in the domestic real estate market.

The dynamic provisioning system appears more effective for the objective of mitigating procyclicality. Even the International Monetary Fund recognises the usefulness of dynamic provisioning as a tool, combined with others, for mitigating procyclicality, including it in its policy proposals (see chapter "Fair value accounting and procyclicality" in IMF, 2008). However, the obstacles to implementing such system are posed not only by international accounting standards, but also by tax rules when they set limits on the deductibility of prudential provisions. The different regulatory bodies have different views on the issue of loan loss provisions, depending on their different missions. That leads to divergence among supervisory regulations, accounting regulations, and tax regulations. Macroeconomic bank supervision, whose mission is systemic stability, is oriented towards provisioning logic based on the concept of expected losses. Accounting rules focus on provisioning policies based on actually incurred and objectively demonstrable losses. Tax laws are designed to fulfil the need to avoid deferring the tax burden over time through provisioning policy (Resti and Sironi, 2007).

**Variable capital requirements.** Another proposal to limit excessive asset growth is to tie it to variables set beforehand, based on inflation targets and long-term economic growth rate, for example. Banks that experience asset growth in excess of what is set in the threshold assigned to each one of them should increase their capital. The mechanism is simple, but it, too, is insensitive to risk; thus, other things being equal, banks that increase their higher-risk assets would be treated in terms of capital requirements in the same way as those oriented towards less risky asset growth (Bank of England, 2008b).

**Capital insurance.** A recent innovative proposal is based on the principle of catastrophe insurance. This prescribes that banks can choose between the alternative of raising more capital or buying an insurance policy that provides a capital injection in case of "systemic events" (Kashyap, Rajan, Stein, 2008). The trigger event could be based on bank losses and write-downs that have an impact on capital at the aggregate level, activating the insurance if such losses exceed a certain threshold. Within this capital insurance scheme, there is an entity, a pension or a sovereign fund, that acts as insurer and that, to make the policy default proof, sets aside an invested sum in safe financial assets, such as treasury bills. If the trigger event occurs, the sum set aside is transferred to the insured bank's balance sheet, which thus does not need to maintain a permanent capital buffer, but gains access to it in case of need (contingent capital).

The main problem with this proposal is the fact that in the event of a systemic crisis, the activation of multiple requests for "claims benefits" from insurers at the same time could completely drain their resources. Another problem regards the systemic trigger event, which is not easy to define and does not solve the problem of the financial distress plaguing individual banks. Finally, there is the doubt about the possibility of bailouts by, for example, a sovereign

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<sup>4</sup> On the dynamic provisioning issue, see Resti and Sironi (2007) and Bank of England (2008b); for details on the system adopted in Spain, see Bank of Spain (2005).

government if, in the event of a systemic crisis, the entities whose function is to provide the insurance are also hit.

This summary surveys the fervent debate on anti-cyclical measures, some of which appear particularly effective for ensuring both wider capital margins and for keeping in check excessive expansion of assets during upturns in the business cycle and, vice versa, sudden crunches during recessions, exacerbating the downturn. The orientation guiding several proposals is the simplification of the metrics to offset what is perceived as the growing complexity and opacity of risk management mechanisms. Nonetheless, financial market developments and product and process innovation may not be adequately understood and monitored by a simple return to the past, while a better equipped and sufficiently sophisticated tool-box may be more adequate for detecting the alarm signals. Relying on a single measurement of risk may be deceptive and a good rule is to be able to count on multiple indicators. As recent experience teaches, a significant misalignment among the different measures of the same phenomenon may be an alarm signal.

## 6. Summary and conclusions

The financial crisis revealed that capital reserves were not adequate, especially in global banks and in investment banks. The recognition of losses has also revealed misbalanced financial structures, featuring high leverage and latent and underestimated risks. Regulatory arbitrage and the development of a shadow banking system allowed for the hiding of the real risks facing the financial system, with the result that capital safeguards were undersized. In some cases, the capital adequacy metrics were deceiving. As a result of the crisis, it became evident that at some big international banks high levels of financial leverage measured by the accounting data coexisted with high regulatory capital ratios. Such an inconsistency in the metrics is a signal that capital is not adequate for the risks taken on. In other words, risk-weighted assets (RWA) were "underestimated", as highlighted by the low ratio of RWA (Basel measurement) to total balance sheet assets. The OTD model created the illusion that risk could be distributed. Bank financial statements' sensitivity to valuation, with the more extended use of the mark-to-market standard, exacerbated the problem of capital inadequacy. As a result, it has become clear that banks must have higher capital cushions during upturns in the business cycle so that they have an adequate buffer against higher volatility. Deleveraging, in its various forms, has become a priority. As the crisis intensified, the outlook for bank earnings has become dimmer, and the economic situation has deteriorated: strengthening capital safeguards has become a necessity.

Capital increases have been huge, but, at least until the systemic government interventions of October 2008 (see Masera, forthcoming), they were not enough to cover the losses. The use of hybrid capital instruments has increased, especially among US banks. This has caused concern about the quality of the capital raised, and the permanence and stability that it should have to be able to absorb losses. In the absence of uniform rules on eligibility standards for hybrids to be recognised as Tier 1 capital, rules vary among regulatory and bank supervision authorities. As a result, concerns about hybrids led the market to focus attention on the capital adequacy measure based on the best quality capital (the core Tier 1). The European Commission proposal to set common standards for hybrid instruments valid throughout the EU should contribute to solving this problem, in a spirit of harmonisation of rules and with a view to levelling of the competitive playing field.

During the current adjustment phase, market participants are calling on banks to strengthen their capital ratios, mainly the core components. Also as a result of government bailouts and support for banks, the capital ratios bar has been raised. In a context of lack of confidence and uncertainty over the value of assets and the earnings outlook, the market is at the forefront of the push towards capital levels that exceed regulatory minimums. It is not yet clear what stance

the regulatory authorities will take on possible new capital adequacy standards. The risk is that the imposition of particularly strict capital requirements could squeeze lending growth too much and increase incentives to get around the limits. The solution may be found in a pragmatic approach that combines calibrated strengthening of capital requirements for banks so as to restore confidence in their solvency, together with rigorous supervision and market discipline.

The Great Financial Crisis has not spared Italian banks. During the first stage, on the whole they were mostly hit by indirect side-effects rather than directly. Overall, when the crisis exploded Italian banks were relatively solid and efficient as a result of restructuring starting in the 1990s. With a few exceptions, write-downs against high risk assets were contained, because exposure to US subprime mortgages and related structured instruments was limited. However, as the financial turbulence persisted and intensified and the credit crisis spread globally, and from the financial sector to the real economy, the problems spread also to the Italian banking industry, mainly through markets with a negative impact on asset values, the gradual deterioration in credit quality, and steep downward corrections of earnings forecasts.

Viewed against the crisis and in comparison to foreign competitors, Italian banks present some special features that, on the one hand, may contribute to explaining their partial protection against the factors that triggered the crisis and, on the other, shape their relative position. The Italian system stands out for its: wide availability of retail funding which sustained lending growth; traditional business model geared towards risk warehousing; limited exposure to toxic assets and, in general, to financial assets held for trading; low leverage; relatively modest capital ratios, but, in normal situations, substantially adequate to the risks taken on; good quality of Tier 1 capital in terms of stability and certainty. All these factors must be taken into account when evaluating the degree of capital adequacy of Italian banks, while making due distinctions among them individually. The assessment cannot be limited to mechanical comparisons of the usual capital adequacy indicators.

However, in view of the exceptional nature, extension, and systemic reach of the crisis, and taking into account the huge and widespread government bailouts and support for funding, cash, and capital in favour of banks in the United States and Europe, Italian banks, even if sounder than many foreign competitors, are called on to exercise all available and feasible options to strengthen their capital bases, also to be able to face the predictable necessities arising from a recession.

Together with the emergency responses implemented by central banks and governments and, at the microeconomic level, by individual banks, regulatory and supervisory officials have started to debate and work on the rules. The global financial crisis, originated in a system still largely governed by Basel I rules, has highlighted the weaknesses of the regulatory and supervisory framework. In detail, insufficient levels of capital reflect the fact that banks have underestimated the risks that they have taken on, and this was partly due to the inadequacies of Basel I prudential rules, but also to regulatory arbitrage. The new Basel II rules, designed to fill the gaps in the first accord and which came into effect in January 2008, are more sophisticated than the previous ones, but they too have defects, as revealed by the financial crisis, such as the treatment of assets in the trading book and risks on off-balance sheet positions. Policymakers have become increasingly aware that, though the foundations of the system should not be turned over, the tools available for supervisory activity must be adapted to the new context and be designed to ensure that, going forward, the financial system is characterised by a better capital standard. As for capital, the FSF Report affirms that the starting point for improving capital adequacy among the big banks is prompt application of Basel II.

There is no lack of reform ideas and proposals, and the medium-term agenda is full. The fundamental purpose of the suggested reforms is to improve the financial system's resilience to

shocks, while at the same time avoiding excessive regulation. In this sense, the aim is to strengthen prudential rules and regulations, hinging them on more robust capital defences. An intense debate has developed also on the procyclicality issue that is a feature of financial systems, in part due to prudential rules based on capital. This issue is of notable interest because the financial crisis has highlighted the multiplication of several factors that together amplify the well known Basel II procyclical effect. The procyclicality issue has several facets, notably fair value accounting, but the focus of the debate has been on regulatory capital requirements. Hence the need has arisen to identify mechanisms that allow for more flexible management of capital requirements with a view to increasing capital margins above minimum requirements during good times and to allow them to dip during recessions. The main proposals in this direction refer to the leverage ratio, variable capital requirements over time, and capital insurance instruments based on enabling banks to choose between holding more capital or buying an insurance policy that provides for capital injections in case of "systemic events". Focusing on the leverage ratio, the underlying idea is to accompany the Basel standard ratios with a floor for the capital-to-asset ratio below which banks may not go, thus limiting the growth of assets as a ratio to capital, in turn mitigating periods of sharp expansion. While the accounting-based leverage ratio has the disadvantages of being insensitive to risk and of not taking into account off-balance sheet exposure, it does allow for protection against risk measurement errors. Another line of intervention proposed is to offset the procyclical effect triggered by the recognition of loan losses during recessions with a dynamic provisioning system.

Some of the anti-cyclical proposals appear effective to ensure both wider capital margins and to keep in check excessive expansion of assets during upturns in the business cycle and, vice versa, sudden crunches during recessions. The orientation guiding several proposals is simplification of the metrics to offset what is perceived as the growing complexity and opacity of risk management mechanisms. However, in the face of rapid financial innovation, the solution cannot be a return to the past. A lesson of the crisis is that to rely on a single measurement of risk may be deceptive and a good rule is to be able to count on multiple indicators. As recent experience teaches, a significant misalignment among the different measures of the same phenomenon is an alarm signal.

### Acronyms

ABS – Asset Backed Security

B&H – Buy & Hold

BoE – Bank of England

CDO – Collateralised Debt Obligation

CEBS - Committee of European Banking Supervisors

CRD - Capital Requirements Directive

ECB – European Central Bank

FSF – Financial Stability Forum

GFSR – Global Financial Stability Report

IFRS – International Financial Reporting Standards

IMF – International Monetary Fund

IOSCO – International Organisation of Securities Commission

IRC – Incremental Risk Charge

MTM – Mark to Market

OTD – Originate to Distribute

RWA – Risk Weighted Assets

SFBC - Swiss Federal Banking Commission

SIV – Structured Investment Vehicle

SNB - Swiss National Bank

SWF – Sovereign Wealth Fund

TA – Total Assets

VAR – Value At Risk

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