

“Financial regulatory reform and the economy”

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I. LESSONS FROM THE CRISIS AND THE REGULATORY RESPONSE

It is indeed a pleasure for me to participate in this 20th Conference to honour Hyman Minsky and I want to thank President Papadimitriou for inviting me. Four years after the eruption of the financial turmoil, which quickly turned into a full-blown financial crisis after the collapse of Lehman Brothers in 2008, the international banking and regulatory landscape is now being changed in ways that significantly impact the future of the financial sector and the economy. The speed of the propagation of the crisis from one country to another as well as from one sector to another posed exceptional challenges for banks, regulators and supervisors alike.

1. Key lessons drawn from the crisis

The crisis had many, often intertwined and mutually reinforcing causes. A key area where several shortcomings were detected and therefore decisive actions had to be taken concerns the regulatory framework, both from a micro- as well as macro-prudential perspectives. Considering the set of causes that contributed to the crisis, the reform of financial regulation has addressed the following points:

First, excessive asset growth in the financial sector during periods of boom has to be contained, thus reducing the risks of asset price bubbles as well. In this context, it has to be acknowledged that overly accommodative monetary policy may have contributed to inflating the stock market and, subsequently, the housing markets. Therefore, a cautious monetary policy of “leaning against the wind” could help to address this problem. This policy should be based on the re-definition of price stability objectives to capture longer time horizons as well as on a more systematic incorporation of financial and monetary developments in the assessment of risks to price stability. However, it should under no circumstances imply any mechanical reaction of central banks to asset price movements. The main response must come from a reduction of the pro-cyclicality of the financial system by means of macro-prudential policy measures. As we have seen in the recent crisis, pro-cyclicality can be exacerbated by certain features of the regulatory capital framework as well as by accounting rules. Consequently, the implementation of effective macroprudential policies, like counter-cyclical capital buffers as well as the revision

of accounting standards, are of paramount importance. Furthermore, the introduction of a non-risk based leverage ratio will also contribute to putting an ultimate brake on the system.

Second, the financial crisis clearly showed the lack of loss absorption capacity of many regulatory capital elements, namely of the so-called hybrids. In some important institutions common equity was as low as 2% of total risk weighted assets in the run-up to the crisis. There was a clear need to implement new standards demanding more and better quality capital to strengthen the loss absorbing capacity of the financial system. The Basel Committee has already agreed on a new global capital standard, endorsed also by G20 Leaders in November 2010, the potential implications of which I'll discuss in more detail later.

Third, the financial system was too vulnerable to market and funding liquidity shocks. The introduction of regulation on liquidity ratios, imposing more robust buffers in the short term and less structural dependence on unstable wholesale funding, is an important step towards enhancing the resilience of the system.

Fourth, the elimination or significant mitigation of the "too big to fail" problem represents a major challenge for regulators, where a number of initiatives are currently being discussed at the international level under the aegis of the Financial Stability Board.

Fifth, the prevention of systemic risk coming from the "shadow banking sector" remains one of the most important issues of the current regulatory agenda. This can be achieved both directly by enlarging the perimeter of regulated institutions as well as reinforcing accounting rules on consolidation and indirectly by regulating the flows of credit or liquidity backstops coming from the regulated sector.

Sixth, tightening the regulation of over-the-counter derivatives through the use of central counterparties (CCP's) and trade repositories as well as by moving trade of standardized instruments (e.g. CDS's) to organized exchanges are key elements of enhancing transparency and mitigating counterparty credit risk in these markets.

Seventh, correction of the prevailing adverse incentives created by an excessively short-term perspective of risk measurement and performance assessment. The introduction of new governance principles regarding risk management and compensation guidelines should help to align incentives with long-term sustainability.

Finally, improving the oversight on Credit Rating Agencies(CRA's) and reducing the reliance on external ratings for official regulatory purposes. Credit Rating Agencies (CRAs) have contributed to the pro-cyclicality of the financial sector and played a very negative role in the

sub-prime crisis by failing to properly assess the risk characteristics of complex financial products.

2. The regulatory reforms in the US and the EU

Most of the aspects of a new regulatory environment are being widely adopted around the world. The substantive work has been done by the Basel Committee and the Financial Stability Board under guidelines approved by the G20. The core areas of reforms on both sides of the Atlantic address the key lessons I just mentioned. In this context, the regulatory and supervisory objectives in the US and the EU share a common agenda.

From a regulatory perspective, the main initiative in the US has been the Dodd-Frank Act (DFA). With the DFA the US has created a yardstick for the regulatory response to the crisis. The DFA is an elaborate framework and a fundamental and ambitious reform.

In Europe the European Commission has already adopted several new pieces of legislation and many more are in preparation until the end of this year. Besides dealing with the Basel III decisions, the whole set addresses other subjects, from OTC derivatives, consumer protection, deposit guarantee schemes and Resolution Funds to Credit Rating Agencies, securitization, short selling or securities market integrity.

These are just a few examples of the very comprehensive overhaul of the financial market regulation underway in the EU. These examples illustrate, first, that authorities on both sides of the Atlantic are determined to draw lessons from the crisis. Second, they point to the importance of intensifying regulatory cooperation across countries. International coordination on financial reform is essential to prevent regulatory arbitrage, avoid loopholes, and ensure a level playing field.

Some differences are likely to remain in aspects not harmonized at world level. For example, regarding CRAs, the EU's regulation has introduced strict authorisation requirements and supervision for CRAs. However, the regulation might not be enough to overcome all the risks related to the use of external ratings. Therefore, issues such as the over-reliance on ratings and the lack of competition in the sector are currently further explored. The DFA includes an obligation to remove references to (private sector) external credit ratings. As the CRAs continue to accentuate their pro-cyclical behaviour, we closely follow in Europe the efforts of US regulators to apply this particular aspect of the DFA.

Both in the US and the EU reforms require hedge funds (above a certain threshold) to register with an authority and report information regularly. In the US the DFA has also introduced limits on investment in hedge funds for financial institutions as well other aspects associated with the so-called Volcker Rule. In the EU, a Volcker-Rule-type of regulation is not envisaged as experience with the universal bank model, which is predominant in the EU, is generally seen as a success.

II. IMPLICATIONS OF THE REGULATORY REFORM FOR THE ECONOMY

Given the comprehensive nature of the regulatory reform, impacting a wide range of institutions, markets and business activities, it is understandable that the reaction of the industry was critical towards the policy measures. While generally supporting the underlying objectives of the regulatory reform by recognizing the responsibilities of the financial services industry in the crisis and acknowledging the serious weaknesses in business practices across a range of financial institutions (IIF, 2008), resistance remains substantial with regard to certain elements of the reform package. In particular, criticism was raised against the new capital requirements (increased minimum capital ratios, introduction of capital conservation and counter-cyclical buffers as well as a capital surcharge for Systemically Important Financial Institutions (SIFIs)), arguing that this will increase costs for banks, reduce profitability, lead to credit supply restrictions, shrink the banking sector and, ultimately, hurt the economy (IIF, 2010).

Theory and historic experience however demonstrate that those claims are partly based on misconceptions that are important to dispel. A series of recent studies (Admati et al., 2011; Miles et al., 2011; Angelini et al, BIS, 2010; Kashyap et al., 2010) explain clearly the theory behind the fact that changes in capital ratios had historically no such effects or, at least, not in a magnitude claimed by the industry. As Admati et al. (2011) conclude, "... requiring that banking institutions are funded with significantly more equity entails large social benefits and minimal, if any, social costs".

Furthermore, there does not appear to be a clear empirical *relationship between the size of the financial sector and sustainable growth*, thus it is not at all evident that a more moderate expansion of the financial system will have adverse impact on the economy as a whole. Let me elaborate on these issues in more detail.

1. Historically based arguments

The interdependencies between finance and economic growth are multifaceted. They should – and will - remain high in the research agenda for the economics profession for a long period.

The insights of Schumpeter pioneered the understanding of the role of a well developed financial system for fostering technological innovations and ultimately economic growth.¹ The approach was taken in recent times by the endogenous growth literature, in particular through theoretical contributions by Aghion and Howitt (2005 and 2009) and empirical work by Rajan and Zingales (1998 and 2003). Nonetheless, the knowledge gap remains very wide and the recent crisis has underlined the importance – in social welfare terms - of filling this gap sooner rather than later and drawing from it more powerful policy designs.

Turning to the facts and figures of all this, let me first stress the important caveat of measurement issues when speaking about the link between finance and growth. Even the size of the financial sector in a given country is not easy to characterise, let alone to measure. While many indicators can be invoked, none is immune from criticism.² Also the perimeter of the financial sector is typically not easy to pin down. It shifts over time, pushed by financial innovations, and institutional³ and structural specificities at country level make international comparisons a daunting task. The periphery of the financial sector is particularly opaque and hard to apprehend. Comprised of OTC products, complex derivatives and investment vehicles, its lack of transparency is commensurate to the systemic risks it has posed to the rest of the economy, as we painfully witnessed in 2008 and 2009 after the Lehman demise.

Let me now take you through a shortened and unavoidably oversimplified account of what we know about growth-finance interactions.⁴ I will focus in particular on three results, broadly defined.

Firstly, looking at the available empirical evidence on the relation between the financial sector and potential growth, most studies do not point to the role of size of the financial sector per se, but rather to the degree of development of the financial sector as the key variable (see in particular Levine, 2005)

¹ “The banker[...] stands between those who wish to form new combinations and the possessors of productive means. He is essentially a phenomenon of development, though only when no central authority directs the social process. He makes possible the carrying out of new combinations, authorizes people, in the name of society as it were, to form them”. Schumpeter (1934). More generally, see Aghion and Howitt (2009) for an overview of many aspects regarding the finance-growth nexus.

² See A. Haldane (2010) for a discussion of the pitfalls that may affect this statistic.

³ See Dorrucci, E., Meyer-Cirkel, A. and D. Santabábara, (2009) for an analysis of the institutional characteristics in emerging economies.

⁴ See for example Goldsmith, R. (1969); King, R. and Levine, R. (1993); Beck, T., Levine, R. and Loayza, N. (2000); Levine, R., Loayza, N. and Beck, T. (2000); Demirguc-Kunt, A. and Levine R. (2001), Levine (2005).

Secondly, when focusing on the nexus between the size of the financial sector and sustainable growth, over the recent past, there is no clear empirical relationship. ***Recent research at the ECB and elsewhere shows that the continuing increase of the financial sector size does not always contribute to higher economic growth, in particular since the late 90's.*** In fact, some empirical evidence suggests that, above a certain threshold, the effects of finance on growth potential weaken with the degree of economic development as the effect of finance on growth is not necessarily monotonic. There are several potential reasons for that. The provision of financial services may reach a threshold beyond which there are diminishing returns to scale. The expansion of the financial sector is associated with a reallocation of productive talent away from real economic activities, which may ultimately depress economic growth through lower industrial innovation. Besides, if banks in particular become too large and powerful, they may extract excessive rents from the corporate sector, impose their taste for prudence on their corporate clients, or become captured by the interests of large inefficient incumbents, disrupting the natural process of Schumpeterian creative destruction. Indeed, over the last years, bank equity appears to have registered a higher average return than non-bank equity.

Third, financial development may exacerbate the trade-off between growth and stability, and so the findings of the traditional finance-and-growth literature may have been driven by studying short periods of relative calm during the Great Moderation. Preliminary evidence suggests that periods of very fast expansions of credit (or other forms of financial intermediation) tend to be disorderly and often indicative of the emergence of financial inefficiencies that are not conducive to sustainable growth, breeding the sources of financial crises associated with severe economic downturns.

To conclude this brief overview, I would underline that larger financial sectors have generally been associated with a higher degree of economic diversification, resulting in a lower overall volatility of GDP growth for the same level of long-term output growth. (Manganelli and Popov, 2010). However, the decade of the run-up to the crisis saw the effect of larger financial sectors on higher economic growth partly disappear. This phenomenon is connected to the complex non-linearities involved in the finance-and-growth-nexus, causing the effect of finance on growth to peter out over the development cycle, as well as to the trade-off between growth and tailrisk exacerbated by the expansion of the financial sector. Indeed, the main finding of research paper by Popov (ECB, 2011) is that financial globalization increases simultaneously the mean and the left skewness of output growth. This implies that while raising long-term growth, financial globalization has also exacerbated the risk of large, abrupt, and rare macroeconomic contractions. This is consistent with the view that in financially liberalized economies, systemic

risk taking raises the probability of a collapse in financial intermediation. The paper also finds that the welfare effects of liberalization vary with the degree of economic and financial development, therefore financial globalization is not a one-size-fits-all development.

There is also some evidence suggesting that higher growth of the financial sector may come at the expense of higher volatility in general (Levchenko et al., 2009), both for developed and developing economies (Popov, ECB 2011). These research papers emphasize the characteristics of the financial sector as key determinants of macroeconomic performance in all its facets, notably as regards long-term potential, cyclical fluctuations and likelihood and severity of crisis episodes (see also Kaminsky and Reinhart, 1999).

This may call for strengthening our efforts to understand the macro-finance nexus, extract lessons from the crisis and foster the synergies across the various analyses and perspectives (monetary policy, stability, etc.) in which central banks analyse the financial system.

Let me now turn to another important point: historical evidence seems to indicate that there is also no relationship *between simple book capital ratio (or leverage as its inverse) and economic growth*. Miles et al. (2011, page 6) point out that in the UK in 1880-1960 the leverage ratio was about half the level of recent decades. Similarly, Kashyap et al. (2010, page 19) demonstrate that the book equity to book assets ratio for US commercial banks has declined substantially over time: while the ratio exceeded 50% in the 1840s, it fell steadily to reach 15% in 1930s and 6% in the 1940s. Later, with the introduction of the Basel I regime in the early 90's, capital ratios started to improve again in the US, however, this development was accompanied by increasing off-balance sheet activities, potentially reflecting regulatory arbitrage as well as the mis-measurement of risks. The evidence of both countries, indicates clearly that very different levels of capital coincided with similar rates of economic growth, showing no specific historical relation between the two.

Turning to the relationship between simple book capital ratio (or leverage as its inverse) and spreads or rates of business loans, both Miles et al. (2011) and Kashyap et al. (2010) find no evidence of any clear link between these ratios and bank lending rates, for the UK since 1890 and for the US since 1920, respectively. Overall, the main findings of these studies cast doubts on the reliability and accuracy of some of the estimates on the excessive macroeconomic and social costs of strengthened capital requirements. Nevertheless, historical examination can only provide an impressionist type of evidence. We need, of course, more precise analytical and econometric analysis.

2. Analytical and empirical evidence

Against this background, it is of particular importance that policy makers have an appropriate and balanced view of the potential impacts of the reform package. In this context, it is necessary to make a clear distinction between long term and short term impacts.

First of all let me underline that when the authorities calibrated the new requirements they took into account the estimated potential costs and benefits of the reform. These estimates were made at the initiative of the Financial Stability Board (FSB) and the Basel Committee on Banking Supervision (BCBS). The Macroeconomic Assessment Group (so called MAG) was established to assess the impacts during the transition towards the new regulatory regime, while the Long-term Economic Impact Group (or so called LEI) assessed the long-term (steady state) net benefits from the implementation of Basel III. The ECB and several Eurosystem national central banks contributed actively to the preparation of these studies.

Let me first start with the estimated **long-term impact** of the enhanced capital and liquidity regulation. As we have recently experienced, financial crises can impose enormous costs on tax payers and society at large. In order to avoid such losses, Basel III reforms aim at improving banks' capital base and thus banking sector's resilience that can help to foster financial stability as well as to mitigate systemic risks in the global financial system. Thus, the long-term economic benefits, while difficult to quantify precisely, can be very substantial.

The main economic benefit of the reform stems from the reduced frequency of future crises. The prevention and mitigation of downside tail risks for the economy implies a sizeable reduction in the expected output losses associated with systemic events and as such, contributes to more sustainable economic growth over the long term. To be more precise, the study of the Long-term Economic Impact Group has estimated that banking crises occur on average every 20 to 25 years. This estimate means that there is a 4.6 per cent annual probability of a crisis. The study shows that a 4 percentage points increase in the capital ratio lowers this annual probability to less than 1 per cent. Another conclusion is that a one percentage point reduction in the annual probability of banking crises produces an expected net saving of 0.6 percent in terms of unrealised output loss.

The LEI study also provided a thorough examination of the potential long-term economic costs. It was found that a 1 percentage point increase in the capital ratio translates into a [median] loss of output of 0.09 percent. The additional loss of meeting liquidity requirements is of similar magnitude. A more recent BIS paper by Angelini et al (2011) also arrived at conclusions that are fully consistent with the LEI report.

Overall, the main finding the LEI analysis is that there is considerable room to tighten capital and liquidity requirements to achieve significant net benefits in terms of output. This finding is even more pronounced if we take into account the fact that the LEI study is based on the assumption of constant return on equity (ROE) thus potentially underestimating the long-term benefits of higher capital and liquidity requirements.

Similar conclusions are provided by Miles et al. (2011) who estimated the costs and benefits of higher bank capital. By using data on the UK banks they show that even proportionally large increases in bank capital are likely to result in only a small long run impact on the borrowing costs faced by bank customers. They estimate the average cost of capital for banks to increase by a relatively minor 10-40 basis points when the bank capital doubles. Importantly, this analysis takes into account the impact of heightened capital ratios on banks' stability and therefore the lower return of equity demanded by investors.

The analysis by Kashyap et al (2010) also finds that long-run steady-state impact on loan rates is likely to be modest, falling in the range of 25-45 basis points for a ten percentage point increase in the capital requirement. Given the relatively mild impact of changes in capital ratios on the borrowing costs that banks' customers have to face, the implications for economic growth may also remain modest.

Overall, the referred studies found that the potential negative impact of the new framework on long-term output was considerably lower than the benefits related to lower frequency of systemic events. This conclusion is even reinforced when considering additional benefits beyond the reduced frequency of crises. In particular, the new prudential rules will also improve the level playing field for the international banking sector as it harmonises the different national practices. Improving level playing field is expected to help financial institutions to save costs and to encourage cross-border activities. This will in turn result in a more efficient financial sector and will also bring benefits to non-financial corporations and households through higher competition and increasing availability of financial services.

Let me now say a few words about the theoretical rationale behind these results. A key conceptual issue that warrants further investigation is the impact of strengthened capital ratios on the expected return on equity. As I already mentioned, enhanced stability of financial institutions should, in principle, be reflected in lower risk premiums and thus lower funding costs for banks. The theoretical underpinning behind this idea is the Modigliani-Miller (M-M) theorem which states that if certain assumptions hold (symmetric information and rational behaviour of market participants, complete, frictionless markets etc) the funding structure of a firm is irrelevant for its

business decisions. In an M-M world, the primary differences between the costs of debt and equity can stem only from their different tax treatment. Both the paper of Miles et al (2011) and Kashyap et al (2010) are based on the – at least partial – validity of the M-M theorem. The relevant point is that more capital reduces the volatility of return on equity and increases the safety of debt thereby reducing the required returns by the market on both equity and debt. This means that the equity risk for a bank should decline linearly with leverage. Indeed, Miles et al (2011) show empirically for the UK that for a leverage of 30 the bank equity risk premium is 6.5% and for a leverage of 15 is just 3.1%. They estimated also the relationship between leverage and equity beta by using different analytical approaches and found that changes in leverage have a significant impact on banks' riskiness. The results of their analysis suggest that, depending on model specifications, the M-M effect is about 45-75% of what it would be if the M-M theorem held precisely. However, as the authors pointed out, their analysis was based on the assumption of no change in the required rate of return on debt, which means that with the more likely assumption of a reduction of that required return the M-M effects would be even higher.

In this framework, it's clear that a substantial increase in the simple book capital ratio (or leverage as its inverse) should lead to a decrease in the required return on equity. This seems to be one of the reasons why many in the sector oppose the new capital requirements. Therefore, it has to be emphasised in this context that a simple ROE ratio, if not adjusted to leverage (and risk), can provide totally misleading signals for investors. In fact, part of the high ROE ratios reported by banks before the crisis was due to high leverage and high risk. A recent ECB study on EU banking structures (ECB, 2010) highlighted that the inappropriate assessment of the risk characteristics, and thus the un-sustainability, of the observed ROE ratios led to huge losses in the recent crisis. Averaging the ratios over time to include the crisis years shows that the effective ROE of banks and other financial institutions was much lower than previously thought. The industry has to accept therefore that the regulatory reform leads to an apparent lower ROE which nevertheless is shown to be misleading when proper consideration for leverage and risk is factored in. In this regard, the ECB report pointed out that “desirable features for banks' performance measures should encompass more aspects of the performance than just profitability embedded in a pure market-oriented indicator such as ROE” and that “risk-adjusted types of returns indicators may benefit from higher disclosure and better explanation to the markets, or at least to the supervisors”.

Let me now turn from long-term, steady state impacts towards *the potential short term consequences of the reform proposals*. While the long-term net benefits of the new regulatory

framework vindicate the scope and magnitude of the regulatory measures, it should not mask the challenges that are associated with the implementation of the reform package. Indeed, Basel III will have some potential **transitional costs** that arise as banks, on average, need to increase their capital base in order to fulfill the new requirements. While the basic assumptions on the M-M theorem may hold in the long term, financial markets are characterised by information asymmetries and frictions in the short run, which can be especially prevalent in distressed periods.

Banks have several possibilities to adjust their capital ratios. For instance, they can raise capital, increase lending spreads, reduce dividends and/or downsize (risk-weighted) assets. In practice, it is likely that banks' adjustment is going to be achieved through a combination of all these measures. There is empirical evidence, however, that in the short term and in crisis periods in particular, banks react to capital (and liquidity) constraints by de-leveraging and by tightening of credit conditions (Hempell – Kok, 2010) that can have a measurable impact on loan supply and thus on economic activity (De Bondt et al. 2010). Whatever methods banks choose to adjust their capital ratios, the overall effect is channelled to the macro-economy via various transmission channels.

The Macroeconomic Assessment Group analysed transitional costs related to a 1 percentage point increase in the capital ratio implemented over eight years, assuming a constant return on equity. The results of the study show that the transitional costs are subdued. The cumulated reduction of GDP relative to the baseline would amount to 0.15 percentage points. Similarly, the negative [un-weighted median] impact on bank lending to the real economy would be approximately 1.4% in cumulated terms. The lending rate spreads are estimated to increase by 15.5 basis points. The peak impact would occur after 35 quarters from the beginning of implementation period but the negative impact recedes when the time elapses.

The interim report of the Macroeconomic Assessment Group assessed also the implications of new tighter liquidity requirements. A 25% increase in the holding of liquid assets was estimated to yield a fall in lending volumes of 3.2% and a [median] increase in lending spreads of 14 basis points after four and a half years. This would induce a [median] decline in GDP of 0.08% relative to the baseline. However, as the new liquidity requirements are subject to a long observation period that allows further fine-tuning of the requirements, it is far too early to draw definitive conclusions over the macroeconomic impact.

As shown by the results of the Macroeconomic Assessment Group as well as by the referred paper of Kashyap et al (2010), the length of the implementation period matters crucially for

determining the transition costs. Clearly, the longer the implementation period, the milder is the negative impact on the economy. If the new framework were implemented hastily, banks would need to undergo sizeable consolidation of their capital base and carry out a reshuffling of their balance sheet structure over a short period of time. This could have some adverse impacts on credit intermediation in the short term. Such transitional impact motivated the design of long phase-in arrangements.

As the transition period is agreed to last from 2013 to 2018, the new measures will become fully effective only on 1 January 2019. These eight years from now should provide the banking sector ample time to adjust to the new regulatory requirements by earnings retention and improved efficiency. Also, we can reasonably expect a gradual decline in investors' profit expectations as they realise and price in the improved stability of individual institutions and the financial system as a whole. Taking into account the expected improvements in profitability of the banking sector, it is likely that banks will be able to cope with the new requirements without major distress. Thus, the long phase-in period of the new Basel III capital requirements prevent disruption in credit flows and bring enough clarity and scope for banks to smoothly absorb the necessary adjustments over time. This implies in turn that the transitional costs for real economic activity are likely to be relatively moderate and distributed over the long implementation period.

III. THE BENEFITS OF HIGHER CAPITAL AND ITS CALIBRATION

As I have highlighted, better capitalised banks may represent substantial benefits from a social perspective in the long run while the transition costs depend largely on the amount of additional capital that banks have to accumulate and the available time for banks to adjust to the new framework. The question therefore is whether we can identify an "optimal" level of capital that could maximise social benefits.

According to the LEI report, the long term benefits for the society are highest when the capital ratio falls in the range of 13-15%. Taking into account the potential impact of declining ROE expectations that may moderate the increase in funding costs of banks; the socially optimal capital ratio can be even higher. Indeed, Miles et al (2011) arrive at a concept of optimal capital ratio of 16 to 20% for the UK. Kashyap et al (2010) for the US mention appropriate capital around 15% .

The total capital ratio demanded by the new Basel regulations until 2019 is 8%, to which we should add the additional 2.5% requirement for the capital conservation buffer, the countercyclical capital buffer (between 0% and 2.5% according to the economic cycle) and the extra loss absorbency capacity for the Global SIFI's. An important observation is that these

levels refer to the new definitions of capital adopted by Basel III whereas the previous calculations on the capital ratio are based on the current definitions of capital and risk weighted assets. The Quantitative Impact Study carried out by the Basel Committee highlights in this regard that the combined effect of the changes in the new concepts of the regulatory capital and the risk weighted assets is equivalent, on average, to a 5.6 percentage points decline in capital ratios under present definitions before Basel III. In other words, in order for the banks to achieve the new Basel capital ratios, they should have on average a 5.6% extra capital under present definitions that will “diminish” when the narrower definition of eligible capital (resulting in a decline in the numerator of the capital ratio) and the extension of the risk coverage (leading to an increase in the denominator of the capital ratio) will come into force. Taking all these effects also into account, we can see that the new calibration of the Basel framework falls within the range of socially optimal capital ratio indicated by the studies I mentioned.

Two important potential consequences of the new capital requirements must be highlighted as they could create risks that, if materialised, could have negative consequences for the economy. First, there is the risk that higher capital requirements could lead to a search for yield and consequent higher risk taking by financial institutions if they do not accept the idea that a lower return that is less volatile is preferable to apparent higher short term returns dependent on excessive leverage and risk. In this respect, good supervision under the rules of Basel III will be essential to avoid a repetition of significant crisis episodes.

Second, another real risk of tighter capital regulation is that the new rules may lead to an increase of the shadow banking system. It is therefore necessary to be prepared to redefine the perimeter of regulation, manage the boundary problem and to regulate the flows between the regulated and non-regulated parts of the system.

IV. OTHER COMPONENTS OF THE REGULATORY REFORM

Notwithstanding the substantial achievement in many areas, there remain some important aspects of regulation where further steps need to be taken by authorities to address the identified shortcomings. In this context, let me highlight that a wide range of regulatory initiatives are currently being discussed under the aegis of the FSB and the Basel Committee where concrete results are expected already in the near term.

First, work is ongoing with relation to the prudential treatment of systemically important institutions (SIFI's) which are expected to have a loss absorbing capacity beyond the Basel standards given the implicit subsidy they get and the enormous costs their potential failure may

represent for society. At the current juncture, it is of primary importance that a consensus is achieved among regulators on the definition of global systemically important financial institutions (SIFI's) as well as on the determination of a reasonable range of additional loss absorbency. Any additional requirements should be proportional to the institutions' systemic importance the measurement of which represents, admittedly, a major challenge for regulators. In order to avoid unwarranted deviations from an international level playing field in this area, consistency across jurisdictions has to be ensured, supported also by effective peer reviews of implementation. The other major issue in dealing with SIFI's is to improve substantially the resolution regime of such institutions in order to reduce the implicit subsidy they get from society thus reducing moral hazard. Nevertheless, it has to be realized that for cross-border institutions this goal will be very difficult to achieve in view of the heterogeneity of legal regimes. A high degree of harmonization of company law, specially bankruptcy law, would have to be attained. Recognizing also that all countries seem to refuse the idea of breaking-up big institutions, it is therefore important that regulatory efforts and more intense supervision should aim at making "too big to fail" into "too good to fail" institutions.

Second, the consistent implementation of the new counter-cyclical buffering mechanism also represents a major challenge for authorities across countries. In this regard, the implementation guidelines developed by the Basel Committee to reduce national discretion and to maintain level playing field have to be respected. In line with the Eurosystem's stance on this issue, I believe that the macroprudential authorities, like the ESRB or the FSOC, should play a key role in the operation of the mechanism as well as in international cooperation and information exchange on buffer settings and impact assessments.

Third, further progress has to be achieved on OTC derivatives markets reform, including the move of standardized products to organized exchanges. While some jurisdictions have already endorsed legislation in this field (e.g. US, Japan) or are in a process of finalising a regulation (EU), others are lagging behind substantially. This may again distort the level playing field with the potential for regulatory arbitrage.

Fourth, as I mentioned before, the incentives created by tighter capital and liquidity regulation for banks raises the risk that certain activities that have traditionally been carried out by banks will, in the future, be transferred into the "shadow banking" sector that is out of the scope of regulatory oversight. Therefore, it is important for authorities to explore and better understand the interconnections between regulated and not regulated entities that are involved in financial intermediation. In particular, analysing the complex chain of intermediation activity as well as

the channels for possible contagion and defining the appropriate policy response remains another main challenge for authorities in the years ahead, also with a view to the fundamental data gaps in this field. The authorities seem to be taking seriously all these concerns as it is shown in the recent publication by the FSB of the contents of the work being done regarding the definition of what will be considered as entities and activities of the “shadow system”, as well as the enumeration of the policy measures to be used to deal with the potential problems that may emerge.

Finally, the role of CRAs in financial intermediation is an issue that would require further analysis and an appropriate policy response. Notably, the intensely pro-cyclical behaviour of CRAs and thus their destabilizing role in the recent crisis have by now been widely acknowledged.

A paper by Flandreau et al (2010) of the BIS already finds that in the period 1920s and 30s, ratings from the US rating agencies performed pro-cyclically. Moreover, they did not find that superior forecasting capacities explained the agencies' growing importance. We have not progressed much. See the way they did not consider any effect in reducing credit risk in Europe as a result of the important decisions on the EFSF and ESM. Ratings are supposed to reflect all available information in a forward-looking manner, and this should include a proper assessment of such decisions.

In this regard, the use of credit ratings in regulations and supervisory policies remains a topical issue that has to be addressed by authorities in line with the principles published by the FSB in October 2010 in this field. Although the FSB requested standard setters and regulators to translate the principles into specific policy actions, work in this field is still at an early stage in several jurisdictions.

V. CONCLUSIONS

Let me conclude by saying that financial regulation is a very complex task where policy makers have to face numerous challenges. In my speech today I could only highlight some of the core initiatives and provide you with a short assessment of the potential impacts of the new Basel framework that I consider as one of the most important elements of the comprehensive policy response to the crisis.

I have highlighted today that there are well-founded arguments to tighten capital requirements given that this is expected to result in significant net social benefits in the medium to long term. This argument was underpinned also by a wide range of empirical studies which emphasized the difference between privately and socially optimal levels of capital and demonstrated that

increased levels of capital are not expected to have a dramatic impact on lending and on economic growth as argued by some in the industry.

Furthermore, I have emphasised the importance of the proper assessment of the enhanced resilience of individual institutions and the financial system as a whole that should, over time, be reflected in lower levels of expected return on equity as well.

Increasing capital and liquidity requirements will result in economic benefits that widely exceed the potential costs. A more stable financial sector is good for long term return on capital and also positive for economic growth and social welfare.

This said, it should not be forgotten that financial markets are often characterised by asymmetric information and other types of frictions in the short run, which may potentially lead to disturbances in financial intermediation, especially in stress periods. Therefore a careful design of the measures and a continuous assessment of the impact mechanism are of utmost importance for policy makers. This is reflected also in the extended transition period for the Basel capital requirements as well as in the agreed observation period for liquidity measures and the leverage ratio. The same principles should be followed in the design of the additional regulatory measures that are currently being discussed at the international level.

Finally, I would like to underline that the new regulatory framework should not be taken as a static set of measures: it is continuously changing and evolving. Regulators and supervisors should reflect on the new types of activities that banks engage in the future as well as on the new types of risks associated with these activities. I firmly believe that, if implemented effectively across jurisdictions, the new Basel rules and the other regulatory initiatives will appropriately address the shortcomings identified in the recent crisis. Testing and the revision of certain measures, if deemed necessary, will however remain one of the main challenges of the future.⁵

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