Italian banks facing Basel 3 higher capital requirements: which strategies are actually feasible?

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Abstract: The new capital requirements imposed by Basel 3 involve Italian banks adopting strategies aimed to reach the tighter required standards. Higher profitability, lower risk weighted assets, higher retained earnings and lower loans to customers supply represent some of the strategies that could be adopted by banks in addition to a shareholders' equity increase. Each one of them, however, could be differently convenient in terms of costs and benefits for the banks themselves and could bring different impacts for the financial system and the real economy. In this paper, adopting an accounting model based on a sample of 10 Italian banking groups, we analyse each of these possible strategies, making a comparison between what should have been done to achieve higher capital requirements, what banks actually did between 2011 and 2013 and what they are going to do in the upcoming years, as pledged in their business plans. Overall, we consider the main pros and cons of each strategy, both in terms of idiosyncratic effects on banks and in terms of systemic effects on the financial system and the real economy. The aim is to investigate how banking strategies have recently evolved and how they could or should change in perspective in a context of already weak performance.

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1. Introduction

With the introduction of the Basel 3 regulatory framework, banks need to identify and evaluate the best strategies in order to achieve and respect the new prudential requirements – stricter capital adequacy, limited leverage ratio and minimum liquidity standards – and to face the impacts which could derive on their business.

The main concern involves the potential negative effects on banks' profitability, especially in a context of shrinking margins and in an economic environment struggling to bounce back. Lower returns could derive in order to maintain higher volumes of liquid assets, to reduce the level of risk weighed assets or to respect the new limits on the leverage.

Briefly: the new prudential framework, enhancing the minimum capital standards and introducing tight requirements about the financial structure and the leverage ratio, could affect – directly or not – banks' economic, patrimonial and financial stability. For this reason, banks need to look for new management strategies to increase their capitalization in a context of decreasing banking profits.

The existing literature about this topic has already examined the main possible impacts on banks deriving from the new regulatory framework. This paper aims to contribute to the debate about the strategies that banks could adopt to face the new capital requirements and the main potential effects that might follow.

In particular, this research – more than just evaluating the strategies that could be adopted by banks to achieve the higher capital standards required by the new regulatory framework – aims to highlight: on one hand, what banking intermediaries would have needed to do to reach the patrimonial purpose; on the other hand, the strategies effectively adopted by banks and the results actually achieved between 2011 and 2013, also thinking about the feasibility of the different strategic solutions – in terms of costs and benefits – and about the future directions that could be identified. The starting point of this analysis and of the deriving considerations is the necessary recognition that the financial, patrimonial, economic and risk conditions which characterize the Italian banking system strongly affect the implementation of the different possible strategic interventions.

The accounting model suggested by Morelli (2011) and applied in our work to a properly selected sample of Italian banking groups allows to highlight the different possible strategies that could be adopted by banks and to derive indications about their feasibility. Moreover we take into account the economic, financial and operational background which actually characterize banks in the recent years. As the results achieved by the model cannot be anything but theoretically indicative of the possible choices and combinations of the different strategies that may be adopted, the analysis of the financial statements and the strategic plans published by banks between 2011 and 2013, allows to enrich the analysis, thinking about the actual intervention margins, the quality of the choices carried on by the banking groups included in the sample and the feasibility of the planned solutions.

The paper is structured as follows. Section 2 offers a brief review of the main recent studies on Basel 3 impacts on banks, with a specific focus to the effects on banking profitability deriving from the tighter capital standards required. Section 3 describes the analytical approach adopted, the sample of banking groups selected and the dataset. Section 4 examines the different strategic solutions pursuable by banks in order to achieve and maintain higher capital standards. In particular, with the exception of shareholders' equity increase, the growth in profitability and self-financing and the reduction in the risk and volumes of assets are taken into consideration. Section 5 reflects upon the actual feasibility of the strategic levers analysed and on the potential intervention margins, taking into account the Italian banks' profitability trend of the recent years and its possible future development. Section 6 concludes the paper summarizing the main significant results and proposing some closing remarks.

2. Literature Review

Since the beginning of the financial crisis, several studies accompanied the development of the regulatory reform. As far as this paper's main purpose is concerned, only the most related to the dealt with topics will be taken into consideration, ordered according to the regulatory development and banks economic trends in the past few years. In the first stage, scholars', academics' and field experts' attention has been directed on the recognition of the causes of the crisis, the determinant factors in the international diffusion of the financial and economic turmoil and the main features of the Italian banking and financial systems which contributed to limit its effects.

In a second period the debate has been mainly redirected towards the critical evaluation of the new regulatory framework established by the Basel 3 agreement, identifying its relevant strengths and weaknesses, meditating on the operative and strategic effects for banks and, more in general, considering the impacts on the overall financial and economic system.

A considerable part of the relevant literature blamed the Basel 2 agreement as the main responsible behind the financial crisis, highlighting on top of all its inability to weaken the effects.

Some authors, such as (Cannata and Quagliarello, 2009; Sironi, 2010; Chionsini and Romagnoli, 2011), on the contrary, consider those reflections unfounded. At the surge of the financial crisis, in fact, the Basel 2 agreement was not entered into force in the United States yet, while in Europe only some banks were implementing it. Nevertheless, the common opinion about the limits of Basel 2 is unanimous: from the non-perfect international harmonization to the arbitrage possibilities between banking and trading books, to the absence of appropriate quantitative measures to manage the liquidity risk and the lack of interconnection between "micro" and "macro-prudential" supervision (Birindelli and Ferretti, 2011; Chiosini and Romagnoli, 2011; Messori, 2009; Onado, 2009; Resti and Sironi, 2011).

The need for an improvement in the prudential regulation towards banks is therefore shared. However that does not apply to the contents and handling methods of some of the topics aim of the regulatory reform expected in the Basel 3 agreement. Restricting to the aspects more deeply related to the purpose of this paper, the forecasts determining far too big increase of the capital required have been highly debated: the tighter limits to the Common Equity Tier 1 structure, from which is demanded the exclusion of preferred and privileged stocks (Paris, 2010; Birindelli and Ferretti, 2011); the deduction, from the regulatory capital of deferred tax assets (Zaccaria, 2010; Carosio, 2010); higher debt limits for banks adopting internal market and counterpart risk valuation models (Nasi, 2011; Carosio, 2010).

To the reform analysis and the proposals to improve the weakest and potentially destabilizing aspects of it, strolled up beside some studies on the banks' situation in terms of adequacy to the new regulatory standards and to the new rules' impacts on the lending activity of banks.

Regarding the first topic, the studies that have been carried on, highlighted a constantly improving situation between 2009 and 2012. In the *Quantitative Impact Study* (QIS) carried on in 2010, upon the 2009 consolidated data, on a sample of 263 banks coming from 23 different countries, the Basel Committee estimates, for the 22 Italian banks taking part to the survey, a common equity requirement of about €47 billion, needed to achieve the 7 per cent *Core Tier 1 ratio* (Basel Committee on Banking Supervision, 2010). Lusignani and Zicchino (2011) demonstrate how actually are the big banking pools that are not aligned to the new regulatory standards, while instead small and medium banks, back at the end of 2009, owned enough capital buffers in order to respect the upcoming regulatory requirements. In particular, over a sample of 10 European and 31 Italian banking groups – 5 of which were big-sized, 11 medium and 15 small – at the end of 2009 none of the big five Italian major groups or of the 10 Europeans managed to achieve a *Core Tier 1 ratio* of at least the 7 per cent, while about one third of the

middle-sized ones and the half of the smallest displayed values higher than the limits required by the new agreement. Altogether, as far as the 31 Italian groups involved in the analysis, the gap between the required and the available common equity needed to reach the 7 per cent target was of €42 billion, just a little bit lower than the €47 billion estimated in the QIS by the Basel Committee (Basel Committee on Banking Supervision, 2010). Comana (2010), based on the data of the end of 2009, gathered among 39 small and medium Italian banks, highlights how, in order to achieve a *Core Tier 1 ratio* of at least the 7 per cent, the institutions objet of the analysis, would have to close a common equity gap of €14,4 billion, assuming the ROE would go back to normal levels of 5 per cent.

Studies on 2011 and 2012 show a clear improvement of the patrimonial levels in the Italian banking system. Regarding the 13 Italian banks belonging to a sample of 212 banks of 26 different countries, the QIS conducted on June 2011 data estimates a common equity gap needed to achieve the 7 per cent *Core Tier 1 ratio* of about €24 billion, almost the half of the one calculated at the end of 2009 (Basel Committee on Banking Supervision, 2012, Mieli, 2012; Signorini, 2012). In 2012, Cannata, Bevilacqua *et al.* (2013), over a sample of 13 Italian banking groups, representing over the 70 per cent of the assets of the overall Italian banking system, calculate a capital gap necessary to achieve the 7 per cent *Core Tier 1 ratio* decreasing of about the 73 per cent from 2010 to June 2012.

As far as the effects brought by the regulatory interventions in terms of lending to costumers, the general concern is that the tightening of capital requirements, together with the introduction of debt limits and new rules for the liquidity risk management, may diminish the amount of available resources and increase the total cost incurred by banks for financing activity, causing a contraction in the volume of loans to customers and an increase in the interest rates (Mussari, 2010; Curcio, 2010; Lusignani and Zicchino, 2011; Cosimano and Hakura, 2011; Kashyap, Stein and Hanson, 2010; King, 2010).

The attention of the institutions and the academics has also been addressed to the valuation of operating strategies to adopt in order to face the stricter regulatory requirements.

Angelini and Gerali (2012) estimated the macroeconomic costs of the reform – in terms of effects on GDP, on the CPI, consumption, investments and real estate prices – depending on the strategy adopted by the banks against the tighter regulatory requirements. Strategies related to capital increase, decrease of shared dividends and raising in the spread of loans. From the results it emerges that in the first two cases – to capital increase and decrease of dividends – the macroeconomic impact would be negligible, while the ROE would undergo a bigger contraction. Totally opposite effects, instead, would appear in case of policies aiming at increasing profits through the implementation of higher fees and interest rates for the customers: there would be a weaker effect on the ROE, but on the other hand there would be a much bigger macroeconomic impact. Signal of the fact that banking strategies may move in a totally different directions than what would be a benefit for the entire economy.

Tutino (2011) takes into account the consequences of the new regulation on the banking efficiency and he highlights the main impacts that the new regulatory policies might have on banking management equilibrium, on the credit collection policies, on financial structure choices, on capital management and profitability. In such a scenario the author underlines the need for a careful redefinition of banking strategies, taking into consideration the requirements imposed by Basel 3, the national and international economic situation, of the chosen business model, the role of competitors, the current and potential profitability levels. The last one is the perspective on which the work of Lusignani and Onado (2012) is focused. Based on the analysis of the systemic data from 1965 to 2011, it highlights the continuous decline of the interest margin of Italian banks in the last 20 years and of the other revenues in the last 10

years: signal of an unstoppable degrade of the profitability and of a need, now more than ever, to find a long term solution to the problem.
About this topic, the evidences raised from the study conducted by Birindelli and Ferretti (2011) are very interesting. They concern the main expectation and concerns of Italian banking intermediaries about the effects of the new regulation and the main strategies banks could adopt to face it.
The survey, that was sent on January 2011 to a sample of 20 listed Italian Banking groups, examined the banks' perspective on: the new Basel 3 requirements and expected effects, main management strategies they were planning to implement the regulatory framework, main effects in terms of cost of capital, profitability and correlation between credit and economy. According to the majority of the banks taking part to the survey the regulatory reform was considered fundamentally indispensable; the most relevant impact in terms of management effects was attributable to the new standards regarding the *Common Equity Tier 1* structure; the capital increase – followed by the self-financing and the reduction in the risk of assets – was considered the main strategic direction to intervene on in order to respect the new capital limits required by the regulation; the effect on the credit distribution to the economy would have been substantially irrelevant. The same activity has been repeated in January 2012 on a sample of 31 Italian banks, accounting for more than the 70 per cent of the assets of the overall Italian banking system and differentiated by size of the intermediary according to the ranking made by Bank of Italy[1]. The obtained results were similar (Tutino, Birindelli and Ferretti, 2012).
Morelli (2011) proposes an analytic approach – taken and empirically implemented in our work (Section 4) – based on the relationship between the capital and other management levers in banks. This allows us to evaluate the range and the efficiency of several operative levers on which we can operate in order to achieve the higher standards required by the new regulatory framework. The author keeps the target *Tier 1 ratio* at 10 per cent and he assumes the following hypothesis in order to measure the effects of the chosen approach: ROA of 0,46 per cent, a share of distributed dividends equal to the 50 per cent of net profits, an assets' weighted average riskiness equal to the 50 per cent of total, risky assets' growth of 7 per cent, possibility to resort only to the self-financing – meaning profits retention and related dividends decrease – without the possibility of shareholders' equity increase. The conclusions achieved by the author – based on the described assumptions and the expectations resulting from the application of his own analysis model – affirm that, in order to reach and maintain the targeted *Tier 1 ratio* to the value of 10 per cent over time, either an increase of profitability of 41 per cent or a decrease in the dividends' distribution of 30 per cent, or again a slowdown of the assets' growth of 29 per cent would be necessary.
Pittaluga, Chiorazzo and Morelli (2013), reviewing and developing the work already made by Morelli in 2011 but using a different approach, take into account also the opportunity to increase the value of total assets through new capital injections. Using simulations based on changes of capital requirements in a middle and long-term equilibrium scenario, the authors observe how, without a growth in the banks' margins of profit, in the long term the achieved *Tier 1 ratio* would be inclined to converge to the initial levels if the bank would not use continuous external capital injection. As a consequence, banks' ability to keep their capital levels, without using new capital emissions, necessarily implied an increase in their profitability.
For an overall view we reported on Table 1 the main analysed aspects. It needs to note that the cited contributions have to be considered in relation to the time of their composition and, especially for the least recent ones, that not all the factors could be taken into account at the time. Having that said, even if the contributions to the analysis and the debate about the value of the new regulatory framework are

[1] *Bank of Italy* (2012), Annexes, Glossary, Banks.

many, the management strategies actually feasible by the banks, starting from the real conditions characterizing Italian banks efficiency, are much less.
The feasibility and the incisiveness of the specific management strategies banks may adopt, in fact, has to be compared with actual data, conditions and context perspectives.

Table 1 Literature review – Synthesis of the main analysed aspects

	Financial crisis and Basel 2: considerations on the main lacks	**A critical analysis of the new Basel 3 regulatory framework**	**Banks' adequacy to tighter requirements**	**The main impacts on banks**	**Strategies viable for banks**
Cannata e Quagliariello (2009)	X				
Messori (2009)	X				
Onado (2009)	X				
Sironi (2010)	X	X			
Chionsini e Romagnoli (2011)	X				
Resti e Sironi (2011)	X				
Zaccaria (2010)		X			
Paris (2010)		X			
Carosio (2010)		X			
Nasi (2011)		X			
Masera (2012)		X			
Curcio (2010)				X	
King (2010)				X	
Lusignani e Zicchino (2011)			X	X	
Cosimano e Hakura (2011)				X	
Kashyap – Stein – Hanson (2011)				X	
Comana (2010)			X		
Signorini (2012)			X		
Mieli (2012)			X		
Cannata, Bevilacqua et al. (2013)			X		
Morelli (2011)					X
Tutino (2011)		X			X
Tutino – Birindelli – Ferretti (2012)		X	X	X	X
Angelini e Gerali (2012)					X
Lusignano e Onado (2012)					X
Morelli – Chiorazzo – Pittaluga (2013)					X

Source: own elaboration

3. Sample, data and methodology

The analysis has been conducted considering a sample of 10 Italian banking groups, starting from the implementation of the analytical approach proposed in Morelli (2011). The adopted model – described more in detail in Table 2 – allows to identify the profitability level which could enable banks to achieve and keep stable over time a target *Tier 1 ratio* ("*Stabilizing ROA*"). Moreover, the model helps to consider additional possible strategies that could be adopted in alternative to a shareholders' equity increase: restrained assets' growth, lower risk weighted assets, limitations to dividends distribution.

Table 2 The accounting model adopted in the analysis

The accounting model suggested by Morelli (2011) starts from the decomposition of the *Tier 1 ratio* in its main determinants [4.1], assuming that capital increase over time is only linked to higher retained earnings, without considering shareholders' equity injection.

$$\%\text{Tier } 1_t = \frac{\text{Tier } 1_t}{RWA_t} = \frac{\text{Tier } 1_{t-1}}{RWA_t} + \frac{NP_t \times (1-d_t)}{RWA_t} \quad [4.1]$$

$$\%\text{Tier } 1_t = \frac{\text{Tier } 1_{t-1}}{RWA_{t-1} \times (1+\Delta\%RWA)} + \frac{NP_t \times (1-d_t)}{RWA_t} \times \frac{RWA_t}{TA_t} \times \frac{TA_t}{RWA_t}$$

$$= \frac{\%\text{Tier } 1_{t-1}}{(1+\Delta\%RWA)} + \frac{ROA_t \times (1-d_t)}{\frac{RWA_t}{TA_t}} = \frac{\%\text{Tier } 1_{t-1}}{(1+\Delta\%RWA)} + \frac{ROA_t \times (1-d_t)}{\%RWA}$$

Assuming stable over time the *Tier 1 ratio* [4.2], it is possible to obtain an accounting equivalence [4.3] that allows to show in which ways banks could work to achieve the target *Tier 1 ratio*.

$$\%\text{Tier } 1_{t-1} = \%\text{Tier } 1_t \quad [4.2]$$

$$\%\text{Tier } 1_t = \frac{\%\text{Tier } 1_t}{(1+\Delta\%RWA)} + \frac{ROA_t \times (1-d_t)}{\%RWA}$$

$$\%\text{Tier } 1_t - \frac{\%\text{Tier } 1_t}{(1+\Delta\%RWA)} = \frac{ROA_t \times (1-d_t)}{\%RWA} \qquad \%\text{Tier } 1_t \times \left(\frac{\Delta\%RWA}{(1+\Delta\%RWA)}\right) = \frac{ROA_t \times (1-d_t)}{\%RWA}$$

$$\%\text{Tier } 1_t = \frac{ROA_t \times (1-d_t)}{\%RWA} \times \frac{(1+\Delta\%RWA)}{\Delta\%RWA} \quad [4.3]$$

The [4.3] formula shows the link between the capital ratio and its determinants: profitability (ROA_t), assets' riskiness ($\%RWA_t$), risk assets growth ($\Delta\%RWA_t$), dividend pay-out ratio (d_t).

Starting from [4.3] it's possible to obtain the value necessary to reach the target *Tier 1 ratio* alternatively in terms of: profitability (*Stabilizing ROA*) [4.4], risk weighted assets [4.5], dividend pay-out ratio [4.6] and risk assets growth [4.7]

$$ROA_{stab} = \frac{\%\text{Tier } 1_t \times \left(\Delta\%RWA / (1+\Delta\%Rwa)\right) \times + \Delta\%Rwa}{(1-d_t)} \quad [4.4]$$

$$\%RWA = \frac{ROA_{stab} \times (1-d_t)}{\%\text{Tier } 1_t \times \left(\Delta\%RWA / (1+\Delta\%Rwa)\right)} \quad [4.5]$$

$$d_t = 1 - \frac{\%\text{Tier } 1_t \times \left(\Delta\%RWA / (1+\Delta\%RWA)\right) \times 1 + \Delta\%Rwa}{ROA_{stab}} \quad [4.6]$$

$$\Delta\%RWA = \frac{ROA_{stab} \times (1-d_t)}{\%\text{Tier } 1_t \times \%RWA - ROA\ (1-d_t)} \quad [4.7]$$

$\%\text{Tier } 1_t$ = *Tier 1 ratio* RWA_t = Risk Weighted Asset TA = Total Assets NP_t = Net Profit
d_t = Dividend pay-out ratio $\Delta\%RWA_t$ = Risk Weighted Asset's Growth
$\%RWA_t$ = Ratio between Risk Weighted Assets and the Total Assets ROA_t = Return on Assets

Source: own elaboration on Morelli (2011)

The sample examined in this paper has been identified selecting, among the major Italian banking groups, those that at December 31st 2011 showed a *Tier 1 ratio* lower than 11 per cent. The choice of such an high target *Tier 1 ratio* – calculated jointly considering the minimum requirement of 6 per cent, the 2.5 per cent related to the *Capital Conservation Buffer* and the additional 2.5 per cent deriving from the *Counter-Cyclical Buffer* – it may seems too careful, especially as far as the component linked to the *Counter-cyclical Buffer*[2].

Nevertheless, if we consider that in 2011 the average *Tier 1 ratio* of the overall Italian banking system was equal to 10 per cent, that the Supervisory Authority usually requires banks to detain *Tier 1 ratio* levels higher than the regulatory minimum and that the *European Banking Authority* (EBA) asked 71 major European banks – among which the first 5 Italian groups – to take the *Core Tier 1 ratio* even temporarily to 9 per cent[3], our choice looks definitely more solid. The selection of the sample has been conditioned by the actual availability of the data needed for the analysis, especially regarding dividends.

The economic and financial data analysed have been extracted from the consolidated financial statements of the selected banking groups. Table 3 displays, for each banking group included in the sample, the following data with regard to 2011:

- the initial *Tier 1 ratio* level (Tier 1_{2011});
- the *risk weighted asset* growth from December 2010 to December 2011 ($\Delta\%RWA_{2011}$);
- the *RWA ratio* ($\%RWA_{2011}$), resulting as the ratio between risk weighted assets and the total assets;
- the distributed profits during 2011, calculated as the share of the previous period's results (d_{2011});
- the "*ordinary*" *ROA* achieved in 2011 (ROA_{2011}), expressed as ratio between net profit and total assets;
- the "*adjusted*" *ROA*, calculated by eliminating from the net profit the effects deriving from the goodwill extraordinary impairments that in 2011 affected 4 of the 10 sampled banking groups (ROA^*_{2011}). This in order to analyse data unaffected by such unusual events.

Since the aim of this study is not to achieve individual conclusions regarding the single intermediaries but to get general indications about the possible strategies that could be effectively adopted by banks to reach the new capital requirements, the banking groups' identities have been omitted on purpose and replaced by the first 10 letters of the alphabet.

[2] The introduction of the *Counter-cyclical Buffer* is left to national authorities discretion in case they might evaluate that an extreme credit growth may lead to an excessive systemic risk (BCBS, 2010).

[3] Bank of Italy (2011); EBA (2011).

Table 3 Sample data – Capital, risky assets, dividend pay-out ratio and profitability. (percentage values)

	Tier 1 $_{2011}$	Δ%RWA $_{2011}$	%RWA$_{2011}$	d $_{2011}$	ROA$_{2011}$	ROA*$_{2011}$
GROUP "A"	5.70%	5.69%	51.56%	87.00%	0.41%	0.41%
GROUP "B"	6.50%	0.67%	78.54%	10.00%	0.24%	0.27%
GROUP "C"	7.63%	6.14%	68.42%	48.00%	0.42%	0.42%
GROUP "D"	7.77%	7.83%	80.47%	48.00%	0.25%	0.25%
GROUP "E"	8.16%	5.90%	67.77%	74.00%	0.23%	0.23%
GROUP "F"	8.23%	7.21%	79.68%	0.00%	-1.69%	0.85%
GROUP "G"	8.60%	23.72%	88.23%	0.00%	-1.18%	-0.54%
GROUP "H"	8.67%	0.76%	54.03%	34.40%	0.31%	0.31%
GROUP "I"	9.32%	1.22%	49.68%	0.00%	-0.99%	-0.06%
GROUP "L"	9.41%	9.74%	29.70%	93.03%	0.84%	0.84%
AVERAGE VALUE	8.00%	6.89%	64.81%	39.44%	-0.12%	0.30%

Source: own elaboration on the basis of the financial consolidated statements of the sampled banks

Three are the main aspects deserving special attention. First, the sample average *Tier 1 ratio* (8.00 per cent) is lower than the minimal capital standards required by Basel 3: this is true when compared with both the 8.5 per cent - considering the minimum capital requirement of 6 per cent plus the *Capital Conservation Buffer* of 2.5 per cent - and the 11 per cent - considering also the additional 2.5 per cent related to the *Counter-cyclical Buffer*. Second, in 2011 the overall profitability of Italian banks has been strongly influenced by goodwill impairments. For four of the banking groups included in the sample such losses lead to negative "ordinary ROA" levels which determined an average ROA for the whole sample of -0.12 per cent (ROA$_{2011}$). Excluding the effects of the goodwill impairment, the sample's economic results strongly increase: the average *adjusted ROA* reach 0.30 per cent (ROA*$_{2011}$). Considering their extraordinary nature, the analysis has been carried on taking into account the overall economic results in both ways, with and without goodwill impairments, in order to highlight, on one hand, the ordinary operational conditions and, on the other hand, to consider also the effects deriving from extraordinary events which may be able to affect the banks' future profitability. Finally, a certain heterogeneity emerges in the asset's riskiness (%RWA$_{2011}$), which may suggest different intermediation models.

4. Analysis of the possible strategic solutions

The following tables show, for each of the possible strategies examined: the results achieved by the banking groups included in the sample in 2011; the levels that each of the strategic levers analysed should reach to achieve and keep stable over time the target *Tier 1 ratio*; the necessary changes to reach these levels, in terms of difference between the ex-ante and the ex-post level. Each table is divided into two parts (A and B): the same analysis is carried out considering alternatively the "*ordinary ROA*" (ROA$_{2011}$) (A) and the "*adjusted ROA*" (ROA*$_{2011}$), calculated by deducting the effects of the goodwill impairment from the net profit (B).

It is important to underline that the adopted model allows to identify the use of each strategic lever that would be necessary, other solutions being equal, as if each strategy was the only way liable from time to time.

Table 4 displays for each banking group: the profitability achieved in 2011 (ROA_{2011} e ROA^*_{2011}); the level of profitability that would allow to reach and keep stable over time the *Tier 1 ratio* at 11 per cent (ROA_{STAB} e ROA^*_{STAB}); and the differences between them ($Gap/Buffer_{ROA}$ e $Gap/Buffer_{ROA*}$). The "*Stabilizing ROA*" (ROA_{STAB} e ROA^*_{STAB}) is derived using the [3.4] (Table 2, Section 3). ROA positive percentage differences (+) suggest how much ROA *should* have grown to achieve stabilizing effects (*Gap*), while negative percentage differences (-) indicate how much ROA *could* have decreased while continuing to produce stabilizing effects (*Buffer*).

Table 4 Profitability needed to reach and keep stable over time the *Tier 1 ratio* at 11 per cent (Stabilizing ROA). (percentage values)

				A			B		
	Tier 1_{2011}	**Tier 1_{target}**	**Gap/Buffer Tier 1**	**ROA_{2011} (a)**	**ROA_{STAB} (b)**	**Gap(+) / buffer(-) $_{ROA}$ (b-a)**	**ROA^*_{2011} (a*)**	**ROA^*_{STAB} (b*)**	**Gap(+) / buffer(-) $_{ROA^*}$ (b*-a*)**
GROUP "A"	5.70%	11%	*5.30%*	0.41%	2.35%	*+1.93%*	0.41%	2.35%	*+1.93%*
GROUP "B"	6.50%	11%	*4.50%*	0.24%	0.06%	*-0.18%*	0.27%	0.06%	*-0.21%*
GROUP "C"	7.63%	11%	*3.37%*	0.42%	0.84%	*+0.42%*	0.42%	0.84%	*+0.42%*
GROUP "D"	7.77%	11%	*3.23%*	0.25%	1.24%	*+0.98%*	0.25%	1.24%	*+0.98%*
GROUP "E"	8.16%	11%	*2.84%*	0.23%	1.60%	*+1.37%*	0.23%	1.60%	*+1.37%*
GROUP "F"	8.23%	11%	*2.77%*	-1.69%	0.59%	*+2.28%*	0.85%	0.59%	*-0.26%*
GROUP "G"	8.60%	11%	*2.40%*	-1.18%	1.86%	*+3.04%*	-0.54%	1.86%	*+2.40%*
GROUP "H"	8.67%	11%	*2.33%*	0.31%	0.07%	*-0.24%*	0.31%	0.07%	*-0.24%*
GROUP "I"	9.32%	11%	*1.68%*	-0.99%	0.07%	*+1.06%*	-0.06%	0.07%	*+0.12%*
GROUP "L"	9.41%	11%	*1.59%*	0.84%	4.16%	*+3.31%*	0.84%	4.16%	*+3.31%*
AVERAGE VALUE	8.00%	11%	*3.00%*	-0.12%	1.28%	*+1.40%*	0.30%	1.28%	*+0.98%*

Source: own elaboration on the basis of the financial consolidated statements of the sampled banks

Data show that the average "*ordinary*" *Stabilizing ROA* (ROA_{STAB}) should have been about 1.28 per cent, that is 1.40 percentage points more than the average level of -0.12 per cent achieved in 2011. In the same way, the average "*adjusted*" *Stabilizing ROA* (ROA^*_{STAB}) should have been 0.98 percentage points higher than the 0.30 per cent achieved in 2011 (ROA^*_{2011}). Therefore, even without goodwill impairments, the average ROA reached in 2011 by the sampled banking groups wouldn't have been enough to "stabilize" the *Tier 1 ratio* at the target level of 11 per cent.

Most of the analysed banking groups show profitability gap to be filled. Only Group B and Group H may obtain in the future a lower profitability – other considered solutions being equal – without compromising the target *Tier 1 ratio*. Regarding Group B, for example, data should be read as follows: if Group B maintained unchanged the growth of assets at risk, the distribution of dividends and the riskiness at the levels of December 2011 and didn't resort to shareholders' equity increase (i.e., maintaining stable the other levers analysed in this work), it would be able to increase the *Tier 1 ratio* from 6.5 per cent to 11 per cent getting just a ROA of at least 0.06 per cent.

Analysing data relating Group A, the *Tier 1 ratio* looks slightly lower than the one achieved by Group B and the ROA reached in 2011 is higher than for Group B. Nevertheless, the *Stabilizing ROA* of Group A is higher (2.35 per cent). This contradiction is only apparent. In fact, it should be taken into account that the analysis conducted enables to highlight the necessary use of the different levers *considered individually*: in this case, the variation of ROA necessary to reach the target. Remain stable, instead, other

variables (the growth of assets at risk, the distribution of dividends and the riskiness), which, evidently, affect so much to delay the attainment of the target *Tier 1 ratio* even with a higher profitability.

Of course, the banking management generally uses the different strategic levers jointly: it doesn't appear feasible, in order to achieve the target *Tier 1 ratio*, to focus only on profitability, leaving unchanged the volume of assets, the riskiness, the dividend policy. The following exercise, therefore, is just indicative of the bare minimum use of the individual levers. It suggests the need to move them together combining the effects.

Table 5 shows the levels of riskiness – calculated using the [3.5] (Table 2, Section 3) – which would enable banks to achieve and keep stable over time the *Tier 1 ratio* at 11 per cent ($\%RWA_{STAB}$ e $\%RWA^*_{STAB}$), other conditions being equal. For each banking group the differences ($\Delta_{\%RWA}$ e $\Delta_{\%RWA^*}$) between the stabilizing levels of riskiness ($\%RWA_{STAB}$ e $\%RWA^*_{STAB}$) and the level of riskiness as calculated with regard to 2011 ($\%RWA_{2011}$ e $\%RWA^*_{2011}$) are also displayed. Positive differences (+) suggest how much the assets' riskiness *could* have increase without compromising the patrimonial objective; negative differences (-) show the *need* to reduce the riskiness to achieve the target *Tier 1 ratio*.

Table 5 Level of risk weighted assets needed to reach and keep stable over time the *Tier 1 ratio* at 11 per cent. (percentage values)

					A		B	
	Tier 1_{2011}	**Tier 1_{target}**	**Gap/Buffer Tier 1**	**$\%RWA_{2011}$ (a)**	**$\%RWA_{STAB}$ (b)**	**$\Delta_{\%RWA}$ (b-a)**	**$\%RWA^*_{STAB}$ (b*)**	**$\Delta_{\%RWA^*}$ (b*-a)**
GROUP "A"	5.70%	11%	*5.30%*	51.56%	9.10%	*-42.46%*	9.10%	*-42.46%*
GROUP "B"	6.50%	11%	*4.50%*	78.54%	299.89%	*+221.34%*	332.02%	*+253.48%*
GROUP "C"	7.63%	11%	*3.37%*	68.42%	34.43%	*-33.99%*	34.43%	*-33.99%*
GROUP "D"	7.77%	11%	*3.23%*	80.47%	16.45%	*-64.01%*	16.45%	*-64.01%*
GROUP "E"	8.16%	11%	*2.84%*	67.77%	9.62%	*-58.15%*	9.62%	*-58.15%*
GROUP "F"	8.23%	11%	*2.77%*	79.68%	-228.49%	*-308.17%*	114.25%	*+34.57%*
GROUP "G"	8.60%	11%	*2.40%*	88.23%	-56.07%	*-144.30%*	-25.39%	*-113.61%*
GROUP "H"	8.67%	11%	*2.33%*	54.03%	248.06%	*+194.03%*	248.06%	*+194.03%*
GROUP "I"	9.32%	11%	*1.68%*	49.68%	-749.78%	*-799.46%*	-43.08%	*-92.76%*
GROUP "L"	9.41%	11%	*1.59%*	29.70%	6.03%	*-23.67%*	6.03%	*-23.67%*
AVERAGE VALUE	8.00%	11%	*3.00%*	64.81%	-41.08%	*-105.88%*	70.15%	*+5.34%*

Source: own elaboration on the basis of the financial consolidated statements of the sampled banks

Looking at "ordinary" results, data show that banking groups wouldn't be able to achieve the target *Tier 1 ratio* even totally eliminating the riskiness of their assets. Effectively, the average stabilizing riskiness is even negative (-41.08 per cent). Data suffer for the negative ROA achieved by three banking groups in 2011 (Group F, Group G e Group I – as shown in Table 3). Indeed, excluding these groups, the stabilizing riskiness for the other seven groups is about 54 per cent. On the contrary, considering data without goodwill impairments, the average stabilizing riskiness is even higher than the one recorded by the banking groups in 2011, about 5 percentage points (70.15 per cent against 64.81 per cent). The higher ROA have greatly reduced the negative gaps necessary to achieve the patrimonial target. However, it should be considered, on one hand, that no bank could actually reach levels of riskiness so low without affecting the ordinary business, being the banking activity itself assumption and management of risks, and, on the other hand, that an adequate profitability – as shown for "adjusted" data of Groups B, F and H (Table 4) – shouldn't even be a good motivation to increase the riskiness, especially if it means going beyond the bank's ability in managing the major risks involved.

Table 6 displays the levels of dividends pay-out ratios that would allow the banking groups to reach and keep stable over time the *Tier 1 ratio* at 11 per cent (d_{STAB} e d^*_{STAB}), calculated using the [3.6] (Table 2, Section 3). The differences between the stabilizing levels of dividends and the distributed profits during 2011 (Δ_d e Δ_{d^*}) are also shown: positive differences (+) suggest how much the dividends pay-out ratio *could* have increase without compromising the patrimonial objective; negative differences (-) show the *need* to restrain the dividends' distribution to achieve the target *Tier 1 ratio*.

Table 6 The value of dividend pay-out ratio needed to reach and keep stable over time the *Tier 1 ratio* at 11 per cent. (percentage values)

					A		B	
	Tier 1_{2011}	**Tier 1_{target}**	**Gap/Buffer Tier 1**	**d_{2011} (a)**	**d_{STAB} (b)**	**Δ_d (b-a)**	**d^*_{STAB} (b*)**	**Δ^*_d (b*-a)**
GROUP "A"	5.70%	11%	*5.50%*	87.00%	26.37%	*-60.63%*	26.37%	*-60.63%*
GROUP "B"	6.50%	11%	*4.50%*	10.00%	76.43%	*+66.43%*	78.71%	*+68.71%*
GROUP "C"	7.63%	11%	*3.37%*	48.00%	-3.33%	*-51.33%*	-3.33%	*-51.33%*
GROUP "D"	7.77%	11%	*3.23%*	48.00%	-154.34%	*-202.34%*	-154.34%	*-202.34%*
GROUP "E"	8.16%	11%	*2.84%*	74.00%	-83.18%	*-157.18%*	-83.18%	*-157.18%*
GROUP "F"	8.23%	11%	*2.77%*	0.00%	-134.87%	*-134.87%*	30.26%	*+30.26%*
GROUP "G"	8.60%	11%	*2.40%*	0.00%	-257.35%	*-257.35%*	-247.53%	*-247.53%*
GROUP "H"	8.67%	11%	*2.33%*	34.40%	85.71%	*+51.31%*	85.71%	*+51.31%*
GROUP "I"	9.32%	11%	*1.68%*	0.00%	-106.63%	*-106.63%*	-15.30%	*-15.30%*
GROUP "L"	9.41%	11%	*1.59%*	93.03%	65.69%	*-27.34%*	65.69%	*-27.34%*
AVERAGE VALUE	8.00%	11%	*3.00%*	39.44%	-48.55%	*-87.99%*	-21.69%	*-61.14%*

Source: own elaboration on the basis of the financial consolidated statements of the sampled banks

Seven out of ten groups have distributed dividends in 2011, some of them equal or more than half of the profits earned. Looking at "ordinary" stabilizing dividends, the average value is strongly negative (-48.55 per cent): therefore, on average, even if no dividends were distributed, the 10 banking groups wouldn't be able to achieve the target only using this lever. In particular, only four out of ten banking groups (Group A, Group B, Group H and Group L) would be able to comply with the regulation's requirements just reducing the dividends pay-out ratio. For the other, this solution wouldn't be enough even if they didn't distribute any dividend. The data continues to be negative also considering the "adjusted" values (-21.69 per cent).

Table 7 shows the risk weighted assets' growth ($\Delta\%RWA_{STAB}$ e $\Delta\%RWA^*_{STAB}$) – calculated using the [3.6] (Table 2, Section 3) – which, other conditions being equal, would enable banks to achieve and keep stable over time the *Tier 1 ratio* at 11 per cent. The differences ($\Delta_{\Delta\%RWA}$ e $\Delta_{\Delta\%RWA^*}$) between the stabilizing assets' growth and RWAs' growth obtained in 2011 ($\Delta\%RWA_{2011}$ e $\Delta\%RWA^*_{2011}$) are also displayed: positive differences (+) suggest how much the assets' growth *could* have increase while continuing to produce stabilizing effects; negative differences (-) show the *need* to reduce the growth to achieve the target *Tier 1 ratio*.

Table 7 The assets' growth needed to reach and keep stable over time the *Tier 1 ratio* at 11 per cent. (percentage values)

					A		B	
	Tier 1_{2011}	**Tier 1_{target}**	**Gap/Buffer Tier 1**	**Δ%RWA $_{2011}$ (a)**	**Δ%RWA$_{STAB}$ (b)**	**$\Delta_{\Delta\%RWA}$ (b-a)**	**Δ%RWA* $_{STAB}$ (b*)**	**$\Delta_{\Delta\%RWA*}$ (b*-a)**
GROUP "A"	5.70%	11%	*5.30%*	+5.69%	+0.96%	*-4.73%*	+0.96%	*-4.73%*
GROUP "B"	6.50%	11%	*4.50%*	+0.67%	+2.59%	*+1.93%*	+2.87%	*+2.21%*
GROUP "C"	7.63%	11%	*3.37%*	+6.14%	+3.00%	*-3.14%*	+3.00%	*-3.14%*
GROUP "D"	7.77%	11%	*3.23%*	+7.83%	+1.51%	*-6.32%*	+1.51%	*-6.32%*
GROUP "E"	8.16%	11%	*2.84%*	+5.90%	+0.80%	*-5.11%*	+0.80%	*-5.11%*
GROUP "F"	8.23%	11%	*2.77%*	+7.21%	-16.17%	*-23.38%*	+8.08%	*+0.87%*
GROUP "G"	8.60%	11%	*2.40%*	+23.72%	-10.86%	*-34.58%*	-4.92%	*-28.63%*
GROUP "H"	8.67%	11%	*2.33%*	+0.76%	+3.57%	*+2.81%*	+3.57%	*+2.81%*
GROUP "I"	9.32%	11%	*1.68%*	+1.22%	-15.38%	*-16.60%*	-0.88%	*-2.10%*
GROUP "L"	9.41%	11%	*1.59%*	+9.74%	+1.84%	*-7.90%*	+1.84%	*-7.90%*
AVERAGE VALUE	8.00%	11%	*3.00%*	+6.89%	-2.82%	*-9.70%*	+1.68%	*-5.20%*

Source: own elaboration on the basis of the financial consolidated statements of the sampled banks

Data show that, on average, the banking groups included in the sample should reduce by about 9.70 percentage points the RWAs' growth, starting from an assets' growth of about 7 per cent between 2010 and 2011. The difference greatly decreases if we consider data without goodwill impairments (5.20 percentage points). Even in this case, some banking groups (B, F and H), starting from a low assets' growth and a good profitability in 2011 (Table 4), would be able to reach and keep stable over time the *Tier 1 ratio* at 11 per cent also accelerating, albeit slightly, the risk weighted assets' growth.

Summarizing, the analysis conducted has shown that the differences in the starting profitability (ROA_{2011} or ROA^*_{2011}) among the banking groups included in the sample have influenced the feasibility of the different available strategies. And that the use of just a single management lever may not generally be enough.

5. Considerations on the results of the analysis and on the actual intervention margins

In the previous section we looked at the levels that each of the strategic levers analysed should reach to achieve and keep stable over time higher capital requirements. In synthesis: a 1 percentage point increase in profitability from the average level achieved in 2011, or, alternatively, a deep reduction in riskiness, assets' growth or dividends pay-out ratios.

Nevertheless, since the aim of this study is not just to show what banks should have done to achieve the target *Tier 1 ratio* but, above all, to understand the actual feasibility of the different strategic solutions, in this Section we look at banks' performance between 2011 and 2013 in terms of profitability, risk and capitalization, and what they are going to do in the upcoming years, keeping in mind the national and international economic context.

5.1. Banking performance between 2011 and 2013

Table 8 shows a comparison between the stabilizing levels in profitability, assets' growth, riskiness and dividends distribution to reach the target *Tier 1 ratio,* as calculated in Section 4, and the results obtained in 2011, 2012 and 2013, considering both the values of "*Ordinary ROA*" and those of the "*Adjusted ROA*".

Table 8 Stabilizing values and results obtained in 2011, 2012 and 2013 (percentage values)

	Ordinary ROA				Adjusted ROA			
	Stabilizing values	**2011 results**	**2012 results**	**2013 results**	**Stabilizing values**	**2011 results**	**2012 results**	**2013 results**
Tier1 ratio	11.00%	8.00%	8.80%	8.66%	11.00%	8.00%	8.80%	8.66%
ROA	1.28%	-0.12%	0.03%	-0.68%	1.28%	0.30%	0.15%	-0.41%
Dividend pay-out ratio	-48.55%	40.00%	27.80%	20.00%	-21.69%	40.00%	27.80%	20.00%
Δ%RWA	-2.82%	+6.89%	+0.16%	-4.02%	+1.68%	+6.89%	+0.16%	-4.02%
%RWA	-41.08%	64.81%	59.06%	57.34%	70.15%	64.81%	59.06%	57.34%

Source: own elaboration on the basis of the financial consolidated statements of the sampled banks

Data on 2012 and 2013 clearly show a relevant weakness of the profitability of the banking groups included in the sample: the "ordinary ROA" is about 0.03 per cent in 2012 and even negative in 2013 (-0.68 per cent); the "adjusted ROA" looks not better (0.15 per cent in 2012, -0.41 per cent in 2013). Moreover:

- the *Tier 1 ratio* is higher in 2012 (8.80 per cent) than in 2011 (8.00 per cent) while reduced in 2013 (8.66 per cent);
- the assets' growth registered a relevant slowdown during the last three years, from +6.89 per cent in 2011 to -4.02 per cent in 2013;
- the riskiness has been reduced over time, as well as the dividend pay-out ratio.

To understand the reasons behind the results shown in Table 8, the main events that have affected the Italian banks' activity and the economic background in recent years need to be considered.

First of all, the low profitability, in addition to decreasing income, was strongly affected, on one hand, by the goodwill impairments (six out of ten groups have depreciated goodwill between 2011 and 2013, two of which in all three years) and by increasing loans loss provisions.

This condition both reflects the adoption by banks of unwise credit policies in the past and the accentuation of the negative effects arising from the worsening economic outlook. Moreover, the intervention of the Bank of Italy, aimed to make the evaluation criteria of collateral more linked to their actual market value, has led to significant impairment of collateral instruments used in support of loans[4]. As a result, an increased focus on the risks taken has led to a contraction in loans to costumers, with obvious impacts on net interest margin. This is joined by the increased cost of funding that banks have incurred as a result of the sovereign debt crisis, as well as the negative impact on net interest resulting from a reduction in the bank spread due to the downward trend in rates' structure and the decline in other revenues for the adverse conditions in financial markets.

[4] Bank of Italy (2013), Supervisory Bulletin n°3, March.

In this already weak context, banks should also be able to increase their capital position, not just to be compliance with the new Basel 3 requirements, but also in accordance with the EBA's regulation and to put through the *Asset Quality Review* and the *stress tests* in the perspective of the new European Banking Union.

In terms of profitability is understandable to not expect a positive contribution to the capital strengthening, even in case of economic recovery, given the continuing decline in profitability began well before the financial turmoil. In fact, the study conducted by Lusignani and Onado (2012) – as reported in the literature review (Section 2) – based on the analysis of the systemic data from 1965 to 2011, shows the continuous decline of the interest margin of Italian banks in the last 20 years and of the other revenues in the last 10 years. The Italian banking system's ROA recorded a fluctuating trend but, in general, it decreased from 1.7 per cent in 2000 to 0.4 per cent in 2011 (excluding goodwill impairments).

What seen at the banking system level is also partly confirmed for our sampled banking groups. We have expanded our analysis by considering, in particular, the trend of ROA in the three years preceding the financial crisis (2004-2006), and in the three years at the turn of the crisis – in 2008, 2009 and 2010 – in order to highlight the trend both over a period of "strong" expansion, and in the recessive one that characterized the years from 2008 onwards. Data are reported in Table 9.

The average ROA of the sample was 0.62 per cent in 2004 and has grown until 2006 when it registered an average value equal to 0.71 per cent. Since then it experienced a gradual reduction up to touch the 0.30 per cent in 2010.

Keeping in mind that:

- in 2011, in 2012 and 2013 the recorded values of ROA for the sampled banking groups were respectively 0.30 per cent, 0.15 per cent and -0.41 per cent, excluding goodwill impairments;
- the results obtained by applying the accounting model outlined the need to increase profitability – other considered solutions being equal – at least of 1 percentage point compared to the 0.30 per cent registered in 2011.

However, if in a positive scenario, as the one from 2004 to 2006, the profitability of the banking groups included in the sample increased less than 0.10 percentage points (from 0.62 per cent in 2004 to 0.71 per cent in 2006), that is just 10 per cent of the one percentage point of increase that is required by applying the accounting model, during a period of economic weakness – as the present one – reaching the profitability recovery necessary to support the capital growth could be extremely difficult and, at the same time, reaching the target *Tier 1 ratio* could take more time than the required one.

Table 9 ROA's banking groups between 2004 and 2006 and between 2008 and 2010. (percentage values)

	ROA_{2004}	ROA_{2005}	ROA_{2006}	ROA_{2008}	ROA_{2009}	ROA_{2010}
GROUP "A"	0.55%	0.57%	0.55%	0.64%	0.56%	0.44%
GROUP "B"	n.d.	0.44%	0.57%	0.21%	0.11%	0.05%
GROUP "C"	0.82%	0.76%	0.72%	0.55%	0.53%	0.34%
GROUP "D"	0.62%	0.67%	0.76%	0.20%	0.86%	0.51%
GROUP "E"	0.39%	0.60%	0.61%	0.38%	0.32%	0.26%
GROUP "F"	0.41%	-0.02%	0.32%	-0.87%	-0.18%	0.05%
GROUP "G"	0.37%	0.68%	0.99%	0.17%	0.23%	0.20%
GROUP "H"	0.74%	1.18%	0.96%	0.52%	0.34%	0.26%
GROUP "I"	0.80%	0.31%	0.66%	0.38%	0.18%	0.14%
GROUP "L"	0.86%	1.11%	0.96%	0.27%	0.49%	0.72%
AVERAGE VALUE	0.62%	0.63%	0.71%	0.25%	0.34%	0.30%

Source: own elaboration on the basis of the financial consolidated statements of the sampled banks

5.2. The banking groups orientation: planned and adopted strategies, future solutions

To complete the analysis, we wonder whether and how the orientations of Italian banks have changed from 2011 up to now and which strategies could be actually feasible, taking into account the conditions on which they are based.

Regards the first question, we have considered the results obtained from the survey conducted in Tutino, Birindelli and Ferretti (2012) – already mentioned in the literature review (Section 2) – about the strategies hypothesised to respect the new prudential requirements. In January 2012, among the surveyed banks, the most shared solution was represented by capital increase (chosen by around 65 per cent of banks), followed by self-financing (58 per cent) and the reduction in RWAs (52 per cent). Only about 20 per cent of the surveyed banks would have opted for the reduction of dividends and the 16 per cent for the disposal of non-core assets. The majority felt negligible the impact of the necessary recapitalization on loans to customers.

Ex post, looking at data resulting from the 2012 and 2013 financial statements, this scenario seems to be just partly confirmed. Between 2011 and 2013, 9 out of 10 banking groups have issued new shares or endorsed capital increases for 2014 (in five cases). Nevertheless, 60 per cent of the sample doesn't reach a *Tier 1 ratio* of 9 per cent, despite the significant capital increases, maybe because more than half of the sampled banking groups carried out goodwill impairments over the last 3 years and due to the substantial write-downs of loans which have involved all groups analysed and partially worn out the capital.

Moreover, if in 2012 in all cases the percentage of RWAs to total assets has decreased, in 2013 the trend is upward for 50 per cent of the selected groups. Expectations about the possibility of self-financing and its impact on loans and on the distribution of dividends are not confirmed by the results obtained in 2012 and even less than those of 2013: profitability is on average close to zero in 2012 and negative in 2013; 80 per cent of the sample banks have reduced lending to customers in the last two years. Regarding dividends: in 2012 there was a sharp decline in dividends paid out in 80 per cent of cases (in particular, five out of ten banking groups haven't distributed any dividends); while in 2013, three out of ten groups have paid dividends on average for 50 per cent of net income, 6 groups haven't distributed any dividends and the remaining one, despite having recorded a loss, paid dividends through the use of retained earnings.

The differences that emerged between the early banks' expectations on the likely impact of the recapitalization required and the choices imposed later by events, are also related to not full awareness, at the end of 2011, about the seriousness of profitability problems and the impacts on margins resulting from the increase in cost of funding due to the sovereign debt crisis.

This is also confirmed by information arising from the banking groups' business plans, published between 2011 and 2013 and therefore, in some cases, before the sovereign debt crisis. The first element to point out is that five out of the eight groups that published the business plan, had to revise or update their plans in 2013 to replace the previous, published, depending on the case, between 2011 and 2012. Sign of a clear difficulty or inability to understand the speed of changes in context and sign of how much the economic and financial conditions may affect the feasibility and the effectiveness of the banking strategies.

Summarizing, some points clearly emerged:

- most of the banking groups that excluded capital increases and disposal of non-core assets was instead found itself having to intervene in this direction, maybe partly linked to the start of the *Asset Quality Review* and the *stress tests* for the transition to the new European Banking Union;
- a deep structural reorganization also through the rethinking of the branch network, the overhaul or the closure of non-performing branches in order to enhancing rationalization and efficiency;
- a still little attention paid to reduce risk, at least for the business plans published between 2011 and 2012.

Referring to the last point, it must be underline the difficulty to follow this way: on one hand, due to the inability to operate with too low riskiness levels as the banking activity is based on the assumption and management of risks, on the other, because of economic events and perspectives wouldn't have made it easier and because it would be translated into a further contraction in loans.

6. Conclusions

The analysis conducted in this paper enables, first of all, to assess different strategic levers, alternative to the shareholders' equity increase, to achieve and keep stable over time a *Tier 1 ratio* equal to 11 per cent: higher profitability, restrained assets' growth, lower risk weighted assets, limitations to dividends distribution. Differences in the starting levels of profitability, asset composition, as well as heterogeneous dividend policies among the banking groups have strongly influenced the results.

The analysis has shown that, in some cases, the capital target could have been achieved, theoretically, even using only one of the levers considered, all the others being unchanged. However, the profitability levels necessary to support a *Tier 1 ratio* of 11 per cent appear difficult to be reached, at least in the short term, as confirmed by the decline in profitability in 2012. A sign that internal conditions of the bank and the economic background don't always actually allow to use specific operating levers. For the same reason, banks might *have to* make choices non convenient for themselves or/and for the whole economy. Just think of how an increase in cost of funding and capital or the substantial write-downs of loans have affected the decision to reduce the loans to costumers.

Furthermore, is evident as other adopted solutions have proven to be unsuitable later, like having distributed dividends – sometimes substantially – even though knowing that the capital level and its quality should grow over time, or even having taken inappropriate and unacceptable levels of risks.

The analysis conducted suggests directions for further developments. A more extended study could take into account some of the aspects that are not directly included in the current one, as the need to move simultaneously the different levers available, the effects deriving also from other regulatory constraints – in addition to capital requirements – and the possibility of turning to shareholders' equity increase, although the latter should be considered – at least in the long term – as a solution conditional on the market's ability to absorb massive capital issues and on ROE's results actually able to encourage and attract capital investments.

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