

# “Basel Pillar II risks in Italian banks”

<b>AUTHORS</b>	Federica Ielasi
<b>ARTICLE INFO</b>	Federica Ielasi (2012). Basel Pillar II risks in Italian banks. <i>Banks and Bank Systems</i> , 7(4)
<b>RELEASED ON</b>	Friday, 21 December 2012
<b>JOURNAL</b>	"Banks and Bank Systems"
<b>FOUNDER</b>	LLC "Consulting Publishing Company "Business Perspectives"



NUMBER OF REFERENCES

0



NUMBER OF FIGURES

0



NUMBER OF TABLES

0

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Federica Ielasi (Italy)

## Basel Pillar II risks in Italian banks

### Abstract

Basel Pillar II asks banks to identify their specific risk types and to broaden the range of risks managed, in order to increase the accuracy of risk assessment.

The objective of this paper is to compare the risk type perimeters identified by Italian banks, realizing a breakdown by bank type (commercial banks, popular banks, cooperative banks) and by bank size. The sample of the research is composed of the list of all banks operating in the Italian financial system (excluding the branches of foreign banks and very small banks).

In particular, the paper aims at providing answers to the following research questions: (1) What is the number/type of Pillar II risks managed by banks? (2) Which are the measurement methods used for estimating Pillar II risks?

The answers to these questions are looked for in the online documentation from the banks included in the sample. The methodology used in the paper is based on the content analysis of the latest Pillar III Disclosure reports.

The paper aims at enhancing the literature on Pillar II risks with an empirical survey of the current implementation of the Internal Capital Adequacy Assessment Processes in Italian banks.

The expected result is a different recognition of risks implicit in existing banking assets and liabilities, according to the type and to the size of banks. In particular, the measurement methods for Pillar II risks (quantitative vs. qualitative) are expected to be unlike in every way among Italian banks.

**Keywords:** banking risks, Basel III, Pillar II, capital requirements.

**JEL Classification:** G21, G28, G32.

### Introduction

Recent years have seen a pronounced evolution in the systems and processes for managing the more traditional risks surrounding financial intermediation and the simultaneous expansion of the risk categories overseen by the banks (Allen and Santomero, 2001; Gup and Kolari, 2005; Thoraval, 2006; Hull, 2007; Bessis, 2011). This trend can be attributed to various causal factors, including:

- ◆ technological developments and the increasing importance of investment in information and IT systems in the banking industry (Panagiotis, 2012);
- ◆ increased consolidation and competition within the banking system (Yildirim and Philippatos, 2007);
- ◆ evolution in the nature of activity performed by financial institutions (Demirgüç-Kunt and Hui-zinga, 2010);
- ◆ theoretical and applied development of risk management tools (Bessis, 2011);
- ◆ changes in national and international supervision regulations (BCBS, 2009; BCBS, 2010).

With reference to this last point, it was in the 'New Capital Adequacy Framework' published by the Basel Committee on Banking Supervision in June 1999, that the introduction of a new supervisory tool was announced for the first time: the Supervisory Review Process (SRP). This provided for the availability within financial institutions of adequate capi-

tal and control systems to face all material risks, taking into account the specific activity performed, the strategies followed and the relevant operating sector (BCBS, 2009).

In terms of the Supervisory Review Process, the first action demanded of the banks was self-diagnosis of their risk profile (FSC, 2007). Each financial institution had to define, completely independently, the specific risk perimeter that applied to their organization, both at the time and prospectively 'Risk Map' and, based on this, estimate an adequate internal capital to set against those risks (Linsley and Shrides, 2005).

In 2008, the General Manager for Credit and Financial Supervision of the Bank of Italy stated that the Supervisory Review Process would constitute the core of banking management and supervision in the years to come. Five years after this statement, this study aimed to verify the state of the art of the Italian financial system in terms of identification and measurement of risks other than Pillar I risks.

Among these so-called Pillar II risks, the Bank of Italy included (Bank of Italy, 2006):

- ◆ concentration risk: risk deriving from exposure to counterparties, groups of related counterparties and counterparties who operate in the same business or are located in the same geographical area (Altman and Saunders, 1997);
- ◆ interest rate risk on banking book: risk resulting from potential changes in interest rate (Madura and Zarruk, 1995);
- ◆ liquidity risk: risk of not being able to meet payment commitments due to both funding li-

quidity risks and market liquidity risks (Gatev and Strahan, 2006);

- ◆ residual risk: risk that the techniques for the mitigation of credit risks used by the bank will be less effective than expected (Kambhu and Rodrigues, 2007);
- ◆ securitization risk: risk that the economic substance of a securitization will not be fully reflected in decisions regarding risk measurement and management (Maddaloni and Peydrò, 2010);
- ◆ strategic risk: risk of a downturn in earnings or capital arising from changes in the operating context, adverse business decisions or poor reactions to changes in the competitive context (Doff, 2008);
- ◆ reputational risk: risk of a downturn in earnings or capital arising from a negative opinion of the bank by clients, counterparties, shareholders, investors or supervisory authorities (Walter, 2006).

Nevertheless, this list is not exhaustive: the banks are the ‘owners’ and protagonists of their risk identification and management processes. Consequently, each bank, on the basis of prudent assessment, must identify any further risk factors connected to their activities. What other risks are currently identified by supervised banks in Italy? How often do they arise in the whole Italian banking system? Is there a uniform language for the identification of Pillar II risks? Are there different interpretations between banks of different legal categories or sizes? After setting out the sample and methodology used for analysis, this study will attempt to reply to these questions in the second section.

The third section will attempt to assess how many and which risks entail the adoption of quantitative methods in order to calculate how much internal capital is sufficient to set against them, and how many and which risks are better suited to a qualitative approach for their evaluation.

International literature maintains that the main innovation in risk management is the gradual extension of quantitative measurements to all risk categories, in addition to the qualitative indicators (Fabozzi, Mann and Choudhry, 2003; Saita, 2004; Borio and Tsatsaronis, 2005; Thoraval, 2006; Resti and Sironi, 2007; Fiordelisi et al., 2011). For example, for reputational risk literature proposes quantitative measurement methods, such as the intellectual capital approach, the accounting approach, the marketing approach and the market-based approach (Gabbi, 2004; De Fontnouvelle and Perry, 2005; Fiordelisi et al., 2012). Nevertheless, banks usually calculate economic capital with respect to risks that are closer to Pillar I risks (concentration risk, interest rate risk on the banking book). As for liquidity risk, there is no clear connection with economic capital, just as the use of qualitative approaches prevails for the estimation of

strategic, residual and reputational risk (Italian Banking Association, PricewaterhouseCoopers, 2007; Doff R., 2008). The goal of the third section is to verify the current state of Pillar II risk measuring methods in the Italian banking system. How many and which risks are measured by quantitative type methods?

The study will proceed with in-depth examination of the banks – distinguishing them on the basis of their relative legal category and size.

A certain dissimilarity in behavior between banks is expected, bearing in mind that the same supervisory regulations, in defining the Supervisory Review Process, conforms to the principle of proportionality (‘corporate governance systems, risk management processes, internal audit mechanisms and those to calculate the adequate internal capital must be proportionate to the characteristics, size and complexity of the bank’s activity’) (Bank of Italy, 2006).

Despite this principle, banks have the option to adhere to the discipline developed for the class above. The paper proposes to examine how widespread practices other than those ‘minimal’ standard procedures outlined by supervisory regulations really are.

The final section of the paper will summarize the results obtained from these analyses and raise some issues for further research.

## 1. Sample and method

The sample used in the analyses consists of supervised Italian banks, with the sole exclusion of smaller banks and branches of foreign banks. The sample is composed of 148 financial institutions.

Information on the taxonomy of Pillar II risks and the methods used to estimate them was obtained from the Public Disclosures that these banks are obliged to publish at least once a year, in accordance with Basel Pillar III.

These reports are often presented in ‘consolidated’ form. In fact, the supervisory regulations are applied individually only to companies that do not belong to banking groups. They are instead applied on a consolidated basis to banking groups, with the exception of those controlled by a European holding company, when their total assets amount to less than 10 billion Euros. Under this provision, the number of documents subject to analysis is 71, representative of the 148 banks that constitute the original sample<sup>1</sup>.

Each banking group was assigned the legal category and size class of the holding company, or of the largest bank within the group.

<sup>1</sup> The documents refer to December 31, 2010. Of these, two documents, from banks controlled by a European holding company, do not include complete disclosures.

On the basis of this approach, the reports refer to 40 public limited companies (commercial banks), 17 popular banks and 14 cooperative banks. As for the size categories, the sample examined is structured around the following categories: the biggest banks (4), large- (4), medium- (8), small-sized (55) banks.

## 2. The results: Pillar II risk identification

As for the seven Pillar II risks outlined by the supervisory regulations, interventions from the Authority have definitely contributed to justifying the relevant definition.

The greatest dissimilarities in terms of language apply to reputational risk and strategic risk.

In particular, with regard to the first, certain differences related to the stakeholders cited in the definition can be highlighted. As previously underlined, the supervisory regulation refers to the negative opinion of the bank's image from the five specific categories of stakeholder: clients, counterparties, bank shareholders, investors and supervisory authorities. Yet upon reading the documents provided by the banks, wider references often emerge. In particular, fifteen of the financial institutions examined define reputational risk as the risk of downturn in earnings or capital arising from a negative opinion of the bank by stakeholders in general, or any subject that the bank has a relationship with. This approach is especially typical of cooperative banks. Other financial institutions provide a precise list of the stakeholders connected to reputational risk, adding categories to those identified by the Bank of Italy: four banks also list human resources/employees, two organizations name the local communities/the relevant socio-economic community, two other financial institutions mention the suppliers and finally one bank includes the media in the list of the relevant stakeholders when it comes to reputational risk.

When dealing with strategic risk, some financial institutions break it down into sub-categories; these sub-categories might, for other banks, be considered as separate risks, distinct from strategic risk. For example, according to a broad meaning of strategic risk, this includes:

- ◆ business or commercial risk: risk connected to the volatility of volumes and margins, generally due to changes in the competitive context, client behavior or technological development;
- ◆ strategic risk in the strictest sense: risk of extreme discontinuity in managerial variables due to errors in the implementation of the strategic plan or inadequate responses to changes in the competitive context, also due to incorrect investment decisions;
- ◆ regulatory risk: risk that changes in the legislative framework might threaten the competitive position of the bank;

- ◆ “way out” risk, in relation to the shares in unlisted companies held in portfolio: risk connected to the possibility of incurring losses due to the difficulty in disinvestment.

One of the banks included in the sample also specifies the inclusion of country risk under strategic risk, ascribable to the following two cases in point:

- ◆ economic risk: risk that the macro-economic downturn of a country might lead to a contraction in the bank's profitability;
- ◆ political risk: risk that domestic political events can affect the investment returns of a foreign branch of the group (nationalization, limitations on the money transfers out of the country, etc.).

The most widely accepted definition, as stated in nine Public Disclosures, subdivides strategic risk into the two following components:

- ◆ business risk, arising from factors external to the organization, such as changes in the customers behavior, competition, prices, technological innovation, taxation and regulations;
- ◆ pure strategic risk, arising from adverse or ineffective business decisions, or their improper implementation. This risk is connected to phenomena of extreme corporate discontinuity linked, for example, to entering new markets or the adoption of radically new operating choices (staff contracts, compensation policies, opening/closure of branches, outsourcing, specialization/diversification, etc.).

As will be explained more clearly in the next section, the need to distinguish between the two components of strategic risk comes not only from managerial reasons, but also from causes connected to the diverse measurement techniques that can be applied to the two risk configurations.

For example, one of the biggest Italian banking group states: ‘pure strategic risk is the component that does not require capital charge; the second component of strategic risk is more directly related to business risk (...). This component, in addition to corporate governance systems and internal audit mechanisms, is tackled by an adequate internal capital’.

The difference in the techniques for managing and measuring the two components of strategic risk has led eight of the banks from the sample to consider business risk a category of its own, separate from strategic risk.

The other types of risk included by some financial institutions in their own Risk Map, in addition to the minimal ones, can be broken down into three categories:

- ◆ financial investment risks;

- ◆ risks connected to failure to comply with rules and regulations;
- ◆ risks connected to particular activities performed by the bank/banking group.

This classification stems from the need for banks to perform a self-assessment of the risks they are exposed to on a vertical basis (all risks related to the overall banking structure, above and below the line), and on a horizontal basis (all risks relating to the different business lines and the group's legal entities).

The following can be included under financial investment risks:

- ◆ investment risk: the risk of losses arising from the portfolio of financial investment in companies that do not belong to the group and are not included in the trading book. This risk is referred to by nine of the banks analyzed.
- ◆ real estate risk: the risk of losses deriving from fluctuations in the value of the real estate portfolio owned by the bank/group, or rather, from the reduction in revenues this generates, depending on the general trend of the real estate market. This risk is cited by ten of the banks analyzed.
- ◆ goodwill risk: current or prospective risk that the value of goodwill recognized in the balance sheet is more than the value that can actually be realized. This risk is explicitly cited by only one of the banks from the sample.

The following can be included among the risks connected to failure to comply with rules and regulations:

- ◆ compliance risk: as described in the supervisory measures, this risk concerns the possibility of incurring legal or administrative sanctions, significant financial losses or damage to reputation due to violations of mandatory rules (legal or regulatory), or rather, of self-regulations (codes of conduct, disciplinary codes). This risk is deemed to be important by 10 of the banks analyzed.
- ◆ risk of unintentional errors or fraud in financial reporting: a risk, listed by one of the banks examined, related to the possibility of incurring sanctions, losses or damage to reputation due to the disclosure of unreliable financial reporting.

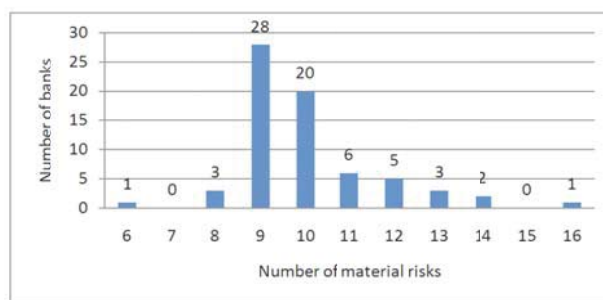
Finally, the following can be included among the risks connected to particular activities performed by the bank/banking group:

- ◆ insurance risk: the risk regarding the uncertainty of certain events and the amount of insurance commitments relating to the activity of the insurance companies that are part of the group or controlled by it. This risk is included in the Risk Map of 4 banks.
- ◆ pension fund risk: the risk, involved in defined benefit pension schemes, that the contributions

allocated are not sufficient to meet guaranteed benefits due to unforeseeable demographic dynamics (so-called actuarial risk) and/or that there are insufficient returns on the assets that these contributions were invested in (so-called financial risk), with consequent additional costs on the bank. This risk was only included by one of the banks in the sample.

Overall, in addition to the three Pillar I risks, regulations indicate a further seven risks to be subjected to examination in Pillar II. With regard to these, analysis of the Risk Maps from Italian banks has shown the materiality of a further eight risk categories for some financial institutions. The total number of risks deemed to be material in the overall Italian financial system stands at eighteen.

The figure below indicates the frequency distribution of the banks analyzed, on the basis of the number of risks they consider to be material<sup>1</sup>.



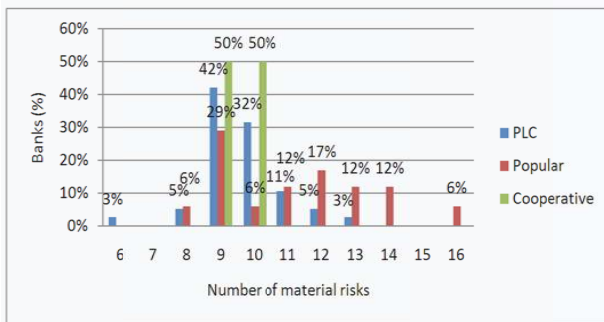
Source: Processing of data published in Pillar III Public Disclosures, 31/12/10.

**Fig. 1. Number of banks/banking groups by number of risks considered to be material**

Figure 1 shows how not one of the banks considers the entire range of risks described above to be material. The group that mentions the highest number of risks has sixteen risks on its Map. On the other hand, there are banks that do not even consider all the risks listed by the Supervisory Authority, as material. To be specific, 38 of the financial institutions analyzed do not include risks deriving from securitization in their Risk Map, either because there were no securitization operations when the Public Disclosures under analysis were published, or because the related risk was included under credit risk.

Figure 2 shows how the subdivision of the banks by legal categories leads us to the conclusion that the popular banks consider the highest number of risks from those described above to be material. On the contrary, no cooperative bank lists over 10 risks on their Map.

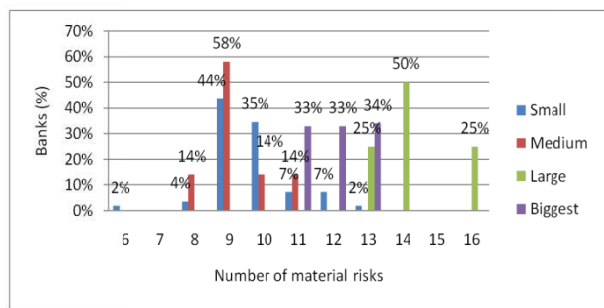
<sup>1</sup> The Risk Map for two of the banks included in the sample, controlled by foreign holding companies, was not available.



Source: Processing of data published in Pillar III Public Disclosures, 31/12/10.

**Fig. 2. Percentage of banks/banking groups (distinguishing them on the basis of their legal category) by number of risks considered to be material**

When the financial institutions are divided by size, it emerges that the biggest and large-sized banks identify the widest range of material risks, as shown in Figure 3.



Source: Processing of data published in Pillar III Public Disclosures, 31/12/10.

**Fig. 3. Percentage of banks/banking groups (distinguishing them on the basis of their size) by number of risks considered to be material**

## 2. The results: Pillar II risk measurement

In this section, the term ‘quantified’ risks refers to the risks for which banks can calculate the internal capital (or economic capital) required to face them. By consequence, liquidity risk is not defined as quantifiable, despite the Supervisory Authorities having provided the banks with methodological elements to calculate quantitative indicators for measuring the banks liquidity position.

Non-quantifiable risks represent those risk types for which, as no solid and shared methods have yet been used for the calculation of the related internal capital, no capital charge is calculated, but rather appropriate mechanisms of control and mitigation are put in place.

The Supervisory Authorities state that the banks themselves must define for which types of risk, other than credit, market and operational risks, it is advisable to adopt quantitative methods to calculate internal capital, defining criteria inspired by the principle of proportionality.

For some risk categories (concentration risk and interest rate risk on banking book), the Supervisory Authorities indicate simplified algorithms in order to measure them (Annexes B and C of Bank of Italy Circular 263/06, Title III, Chapter 1).

Analysis of the contents of the latest Pillar III Public Disclosures provided by Italian financial institutions shows how all the banks, of any size and legal category, use a quantitative method, to varying degrees of sophistication, to measure credit, market, operational, concentration and interest rate risks on their banking book.

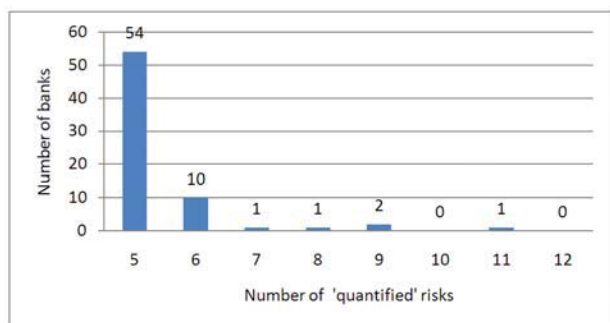
The other risk categories identified by the Supervisory Authorities are treated by the banks analyzed as ‘non-quantifiable’ risks. More specifically, no financial institution quantifies economic capital with respect to liquidity risk, reputational risk and pure strategic risk.

The management of such risks requires on the one hand the definition of adequate organizational mechanisms with respect to a variety of events that may generate risk, and, on the other hand, qualitative assessment in order to direct attempts at mitigation of the risk itself. Qualitative assessment usually occurs through the use of specific scorecards, generally completed by the different subjects involved in the processes where risks may be generated. These scorecards are intended to identify, by means of qualitative techniques, the potential level of risk and the relevant control mechanisms. For example, as for strategic risk, some banks have a judgemental scorecard, using an approach that entails attributing a frequency and impact rating to every risk event. As for reputational risk, despite literature on the matter providing methods to measure corporate reputation in a quantitative way, not a single bank has yet to use these models in order to calculate internal capital. The smaller banks report difficulties in the application of qualitative assessment techniques, based on the results of questionnaires or interviews conducted with one or more corporate stakeholders.

While some of the risks specifically identified by the Supervisory Authorities are not considered in the calculation of the banks’ economic capital, financial institutions have sometimes identified specific models for measuring the other risks that are not expressly regulated. In particular, business risks, financial investment risks and insurance risks are typically included among the risks for which internal capital is calculated.

As revealed by the figure below, although the most important quota of the financial institutions only quantifies the five risk categories for which the Supervisory Authorities provide specific measurement algorithms, banks that include a much wider range of risks in the

calculation of their economic capital do stand out, up to a maximum of eleven risk categories.



Source: Processing of data published in Pillar III Public Disclosures, 31/12/10.

**Fig. 4. Number of banks/banking groups by number of 'quantified' risks**

In particular, six banking groups measure business risk, five investment risks, four real estate risks and two insurance risks.

As for financial investment risk (investment risk and real estate risk), the estimation model adopted is based on measurement of the variability of the expected loss connected to each type of risk. The VaR (Value at Risk) method is therefore applied in order to calculate the maximum potential loss, considered according to approaches that may differ with reference to time horizons and levels of confidence defined within each bank.

On the other hand, the measurement model adopted for business risk is different, for which the corresponding risk capital is estimated on the basis of Earning at Risk (EaR) measurements. The EaR type method adopted by the financial institutions, typically parametric, allows the estimation of potential losses through the application of specific coefficients to economic margins, calculated on the basis of historical analysis of the volatility of the income components used in the estimate. Among the business risk measurement models described in the Pillar III Public Disclosures, differences emerge connected to the income component that is deemed to be volatile (intermediation margin or other operating results). Sometimes, for particular financial items, a simpler approach than the Earning at Risk method is adopted. For example, a banking group belonging to the sample calculates risk capital as equivalent to the value of performance commissions booked over the last year.

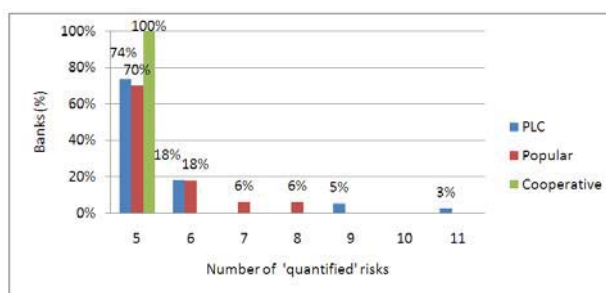
Finally, to estimate insurance risk, the VIF (Value of in Force Business) method is used, estimating the probability that the value of insurance activity over time may deteriorate.

For all the risk categories examined, it is necessary to underline that the capital charge calculated is complementary and is no substitute for the provision

of suitable mechanisms of control and mitigation of the risks themselves.

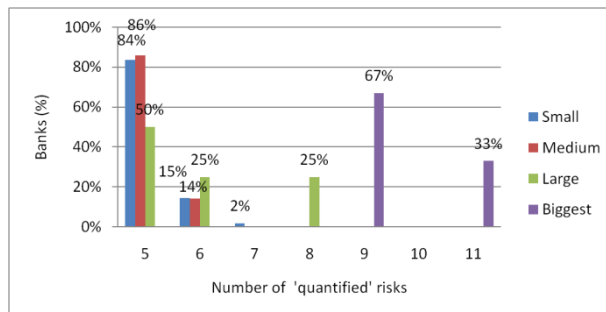
Which banks/banking groups have the widest range of risks estimated with quantitative methods?

The following Figures 5 and 6 show the distribution of the banks, subdivided by legal category and size, on the basis of the number of risks included in the calculation of economic capital. As we can deduce from the figures, the banks with the higher number of 'quantified' risks are the large-sized banks PLC. On the contrary, all the cooperative banks measure only the five risks for which the Supervisory Authorities provide simplified estimate algorithms.



Source: Processing of data published in Pillar III Public Disclosures, 31/12/10.

**Fig. 5. Percentage of banks/banking groups (distinguishing them on the basis of their legal category) by number of 'quantified' risks**



Source: Processing of data published in Pillar III Public Disclosures, 31/12/10.

**Fig. 6. Percentage of banks/banking groups (distinguishing them on the basis of their size) by number of 'quantified' risks**

As for the number of risks identified, it was underlined how the banks with the widest range were not the biggest, but the large Popular Banks. On the other hand, in terms of the application of risk measurement techniques, the principle of proportionality is complied with in a stricter way.

## Conclusions

The banks define strategies and prepare instruments and procedures to calculate the capital that they deem to be suitable, by amount and composition, for permanent coverage of all the risks to which they are, or might be, exposed.

The taxonomy of Pillar II risks is common for the risk categories defined by the Supervisory Authorities: concentration risk, interest rate risk on banking book, liquidity risk, residual risk, securitization risk, strategic risk and reputational risk. Regulators enforced standards in risk management, for Pillar II risks too. This has created the long missing international financial language that can be understood by all market participants, improving not only the communication between banks and regulators, but also inside the banking sector and the investor community.

Nevertheless, the banks are the ‘owners’ and protagonists of their risk identification and management processes. Each bank, on the basis of prudent assessment, must identify any further risk factors connected to its activities. The paper shows how there are significant differences with reference to non-regulated risks, such as business risk, investment risk, real estate risk, goodwill risk, compliance risk, the risk of errors or fraud in financial reporting, insurance risk and pension fund risk.

The analysis of Pillar III Public Disclosures indicates that the largest Risk Map in the Italian banking system includes sixteen different risk categories. This Risk Map belong to a large popular bank. No cooperative bank lists over ten risks on their Map.

Among the risks not explicitly defined by the regulations, the most commonly cited is business risk, connected to changes in client behavior or operating context. Currently, there are eight banks that deem it to be a material risk, considering it separate from strategic risk, and six include it in their internal capital calculation. Economic capital is used by these banks as business-risk mitigant albeit not the only one. Despite the amount of economic capital that financial institutions hold to cover business risk, it has received little attention in literature.

The quantification of Pillar II risks is generally limited to risks for which the Supervisory Authorities propose specific calculation algorithms (credit risk, market risk, operational risk, concentration risk and interest rate risk) and it is sometimes extended to residual risk and securitization risk. But no Italian

financial institution quantifies economic capital against liquidity risk, reputational risk or pure strategic risk.

Only the biggest banks include other risks in the calculation of their internal capital, such as business, investment, real estate or insurance risk.

The banks with the higher number of ‘quantified’ risks are the large-sized banks (PLC). On the contrary, all the cooperative banks measure only the five risks for which the Supervisory Authorities provide simplified estimate algorithms.

With regard to the number of risks identified, the analysis showed how the banks with the widest range were not the biggest, as for the methods of measurement the principle of proportionality is complied with in a stricter way.

There is not, therefore, a strong direct relationship between number of risks considered to be relevant and number of quantified risks.

Some of the largest banks do not cite risks considered to be relevant by banks of medium-large size. This can mean that some of the companies sampled are not providing a complete picture of the risks they face. In banks, in fact, one of the principal driver affecting levels of risk is company size and complexity.

On the other hand, the results achieved show how some banks are not able to calculate how much internal capital is necessary to set against a significant number of risks considered to be material.

Further development in the risks controlled by the banks is expected, as well as refinement of the quantitative measurements for the estimate of Pillar II risks. The Supervisory Review Process is not characterized by a sole objective of compliance with supervisory regulations, but shows significant effects on managerial and strategic policies. In fact, the planning of the economic capital of a bank will increasingly influence its operational and strategic choices, forming the basis for the adjusted measurement of risk of individual transactions, business or organizational units, as well as for the definition of strategic plans and assessment of the efficiency of extraordinary operations.

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