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Essays on Risk Disclosure: Evidence from the Banking Industry

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Introduction

This thesis examines risk disclosure practices in the banking industry. The main aim of the thesis is to assess the level of transparency of bank financial reports by focusing on the information disclosed to the public with reference to their risk exposure and management. Additional objectives include the identification of areas for improvement for bank risk disclosure and definition of proposals to enhance risk disclosure. By drawing upon both qualitative and quantitative techniques, I develop methodological approaches to assess the information financial institutions provide to the public with reference to the following categories: (i) credit risk; (ii) market risk; (iii) risks associated to derivative financial instruments; (iv) general risk. I subsequently rely on these methodologies to carry out empirical analyses on samples of Italian and European banks. In addition, I analyse the effects of the Banking Union and the Single Supervisory Mechanism on bank risk disclosure practices.

Enhancing transparency and reducing information asymmetry between banks' insiders (banks' managers) and outsiders (shareholders, investors and other stakeholders) is fundamental for the correct functioning of financial markets (Tutino, 2019; Rutigliano, 2020). Financial institutions are notoriously opaque because of their risk-taking and maturity transformation role, which make them difficult to assess without considerable information on their risk-taking practices (Morgan, 2002; Flannery et al., 2013). Adequate levels of risk disclosure serve as an outside mechanism for monitoring the behaviour of bank management (Eng and Mak, 2003), facilitates access to external finance at a reasonable cost of capital (Botosan, 1997), and helps maintain the trust of stakeholders (Oliveira et al., 2011). On the other hand, if risk disclosure is not sufficiently comprehensive, the negative consequences may be particularly severe. The 2008 – 2009 global financial crisis has been attributed in part to inadequate disclosure by banks that complicated assessments of their risk-taking and risk management (Avgouleas, 2009; Gorton, 2009; Sowerbutts et al., 2013). The lack of disclosure by banks magnified uncertainty about the underlying value of assets and off-balance sheet exposures to structured credit products, which fueled the market turmoil. However, while full transparency and the maximum possible level of disclosure might be desirable for investors and stakeholders, it is crucial to take into account that competitors might acquire information that might be used to harm banks' competitive position (so called proprietary cost. Verrecchia, 1983). In this context, the disclosure of certain types of information can lead to a competitive disadvantage

(Edwards & Smith, 1996) that could damage bank position in the competitive arena, making a full disclosure regime dangerous for the banking industry. In this context, bank regulators and supervisors intervene to find a balance, by imposing banks to disclose sufficient information to market participants, while assuring that their competitive position would not be harmed because of excessive disclosure. The in-depth investigation of banks' disclosure practices, by focusing on the most relevant risks in the banking industry, represents an extremely relevant object of study to understand the conflicting forces that shape risk disclosure practices in the banking industry, and to find a balance in this trade-off between stakeholders' demand for disclosure and banks' need to withhold certain confidential information.

The study of the extant literature represents a crucial starting point for an adequate understanding of the incentives and constrains that determines bank risk disclosure practices. This analysis is performed in chapter 1, which aims to provide a review of the literature on risk disclosure in the banking industry. It reviews the strand of literature that studies the practices financial institutions follow when they disclose information to the public about the risk exposure and management. This literature review covers papers published until 2019 in peer-reviewed journals stored in Scopus, Web of Science and Google Scholar databases. 47 papers in total were selected based on a specific search strategy of their titles and keywords. In addition, other contributions not stored in these databases have been analysed, including books and other contributions on fields related to risk disclosure. These contributions have been reviewed and categorised in order to shed light on relevant aspects analysed in the literature, including the theoretical contributions, the methodological approaches employed in the empirical literature, the type of banking risks examined, the type of documents and narrative disclosures analysed, and other pivotal topics investigated in the literature. The most relevant theoretical frameworks adopted in the literature are the following: agency theory (Jensen and Meckling, 1976), management entrenchment theory (Gelb, 2000; Eng and Mak, 2003), signalling theory (Spence, 1973; Morris, 1987), stakeholder theory (Freeman, 2010), legitimacy theory (Suchman, 1995; Bamber and McMeeking, 2010), political cost theory (Watts and Zimmerman, 1986), proprietary cost theory (Darrough and Stoughton, 1990; Verrecchia, 1983), impression management theory (Goffman, 1959; Merkl-Davies and Brennan, 2011) and resource dependence theory (Pfeffer and Salancik, 1978; Bushman and Wittenberg-Moerman, 2012). These theories provide an explanation for most disclosure practices in the banking industry. However, regardless of the sound theoretical underpinning of the literature, it emerges that there are various gaps with reference to the methodological approaches adopted to examine bank disclosure practices and to the type of banking risks analysed.

From a methodological viewpoint, while on the one hand the widespread use of automated computer-aided text analysis techniques extended our knowledge on important aspects in this field of study, on the other hand this approach is characterised by certain limitations. Barnouw (2018) has recently stressed the point that, when it comes to textual analyses, *"notwithstanding major advances in the use of computers, their application usually sacrifices the criterion of meaningfulness in favor of reliability and speed."* Although reliability and speed are important features that any textual analysis technique should have, if the analysis is not meaningful, it would be pointless to examine bank risk disclosure and impossible to draw relevant conclusions. Furthermore, according to a recent study (Cao et al., 2020) corporate disclosure practices have been reshaped by the use automated text analysis techniques, which are largely employed by financial analysts, robo-advisors and algorithmic traders. In particular, the use of artificial intelligence and machine processors has motivated firms to change their disclosure practices by avoiding words that are negatively perceived by artificial intelligence algorithms. This "feedback effect" (i.e. "how companies adjust the way they talk knowing that machines are listening", Cao et al., 2020, pp. 28) can lead to important negative outcomes including information manipulation, if firms' and banks' disclosures are analysed only by means of computer aided automated textual analyses. Hence, although automated textual analysis techniques are undoubtedly useful, they still need to be complemented by qualitative (or semi-objective) content analysis methodologies, which have been largely overlooked by the extant literature. This is the main aim of chapters 2, 3 and 4 of this thesis. Chapter 2 aims to analyse credit risk disclosure in the Italian banking industry by proposing a methodology to assess qualitative and quantitative profiles of bank disclosures with reference to the most important financial reporting documents. This chapter examines the qualitative and quantitative profiles of bank risk disclosure, with specific reference to the most traditional type of risk for commercial banks, namely credit risk. A hybrid scoring model based on analytical grids is adopted to assess the ability of banks to provide an adequate credit risk disclosure. While other studies already investigated into credit risk disclosure in banking (Frolov, 2006 is amongst the few contributions in this specific field), the need for reliable approaches to analyse this type of risk calls for further development of this strand of literature. Although the analysis of credit risk disclosure in the banking industry is extremely relevant, it is difficult to find a suitable methodological approach to assess it, as the development of metrics to examine bank risk disclosure with specific reference to credit risk has been overlooked by the literature. In addition, while it is relatively easy to find measures to assess the amount of information provided with reference to credit risk, measuring disclosure quality is much more complex (Beretta and Bozzolan, 2008). Previous studies have examined mandatory and voluntary risk reporting, using automated content analysis, whilst chapter

2 proposes an original and non-automated approach. By applying this methodology on a sample of large Italian banks, and by carrying out a correlation based network analysis of disclosure scores, interesting insights emerge with reference to the most relevant aspects of bank credit risk disclosures, differences between banks' practices, and relationship between bank size, business models and bank disclosure.

While bank risk disclosures with specific reference to credit risk have not been thoroughly investigated in the literature, when it comes to market risk, reliable methodological approaches have already been proposed. Chapter 3 focuses on the market risk disclosure practices in the financial reports of large Italian banks, in order to detect their main drawbacks and possible areas of improvement. Market risk is also amongst the most important risks in the banking industry (Basel Committee on Banking Supervision, 2006; Sironi and Resti, 2008; Tutino et al., 2011) and banks' exposure to this type of risk have recently become particularly large, at the expenses of other types of risk (Polizzi, 2017). Furthermore, financial innovation and financial engineering lead to an increased complexity with reference to the measurement and the disclosure of market risk (Barth and Landsman, 2010; Hull, 2018). The empirical investigation proposed in chapter 3 adopts a recently designed research methodology (Scannella and Polizzi, 2018), which assesses both qualitative and quantitative profiles of bank market risk disclosure, based on the content analysis setting proposed by Krippendorf (1980). I analyse the three most important official financial reports for risk reporting purposes, namely the management commentary, the Basel Pillar III disclosure report and the notes to the consolidated financial statement. The study conducted in chapter 3 provides useful practical solutions to overcome various problems related to market risk disclosure in the Italian banking industry, with particular reference to the scarce informativeness of the management commentary, the widespread information overlapping between bank financial reports, and their excessive number of pages.

Although the analysis of specific types of risk is extremely relevant, it is equally important to examine the disclosure of elements that could potentially have an impact on any kind of bank risk. In this regard, the disclosure of the risks associated to derivative financial instruments plays a fundamental role. This topic is addressed in Chapter 4, which aims to analyse the disclosure practices of large European banks with specific reference to derivative financial instruments, and to identify their main differences, points of strength and weaknesses. The widespread use of derivative financial instruments represents a potential source of systemic risk for the financial system, if they are not managed correctly and prudently. This aspect remarks the importance of a comprehensive derivative disclosure in the banking industry, which became even more relevant after the 2007 -

2008 global financial crisis. Derivative disclosure is pivotal for banks' stakeholders and potential investors to assess banks' risk exposure and to take appropriate and conscious decisions. Given that derivatives are an enormous potential source of risk for banks, a satisfactory disclosure on other types of risk might be completely spoiled by an inadequate reporting on derivative exposure and management. Chapter 4 proposes an empirical analysis on derivative disclosure on a sample of large European banks. In line with chapter 2, a methodological approach based on the content analysis framework is proposed in order to investigate into derivative disclosures in banking, and to evaluate their qualitative and quantitative profiles. By adopting a scoring model based on key disclosure parameters, this chapter provides evidence that banks differ in their derivative reporting, although they are subject to homogeneous regulatory requirements and accounting standards. This chapter also shows that there is room to improve several aspects of derivative disclosure practices of European banks.

Apart from the analysis of specific bank disclosure practices, it is important to recognise that certain exogenous shocks may have a significant impact on risk disclosure in the banking industry. Amongst numerous variables, events and circumstances that strongly influence bank disclosures, banking supervision undoubtedly plays an important role. Banking supervision and bank disclosure are closely intertwined. On the one hand, bank supervisory authorities are essential to maintain the integrity and transparency of the whole banking sector. On the other hand, bank disclosures are extremely beneficial for supervisors, as it is remarked by Nier and Baumann (2006), who show that more transparency decreases equity return volatility, and consequently improve supervisors' view of the risk and relative performance of the bank. Bank supervisors and regulators are extremely interested in bank disclosure, as it enhances financial stability, which is one of their main final objectives. This topic is analysed in chapter 5, which assesses the impact of centralised and decentralised banking supervision on the risk disclosures of European banks. In November 2014, the European Council has established the Banking Union, as a revolutionary change in the supervisory structure of the European banking system. The Banking Union is based on three pillars: the Single Supervisory Mechanism, the Single Resolution Mechanism and the European Deposit Insurance Scheme. The main focus of chapter 5 is on the first pillar, which is meant to centralise and improve the banking supervisory function in Europe. The key objective of the Single Supervisory Mechanism is the achievement of a common high standard supervision, as a reaction to the ineffectiveness of national based banking supervision. After the establishment of the Single Supervisory Mechanism, the largest and most significant banks have been supervised by the European Central Bank (centralised supervision), whilst the other 'less significant' institutions have

been left under the supervision of national supervisory authorities (decentralised supervision). The onset of Banking Union and the establishment of the Single Supervisory Mechanism are considered as an exogenous shock that provides the setting for a natural experiment to analyse the effects of the new supervisory arrangements on bank risk disclosure practices. Chapter 5 analyses the effects of the new supervisory regime on bank disclosures by combining the perspectives proposed by the organisation-society theories (Burgstahler & Dichev, 1997; Cohen et al., 2017), with the theoretical models that analyse the effectiveness of banking supervision in a multi-supervisor setting (Agarwal et al., 2014; Carletti et al., 2020). The aim of this analysis is to investigate the impact of the banking union on the way banks provide information in their annual financial reports. Adopting an expert validated tailored disclosure dictionary and a difference-in-differences methodology, I analyse the risk disclosures provided by a sample of 75 banks supervised by the European Central Bank within the Single Supervisory Mechanism, and 150 financial institutions supervised by National Supervisory Authorities, before and after the establishment of the banking union. The results of the analysis conducted in chapter 5 confirm the importance of banking supervision in shaping bank disclosure practices, and sheds light on some aspects that could be improved in the current banking supervision architecture in Europe, which could result in a more comprehensive disclosure in the banking industry.

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Chapter 1 – Risk disclosure in banking: The state of the art

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Chapter 2 – Credit risk disclosure in banking: evidence from the Italian banking industry

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Chapter 3 –An Investigation Into Market Risk Disclosure: Is There Room To Improve For Italian Banks?

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Chapter 4 – Do European banks differ in their derivative disclosure practices? A cross country empirical analysis

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Chapter 5 – Risk Disclosure and Banking Union: The effects of the Single Supervisory Mechanisms

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Conclusions

This thesis analysed risk disclosure practices in the Italian and European banking industry, by assessing the level of transparency of bank financial reports, and examining the information disclosed to the public with reference to their risk exposure and management.

The starting point of the thesis was the review of the strand of literature that studies the practices financial institutions follow when they disclose information to the public about the risks they are exposed to, and how they manage them. Chapter 1 proposed a discussion of the most relevant theories adopted in the literature, namely agency theory (Jensen and Meckling, 1976), management entrenchment theory (Gelb, 2000; Eng and Mak, 2003), signalling theory (Spence, 1973; Morris, 1987), stakeholder theory (Freeman, 2010), legitimacy theory (Suchman, 1995; Bamber and McMeeking, 2010), political cost theory (Watts and Zimmerman, 1986), proprietary cost theory (Darrough and Stoughton, 1990; Verrecchia, 1983), impression management theory (Goffman, 1959; Merkl-Davies and Brennan, 2011), resource dependence theory (Pfeffer and Salancik, 1978; Bushman and Wittenberg-Moerman, 2012). By drawing upon economics, management, accounting and psychology, the multidisciplinary perspective proposed by these theories allows researchers to have a comprehensive view of the numerous forces that shape risk disclosure practices in the banking industry. From the examination of the literature, it emerged that the period after the 2007 – 2008 global financial crisis is the most analysed time horizon. The reason behind this finding is that opacity and inadequate risk disclosure in the banking industry have been considered an important factor contributing to the crisis (Avgouleas, 2009; Gorton, 2009; Sowerbutts et al., 2013) in that financial institutions did not provide enough information about the assets that they were holding or their risk exposure and management. By analysing the geographic distribution of the samples analysed by the bank risk disclosure literature, other interesting insights emerged. First, numerous developing countries are poorly investigated or even not analysed at all. Second, Islamic banks are thoroughly investigated as there is a religious motive that induce them to provide high levels of disclosure, in compliance with Islamic religious precepts (Dignah et al., 2012). Consequently, numerous researchers focus on these banks. Third, the three most analysed countries worldwide are the U.S., the U.K. and Italy. The U.S. and the U.K. are widely studied because of (i) the high level of development of their banking sector; (ii) the fact that the annual reports of the financial institutions located in these countries are provided in English. As for the Italian context, there is another important reason why it is considered so interesting. Specifically, the Italian national

banking regulator (Banca d'Italia) adopts the so-called "interventionist or rule-based enforcement" (Bischof, 2009), which is an important regulatory and supervisory tool to achieve minimum levels of disclosure (Frolov, 2006). Thus, because of its peculiarities, the literature that focuses on this country is more developed, although numerous aspects still requires further investigations (Polizzi & Scannella, 2020). Overall, chapter 1 showed that, although numerous studies have been analysing risk disclosure in the banking industry, significant efforts are still necessary to push the frontier of the research in this field of study. Given that the lack of transparency has been amongst the most important contributing factors of the 2007 – 2008 global financial crisis, it is crucial to understand more in depth the role that bank transparency plays in financial markets by analysing risk disclosure practices. The subsequent four chapters of the thesis analysed bank risk disclosure practices with reference to (i) credit risk, (ii) market risk, (iii) risks associated to derivative financial instruments and (iv) the impact of the Banking Union on bank disclosures, aiming to investigate into the role of risk disclosure and transparency in the banking industry.

Chapter 2 analysed credit risk disclosure practices in the Italian banking industry, by proposing an innovative methodological approach within the content analysis framework, to investigate into qualitative and quantitative profiles of bank disclosure practices. The extant literature has not provided reliable methodological approaches to specifically investigate into credit risk disclosure in the banking industry. In order to fill this gap, this chapter proposed a mixed content analysis methodology divided into two parts that compensate each other's limitations. The first part is based on an objective evaluation, whilst the second one is based on a judgment analysis. This analysis is supported by objective binary indicators and by the adoption of the qualitative characteristics described in the Conceptual Framework for IAS/IFRS as guidelines in the evaluation process. The empirical research focused on a sample consisting of the ten largest Italian banks over the 2012 – 2017 time horizon. The credit risk disclosures of these banks are characterised by relevant differences, regardless of their homogeneous regulatory requirements and accounting standards that should strongly harmonise their disclosure practices. Although the international accounting standards and bank regulatory requirements have contributed to enhance credit risk disclosure, it emerges that there is still room for improvement of the disclosure and the transparency of the information, which in turn would strengthen the effectiveness of market discipline and the stability of the banking system. In this regard, particularly important aspects are the following: (i) enhancement of comprehensibility and comparability of bank disclosures; (ii) improvement of forward-looking disclosure; (iii) Provision of a more holistic view and less fragmented credit risk disclosure. Furthermore, adopting a correlation based network analysis approach, chapter 2 also

provided preliminary evidence on the existence of a relationship amongst credit risk disclosure, bank size and business model. More specifically, I found preliminary evidence that the enhancements of bank credit risk disclosure scores in the period 2012-2017 are related to bank size and business models. The methodology proposed in chapter 2 mitigates the concerns about the subjective evaluation that affects the content analysis, although it cannot be completely eliminated. This hybrid methodology overcomes the drawbacks of a purely quantitative or qualitative analysis, combining the points of strength of both approaches.

The objective of chapter 3 was to investigate the market risk disclosure practices of the largest Italian banks. This topic is one of the crucial areas of interest for investors and stakeholders, because market risk is amongst the most relevant types of risk in the banking industry. The empirical analysis performed in chapter 3 adopts the methodology proposed by Scannella and Polizzi (2018) on a sample composed by the ten largest Italian banks by total assets, over a time period running from 2012 to 2015. The investigation is carried out looking at the three most important official documents banks have to prepare for risk reporting purposes, namely the notes, the management commentary and the Pillar III disclosure report. The results of the empirical analysis show that, even though it is important to increase the amount of information banks should disclose in their financial reports, also the location of the information in bank financial reports play a crucial role in determining the overall relevance and comprehensibility of the information on market risk exposure. The reduction of the overlapping areas between the aforementioned documents is one of the most straightforward and easiest solutions to reduce the complexity and improve the comprehensibility of bank financial reports with reference to risk reporting. The pillar III disclosure report and especially the management commentary can be significantly improved. In particular, the former should include more information not only about regulatory capital and adequacy, but also about the economic capital, providing more insights on bank internal and managerial perspectives in this crucial aspect. As for the management commentary, it should provide more qualitative and descriptive information about the overall strategy of the risk management functions of the bank. An adjustment like this could offer the users of bank disclosures a more forward-looking perspective, which is crucial to allow investors to take rational and conscious economic decisions.

Chapter 4 compared the derivative disclosure practices of a sample of European global systemically important banks over the 2013 – 2019 time horizon, by relying on a tailor-made content analysis methodology based on analytical grids. This methodological approach is based on both objective and judgement-based evaluations of the disclosure on the risks associated to derivative financial

instruments. The first part of the scoring model relies upon a binary scheme to evaluate each key disclosure parameter. This purely objective methodology attenuates the subjectivity that affects the content analysis. The second part of the scoring model is a judgment-based analysis, and it captures those elements that are not considered by the first part of the metric. Hence, the drawbacks of a pure quantitative or qualitative analysis are counterbalanced in this hybrid content analysis methodology. The key finding of the empirical analysis was that banks differ in their derivative disclosure practices, regardless of their homogeneous regulatory framework. The research also provided empirical evidence that derivative disclosure could be improved in the Annual Reports and Pillar III Reports. There is room for improvement in the explanations of derivative use and hedging strategies, the connections between risk exposures, hedging instruments, and strategies, as well as the effects on the financial statement. In general, the expectation is that risk disclosure in banking will be enhanced after the introduction of the recently revised Pillar III disclosure requirements and new IAS/IFRS. The use of derivatives is widespread across banking institutions and it is potentially a significant source of systemic risk in the financial system, if these financial instruments are not managed prudently. The demand for higher levels of risk disclosure in general and derivative disclosure in particular has increased over recent years, especially after the global financial crisis, the adoption of a bail-in regime in the new European bank resolution regulation, and the enhanced accounting and regulatory constraints decided by national and international authorities and accounting standard setters. The methodology proposed in this chapter provides a reliable technique to investigate into this specific type of risk disclosure, and empirical analyses conducted by using it may offer important insights to further improve risk disclosure in the banking industry.

Chapter 5 assessed the effects of the new European supervisory regime (i.e. the Single Supervisory Mechanism led by the European Central Bank) on bank disclosure. Adopting an expert validated tailored disclosure dictionary, specifically designed to investigate into bank consolidated annual reports, I analysed the risk disclosures of a sample of 75 SSM supervised banks, and 150 financial institutions supervised by National Supervisory Authorities, before and after the establishment of the Banking Union, over a time period running from 2012 to 2017. This dictionary consists of four different disclosure categories (risk management, risk exposure, references to the regulatory framework and reassuring disclosure), in order to study how this revolutionary change in the supervisory mechanism has prompted banks to change their disclosure practices. On the one hand, the findings of chapter 5 support the idea that the Banking Union, and more specifically the establishment of the Single Supervisory Mechanism, has had a positive impact on bank disclosures. On the other hand, it emerged that the risk disclosure provided by banks supervised by the

European Central Bank through the Single Supervisory Mechanism improved less in comparison to that of the financial institutions supervised by National Supervisory Authorities. These findings are related to the limitations of the current supervisory system in Europe, and specifically to the indirect collection of the supervisory information, which is performed by the National Supervisory Authorities. The inefficiency of the regulatory system has a negative impact on the speed of the information flow between the supervised entities and the Single Supervisory Mechanism, as well as on the scale of information collection, which is suboptimal. Chapter 5 suggested that further efforts are still necessary by bank regulators and supervisors to improve the disclosure of European banks. A change in the current mediated supervisory mechanism for large European financial institutions may enhance bank disclosure. In particular, a direct information collection performed by the Single Supervisory Mechanism may be more effective, as the mediation role performed by National Supervisory Authorities may result in inefficiencies, which are reflected in the way financial institutions provide information in their annual reports.

Throughout this thesis, it is remarked the importance of adopting new methodologies to analyse the disclosures of financial and also non-financial firms. The excessive reliance on computer-aided textual analysis techniques has negative consequences not only with reference to the academic literature in this field of study, but it is even affecting firms and banks' disclosure practices. In this regard, Cao et al. (2020) showed how corporate disclosure practices have been reshaped by the use of automated textual analysis techniques, which are largely employed by financial analysts, robo-advisors and algorithmic traders. In particular, the use of artificial intelligence and machine processors has motivated firms to change their disclosure practices by avoiding words that are negatively perceived by artificial intelligence algorithms. This change in disclosure practices can lead to important negative outcomes including information manipulation, if firms' and banks' disclosures are analysed only by means of computer aided textual analyses. Hence, although automated textual analysis techniques are undoubtedly useful, they still need to be complemented by qualitative content analysis methodologies, which have been largely overlooked by the extant literature. This is amongst the most important aims of chapters 2, 3 and 4 who relied on mixed content analysis methodologies that allow to identify problems and limitations in bank risk disclosures, to carry out a thorough and detailed comparison of bank disclosure practices, and to detect areas for improvement in various financial reports. These analyses and their methodological approaches aim to achieve high levels of meaningfulness, which is considered the most important objective to pursue, whilst the speed of the analysis was not considered the main priority. It is clear that these methodologies are characterised by certain drawbacks. First, the level of subjectivity that

characterises these approaches, which is nevertheless unavoidable in any content analysis methodology. Second, as already mentioned, these types of analysis are extremely time-consuming, and it is virtually impossible to analyse large samples. In actuality, this is the main reason why an automated content analysis approach has been used in chapter 5 to analyse a sample of 225 financial institutions over a 6 year time period. However, the mixed methodologies proposed in this thesis, and in general qualitative content analysis methodologies, are extremely useful in numerous instances including explorative analysis, multiple case-studies, examination of small samples, etc., as they allow to collect considerable information even from small samples. Lastly, these methodologies may represent important tools to investigate into the change in disclosure practices that have been reshaped by the use automated text analysis techniques that motivate financial and non-financial firms to avoid words that are negatively perceived by artificial intelligence algorithms (Cao et al., 2020). Unfortunately, given the current technological knowledge, performing this kind of analysis by means of automated textual analysis would not be an easy task. This is just one of numerous avenues for future research that emerged from the analysis conducted in this thesis. Future research could also extend the analyses carried out in chapter 2, 3 and 4, increasing the sample sizes both in their cross sectional and time series dimensions and analysing different types of risk such as operational and liquidity risk. As for chapter 5, conducting a comparative analysis of a small group of banks supervised at national and supranational level might be particularly relevant to confirm the results obtained in the quantitative analysis conducted in this thesis.

Another important avenue for future research is related to the fact that the disclosures of banks located in certain countries have been more widely analysed than others. Hence, examining those countries that are not thoroughly investigated by the literature would represent an important step ahead. In this regard, there is another important aspect to take into consideration. Given that the most analysed countries are the developed countries (see chapter 1), it would be useful to analyse also the banking industries of developing countries to detect possible differences in terms of risk disclosure. More specifically, a reasonable expectation is that the banks located in developed countries should be characterised by better risk management strategies and techniques. Given that, according to the extant literature, firms characterised by a more sophisticated risk management functions are characterised by a more comprehensive and detailed risk disclosure (Dicuonzo, 2018), it would be important to analyse the differences between developed and developing countries in terms of bank risk disclosure. This research setting would allow to study a possible relationship between the development of the banking system and the level of bank transparency.

Given that the period after the 2007 – 2008 financial crisis has been widely analysed, the investigation of the effects of other banking crises represents another important avenue for future research. Hence, the analysis of the effects of other banking crises on bank risk disclosure is another aspect that future research could address. The crises that might be analysed include not only crises that affect the whole banking system (sovereign debt crisis, Brexit crisis, Covid-19 crisis, etc.), but also bank specific crises that affect one single institution.

Another important avenue for future research is related to the analysis of specific types of risk disclosure that are still under-researched. Focusing on emerging non-financial risks such as environmental risk, reputational risk, corruption, fraud and money laundering risks, as well as other risks related to bank corporate social responsibility would be important to shed light on aspects that have been mostly overlooked by the literature.

Another gap in the literature is related to the fact that while some contributions focus on the disclosure provided by banks on a voluntary basis (Oliveira et al., 2011; Neifar & Jarboui, 2018), others focus on the quality of the disclosure that is mandatorily required by banks (Maffei et al., 2014; Samanta & Dugal, 2016). Although there are some studies that analyse both voluntary and mandatory disclosures (Scannella & Polizzi, 2018), the literature that differentiates between the disclosures provided on a voluntary basis from the disclosures provided in accordance with a specific regulation is still scant. This analysis would be extremely important to understand how and to what extent bank disclosure practices are influenced by regulatory requirements and bank specific decisions to disclose or withhold certain pieces of information. In order to do that, it would be pivotal to investigate in depth the international and national regulatory requirements in terms of bank disclosure. The outstanding amount of sources of regulatory requirement at international level and the level of details of certain national requirements makes this analysis particularly complex. However, it would undoubtedly be an important step ahead for the literature. With appropriate adjustements, the judgement-based content analysis approaches proposed in the chapters 2, 3 and 4 of this thesis may serve for this purposes, analysing the qualitative characteristics of mandatory and voluntary disclosures in different national banking sectors.

In conclusion, this thesis proposes methodological approaches and in-depth empirical investigations of risk disclosure in the banking industry, which allow to assess and monitor bank transparency. Given that the 2007 – 2008 global financial crisis has been attributed in part to a lack of transparency by financial institutions, scholars are called to put significant efforts in order to

prevent these crises from occurring again, by carrying out, inter alia, meaningful investigations on transparency and risk disclosure in the banking industry.

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