

CORPORATE GOVERNANCE IN BANKS: SYSTEMATIC LITERATURE REVIEW AND META-ANALYSIS

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Abstract

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This paper provides a two steps investigation of the literature on banking corporate governance. We firstly perform a systematic literature review on the academics papers focused on risk management, compensation and ownership structure of banks. Then we run a meta-analysis investigation over more than 2,500 observations to clarify the understanding of the relationship with performance and risk in banks. The sub-group analysis related with bank performance shows a clear and significant finding: Board ownership, CEO ownership and Controlling shareholder enhance the performance of banks. Conversely, State ownership is negatively associated with bank performance. Results of the whole investigation and directions for scholars are also discussed.

Keywords: Corporate Governance, Banks, Systematic Review, Meta-Analysis

1. INTRODUCTION

In this paper we review the academic papers on corporate governance of banks published from 1990 to 2018. The review is conducted in two steps: we firstly apply a systematic literature review to identify the relevant papers in this topic, then we run a meta-analysis methodology to assess the prevailing results of prior researchers. We restrict the research on three main areas of corporate governance of banks, given their importance from both academics and policy makers perspectives: risk management; ownership structure and executive compensation. As a matter of fact, banks are in the business of taking risks. Since the crisis, risk management function has received increasing attention due to its decisive role in risk-avoiding, that has been revealed to be insufficient and weak (Brogi & Lagasio, 2018). Thus, banking regulatory bodies have responded, proposing long overdue principles of good Corporate Governance (McConnell, 2011). In particular, National authorities have taken several measures to improve regulatory and supervisory oversight of risk governance at financial institutions so as to ensure sound risk governance through changing environments and tightening up on the roles and responsibilities of boards of directors (Brogi, 2011). These measures

include developing or strengthening existing regulation or guidance, raising supervisory expectations for the risk management function, engaging more frequently with the board and management, and assessing the accuracy and usefulness of the information provided to the board to enable effective discharge of their responsibilities (FSB, 2013). The second pillar of Basel II identifies the role of the board as an integral aspect of risk management, therefore aligning the internal governance structure in the light of comprehensive risk management approach seemed like an immediate need. Both academics and policy makers recognize that two of the most important internal governance mechanisms which support the comprehensive risk management framework are the establishment of an independent Chief Risk Officer (CRO) and/or Risk Management Committee that will have an oversight responsibility for all risks undertaken by the bank. Indeed, assigning the role of risk management to a board-level committee is becoming more common among large companies, notably in the financial sector (OECD, 2017). From an Institutional perspective, the EP (2013) encourages Member States to introduce principles and standards to ensure effective oversight by the management body, promote a sound risk culture at all levels of credit institutions and investment firms

and enable competent authorities to monitor the adequacy of internal governance arrangements. In order to assess the progress of national authorities and the banking industry in the area of risk governance since the global financial crisis, the FSB issued a Thematic review on risk governance in February 2013 as part of its series of peer reviews. The peer review found that financial institutions and national authorities have taken measures to improve risk governance. Nonetheless, standard setters' attention and awareness to this issue is being given mostly since the early aftermath of the last financial crises¹. However, more work is needed by both national authorities and banks to establish effective risk governance frameworks and to enumerate expectations for third-party reviews of the framework. Banks also need to enhance the authority and independence of CROs. For instance, National authorities need to strengthen their ability to assess the effectiveness of a bank's risk governance and its risk culture and should engage more frequently with the board and its risk and audit committees (BCBS, 2015). The results of the analysis on this topic, confirms its constantly increasing relevance since the crisis and shows that academic literature still presents mixed result. A second widely researched topic in banking Corporate Governance literature (Shleifer & Vishny, 1986) is Ownership structure. From a firms perspective, it was initially inspected by Berle and Means (1932), whose study points out the issue of the separation of ownership and control, being "concerned with the survival of organizations in which important decision agents do not bear a substantial share of the wealth effects of their decisions" (Fama & Jensen, 1983b). They also discover that firms' performance is negatively affected by a diffuse ownership structure. Concerning this issue, the agency theory (Jensen & Meckling, 1976) identifies managers as the agents whose function is to maximize shareholders' interests, recognised as principals. In a situation of separation between ownership and control, agents, who are not owners of the firm, may commit "moral hazards" since their interests are not aligned with those of principals (Jensen & Meckling, 1976). This view is consistent with Jensen (1983b) who also identifies two different solutions in order to solve principal-agency problems. One is to align principals and agents' risk-taking and the other is to enhance the monitoring of ownership structure. Agency theorists have long considered concentrated ownership as a governance mechanism that may reduce agency costs (Glassman & Rhoades, 1980; Shleifer & Vishny, 1997). Indeed, in those companies with concentrated ownership structures, "horizontal" agency problems that arise between controlling and minority shareholders are the

predominant concern, while "vertical" agency problems that arise between managers and shareholders may be mitigated (Vermeulen, 2013). Indeed, in the last decade, even countries characterised by dispersed ownership structures, have introduced special arrangements to address the "horizontal" agency problems that can arise between controlling and minority shareholders (OECD, 2017). Nonetheless, the effect of the separation of ownership and control has been left undetermined and is still focus of debate. Specifically related to banks, Ownership has been investigated in the literature of last 30 years, as outlined further in this paper. The meta-analysis shows that previous researches related to the effect of Ownership structure on risk do not identify a prevailing result in determining the best configuration of the variables. Conversely, there is a clearer understanding of the impact of Ownership structure on bank performance: banks with high level of Board ownership, CEO ownership and Controlling shareholders enhance their performance. Finally, executive compensation is a hot subject for researchers in banks' corporate governance especially in the aftermath of 2007/2008 financial crises (OECD, 2015). Indeed, there is a wide consensus in the literature regarding executive compensation that its level and composition may increase the risk-taking behavior of bank managers (Houston & James, 1995; Adams & Mehran, 2003; Webb, 2008; Bebchuk et al., 2010; Gropp & Kohler, 2010; Grove et al., 2011; DeYoung et al., 2013; Chaigneau, 2013). This is the reason why both principle setter and regulators identify it as a critical issue in banks' soundness and stability. Moreover, executive compensation has also become a topic of intense debate among principles setters (e.g. OCSE, 2015; 2017; BCBS, 2015; EBA, 2015), regulators (e.g. EP, 2013) and media (e.g. Rajan, 2008; Rajan et al. 2008; Kyrkpatric, 2009), with a particular focus on CEO compensation (Bai & Elyasiani, 2013; Fahlenbrach & Stulz, 2011; Thanassoulis, 2011; Hagedorff & Vallascas, 2011; Tian & Yang, 2014). Remuneration structure, and in particular, executive compensation, is one of the most debated topic in Corporate Governance literature of both firms and financial institutions. Also principle setters discuss about this subject in detail defining remuneration as a practice supporting Corporate Governance soundness (OECD, 2004; 2015; BCBS, 2010; 2015). Moreover, to achieve soundness it is emphasized that remuneration policy should be focused on the longer run interests of the company over short term considerations (OECD, 2004; 2015; BCBS, 2010; 2015). Referring in particular to financial institutions, BCBS asserts that remuneration structure is also linked to bank risk-taking behavior, furthermore it should be in line with the business and risk strategy, objectives. To sum up, both standard setters and regulators pay attention to executives' compensation, due to the need of concern and awareness regarding this issue. The ability of the board to effectively oversee executive remuneration appears to be a key challenge in practice and remains one of the central elements of the Corporate Governance debate in a number of jurisdictions. Implementation of the OECD Principles thus remains a challenge (OECD, 2010). Focusing on banks, BCBS (2010) in the first edition of its

¹ For instance, OECD (2009) states: *"Perhaps one of the greatest shocks from the financial crisis has been the widespread failure of risk management. In many cases risk was not managed on an enterprise basis and not adjusted to corporate strategy. Risk managers were often kept separate from management and not regarded as an essential part of implementing the company's strategy. Most important of all, boards were in a number of cases ignorant of the risk facing the company."* EBA (2011) states that an institution shall develop an integrated and institution-wide risk culture, based on a full understanding of the risks it faces and how they are managed, taking into account its risk tolerance/appetite.

Principles for Enhancing Corporate Governance developed suggestions regarding compensation and link compensation systems to both bank performance and risk. The Committee in the same year also provided the Compensation Principles and Standards Assessment Methodology (2010) so as to "guide supervisors in reviewing individual firms' compensation practices and assessing their compliance with the FSB Principles and Standards, and seeks to foster supervisory approaches that are effective in promoting sound compensation practices at banks and help support a level playing field." From an institutional perspective, the EC issued legislative proposals to grant shareholders the right to vote on remuneration policy and the remuneration report (EC, 2014). Moreover, the CRD IV approved by the EP in 2013 impose a cap on banking executives' incentives. Indeed, many jurisdictions have adopted rules on prior shareholder approval of equity-based incentive schemes for board members and key executives. More recently, EBA (2015) provide a draft of its Guidelines to set out the governance process for implementing sound remuneration policies across the EU and also aim to identify specific criteria for mapping all remuneration components into either fixed or variable pay. At a national level, United Kingdom (2002) introduced a non-binding shareholder vote on executive compensation "Say-on-Pay", which one of the main aims was to improve performance linkage of executive pay. This practice was also followed by US (2010) and Australia (2011). Furthermore, in UK new rules came into force in September 2013, where publicly traded companies are required to submit the company's remuneration policy report for a binding shareholder vote at least every three years. To sum up, there has been a rich policy effort to entail firms, and especially banks to achieve a more long-term-oriented awareness regarding compensation structure and also a better-defined performance based view to reduce excessive risk-taking, as a response to the financial crisis. This premise confirms the relevance of this paper, which helps in clarifying the understanding of the relationship between corporate governance of banks and their performance and risk. It contributes to the literature on banks' corporate governance by trying to identify the prevailing results and the existence of best practices in Risk management, Ownership structure and Compensation of banks. Thus, this paper may also be relevant in terms of policy implication.

The reminder of the paper is organized as follows: Section 2 review the literature on the three selected area of corporate governance; Section 3 explains the methodology; results are reported in Section 4; and Section 5 concludes by commenting the obtained results and suggesting for further researches.

2. LITERATURE REVIEW

2.1. Risk management

The systematic literature on the relation between banks' corporate governance and risk management shows that academic literature still presents mixed result in this research area. Aebi et al. (2012), using data on 573 US banks over the crises period (1st July

2007 to 31st December 2008), investigate whether risk management-related Corporate Governance mechanisms, made banks perform better during the financial crisis of 2007/2008. In particular, they examine if the presence of a CRO in a bank's executive board and whether the CRO reports to the CEO or directly to the BoD, are associated with a better bank performance measured by buy-and-hold-returns and ROE, controlling for various Corporate Governance characteristics (CEO ownership, board size, and board independence). Findings reported in their paper show that banks, in which the CRO directly reports to the BoD and not to the CEO, performed significantly better in terms of both performance measures. A similar result is provided by Ellul and Yerramilli (2013). They explore the implication of a strong and independent RM to bank risk-taking and performance using a sample of 74 large US BHCs over the period 1995-2010. They construct a Risk Management Index (RMI), which is based on five variables related to the strength of a bank's RM (CRO Present, a dummy variable that identifies if the BHC has a designated CRO; CRO Executive, a dummy variable that identifies if the CRO is an executive officer; CRO-Top5, a dummy variable that identifies if the CRO is among the five highest paid executives; and CRO Centrality, defined as the ratio of the CRO's total compensation to the CEO's total compensation). The authors find that banks with a higher RMI value in 2006 performed better in the crisis period than others, and were also less risky. Their conclusions are supported by lower tail risk and lower level of NPLs for better risk-managed banks in 2006. Zagorchev and Gao (2015) use 41 factors of the RiskMetrics' Corporate Governance index (CG41) to examine how Corporate Governance affects US financial institutions over the period 2002-2009. The authors find a negative relationship between better governance and excessive risk-taking (proxied by non-performing assets and real estate non-performing assets). Moreover, their results also support a positive association between better governance and performance (measured by Tobin's Q). Mongiardino and Plath (2010) investigate the role of independent directors in RM. According to this study risk governance requires a dedicated board-level risk committee, of which a majority should be independent, and that the CRO should be part of the bank's executive board. Based on a survey among 20 large banks, they find that only a small number of banks followed these guidelines in 2007. Most risk committees were not comprised of enough independent and financially knowledgeable members. Similarly, Kanagaretnam et al. (2010) examine auditor independence in the banking industry by analyzing the relation between fees paid to auditors and the extent of earnings management through loan loss provisions. They find that especially relating to small banks, auditor fee dependence on the audit client is associated with earnings management via abnormal loan loss provisions. Thus, the authors also suggest to policymakers to contemplate new regulations in light of the banking crisis. A complementary view is provided by Barakat and Hussainey (2013) who recommend to enhance risk disclosures by establishing independent specialized national committees or task forces to monitor and advise

Pillar 3 disclosures in banks. As a matter of fact, academic literature still presents mixed result, furthermore, "there exist fundamental risk-incentive mechanisms that operate in exactly the opposite direction" (Boyd et al., 2005). Furthermore, the diversity among financial system institutions lead to different risks faced by banks, supporting the unlikeliness to apply a single instrument of financial stability policy (Ellis et al., 2014). CEOs are key decision makers. In particular, their risk propensity has a decisive role in the definition of the strategy of the bank (Adams & Ferreira, 2007). As a consequence, their position has a strong effect on both bank risk and performance. For instance, Luu (2015) finds that more powerful CEO tend to engage in less risky activities. However, empirical research on the impact of CEO duality on banks' risks (Simpson & Gleason, 1999; Pathan, 2009, Boujelbene & al., 2013; Cornelli et al., 2013) provide different conclusion and most of the findings are not supported by sufficient significance. Finally, as concerns risk management, Aebi et al. (2012) and Ellul and Yerramilli (2013) find that banks in which the Chief Risk Officer directly reports to the board of directors and not to the Chief Executive Officer performed significantly better in terms of both performance and risk measures. Mongiardino and Plath (2010) governance requires a dedicated board-level risk committee, of which a majority should be independent, and that the CRO should be part of the bank's executive board.

2.2. Ownership structure

Researches related to ownership structure can be in turn divided in two different strands of literature. A first sub-field deals in ownership concentration, the other is focused on owners' type. Concerning the first dimension, one of the studies who investigate the empirical relationship between ownership concentration and profitability in banks is Shehzad et al. (2010) which results show that concentrated ownership has a significant positive effect on bank risk-avoiding. Indeed, the authors, use a sample composed by 500 cross-country banks over the period 2005-2007 and find that a higher level of concentration lead to a reduction of NPLs ratio. Similarly, Adnan et al. (2011) investigate the efficiency of Malaysian listed banks during 1997-1998, trying to link it with banks' ownership structure. The authors, using a GLS multivariate regression, find that block ownership lead to better efficiency of Malaysian banks, as measured by both the ratios between NPLs and total loans and between operating expenses and total assets. They also justify this result by arguing that the significance of concentrated ownership could suggest better monitoring by the block-holders. This is consistent with Azofra and Santamaria (2011) who investigate Spanish banks. Lately, Grove et al. (2011) do not provide much support that concentrated ownership lead to positive effects on banks performance. Indeed, the authors find a weak association between the two variables. Contrariwise, Beltratti and Stulz (2012) show a strong relationship between concentrated ownership and bank risk-taking especially during the recent financial crisis in US. Following this view, Busta et al. (2014) focusing on data of European banks over the period 1993-2005,

find a negative relationship between ownership concentration and banks market value. In particular, they use a GMM dynamic estimator that lead them to find a negative effect of ownership concentration on banks Tobin's Q. Nonetheless, their major finding is that the obtained results varies across different institutional settings. Indeed, the negative effect is particularly strong in countries belonging to Germany, France or Common law legal tradition, contrariwise, the authors find a positive effect of concentration on Scandinavian banks. Busta et al. (2014) argues that these differences could derive by the identity of the predominant owners (financial institutions and family in the first group, trusts and foundations in Scandinavia). Actually, as above mentioned, owners' type matter. The first study resulted by the research conducted that is related on this issue is Saunders et al. (1990). The authors show that stockholder controlled banks exhibit significantly higher risk-taking behavior than "managerially" controlled banks during the 1979-1982 period of relative deregulation. Lately, Anderson and Fraser (2000) investigate whether or not managerial shareholdings affect banks risk-taking of an International sample observed in the period 1987-1994. Their results show a strong a positive observation of the analysed variables, although they present some differences in the period 1980s, due to the financial distress and the less level of bank regulation. Consistent are also Anderson and Fraser (2000) and Kabigting (2011). The latter finds that insider ownership has significant positive relationship with ROA, bank size and Earning Per Share (EPS). Westman (2011) inspects a sample composed by 477 European traditional and non-traditional banks over 2000-2006 and finds directors' ownership positively affecting traditional banks profitability, whereas management ownership has a similar effect in non-traditional banks sample. At last, Berger et al. (2012) by looking for a relationship between different Corporate Governance drivers and US commercial banks risk, provide evidence that banks' probability of default is strongly and negatively affected by insider ownership. Fahlenbrach and Stulz (2011) find that higher insider ownership and higher sensitivity of CEO wealth to bank performance represent better alignment of interests. Indeed, there is a strand of literature regarding banks ownership, trying to asses specifically the association of CEO ownership and bank efficiency, obtaining mixed results. For instance, Pathan (2009) find statistically significant and positive coefficients regressing bank risks (total risk, idiosyncratic risk and systematic risk) over CEO ownership percentage. This result can be justified by showing that as the percentage of bank CEOs shareholdings increase, their risk preferences coincide with bank shareholders and so increases bank risk. Berger et al. (2012) find that high shareholdings of CEO, lead to a reduction of banks probability of failure. This is also consistent with Aebi et al. (2012). Rachidi et al. (2013) find that a lower CEO ownership has no significant effect with all measures of risks. Another dichotomy concerning ownership structure, is related to state owned banks and private sector institutions. As resulted by this survey, many authors investigated this issue in the last decade. Berger et al. (2005) explore the effects of domestic, foreign, and state ownership on bank

performance of Argentinian banks during 1990s. The authors obtained strong and robust result showing that state owned banks have poor long-term performance (static effect), those undergoing privatization had particularly poor performance beforehand (selection effect), and these banks dramatically improved following privatization (dynamic effect). Similar results are obtained by Kim and Rasiah (2010) by exploring a sample of Malaysian banks. Barry (2011), investigate this issue in a sample of European banks and find that publicly held banks do not affect risk-taking when changes in ownership structure occur. Focusing also on a sample of European banks Iannotta et al. (2013) and try to relate state ownership with bank risk as measure by default risk and operating risk. They analysis show different results, one of the most relevant is that government owned banks resulted to face lower default risk, but higher operating risk. Recent studies investigate the relation between institutional shareholding and bank risk-taking with results again not conclusive. Barry et al. (2011), Erkens et al. (2012) and Ellul and Yerramilli (2013) show that that financial firms greater institutional ownership is associated with increases in risk-taking strategies of banks. Contrariwise, Knopf and Teall (1996) and Ferri (2009) report opposing findings, and this difference may be linked with the period of observation. Finally, a few studies assess the impact of regulation on banks ownership structure. In particular, Caprio et al. (2007) and Laeven and Levine (2009a; 2009b) investigate this issue and find evidence that bank regulation may increase or decrease bank risk-taking, depending upon the ownership structure. Levine (2004) and Barth et al. (2004) argue that regulation policies may limit the impact of traditional governance mechanisms. The authors also point out that Governments in many countries restrict the concentration of bank ownership and also impose limits on the purchase of shares by outsiders without regulatory approval. As a result, still there is not a clear answer about which is the optimal ownership structure in banks.

2.3. Compensation

As a result of the analysis conducted in this paper, executive compensation is a hot subject for researchers especially in the aftermath of 2007/2008 financial crisis. This is also denoted by academicians and principle setters. For example, OECD (2017) states that "since the financial crisis, much attention has been paid to the governance of the remuneration of board members and key executives". Indeed, most of the literature regarding executive compensation in the sample was developed from 2011. Moreover, executive compensation has also become a topic of intense debate among principles setters (e.g. OCSE, 2015; 2017; BCBS, 2015; EBA, 2015), regulators (e.g. EP, 2013), and media (e.g. Rajan, 2008; Rajan et al. 2008), with a particular focus on CEO compensation. Nonetheless, the evidence linking compensation practices to the effect on banks' risks and performance is mixed. Focusing on an agency theory perspective, executive compensation and especially its variable part, is usually identified as one of the mechanism used to align managers' and shareholders' interests as well as to enhance

executives' performance (Berle & Means, 1932; Holmstrom, 1979; Grossman & Hart, 1983; Murphy, 1985). Moreover, following this theory an executive compensation structure is optimal when managers are motivated to encourage only risk increasing but positive NPV projects (Jensen & Meckling, 1976; Amihud & Lev, 1981; Smith & Stulz, 1985). From an opposite perception, the development of the literature outlines the managerial power theory that states that the composition of incentive pay is perceived as a mechanism that misaligns executives' interests from those of shareholders (Bebchuk et al., 2010). Indeed, as further investigated, there is a wide consensus in the literature regarding executive compensation that its level and composition may increase the risk-taking behavior of bank managers. This is the reason why both principle setter and regulators identify it as a critical issue in banks' soundness and stability. In particular, it should include procedures to avoid conflicts of interest and should also encourages employees to act in the interest of the company as a whole. Moreover, incentives embedded within remuneration structures should not promote excessive risk-taking (BCBS, 2015).

As noted above, a wide strand of the literature states that higher (potential) compensation in banking institutions lead to higher risk-taking behavior (Houston & James, 1995; Adams & Mehran, 2003). Moreover, executives' incentives have also been identified as a driver of the recent financial crises of 2008 by several scholars (e.g., Kashyap et al., 2008; Kyrkpatric, 2009; Bebchuk et al., 2010). Consistent with the managerial power theory, Gropp and Kohler (2010) show that in their sample consisting of 1100 banks from 25 OECD countries from 2000 to 2008, aligning the interests of managers and shareholders increases risk-taking of banks. Nonetheless, as a matter of fact, the most important determinant of the effect of compensation is its composition. Indeed, many of the studies resulted by this survey are consistent with the view that on the one hand equity linked pay encourages risk-taking, contrariwise non-equity linked pay makes CEOs more risk-averse. As concerns equity linked CEO compensation, there may be a moral hazard behavior since these practices combine unlimited upside with limited downside potential risk, resulting in convex CEO pay-off linkage with marginal increases in bank risk. DeYoung et al. (2013) find a rapid increase of equity-linked compensation in US banking over the last decade and show that this practice is more linked with higher risk in financial institution than in any other industry. Moreover, the author state that CEO compensation was changed to encourage executives to exploit new growth opportunities created by deregulation and debt securitization, but this is also a reason to incur in an increasing risk-taking behavior. In particular, banks' risk is measured by pay-performance sensitivity (delta), which is related to stock grants, and pay-risk sensitivity (vega), which is related to stock options grants. Findings of the authors asses that non-traditional banking income is strictly related to vega compensation. Similarly, Bai and Elyasiani (2013) use CEO compensation sensitivity to risk (vega) and pay-share inequality between the CEO and other executives as measures of compensation. They aim to investigate the

relationship between default risk and executive compensation for BHCs over the 1992-2008 period. Some of the most important findings deriving by their analysis are: CEO compensation sensitivity to risk of BHCs has risen in response to deregulation; higher CEO compensation sensitivity to risk lead to greater bank instability; the association between bank stability and managerial compensation is bidirectional; higher vegas induce greater risk and vice versa. As mentioned above, regulating compensation structure is also a vital element in the risk-taking behavior of bank executives. In particular, Webb (2008) states that executive bank risk-taking due to remuneration structure is largely avoided when regulatory monitoring is high. Hence, strict regulatory framework is needed to preserve bank stability. Chaigneau (2013) analyses the effects of two regulatory mechanisms, namely a regulation of the structure of bank CEOs incentive pay and sanctions for the CEOs of failed banks, on bank risk-shifting. The author argues that the current regulatory approach, which largely attempts to align the interests of bank CEOs with those of their shareholders, is flawed. Moreover, Chaigneau (2013) also suggests that banks' Corporate Governance arrangements could be well-adjusted into two alternative ways in order to ensure the efficiency structure of bank CEOs incentives. First, the regulator could let shareholders set both the level of pay and the level of incentives of bank CEOs, but it would impose some constraints on the structure of their incentive pay. Second, the regulator could threaten to punish the CEOs of failed banks. Any of these two mechanisms would ensure (at no extra cost) that bank CEOs have efficient risk-taking incentives, although argued that the first mechanism is more robust to modelling assumptions and parameter uncertainty. Different compensation policies provide different ways of aligning managerial and shareholder interests (Jensen & Murphy, 1990). Cunat and Guadalupe (2008) investigate the effect of product market competition on the compensation packages of banks' executives, distinguishing the effect on total pay, estimated fixed pay and performance-pay sensitivities, and the sensitivity of stock option grants. Using a panel data of US banks in 1990s, they provide a difference-in-differences estimation and find that deregulation has had a significant impact on the level and the structure of executives' compensation. In particular, the variable components of pay increased along with performance-pay sensitivities and, at the same time, the fixed component of pay fell. Similarly, Mehran and Rosenberg (2008) report a significant impact of pay-risk sensitivity on risk-taking (measured respectively by volatility of stock returns and write downs). Contrariwise, Fahlenbrach and Stulz (2011) find no evidence of the relationship between bank performance and both CEO incentives (and ownership) during the credit crisis, furthermore the poor performance of banks during the crisis was the result of unforeseen risk. The authors investigate a sample of 98 financial firms, of which 95 are banks over the period 2006-2008. In particular, they study whether US banks with CEOs, whose incentives were better aligned with the interests of their shareholders, performed better during the crisis. Their findings show that the banks in the sample performed worse both in terms of stock returns and

in terms of ROE. Closely to Fahlenbrach and Stulz (2011), Erkens et al. (2012) find that banks which performance was worse during the financial crisis are those offering non-equity based pay for their CEOs. An unclear view of the association between executives' compensation and bank performance is given by Grove et al. (2011) and by Acrey et al. (2011). The first authors apply agency theory to the banking industry and adopt the factor structure by Larcker et al. (2007) to measure multiple dimensions of Corporate Governance for 236 US public commercial banks during the financial crisis. They investigate the effect of executive compensation on both banks' financial performance and loan quality, obtaining mixed result. Indeed, they find that the extent of incentive executive pay is positively associated with financial performance (measured by ROA of 2006 and 2007 and excess stock return of 2006), but it is negatively associated with loan quality (measured by the non-performing assets ratio of the average of the 2006-2008 period). They also capture the consequences of the mismatch between incentive systems and RM with a lack of risk adjusted financial targets in executive compensation. From another perspective with similar results, Luo (2015) examines the determinants of executive compensation in Chinese banking during 2005-2012. The author runs both a 2 Squared Least Stages (2SLS) methods and a dynamic GMM regressions obtaining positive but no significant relationship with pay performance of CEOs although his result show that ownership structure (measured by ownership concentration and ownership identification) and compensation committee are significant in determining the amount of executive compensation. Actually, a wide compensation practice is to link CEO payment to bank performance (Minnick et al., 2011). More specifically, this kind of cash bonus is usually payable when earnings-based targets over at least one year are achieved and the payoff increases up to a maximum cap. Harjoto and Mullineaux (2003) investigate compensation strategies of commercial BHCs during 1992-2000. One of their findings show that pay-for-performance sensitivities are strongly larger for BHCs that have entered the underwriting business. Furthermore, and consistent with agency theory, the authors find also that pay-for-performance sensitivities decline generally at BHCs as return variability increases. Continuing to follow an agency theory perspective, Cornett et al. (2009) look for a relationship between different Corporate Governance mechanisms and both bank earnings and earnings management by investigating data of the largest publicly traded BHCs in the US. During their analysis, they find that the estimation of the three variables was biased by high endogeneity. Thus, they continue their study by using a simultaneous equation approach and find that CEO pay-for-performance sensitivity, board independence, and capital are positively related to earnings and that earnings, board independence, and capital are negatively related to earnings management. In particular, as concerns pay-for-performance, the authors find interesting results: it is positively related to both earnings management and board independence, and the latter relationship is bidirectional. Livne et al. (2011) investigate the role of Fair Value Accounting (FVA) outcomes in

determining compensation amount of US bank CEOs, finding a positive link between CEOs cash bonus and fair value (FV) accounting of both Held For Trading (HFT) (managed for short-term profit) and Available For Sale (AFS) assets. Hagendorff and Vallascas (2011) investigate the link between CEO cash bonuses and bank risks by using the Merton distance to default model on a sample composed by US and European firms. They find that increases in CEO cash bonuses lower the default probability of banks. Moreover, the authors find also that the risk-reducing effect of CEO cash bonuses is mainly related to stronger regulatory environments and for non-distressed financial institutions. Similarly, Acrey et al. (2011) investigate the relationship between CEO compensation and bank default risk. They focus in particular on short term incentives to study if the latter could determine higher bank risk-taking. The authors use early warning off-site surveillance parameters and Expected Default Frequency (EDF) as well as crisis-related risky bank activities, and find that although compensation elements commonly thought to be the riskiest components (e.g. options and bonuses) are either insignificant or negatively correlated with common risk variables, and only positively significant in predicting the level of trading assets and securitization income. Contrariwise, Thanassoulis (2011) applying a theoretical model calibrated on US banking system data, demonstrates that overall remuneration represents a substantial expense for a bank which therefore contributes to default risk significantly. Lastly, the author suggests that cap on the proportion of the balance sheet which can be used for remuneration can lower bank default risk. Tian and Yang (2014) also focus on incentive pay of US banking CEOs and find a positive association with bank risk-taking. In particular, they investigate a sample composed by 179 financial institutions over the period 2005-2010 and distinguish commercial banks from non-commercial financial institutions (respectively 123 and 56), and find a trend for commercial bank CEOs to switch from cash bonuses into other forms of incentive compensation, if more desirable. Bhagat and Bolton (2014) conduct a study on 14 of the largest financial institutions during 2000-2008. They focus different on features of CEO compensation (CEO's purchases and sales of their bank's stock, their salary and bonus, and the capital losses CEOs incur due to the dramatic share price declines in 2008) and consider three measures of risk-taking (Z-score, the banks' asset write-downs, and whether or not a bank borrows capital from FED bailout programs, and the amount of such capital). Their results agree with the analysis of Bebchuk et al. (2010) and assess the correlation between incentives generated by executive compensation programs and excessive risk-taking by bank. The authors also propose a compensation structure for senior bank executives: executive incentive remuneration should only contain restricted stock and restricted stock options. This kind of structure will properly fit the long-term incentives of the senior executives with the interests of the stockholders. Even though most of the literature regarding executives' compensation in banking is especially referred to CEOs, a few recent studies (Keys et al., 2009; Aebi et al., 2012; Ellul & Yerramilli, 2013) are focused also on Chief Risk Officers (CROs)

compensation in order to determine whether risk managers' activity effectiveness is related to a high level of compensation.

3. METHODOLOGY

3.1. Sample

We perform a systematic review of the literature that entails different steps:

1. Choose Business Source Complete and ScienceDirect² as research databases.
2. Select only papers published in journals with a peer reviewed evaluation process.
3. Search in the keywords the combination of "Corporate Governance" and "banks" or "financial institutions").
4. Restrict the sample to the articles related to Risk management, Ownership structure and Compensation, because of their increasingly attention received by Supervisors³.
5. Ensure relevance of the articles by reading all abstracts and survey remaining articles by a complete reading in order to check for substantive relevance of the contents.
6. Consolidate results.

We obtain that the literature concerning the selected topic is mainly focused on risks potentially faced by banks and their performance capability. Specifically, Risk management, Ownership structure and Compensation are normally investigated considering their impact on risks and performance drivers. Indeed, Risk management function is responsible for identifying, measuring, monitoring, and recommending strategies to control and mitigate risks. It also reports on risk exposures of firms, so as to ensure a risk profile in line with the Risk Appetite Framework (RAF) approved by the Board of Directors. As concerns executive compensation, it is related with risk since an inadequate compensation structure may lead to excessive risk-taking. Finally, there is a wide strand of literature that relates risk and performance to the ownership structure and its concentration.

3.2. Meta-analysis

In order to have a complete understanding on the evolution of literature on corporate governance of banks, a meta-analysis methodology is applied, following Hunter et al. (1982). The latter is a systematic method that seeks to reconcile the findings of prior researches on a specific topic (Souissi & Khelif, 2012). This methods entails a two steps procedure: firstly, running the model to have an overall overview on the prevailing sign of the

² Business Source Complete and ScienceDirect are chosen since they are two of the leading databases for economics and management literature researches (Berggren and Karabag, 2012). I conduct an advanced research on these two sources, leading to different results. For instance, the advanced search for the combination of the words "corporate governance" and "banks" in the keywords of the articles published in only academic peer reviewed journal in English language on ScienceDirect returned 253 results, 231 on Business Source Complete.

³ as mentioned in the introduction, and also confirmed in the 15 Corporate governance principles for banks issued in 2015 by BCBS which address these topics in principles 1-8 and 11.

relationship between corporate governance and the independent variables (e.g risk and performance); then, running the analysis over specific corporate governance feature as identified by homogenous subgroups of variables (related to risk management, ownership and concentration), to clearly determine the relation in-between. We also test for the consistency across the sample, by checking for heterogeneity with the statistics proposed by Higgins and Thompson (2002) and Higgins et al. (2003):

$$I^2 = \frac{x^2 - df}{x^2}$$

where is x^2 the x^2 statistics and df is its degrees of freedom. This allows to compute the portion of the variability that is due to heterogeneity rather than sampling error. Over the total sample, we obtain $I^2 = 0.92$, which means that 92% of the variability is due to heterogeneity and the studies included in the sample cannot be considered of the same population.

The heterogeneity issue is then addressed in two different ways: performing a random effects model which assumes a Gaussian distribution to identify the effects of the different studies (Fleiss & Gross, 1991; DerSimonian & Laird 1985; Ades & Higgins, 2005; Higgins et al., 2009); running the subgroup analysis, as above explained, which looks also for interactions in each selected subgroup. To the first point, the random effects model is run at a 95% confidence level, with the underline assumption that the true effect may be different over the sample (Borenstein et al., 2009).

The proposed model is based on Pearson's correlations between independent and dependent variables assuming a bi-variate correlation analysis. Since Pearson's correlation is bounded between -1 and 1, we also need to correct the skewness for sampling distribution for highly correlated variables. Thus, we compute a Fisher's r -to- z transformation (Fisher, 1921) to the Pearson's correlation coefficient in order to transform the skewed distribution (r) into a distribution (z) that may be considered as a Gaussian distribution, with its variance coefficient independent from the initial computed correlation. This is done by estimating the standard error using the sample size of each study:

$$z - \frac{1}{2} \log \frac{1+r}{1-r}$$

with $\mu_z = \mu$ and $\sigma_z = \frac{1}{\sqrt{n-3}}$ (where n is the sample size).

Under the assumption of random effects, each study has an assigned weight equal to W that is calculated as follows:

$$W_i = \frac{1}{V_y}$$

where V_y is the within-study variance for the i -study plus the between-studies variance:

$$V_y = V_{y_i} + T^2$$

Lastly, we calculate the variance and the estimated standard error of the overall effect, respectively as: $V_M = \frac{1}{\sum_{i=1}^k W_i}$ and $SE_M = \sqrt{V_M}$,

where M is the weighted mean:

$$M = \frac{\sum_{i=1}^k W_i Y_i}{\sum_{i=1}^k W_i}$$

Then, with the 95% level of confidence, the lower and upper limits will result as: $LL_M = M - 1.96 * SE_M$ and $UL_M = M + 1.96 * SE_M$.

The meta-analysis is run over the results obtained in previous academic papers related to Ownership structure of banks and their corporate governance, since the methodology requires a minimum number of papers to be included in the sample which have also to be homogeneous in terms of methodology. Thus, the meta-analysis is not comprehensive of all the research areas investigated in this paper but it is only focused on the relation between Ownership structure and both banks' performance and risk. The other research areas (e.g. Risk management and Compensation) have been analyzed with the systematic literature review as above presented.

4. RESULTS

4.1. Ownership and performance

At first, we run the meta-analysis over the sample of paper that analyze the relationship between Ownership structure and bank performance. The results of the analysis are summarized in Figure 1 and Table 1, which show respectively the forest plot of the meta-analysis and the output table. Figure 1 clearly shows that overall relationship between Ownership and performance is positive, strong and significant. This may be understood by looking at the last line of the Forest plot, which represents the weighted average effect size or "summary effect" and estimates the intervals in which the effect will most probably lie.

Indeed, most of the confidence intervals are on the positive side of the x-axis. This lead to assert that there is a widely diffused finding in the literature on Ownership structure in banking, which is found to be relevant in increasing bank performance. In order to understand the in-between relations of the variables investigated, Figure 2 and Table 2 show the results of the subgroup analysis. In particular, selected papers are focused on the relation between banks performance and four different types of ownership: Board ownership (which is the portion of capital owned by directors of the banks); CEO ownership; Controlling shareholder (which is the percentage of capital owned by the controlling shareholder); State ownership. The subgroup analysis identify Board ownership, CEO ownership and Controlling shareholders as positively related to banks performance, with positive correlation coefficients (respectively equal to 0.04, 0.29 and 0.12). The most significant relationship is found with CEO ownership, since the confidence limits are very small and both in the positive side of the x-axis (CI lower limit is 0.24 and CI upper limit is 0.33). Conversely, State ownership seems to be significantly negative related to banks performance, with a correlation coefficient equal to -0.18 and CI in the range (-0.24:-0.12).

Figure 1. Ownership and performance overall

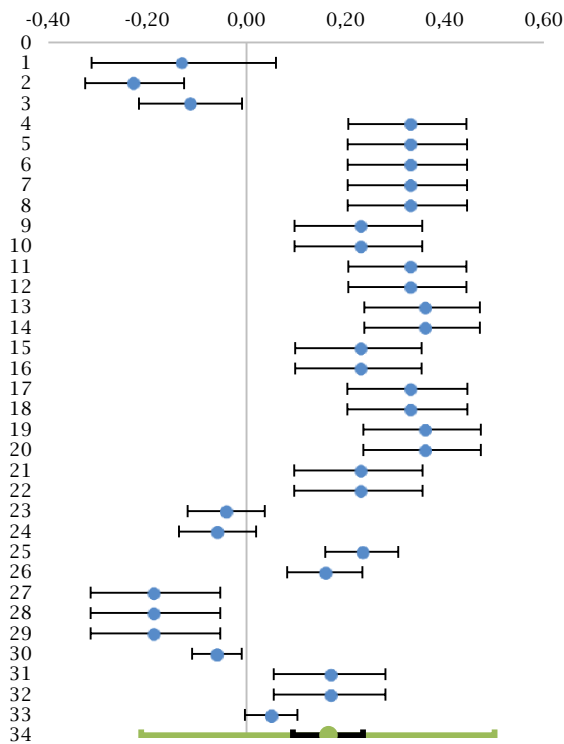


Figure 2. Ownership and performance - Subgroup analysis

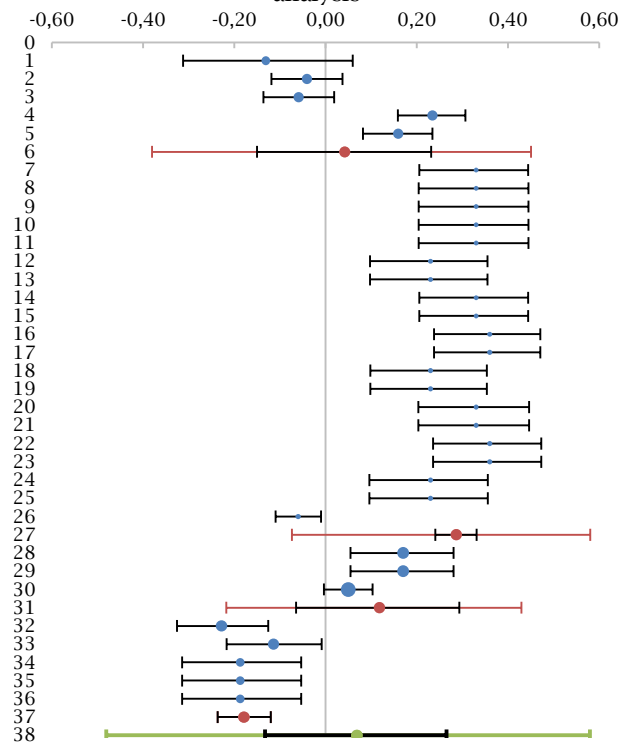


Table 1. Ownership and performance overall

Study number	Correlation (z)	Number of subjects	Variance (z)	Standard error (z)	Weight (random)	CI Lower limit	CI Upper Limit	Weight %	Residuals	ES Forestplot	CI Bar LL	CI Bar UL
1	-0,13	110	0,00935	0,1	23,04	-0,31	0,06	0,03	-0,3	-0,13	0,18	0,19
2	-0,23	349	0,00289	0,05	27,07	-0,33	-0,13	0,03	-0,4	-0,23	0,1	0,1
3	0,34	218	0,00465	0,07	25,84	0,21	0,44	0,03	0,18	0,33	0,12	0,11
4	0,34	214	0,00474	0,07	25,78	0,2	0,45	0,03	0,18	0,33	0,13	0,12
5	0,23	211	0,00481	0,07	25,73	0,1	0,35	0,03	0,07	0,23	0,13	0,12
6	0,23	215	0,00472	0,07	25,79	0,1	0,35	0,03	0,07	0,23	0,13	0,12
7	0,23	208	0,00488	0,07	25,69	0,1	0,36	0,03	0,07	0,23	0,13	0,13
8	-0,04	634	0,00158	0,04	28,06	-0,12	0,04	0,03	-0,21	-0,04	0,08	0,08
9	-0,19	213	0,00476	0,07	25,76	-0,31	-0,05	0,03	-0,36	-0,19	0,13	0,13
10	-0,06	1 534	0,00065	0,03	28,81	-0,11	-0,01	0,03	-0,23	-0,06	0,05	0,05
11	0,17	288	0,00351	0,06	26,62	0,06	0,28	0,03	0	0,17	0,11	0,11
12	0,05	1 356	0,00074	0,03	28,74	0	0,1	0,03	-0,12	0,05	0,05	0,05

Table 2. Ownership and performance - Subgroup analysis

Subgroup name	Correlation	CI Lower limit	CI Upper limit	Weight	I2	T2
Board Ownership	0,04	-0,15	0,23	0,24	0,91	0,02
CEO Ownership	0,29	0,24	0,33	0,25	0,89	0,03
Controlling Shareholders	0,12	-0,06	0,29	0,25	0,66	0
State Ownership	-0,18	-0,24	-0,12	0,25	-	-
Combined effect size	0,07	-0,13	0,26		0,92	0,03

4.2. Ownership and risk

The second investigation is performed over the sample of papers that analyze the relationship between Ownership and risk.

The overall analysis shows a significance of the results weaker than previous related to ownership and performance. Indeed, the Forest plot reported in Figure 3 and Table 3 show that there is not a predominant result in previous academic researches on this topic. The results of the subgroup analysis confirm that most of the academic are inconclusive.

Figure 4 and Table 4 report the output of the analysis. In this case the subgroups are CEO ownership, Controlling shareholder and State ownership. The correlations coefficients are negative in all the three cases, but the confidence intervals are very large, thus unavailing to draw significance conclusion of the investigation. The most significant result is obtained for the Controlling shareholder subgroup, which seems to increase of bank risk (as confirmed by the positive correlation equal to 0.04 and the CI limits respectively at -0.03 and 0.10).

Figure 3. Ownership and risk overall

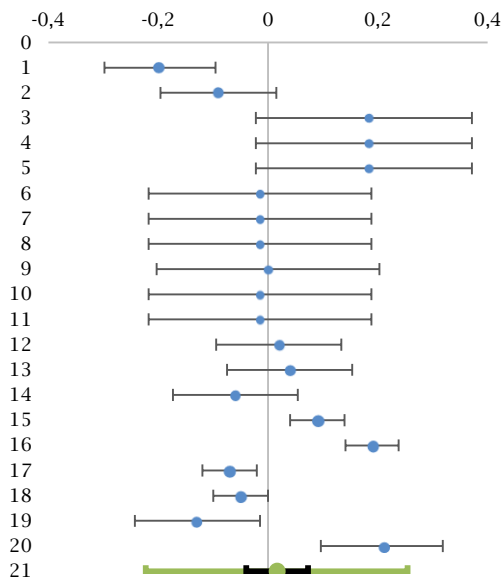


Figure 4. Ownership and risk - Subgroup analysis

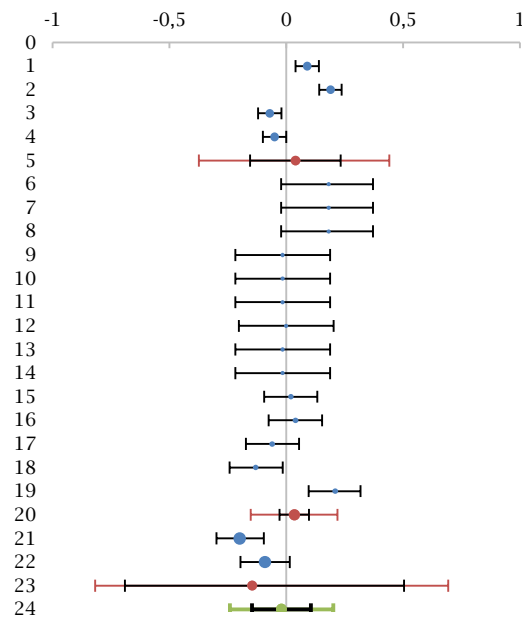


Table 3. Ownership and risk overall

Study number	Correlation (z)	Number of subjects	Variance (z)	Standard error (z)	Weight (random)	CI Lower limit	CI Upper Limit	Weight %	Residuals	ES Forestplot	CI Bar LL	CI Bar UL
1	-0,2	349	0,00289	0,05	63,73	-0,3	-0,1	0,06	-0,22	-0,2	0,1	0,1
2	0,18	96	0,01075	0,1	42,46	-0,02	0,37	0,04	0,17	0,18	0,2	0,19
3	0,02	298	0,00339	0,06	61,76	-0,09	0,13	0,06	0	0,02	0,11	0,11
4	0,09	1 534	0,00065	0,03	74,33	0,04	0,14	0,07	0,07	0,09	0,05	0,05
5	-0,13	288	0,00351	0,06	61,31	-0,24	-0,01	0,06	-0,15	-0,13	0,11	0,12

Table 4. Ownership and risk - Subgroup analysis

Subgroup name	Correlation	CI Lower limit	CI Upper limit	Weight	I2	T2
CEO Ownership	0,04	-0,16	0,23	0,29	0,96	0,01
Controlling Shareholders	0,04	-0,03	0,1	0,39	0,52	0,01
State Ownership	-0,15	-0,69	0,5	0,31	0,52	0
Combined effect size	-0,02	-0,15	0,11		0,84	0,01

5. CONCLUSION

There is an increasing understanding of the fundamentals of bank Corporate Governance such as risk management, ownership structure and compensation. This results from both banking and institutional perspective. The methodology entails a systematic literature review of the papers focused on this topic, and a meta-analysis assessment of previous academic findings on the relation between Ownership and both risk and performance of banks. As concerns risk management, the systematic literature review finds it is receiving increasing attention from academics since the crisis, and shows that published papers still present mixed result. The prevailing academic debate on compensation in bank is based on an agency theory that states executive compensation - and especially its variable part - is usually identified as one of the mechanism used to align managers' and shareholders' interests as well as to enhance executives' performance (Berle & Means, 1932; Holmstrom, 1979; Grossman & Hart, 1983; Murphy, 1985). Nonetheless, also in this case there is not an univocal consensus on the relation between compensation and performance. Indeed,

under the managerial power theory the executive incentive pay is perceived as a mechanism that misaligns executives' interests from those of shareholders (Bebchuk et al., 2010). However there is a wide consensus on the possible increase the risk-taking behavior of bank managers as an effect of higher compensations. Lastly, the meta-analysis on ownership show an interesting result in the assessment of previous academic findings. In particular, even though any conclusion may be drawn for the association between ownership and risk, there is a clear and significant result obtained by investigating the relation between ownership and bank performance. The subgroup analysis clearly shows that Board ownership, CEO ownership and Controlling shareholder enhance the performance of banks. Conversely, State ownership is negatively associated with bank performance. However, there are some shortcoming associated with this methodology. The most important is a sample selection bias (e.g. heterogeneity or "apples and oranges" issue as in Higgins & Thompson, 2002). which unable the results of the meta-analyses to be used with the aim of drawing general conclusion for the explored topic. From a methodology point of

view, a further sensitivity analyses may be performed to verify if different selection criteria or different assumptions in the procedure lead to different findings (Lagasio & Cucari, 2018). Scholars

in this field may also further investigate the cross-country differences in the relation between corporate governance and both performance and risk in banking.

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