Leverage decisions and manager characteristics: evidence for European Banks

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Abstract

This study assesses how manager's characteristics influence leverage decisions. Using data from European banks, the results show that younger managers are risk-prone and less conservative in leverage decisions. Moreover, it is observed that for higher levels of leverage more experienced managers tend to increase leverage. This is also true for managers with a longer tenure as they may bring their personal preferences towards risk. However, this effect differs according to the level of leverage at the manager's appointment date. The inclusion of the decision horizon seems to validate the idea that a short-term managerial horizon enhances the self-interested behaviour of the manager and this is reflected on capital structure decisions.

Keywords: Quantile Regression; Banks; Capital Structure; Manager's characteristics

JEL classification: C21, G21, G32, G41

Declarations

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1 Introduction

Excessive leverage has governance implications and encompasses agency problems, in that managers may pursue rent-seeking strategies that are detrimental to the long-term financial stability and profitability of the bank.

Since the seminal work of Modigliani and Miller (1958), several studies have contributed to the development of the literature that explores the determinants of capital structure. The absence of a universal theory of capital structure is reflected in the extent of the empirical literature on this topic (see Frank and Goyal (2008, 2009) for a concise review of this literature). Though, three main theoretical strands have emerged: the Trade-Off Theory; the Pecking Order Theory and the Market Timing Theory. According to the Trade-Off Theory (Myers, 1984) firms will balance the costs and benefits of debt in order to achieve an optimal capital structure. Firms should attempt to balance the benefit of debt as tax benefits with the costs associated with increasing levels of debt such as bankruptcy costs and agency costs. The Pecking Order Theory of Myers and Majluf (1984) is based on the existence of information asymmetry, considering that firms follow a financing hierarchy designed to minimize adverse selection costs of security issuance. By doing so, firms show a distinct preference between internal and external funds with investments to be financed first with internal funds, second with secured debt, and finally with equity. The Market Timing Theory (Baker and Wurgler, 2002) argues that firms issue new equity when their share price is perceived to be overvalued and buy back shares when they are undervalued. This fluctuation in the price of shares affects the way how firms finance their investment decisions and the capital structure of the firm.

The focus of most empirical work has been on non-financial firms and, concerning a bank's capital structure, in spite of there are clear similarities on the determinants of financing decisions, the banking sector is different for many reasons to other non-financial firms, namely higher agency costs. As pointed out by Berger and Patti (2006), notwithstanding the banking sector's activity being restricted by regulation, banks are also subject to the same type of agency problems and their behaviour is also influenced by the same factors as other industries.

Considering the relation between leverage and the rent- and risk-seeking behaviour of bankers, Avgouleas and Cullen (2015) consider that leverage constitutes a cheap and fast way to increase size, thus the expansion of bank assets will generate an increase in returns

(by the increase in the return on equity – ROE), at least in the short term. Thus, as leverage leads to an increase in size and to the maximization of the shareholders' returns, it is expected that managers will pursue this kind of strategy not only to imitate competitor strategies, but also to retain their jobs and career prospects. This behaviour encompasses an agency cost, as their risk seeking behaviour may harm the long-term profitability and financial stability of the bank. In line with Berger and Patti (2006), the separation of ownership and management is a source of agency costs, so this problem may be overcome with the choice of capital structure. In this sense, debt may serve as a corporate governance tool and a discipline device for managers. Since bankruptcy is costly for managers, a high level of leverage will constrain and motivate managers to act according to the shareholders' interests. The authors state that high leverage may reduce agency costs, as managers perceive the risk they will incur if the firm is liquidated, namely in terms of salary losses and other benefits as well as a bad reputation.

By focusing on the banking industry, we want to consider its specificities. There are two elements which are central regarding the differences in the corporate governance of banks: the use of excessive leverage and the strong regulated environment in which banks develop their activities (Hagendorff, 2014; Koudstaall and Wijnbergen, 2012). Given the high use of leverage that prevails in the banking sector, it is natural to try to find what factors favour the use of leverage, instead of equity in financing banks. Avgouleas and Cullen (2015: 7) set out four possible drivers. The first is the rent-seeking behaviour of managers, especially in the absence of regulatory controls that may lead to an increased use of uninsured debt to finance bank assets and a greater risk. The second is related with the bank management use of asset substitution (risk-shifting) to select those investments that are riskier. This behaviour arises as banks increase their leverage, fostered by the opaque environment in which banks operate that hinder the flow of information and the evaluation of the risk of their operations. The third driver are the differences in risk preferences between agents that dominate the decision process. It is expected that a high level of risk will be preferred by shareholder-dominated banks, followed by manager-dominated banks, and finally, by banks dominated by deposit guarantors. Finally, the fourth driver is the financial innovation and the use of leverage that have led to a rapid expansion of the banking business. In addition, Hegendorff (2014) mentions that a safety net system is also responsible for high leverage. In this sense, the idea that regulators may subsidize bank leverage, constitutes an incentive for banks to increase the amount of debt issued.

There is no doubt that capital structure theories may contribute towards explaining the decisions on the banking capital structure, but the role of leverage and its relationship with bank governance and the characteristics of managers, constitutes a topic that deserves further development. A first contribution of our study is towards the literature on corporate governance in banking. Our paper focuses on the banking sector and, therefore, we provide empirical evidence on the significance of managers' characteristics to corporate strategic decisions in banking. The focus on this particular sector, allows us to validate our findings on comparable firms, and by doing so we complement the literature on capital structure decisions in banking. Despite the literature that reports that individual managers matter for firm behaviour and their policy choices (e.g., Bertrand and Schoar, 2003; Custódio and Metzger, 2014; Graham et al., 2013; Malmendier and Tate, 2005 and 2008; Malmendier et al., 2011), the studies in the banking sector are very scarce. For instance, Nguyen et al. (2015) consider observable characteristics and those regarding experience, such as age, education and employment history and they explore the relation between executive characteristics and the market performance of banks. Berger et al. (2014) seek to understand how the manager's team composition in terms of age, gender and education affect portfolio risk. In this paper, we intend to fill the gap in the literature using data for the Euro Area banking industry, focusing not only on how demographic and managers' personal characteristics affect their leverage choices, but also the influence of the management team on that choice.

A second contribution of our study is to combine insights from the upper echelons' perspective with traditional theories in the explanation of the relation between managers and corporate capital structure decisions. Recent papers have identified that managers' characteristics are determinant for corporate strategic decisions, and therefore that behavioural finance may contribute for a better explanation of the capital structure decisions (Cronkvist et al., 2012; Hackbarth, 2008; Subrahmanyam, 2007). For instance, Malmendier et al. (2011) consider in their study the role of managerial traits in explaining the variation in capital structure that is not explained by traditional theories based on firm-, industry- and market-level explanations. Their purpose is to identify specific managerial characteristics, establishing a link between those characteristics and financial decisions and quantifying their effects. In the spirit of Cronqvist et al. (2012), together with the purpose of understanding the determinants of capital structure, our motivation relies on the attempt to show that managerial preferences may influence the firm's strategic decisions, namely leverage levels decisions. Considering that managers' risk preference or perception may

influence the leverage decision process, we investigate if the level of leverage at the manager´s appointment date is determinant for the leverage decision, as we may think that managers' preferences in terms of risk may be determinant for their preferences in terms of leverage.

Finally, we take into account the presence of moral hazard, and whether the self-interest behaviour of managers is reflected in their leverage choices, by including time horizon as a potential relevant characteristic. Myopic behaviour variables, such as employment contract, time horizon or contract length, can be found in studies to assess the significance of an opportunistic behaviour and its effects on performance, investment or innovation (see, for instance, Antia et al., 2010; Gonzalez-Uribe and Xu, 2017; Xu, 2009, 2011; Xu and Cziraki, 2014). However, it would also be interesting to consider its effects on leverage levels. In this sense, we may consider that managers will be more prone to short-term results in order to maximize their preferences when they face a short time horizon. To supplement prior research, this study uses contract time horizon that is measured by the time remaining (to the manager) until the end of the contract. However, as managers are not alone in the decision process, we consider the average contract time horizon of the management team in order to teste if managers with shorter decision horizons will prefer higher levels of leverage.

The present study uses data that matches information from European banks and managers. We start from a cross sectional regression specification, but as we assume that the effect of the explanatory variables may differ at different points of the conditional distribution, we implement a simultaneous quantile regression model. This is of particular interest, as the quantile regressions confirm the existence of non-linearities. Our general findings suggest that younger and tenured managers, as well as managers with more experience, will be more prone to higher levels of leverage. The effect of tenure differs according to the level of leverage at the manager's appointment date and the positive relation between experience and leverage is only observed for highly leveraged banks. We have also observed that a bank's leverage at the manager's appointment date is determinant for the bank's current leverage. In addition, we offer some insights regarding the inclusion of the horizon dimension, in a way that it considers that horizon problems may also be related with the management team's horizon. In this sense, this study shed some light on whether and how the management team's contract time horizon may influence the leverage decision process and how a short-time managerial horizon may reflect on the capital structure.

The paper proceeds as follows. Section 2 discusses the theoretical and empirical evidence. Section 3 develops hypothesis concerning the relation between manager's characteristics and leverage. Section 4 introduces our dataset, presenting some descriptive statistics and the definition of the variables used. This section is followed by the discussion of our empirical methodology. The empirical analysis is presented in Section 6 and some additional results and robustness tests are presented in Section 7. Finally, Section 8 offers some concluding remarks.

2 Theoretical background

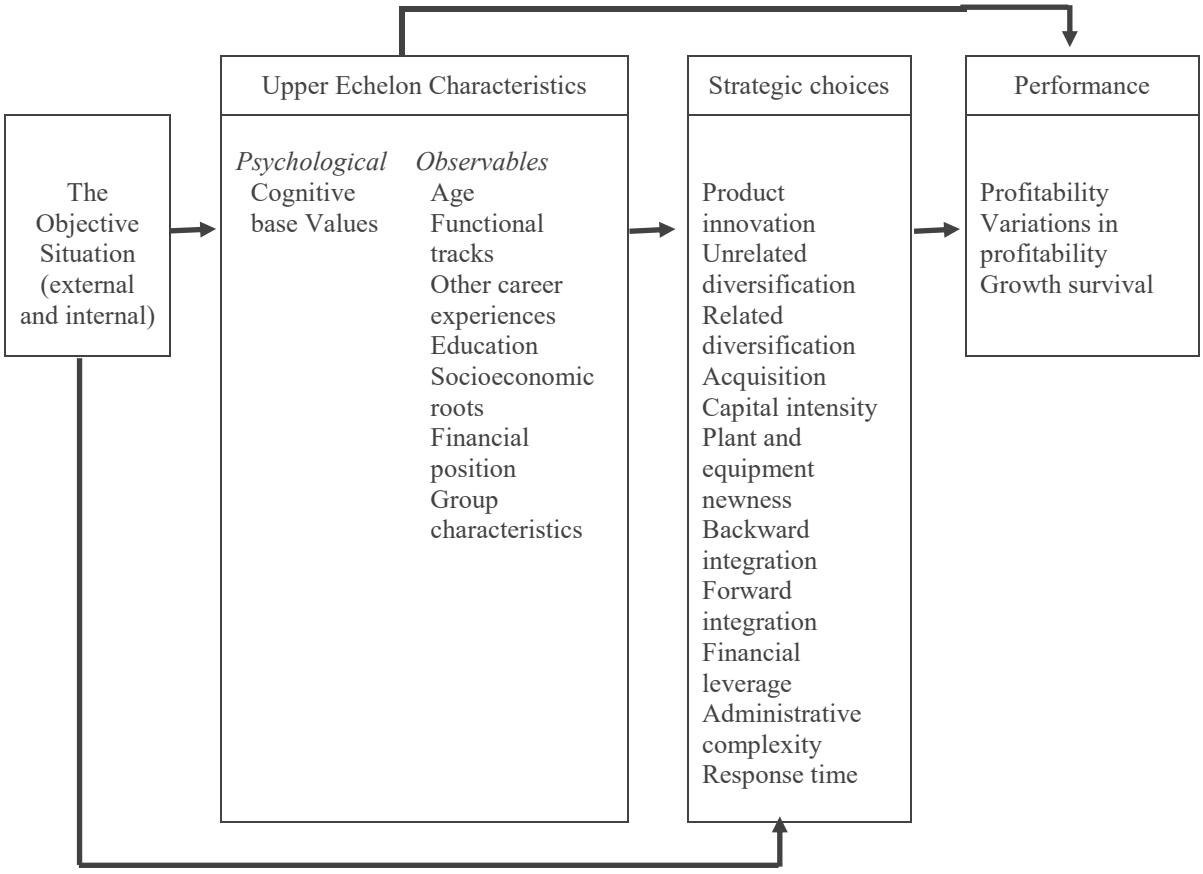
The agency problem in banks pushes them towards more leverage and this may be explained by the opacity that is inherent to their assets, that hinders the way in which managers can be monitored by outsiders, thus creating a favourable environment for asset substitution (Gropp and Heider, 2010). Moreover, Gropp and Heider (2010) argue that factors related to individuals, may also influence capital structure decisions. The work of Bertrand and Schoar (2003) considers that capital structure depends on the managers' preferences, and differences in capital structure may be related to differences in the quality of the corporate governance. The same line of reasoning is also present in other studies that consider managers as key elements for understanding corporate leverage, namely Baker and Wurgler (2013), Frank and Goyal (2007), Cadenillas et al. (2004), Bertrand and Schoar (2003). Therefore, it is relevant to understand and measure manager characteristics, namely through the inclusion of manager fixed effects in the empirical models, and how those characteristics may explain the financing decision. Frank and Goyal (2007) also consider that the managers' observable characteristics, like age, educational background and employment histories, may explain their behaviour and consequently their choices in terms of leverage levels. For instance, they observe that a longer tenure is related with a lower leverage, and that managers holding an MBA or a law degree, or managers who have previously worked at more companies, tend to present a higher leverage.

Several researchers have questioned how similar firms may differ in their corporate decisions. In this sense, it has been recognized that the distinctive features inherent to the managers may explain those differences and the way in which managers may influence leverage decisions. The assertion that corporate decisions reflect the managerial background traits and characteristics, originally presented in Hambrick and Mason (1984)

in their Upper-echelon theory, is in accordance with the idea that managers' characteristics such as age, tenure, educational background and career experiences affect their corporate strategic decisions. The theory suggests that the more complex a decision, the more important are the personal characteristics of the decision makers. In this sense, the inclusion of managers' characteristics in studying the determinants of a firm's capital structure has gained attention.

This line of reasoning draws from behavioural finance research as it considers that decisions do not only depend on the firm's environment, but also on the manager's personal characteristics in the way proposed by Hambrick and Mason (1984). Figure 1 explains how upper echelon characteristics explain strategic choices, assuming that the environment is not enough to explain the actions and outcomes of organizations.

Figure 1: An Upper Echelon Perspective of Organizations



Source: Hambrick and Mason (1984)

Several behavioural finance studies have focused their attention on the characteristics of managers, bearing in mind that managers are central to the organizations, as they

influence a firm's policy choices (Bertrand and Schoar, 2003; Custódio and Metzger, 2014; Escribá-Esteve et al., 2009; Graham and Harvey, 2001; Hambrick, 2007; Hambrick and Mason, 1984; Malmendier et al., 2011; Matemilola et al., 2013; Nguyen et al., 2015). In this sense, recent empirical studies suggest that CEO characteristics matter, and evidence on manager's heterogeneity includes demographic characteristics such as age, gender, tenure, education and experience (Berger et al., 1997; Bertrand and Schoar, 2003; Chen et al., 2010; Custódio and Metzger, 2014; Hambrick and Mason, 1984; Hu and Liu, 2015; Ryan and Wang, 2012), while personal traits such as overconfidence, personal risk attitudes or preferences are included (Cronqvist et al., 2012; Graham et al., 2013; Malmendier and Tate, 2005, 2008; Malmendier et al., 2011).

In addition to the empirical literature presented in this paper, it is worth mentioning some theoretical research such as Cadenillas et al. (2004) who develop a theoretical model in which they consider the relation between managerial risk aversion and leverage. Their results are in line with Bertrand and Schoar (2003), who demonstrate that the type of manager and, hence, the observable manager characteristics are associated with financing decisions, concluding that older managers are more conservative in their leverage decisions and that managers holding an MBA are less conservative. Similarly, Hackbarth (2008) considers managerial characteristics in order to examine the relation between managerial traits, such as growth and risk perception biases, and the firm´s capital structure. His model shows that managers with growth and/or risk perception biases tend to choose higher leverage levels in comparison to unbiased managers.

The theoretical research presented also considers the presence of agency costs. As pointed out by Kuo and Wang (2015), and in line with the agency theory proposed by Jensen and Meckling (1976), the self-interested behaviour of a manager is reflected in corporate capital structure decisions. This behaviour may be more prevalent in the presence of moral hazard, where managers are more prone to short-term results in order to maximize their preferences.

On the other hand, Hackbarth (2008) considers the interaction between agency problems and managerial traits, such as growth and risk perception biases. Managers with growth perception bias will overestimate the growth of future earnings and managers with risk perception bias believe that the firm is less risky than it actually is, thus in both cases the likelihood of financial distress is underestimated. This biasedness can help to reduce the principal-agent problem, in the sense that higher debt levels will constrain the availability of funds, thus managers will enhance firm value. More specifically, according

to Hackbarth (2008), the need to balance the benefits of tax benefits, default costs, and self-interest with the need to ensure sufficient efficiency to avoid being replaced, will constrain self-interested managers. However, this value-enhancing behaviour is not evident for the case where extreme managerial biases are observed.

3 Hypothesis development

As mentioned above, managers' characteristics may be influential in the leverage decision process. In this section, we develop hypothesis concerning those characteristics, which are: (1) age (2) gender (3) tenure (4) experience and (5) leverage at the appointment date.

Age

In line with the upper echelon theory, age may influence leverage decision as older managers are more risk averse and more conservative than younger managers. This conservative attitude is stated by Hambrick and Mason (1984) who posit three reasons why older managers are apparently more conservative. First, older managers may have less mental and physical stamina or may be less able to grasp new ideas and learn new behaviours. Moreover, as the ability to assimilate information diminishes as managers get older, age may be positively related with seeking information behaviour, in order to more accurately assess information and, by doing so, the decision-making process takes longer. Second, older managers may have a greater commitment to the organizational status quo. Lastly, older managers are at a stage in their lives, where financial and career stability are more important. In this sense, the managers' preference for a quiet life, increases with age (Bertrand and Mullainathan, 2003). Moreover, as Hu and Liu (2015) refer, the costs of failure are more evident to older managers, as they have more difficulty in getting a new job.

Serfling (2014) suggests that the way a manager's age impacts risk-taking behaviour may be not so consistent. In fact, if career concerns dominate there should be a positive relation between age and risk-taking. However, in a managerial signalling model, younger managers attempt to signal to the market that they are talented managers, pursuing riskier and more aggressive investment strategies. In this case, a negative relation between age and risk-taking, may be expected.

H1: Manager's age is negatively related with leverage.

Gender

Another widely used variable that describes the characteristics of a manager is gender. There is a growing literature that recognizes that gender is determinant for corporate choices and considers, among others, differences in risk aversion, overconfidence or in unemployment risk, as referred in Faccio et al. (2016). As men tend to be more confident, comparatively to women, it may also be expected that they will be more prone to riskier strategies and to higher levels of debt (Graham et al., 2013). This is in line with Chen et al. (2014), who state that firms with male managers give rise to a higher possibility of using debt. Faccio et al. (2016) refer that firms managed by females present lower leverage, less volatile earnings and a higher chance of survival, than firms managed by males.

H2: Manager's (male) gender is positively related to leverage.

Tenure

Tenure also plays an important role in decision making, particularly in the Upper Echelon Theory perspective. Hu and Liu (2015) consider that managers with a longer tenure have less need to establish a reputation, thus becoming more risk averse. As tenure increases, managers are more confident that they will not be replaced, and they will be less receptive to new ideas and changes (Orens and Reheul, 2013). Moreover, a longer tenure will contribute to the increase of the discretionary power of managers. This point of view is in accordance with the human capital hypothesis presented in Chen and Zheng's (2014) work, where longer tenure may suggest a greater managerial power and entrenchment. Therefore, in the same line of reasoning, as presented in Berger et al. (1997) and Ryan and Wiggins (2001), entrenched managers are risk averse, in order to protect their private benefits, thus firm leverage is affected by a manager's entrenchment and managers tend to avoid debt.

H3: Tenure is negatively related to leverage.

Experience

Experience may influence the decision-making processes, in which individuals are involved. In line with Matemilola (2013) and Escribá-Esteve et al. (2009) experience may reflect a manager's cognitive ability, thus managers with more experience would be more capable in a complex decision process, as they have the cognitive ability to make high quality decisions in this type of environment. Moreover, experienced managers are more able to analyse the expected risk and outcome of their strategic choices (Matemilola,

2013). In the same line of reasoning, Ting et al. (2015) analyse the relation between managers' previous experience and a firm's financial policies, considering that top manager's expertise and background is determinant for leverage decisions at the firm level.

Escribá-Esteve et al. (2009) consider that the manager's previous experience, accumulated by working in other firms or industries, will contribute to better and innovative ideas, which stimulate more proactive strategic decisions. We may consider here, as Custódio et al. (2013) and Hu and Liu (2015) that managers who worked for multiple firms have probably acquired more generic skills, in this sense, work experience will contribute towards gathering skills that will be determinant in the strategic decision-making process. In addition, a more diverse career experience will make managers more prone to exploit external financing (Hu and Liu, 2015).

Furthermore, a manager's previous experience may be more relevant in the case of financial managers. Custódio and Metzger (2014) consider the relation between a firm's financial policy and the financial expertise of the CEO, and they have observed that financial expert CEOs have a more diverse work experience, than nonfinancial experts; moreover, they have concluded that financial experts have more general managerial skills. Their results conclude that a manager's previous work experience, affects a firm's financial policies.

Finally, as Nguyen et al. (2015) suggest, more experienced managers may bring their social ties and networks to the banks, therefore a more diverse career experience may help to accumulate social connections, and by doing so managers will have quicker and better access to information, mitigating information asymmetry and contributing to the search for new business opportunities (Hu and Liu, 2015; Ting et al., 2015).

Looking at this relation, Hu and Liu (2015) find that more experienced managers are more likely to use debt financing, however, when considering that this effect may vary according to the firm's financial constraint, the findings suggest that the positive relationship between manager experience and debt financing is only observable for constrained firms.

H4: Experience is positively related to leverage.

Leverage at the appointment date

Considering that a manager's risk preference may influence the leverage decision process, risk-averse managers will prefer a low leverage and to hold more cash, in order to avoid financial pressure. In line with Cain and McKeon (2016), the manager's utility is affected

by changes in firm risk, thus the risk-averse managers will see their utility affected negatively by the increase in firm risk.

Because banks with higher leverage will incur in higher risk, the level of leverage at the appointment date may be determinant for the leverage decision process since, for instance, if managers are risk averse that would give rise to a higher possibility of employing a low leverage level. However, for risk-preference managers the possibility of increasing leverage will be higher (Chen et al., 2014; Graham et al., 2013).

In addition, we may also consider, in line with the model proposed by Hackbarth (2008), that managers with risk perception bias believe the firm is less risky than it actually is, and they tend to choose higher levels of debt. Based on this idea, it is expected, especially for banks with excessive leverage, that for this type of managers the current level of leverage may be higher in comparison to the appointment date.

H5: Leverage at the appointment date has an uncertain effect on leverage.

4 Data, sample and variables definition

4.1 Data and Sample

We use a previous prepared dataset on all banks from 19 countries that are members of the Euro Area with data for the 1987-2015 period. Information from income statements and balance sheet information on individual banks is taken from Bankscope. The Bankscope database, provided by Bureau van Dijk, is a unique collection of micro-level banking information for different countries. It comprises information on detailed financials, which are presented in multiple formats, including the universal format to compare banks globally. All data is reported in Euros and adjusted by price consumer index inflation in each respective country.

Data for managers[1] is also provided and it includes, for instance, address, contact numbers and web address, specialisation, various identification codes and managers' details. To derive the final sample, data on managers in 2015 was collected from Bankscope and matched with the original bank dataset. At the time of the data collection it was not possible to improve the information obtained or to increase the years of analysis,

[1] Bankscope considers managers as well as directors, thus reporting "Directors/Managers".

as the dataset was no longer available by the end of 2016. As the information on managers was only obtained for one year, we have applied a cross-section regression analysis.

The original database included 61,585 observations, with information on 3,461 banks and 56,761 managers. After checking and clearing for inconsistencies and dropping all banks that are categorized as “Central banks", “Specialized governmental credit institutions” and “Multi-lateral governmental banks”, we have ended up with 58,908 observations, representing 3,362 banks and 54,303 managers.

The summary statistics for the variables used in our analysis are presented in Table 1. Besides mean, standard deviation maximum and minimum. Table 1 presents provides the value of those variables at different quantiles. We observe that some variables show high dispersion, which may be a concern as OLS estimations may be more affected by these outliers. The presence of outliers is particularly relevant for the variable experience, total assets and growth of total assets. In order to account for this potential problem in our OLS specification, the explanatory variables were trimmed at the 1st and 99th percentiles. Table 1 presents information regarding the original sample and the trimmed sample. The mean and median age for managers is 55 and 54 years, respectively. Average tenure is 5 years while the median tenure is 4 years and about 78% are male managers. The level of leverage at the appointment date is nearly 91% in average, with a median of 93% and the management team has, on average, almost two years until the resignation date.

As referred above, there are some differences among the summary statistics, which is the case for the variable experience that presents an average of 2.52 for the original dataset and 1.25 for the trimmed dataset. With respect to total assets and growth of total assets, they present an average of 126,000 million euros and 3.54%, respectively. For the trimmed sample, the average of these variables is almost 98,000 million euros and 2.85%, respectively.

Table 1: Descriptive Statistics

Variable	N	Mean	St. Dev	Min.	Max.	1st percentile	5th percentile	10th percentile	25st percentile	50th percentile	75st percentile	90th percentile	95st percentile	99th percentile
Original Dataset														
Liabilities to total assets (%)	56,381	88.82	14.22	0.00	350.62	12.97	63.30	84.46	89.36	91.82	94.65	95.49	96.54	99.02
Age (years)	36,441	54.59	9.65	22.00	99.00	34.00	39.00	42.00	48.00	54.00	60.00	66.00	70.00	83.00
Gender (1=male;0=female)	56,458	0.78	0.41	0.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Tenure (years)	32,243	5.23	6.07	0.00	59.00	0.00	0.00	0.00	1.00	4.00	6.00	12.00	17.00	34.00
Experience (# of firms)	58,908	2.52	14.48	1.00	181.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	3.00	14.00
Leverage at the appointment date (%)	22,632	90.52	13.09	0.51	627.11	17.11	75.25	86.18	90.64	93.41	95.49	96.64	97.49	98.82
Management team's horizon (years)	3,909	2.00	0.63	1.00	7.00	1.00	1.00	1.00	2.00	2.00	2.00	2.83	3.20	4.00
Tenure Lag (years)	32,243	-0.04	3.92	-28.05	49.79	-9.35	-5.74	-4.06	-2.01	0.00	2.00	4.33	3.20	11.73
Net income to total assets - ROA (%)	30,418	0.48	1.17	-37.53	44.32	-1.73	-0.14	0.02	0.23	0.48	0.56	1.03	1.64	3.97
Total assets	56,562	1.26e+08	4.27e+08	27.00	7.88e+09	23,951	94,435	175,102	625,798	2,985,555	2.93e+07	3.90e+08	6.70e+08	1.33e+09
Growth of total assets (%)	56,992	3.54	20.37	-99.42	418.57	-33.54	-14.72	-7.33	-0.53	1.96	5.63	11.79	19.82	73.08
Tangibility	55,531	0.01	0.07	0.00	2.83	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.03	0.11
Trimmed dataset														
Liabilities to total assets (%)	56,381	88.82	14.22	0.00	350.62	12.97	63.30	84.46	89.36	91.82	94.65	95.49	96.54	99.02
Age (years)	35,815	54.45	8.87	34.00	83.00	36.00	40.00	43.00	48.00	54.00	60.00	66.00	69.00	77.00
Gender (1=male;0=female)	56,458	0.78	0.41	0.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Tenure (years)	32,230	5.21	6.02	0.00	34.00	0.00	0.00	0.00	1.00	4.00	6.00	12.00	17.00	34.00
Experience (# of firms)	58,347	1.25	0.99	1.00	14.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	6.00
Leverage at the appointment date (%)	22,188	91.21	9.52	17.11	98.82	38.66	78.90	86.50	90.75	93.41	95.49	96.54	97.18	98.54
Management team's horizon (years)	3,883	1.98	0.58	1	4.00	1.00	1.00	1.00	2.00	2.00	2.00	2.53	3.00	4.00
Tenure lag (years)	31,602	-0.05	3.31	-9.35	11.73	-7.63	-5.40	-4.01	-2.01	0.00	0.99	4.00	5.95	10.00
Net income to total assets - ROA (%)	29,823	0.48	0.56	-1.68	3.97	-1.10	-0.09	0.02	0.23	0.48	0.56	1.00	1.47	2.67
Total assets	55,437	9.75e+07	2.13e+08	23,951	1.33e+09	43,994.90	107,513	187,100	633,117	2,985,555	2.80e+07	3.90e+08	5.32e+08	8.42e+08
Growth of total assets (%)	55,734	2.85	10.36	-33.08	73.08	-21.92	-12.38	-6.36	-0.43	1.96	5.63	11.29	17.81	46.71
Tangibility	55,944	0.01	0.01	0.00	0.11	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.03	0.05

Table 1 presents summary statistics for the variables used in our analysis. Variable definitions are presented in Table 9 from Appendix 1.Besides mean, standard deviation maximum and minimum, it is also provided the value of those variables at different quantiles. Computations from the author based on Bankscope (2015) and Orbis Bank Focus (2016).

4.2 Variables

In this subsection, we describe the main variables used in the empirical analysis. The detailed definition of the variables is summarized in Table 9 from Appendix 1.

The dependent variable in this study is liabilities to total assets, measured as total liabilities, divided by total assets. This ratio examines how much of a bank's assets are made of liabilities.

Manager characteristics like age and gender may influence a manager's behaviour. These characteristics are observed and directly obtained from the dataset. Tenure is measured as the length of time between the date when the manager started the position in the bank (appointment date) and the current year 2015 (current date).

Work experience contributes towards gathering skills that are determinant for making strategic decisions; we consider the variable experience as the number of firms for which the manager is working for. We consider, in line with Hu and Liu (2015), that diverse career experiences help to accumulate social connections, thus it may also be related with the manager's network.

The variable leverage at the appointment date is obtained from a preliminary dataset that provides information on banks. We used this dataset to obtain previous year values for some bank variables and matched them with the dataset on managers. By doing this, it was possible to assign to each manager the existing level of leverage on his/her appointment date. The usefulness of this variable is to evaluate if the bank's leverage at the appointment date has a significant effect on the bank's current leverage.

Furthermore, we consider some bank-specific factors that are well established in the capital structure literature (Rajan and Zingales, 1995; Frank and Goyal, 2009; and Gropp and Heider, 2010), such as bank profitability, size, growth and tangibility.

Profitability (roa) is measured as the return on average assets. The relation between profitability and leverage may be uncertain. In this sense, a negative effect may be expected, as profitable banks tend to hold more capital since they face a lower cost of increasing equity in the short term, thus, in line with Rajan and Zingales (1995) and Frank and Goyal (2009), if debt financing is the dominant source of external financing, then more profitable firms will have less leverage. However, profitability may also be positively related with leverage, as profitable firms may seek tax benefits, or since they face lower expected costs of financial distress, they are more prone to use more debt (Frank and Goal, 2009).

The variable size is measured as the natural logarithm of total assets and its inclusion is justified by the fact that large and diversified firms face lower probability of financial distress. This variable may also reflect the bank's reputation in debt markets, as well as their superior debt market access with preferable lending conditions, thus it is expected that for larger banks it will be easier to issue more debt.

High growth firms have higher costs of financial distress, free cash problems and debt-related agency problems (Frank and Goal, 2009), thus in accordance with the trade-off theory, high growth firms are more equity financed and therefore growth reduces leverage. However, it is also considered under the pecking order theory, that firms with growth opportunities – holding profitability fixed – will issue more debt, thus leverage and growth opportunities are positively related. As a measure for growth opportunities, we use the growth of total assets.

The literature also finds a positive association between tangible assets and leverage, thus the variable tangibility is also included. As referred by Rajan and Zingales (1995), tangible assets are easy to collateralize and thus reduce the agency costs related to debt. Notwithstanding this positive relation, Frank and Goyal (2009) consider that, under the pecking order theory, the predictions are ambiguous as low information asymmetry, associated with tangible assets, makes equity less costly, thus leverage is negatively related with tangibility. However, if adverse selection is about assets in place, tangibility increases adverse selection and firms will incur in higher debt.

5 Empirical methodology

For the estimation of the relationship between leverage and manager characteristics, we depart from a cross sectional regression where the model is formulated as a linear specification for the conditional mean of the dependent variable. We estimate the conditional mean regression as

$$E(L_{i,c}|X_{i,c}) = \alpha + \beta_1 x_{1ic} + \cdots + \beta_k x_{kic} + \mu_c + \delta_b \quad (1)$$

where $L_{i,c}$ represents the ratio of liabilities to total assets of the bank's manager i in country c. We include some bank-specific factors that are well established determinants of leverage, as well as variables related to manager characteristics. These variables are described in detail in the previous section. We have also included country and bank specialization dummies, $\mu_c + \delta_b$, respectively.

We start from the simplest specification that provides estimates based on the average effect of the independent variables on the conditional mean of leverage, however standard least squares regression techniques provide an incomplete view of the relationship, as they fail in considering other locations of the leverage distribution. While the optimal properties of standard regression estimators are not robust to modest departures from normality, quantile regression results are characteristically robust to outliers and heavy tailed distributions.

In our case, a quantile regression model may be preferable, as it allows us to estimate the effects of the explanatory variables at different points in the conditional distribution of the dependent variable. By relaxing the assumption that errors terms are identically distributed at all points of the conditional distribution and considering that slope parameters vary at different quantiles, it may be more reliable as we may obtain a more complete understanding of the relationship, and how it may vary throughout the leverage distribution. For applications on quantile regressions analysis in capital structure studies see, for instance, Fattouh et al. (2005, 2008), Margaritis and Psillaki (2007) and Sánchez-Vidal (2014).

The quantile regression model is defined as

$$Quant_{\theta}(L_i|X_i) = \alpha_{\theta} + \beta_{\theta 1}x_{1i} + \cdots + \beta_{\theta k}x_{ki} + \mu_{\theta c} + \delta_{\theta b} \quad (2)$$

where $Quant_{\theta}(L_i|X_i)$ denotes the θ^{th} conditional quantile of L_i given X_i.

As described by Koenker and Basset (1978), the θ^{th} regression quantile, $0 < \theta < 1$, solves the following problem

$$\min_{\beta} \frac{1}{n}\left\{\sum_{i,c:y_{ic}\geq x'_{ic}\beta} \theta|y_{ic} - x'_{ic}\beta| + \sum_{i,c:y_{ic}<x'_{ic}\beta} 1-\theta|y_{ic} - x'_{ic}\beta|\right\} =$$

$$\min_{\beta} \frac{1}{n} \sum_{i=1}^{n} \rho_{\theta}\mu_{\theta ic}$$

(**Erro! Autorreferência de marcador inválida.**)

where $\rho_{\theta}(u)$ is the "check function" defined as

$$\rho_{\theta}(u) = \begin{cases} \theta u & if\ u \geq 0 \\ (\theta - 1) & if\ u < 0 \end{cases} \quad (4)$$

The resulting minimization problem in Eq. (**Erro! Autorreferência de marcador inválida.**) can be solved by linear programming methods (Koenker and Basset, 1978).

Due to the advantages of quantile regression estimates over standard least squares regression technique, we consider the conditional quantile regression to model the relationship between leverage and the explanatory variables conditional on the selected quantiles. Thus, quantile regression allows us to assess the association of the predictors, with leverage at different points of the conditional leverage distribution. The quantile $\theta \in (0,1)$ is that L, which splits the data into proportions θ below and $1-\theta$ above. As θ can be specified as any value between 0 and 1, the estimated coefficients may differ, depending on the particular quantile being estimated. For our analysis, we estimate quantile functions at both tails of the leverage distribution – $\theta(0.10)$ and $\theta(0.90)$ –, the median regression – $\theta(0.50)$ – and interquartile regression – $\theta(0.25)$ and $\theta(0.75)$.

As pointed out by Yang et al. (2012), based on Koenker and Hallock (2001), the interpretation of quantile regression estimation is similar to, but slightly different from, that of ordinary least squares. The standard linear regression summarizes the average relationship between a set of predictors and the dependent variable based on the conditional mean function, thus the coefficient of the specified predictor, *X*, represents the expected change in the dependent variable that is associated with a unit change in *X*. For the quantile regression, the coefficient *X* in the θ^{th} quantile can be interpreted as the marginal change (relative to the value of the θ^{th} quantile of the dependent variable), due to a one unit change in *X*. As a result, the interpretation of quantile regression results needs to specify which quantile of the dependent variable they refer to.

We implement simultaneous quantile regression instead of quantile regression, as it estimates each equation simultaneously and obtains an estimate of the entire variance-covariance matrix of the estimators by bootstrapping. As it produces several values of θ simultaneously, it allows testing for differences between quantile regressions coefficients for different quantiles[4] across the quantiles of leverage, to further confirm the pattern in the relation between leverage and manager characteristics, namely contract time horizon.

[4] For the implementation of this procedure we have used the "sqreg" command in Stata 14 and required the model to perform 100 bootstrap replications.

6 Empirical analysis

6.1 Baseline results

To test the impact of manager characteristics on leverage, we use the following general cross-sectional regression specification:

$$\begin{aligned} Leverage_i = {} & \beta_1 + \beta_2 Age_i + \beta_3 Gender_i + \beta_4 Tenure_i + \beta_5 Experience_i + \\ & + \beta_6 Leverage\ at\ the\ appointment\ date_i + \beta_7 Tenure\ lag_i + \\ & + \beta_7 Tenure * Leverage\ at\ the\ appointment\ date_i + \beta_8 ROA_i + \\ & + \beta_9 Size_i + \beta_{10} Tangibility_i + \beta_{11} Growth\ opportunity_i + \\ & + Country_c + Bank\ specialization_b + \mu_i \end{aligned} \quad (5)$$

where $Leverage_{ic}$ is the ratio of liabilities to total assets of the manager´s bank. For manager characteristics we consider Age and $Gender$. Gender represents a dummy variable taking value one if male. We also consider $Tenure$ as the number of years between current date (2015) and resignation date. $Experience$ measures the number of banks for which manager works. A bank's leverage at the manager's appointment date is represented by leverage at the appointment date. $Tenure\ lag$ measures the distance in years between a management team's tenure and a manager's tenure. We have also included the interaction of the $Tenure$ variable, with $Leverage\ at\ the\ appointment\ date$. ROA is the return on assets; $Size$ is measured as the natural logarithm of total assets; $Tangibility$ is computed as the ratio of fixed assets to total assets. To measure $Growth\ opportunity$, we use annual percentage change of total assets. As already mentioned we have also included country and bank specialization dummies.

Table 2 presents the estimation results from the baseline specification of Eq. (1). As previously mentioned, we have included variables related with manager characteristics, as well as some bank determinants of leverage.

Table 2: Ordinary Least Square regressions of liabilities to total assets

Dependent variable: Liabilities to total assets					
Variable	(1)	(2)	(3)	(4)	(5)
Age	-0.052***	-0.052***	-0.019***	-0.018***	-0.016***
	(0.008)	(0.008)	(0.004)	(0.004)	(0.004)
Male	0.141	0.137	-0.037	-0.035	-0.020
	(0.136)	(0.136)	(0.063)	(0.064)	(0.061)
Tenure	0.019**	0.019**	-0.000	0.050**	3.253***
	(0.008)	(0.008)	(0.012)	(0.024)	(0.532)
Experience		0.061	0.315***	0.321***	0.285***
		(0.077)	(0.071)	(0.072)	(0.069)
Leverage at the appointment date			0.497***	0.496***	0.649***
			(0.034)	(0.034)	(0.044)
Tenure Lag				-0.061***	-0.027
				(0.024)	(0.019)
Tenure*Leverage at the appointment date					-0.035***
					(0.006)
Return on assets	-283.947***	-285.051***	-160.638***	-163.095***	-151.023***
	(16.388)	(16.397)	(9.860)	(10.017)	(10.306)
Size	1.277***	1.277***	0.526***	0.534***	0.487***
	(0.061)	(0.060)	(0.033)	(0.033)	(0.036)
Tangibility	-78.797***	-78.870***	-64.100***	-65.233***	-60.045***
	(10.067)	(10.100)	(6.668)	(6.758)	(6.217)
Growth opportunity	4.511***	4.562***	4.212***	4.312***	4.461***
	(0.715)	(0.713)	(0.559)	(0.564)	(0.530)
Constant	72.872***	72.797***	38.124***	37.659***	24.650***
	(1.222)	(1.241)	(2.805)	(2.800)	(3.730)
Country dummies	Yes	Yes	Yes	Yes	Yes
Bank specialization dummies	Yes	Yes	Yes	Yes	Yes
Observations	11,779	11,770	9,382	9,253	9,253
R-squared	0.321	0.322	0.656	0.658	0.687
RMSE	5.219	5.219	2.920	2.929	2.802
F-stat	3802	3691	210.5	205.7	23963
Prob>F	0.000	0.000	0.000	0.000	0.000

Table 2 presents the estimation results from the baseline specification of Eq. (1). Variable definitions are presented in Table 9 from Appendix 1. All explanatory variables were trimmed at the 1st and 99th percentiles. Robust standard errors are in parentheses. Significance at the 10%, 5%, and 1% levels is indicated by *, **, and ***, respectively.

Consistent with the literature, the OLS results suggest that profitability and tangibility are associated with a lower leverage, while size and growth opportunity, as expected, affect the bank's leverage positively.

The inclusion of variables related to managerial characteristics and personal traits suggests that younger managers are less risk averse and less conservative in their leverage decisions. This behaviour is acceptable as we may consider, besides other arguments, that older managers may prefer a quiet life and career stability (Bertrand and Mullainathan, 2003; Hu and Liu, 2015). Moreover, as suggested by Serfling (2014) age may exert a negative effect on leverage, as younger managers may desire to signal that they are talented managers, by pursuing riskier and more aggressive strategic decisions.

Despite the common perception that gender differences may be determinant for the choice of capital structure, and that firms managed by males present a higher use of debt, the results do not confirm this, as the variable gender is not statistically significant. As suggested by Faccio et al. (2016) managers present some specificities and special skills, therefore for top managers there may not be a difference between males and females; this may suggest the existence of a self-selection mechanism, as women who choose to be managers are considerably different from all the rest.

Controlling for some personal traits, namely tenure, the results depict a positive relationship between leverage and a manager's tenure. In this case, we do not find empirical evidence that confirms a negative relationship between tenure and leverage. We may say that our findings are inconsistent with an entrenchment argument; however, they seem to be consistent with the idea presented in Korkeamäki et al. (2017) and based on Cronqvist et al. (2012), according to whom individual preferences towards financial risk, may be determinant to capital structure. Therefore, managers with a longer tenure will be more able to increase leverage, as they can bring their personal preferences. However, this effect differs according to the level of leverage at the manager's appointment date, thus suggesting that a manager's power is constrained.

With regards to a manager's experience, we observe a positive effect on leverage. Hence, as suggested by Escribá-Esteve et al. (2009), Custódio et al. (2013) and Hu and Liu (2015), the results suggest that a more diverse career experience will contribute towards enhancing a manager's expertise and the gathering of skills that are determinant in strategic decision-making and this may explain why managers will be more prone to exploit external financing. Moreover, we may consider that the accumulated experience, will be accompanied by the creation of social ties and networks, thus managers will have quicker and better access to debt financing (Nguyen et al., 2015; Hu and Liu, 2015; Ting et al., 2015). Additionally, we may expect that managers that belong to several boards can reduce their personal risk exposure.

The inclusion of leverage at the appointment date, confirms a statistically strong positive relation between the bank´s leverage at the manager's appointment date and the current level of leverage. In this sense, the initial bank´s leverage that the manager will face when he/she starts the appointment, exerts influence on the leverage decision process in which the managers will take part. This may suggest that managers that are less risk-averse will prefer higher levels of leverage or, in the presence of risk perception bias, like

Hackbarth (2008) suggests, managers will choose higher levels of leverage assuming that banks are less risky than they really are.

We observe that the inclusion, in our regression, of the variable leverage at the appointment date does not alter the expected sign and magnitude of the coefficients, the only exception is for the variable tenure, which for this specification turns insignificant. Considering that, as previously referred, the variable tenure may signal that managers with a longer tenure are more willing to imprint their leverage preferences in the leverage decisions in which they participate, and that managers that are less risk-averse will prefer higher levels of leverage – something that was already discussed with the inclusion of the variable leverage at the appointment date –, we may consider, in line with Berger et al. (2014), that the effect of managers can be counterbalanced by other executives, thus we need to account for that constraint. We, therefore, consider the effect of tenure lag. The results suggest a negative effect of the distance between a management team's tenure and a manager's tenure on leverage. The logic behind this may be explained by the fact that managers that present a higher lag in comparison with the bank's management team, will be more constrained and, as suggested by Berger et al. (2014), in line with the ideas presented in Adams and Ferreira (2010), in the decision-making processes individuals tend to be riskier than groups, whose decisions will result in rejection of projects which are too risky.

As previously observed, there is a positive relationship between leverage and a manager's tenure, however, despite the influence of individual preferences towards financial risk on capital structure, this effect varies according with the bank's risk exposure. In order to explore the tenure variable in more detail, we include its interaction with the leverage at the appointment date. It is observed that the coefficient of leverage at the appointment date remains positive and the positive effect of the variable tenure increases in a considerable way; however, the interaction coefficient suggests a negative effect. Figure 2 Figure 2depicts a clearer picture of this effect. For managers that observed a lower leverage at their appointment date, the effect of tenure on a bank's leverage will be positive, however for managers whose banks present higher values of leverage at their appointment date, there is a negative effect of tenure on leverage, thus not rejecting the hypothesis of a negative relation between tenure and leverage, but only for higher values of leverage at the manager's appointment date. This suggests that tenured managers may exert more influence on leverage, when their bank risk is lower, that is to say, for lower levels of leverage at the manager's appointment date.

Figure 2: Average marginal effects of tenure on leverage at different levels of leverage at the appointment date

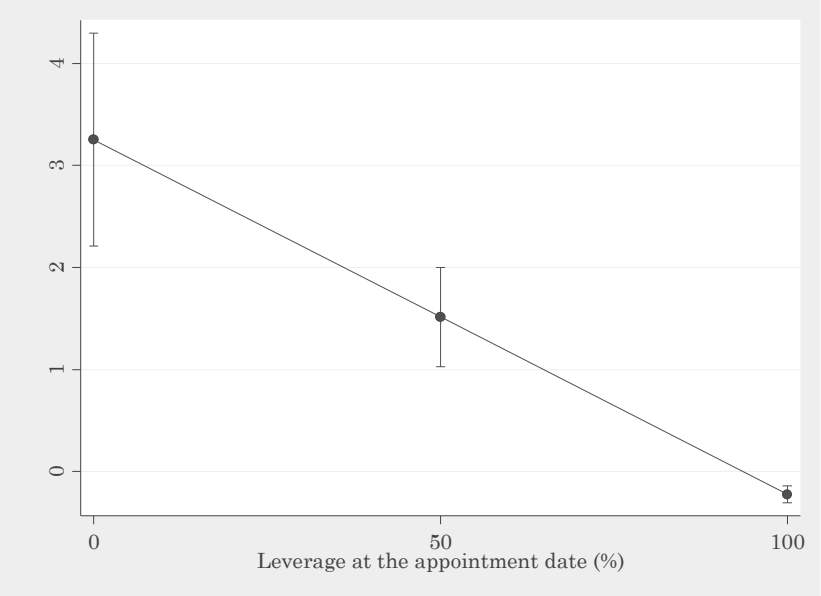


Figure 2 presents the average marginal effects of tenure on bank's leverage and how it differs at different levels of leverage at the manager's appointment date. The average marginal effects were calculated with a 95% confidence interval.

6.2 Quantile regression results

As already mentioned, the OLS, by focusing on the central tendency of the distribution, does not consider that the effect of the explanatory variables may differ at different points of the conditional distribution. Table 3 reports the results of estimating Eq. (2) for different values of θ using liabilities to total assets as the dependent variable. As previously reported, we estimate the coefficients at the 10^{th}, 25^{th}, 50^{th}, 75^{th} and 90^{th} using the same list of explanatory variables. The conditional quantiles estimates reported in Table 33 show that we may expect different effects of the explanatory variables at the different quantiles of the distribution.

As expected, profitability enters with a negative and significant coefficient, thus supporting the fact that an increase in internal funds is related with a decrease in leverage, therefore banks tend to hold more capital. Size also presents a positive and a significant coefficient that is higher for lower and moderate levels of leverage and decreases in magnitude for higher levels of leverage. As suggested, large banks may benefit from preferable lending conditions and better access to debt, however as banks become highly leveraged, they might not be able to borrow at preferable conditions.

The tangibility coefficient, as reported by the OLS estimates, suggests a negative and significant effect. As previously discussed, the effect of this variable on leverage may be ambiguous. We may think, in line with Frank and Goyal (2008), that for lower levels of leverage, the low information asymmetry associated with tangible assets makes equity less costly, however as banks become more leveraged and if there is adverse selection about firm value, firms will prefer debt. Similarly, for growth opportunity, we observe a significant positive effect on leverage, which validates the idea that growing firms will issue more debt.

Taking into consideration some manager's characteristics as age, gender and tenure, we observe that, as reported in Table 2, age may exert a negative effect on leverage, however this effect is slightly more manifest for low values of leverage (10^{th} quantile) and not significant for higher levels of leverage (90^{th} quantile). This may confirm that younger managers may desire to signal that they are talented managers by pursuing riskier and more aggressive leverage choices; however this behaviour will be constrained as banks become more leveraged. It is observed that gender is not significant for any quantile. Finally, the results suggest that tenure is not significant for the 10^{th} quantile, but it turns out to be significant for the other quantiles and its effect is increasing and becoming stronger, in comparison to our OLS estimates, as we move to higher levels of leverage.

Focusing on the variables that attempt to assess the influence of a manager's personal behaviour on leverage, we find that experience enters with a significant positive coefficient that is only observable for the highest quantile. This outcome confirms the relation between experience and leverage that was identified in our OLS specification, thus suggesting that experience, which is reflected by a manager's expertise and his/her accumulated experience that increases social ties and networks, is central for high leverage banks, which require better access to debt financing.

The results for our central measure of manager's characteristics allows us to assess that the predicted linear effect is lower in comparison to what is observed for the OLS estimates. In fact, a significant and strong effect is observed, which suggests that a bank´s leverage level at the manager's appointment date will be determinant for the level of leverage; however, a slightly lower but still clear effect for the 90^{th} percentile is observed. Although this may signal that managers are more risk-prone, this effect may cease to be valid for higher levels of leverage, as firms get financial constraints.

The negative effect of the interaction coefficient suggested on Table 2 remains. Moreover, the simultaneous quantile regressions not only show that this effect increases as

we move up across quantiles, but they also indicate that for low quantiles (10th and 25th) the negative effect is not as strong as the one reported by the OLS estimates and for the intermediate and high quantiles (50th, 75th and 90th) the effect is stronger.

Table 3: Simultaneous quantile regressions of liabilities to total assets

Dependent variable: Liabilities to total assets					
Variable	q10	q25	q50	q75	q90
Age	-0.016***	-0.003*	-0.006***	-0.005**	-0.000
	(0.004)	(0.002)	(0.002)	(0.003)	(0.002)
Male	-0.043	-0.015	-0.022	0.005	0.011
	(0.040)	(0.012)	(0.022)	(0.013)	(0.028)
Tenure	0.636	2.379***	5.172***	6.710***	6.146***
	(0.839)	(0.486)	(0.365)	(0.633)	(1.075)
Experience	-0.019	0.008	0.012	0.051	0.294**
	(0.036)	(0.035)	(0.018)	(0.071)	(0.129)
Leverage at the appointment date	0.963***	0.957***	0.936***	0.919***	0.723***
	(0.016)	(0.015)	(0.010)	(0.017)	(0.089)
Tenure Lag	0.008	-0.005	0.002	0.002	-0.028
	(0.006)	(0.005)	(0.008)	(0.008)	(0.021)
Tenure*Leverage at the appointment date	-0.009	-0.027***	-0.056***	-0.071***	-0.064***
	(0.009)	(0.005)	(0.004)	(0.007)	(0.011)
Return on assets	-109.316***	-91.224***	-81.241***	-60.920***	-79.468***
	(8.617)	(7.853)	(8.148)	(8.867)	(20.348)
Size	0.282***	0.215***	0.112***	0.113***	0.169***
	(0.032)	(0.016)	(0.015)	(0.014)	(0.047)
Tangibility	-23.917***	-12.082***	-11.338***	-6.449*	-7.272***
	(8.211)	(3.592)	(4.341)	(3.882)	(2.068)
Growth opportunity	0.686***	0.506***	0.799***	0.398*	0.745***
	(0.098)	(0.174)	(0.202)	(0.221)	(0.289)
Constant	-1.912	-0.103	4.022***	5.714***	23.471***
	(1.740)	(1.288)	(0.844)	(1.456)	(7.636)
Country dummies	Yes	Yes	Yes	Yes	Yes
Bank specialization dummies	Yes	Yes	Yes	Yes	Yes
Observations	10,041	10,041	10,041	10,041	10,041

Table 3 presents the estimation results from the quantile regressions of Eq. (2). Variable definitions are presented in Table 9 from Appendix 1. Bootstrapped standard errors are in parentheses. The bootstrap standard errors were obtained using 100 bootstrap replications. Significance at the 10%, 5%, and 1% levels is indicated by *, **, and ***, respectively.

The results presented in Table 3 are complemented by Figure 3 that depicts the estimated coefficients for the variables of interest. In order to verify statistical variation of coefficients along leverage conditional distribution, we plot the estimated coefficients of interest against the various quantiles and show the 95% confidence interval, constructed using the percentile method, with 100 bootstrap replications. Figure 3 depicts the quantile regression coefficients that are presented as lines, varying across the quantiles, together

with their confidence intervals. The OLS coefficients are plotted as a horizontal dashed line, with the confidence interval as two horizontal dashed lines around the coefficient line.

It is clear that the effect of the explanatory variables on leverage is different at different quantiles of the distribution, so the OLS estimates gives us an incomplete picture as it does not allow for the possibility of non-linear effects. As can be seen, if the quantile coefficient is outside the OLS confidence interval, then we have significant differences between the quantile and the OLS estimates. For quantile regression we need to distinguish between two types of significance, as quantile coefficients may be significantly different from zero, but quantile coefficients can also be significantly different from the OLS coefficients (outside the OLS confidence interval).

Figure 3: Quantile regression coefficients and confidence intervals

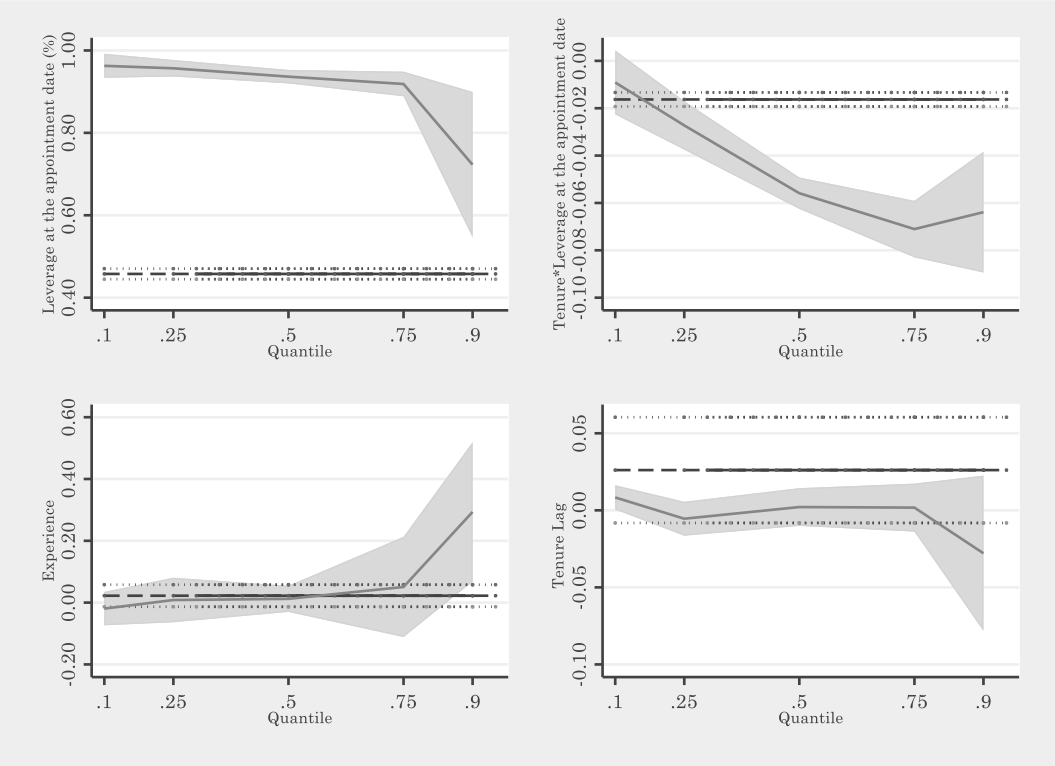


Figure 3 presents the estimated coefficients and confidence intervals for the main variables: leverage at the appointment date; experience; tenure lag and the interaction between tenure and leverage ate the appointment date. The quantile regression coefficients are presented as lines varying across the quantiles, together with their confidence intervals. The OLS coefficients are plotted as a horizontal dashed line, with the confidence interval as two horizontal dashed lines around the coefficient line. Coefficients are plotted against the various quantiles and show the 95% confidence interval, constructed using the percentile method, with 100 bootstrap replications. For the implementation of this procedure we have used the "sqreg" command in Stata 15.

The simultaneous quantile regression allows us to obtain several values of θ simultaneously, allowing for differences between quantile regression's coefficients to be tested. The bootstrap procedure is extended to construct a joint distribution that produces *F*-statistics to test for the equality of the estimated coefficients across different pairs of quantiles. The *F*-tests and the associated p-values are presented on Table 4. According to the tests, the estimates clearly reject equality of coefficients between all pairs of quantiles, indicating that the impact of the explanatory variables differs across the distribution of leverage.

Table 4: *F*-tests for equality of coefficients across pairs of quantiles

	10th	25th	50th	75th
10th				
25th	*F*-test=39.07			
	p-val=0.00			
50th	*F*-test=113.49	*F*-test=84.86		
	p-val=0.00	*p*-val=0.00		
75th	*F*-test=278.39	*F*-test=284.58	*F*-test=119.60	
	p-val=0.00	*p*-val=0.00	*p*-val=0.03	
90th	*F*-test=185.01	*F*-test=162.35	*F*-test=76.52	*F*-test=21.33
	p-val=0.00	*p*-val=0.00	*p*-val=0.00	*p*-val=0.00

Table 4 presents *F*-tests and the associated p-values for testing the equality of coefficients across different pairs of quantiles. The *F*-tests are based on the bootstrap method with 100 bootstrap replications.

7 Additional results and robustness checks

In this section, we investigate whether the results are robust to alternative specifications. First, we use liabilities to total equity as an alternative definition for our dependent variable. Second, we examine if the results are confirmed when sub-sampling, excluding high leverage banks. We also include an additional explanatory variable that tries to account for the horizon of the management team.

7.1 Alternative definition of the dependent variable

To test the robustness of the results, we consider an alternative definition of the dependent variable, where leverage is measured as the ratio of liabilities to total equity. In Table 5, we regress the liabilities to total equity on the same set of explanatory variables as in Table 33. We observe that the expected signs obtained prevail; however, the variable tenure loses its

significance at the 75th and 90th quantiles, and tangibility at the lower and median values of leverage. The most remarkable changes are the change of sign for the highest quantiles for the interaction variable, between tenure and leverage at the appointment date, although only significant at the 10% level; and that the variable tenure lag is now significant, except for the 10th quantile, and it changes its sign for the highest quantile. In spite of these changes, the results for other variables are similar and the main results prevail, namely, the positive effect of leverage at the appointment date.

Table 5: Simultaneous quantile regressions of liabilities to total equity (alternative dependent variable)

Dependent variable: Liabilities to total equity					
Variable	q10	q25	q50	q75	q90
Age	-0.000	-0.003	0.000	-0.017***	-0.003
	(0.002)	(0.003)	(0.001)	(0.007)	(0.002)
Male	-0.064	-0.131**	0.000	-0.006	0.005
	(0.043)	(0.063)	(0.013)	(0.050)	(0.006)
Tenure	0.662	2.506***	2.519***	1.250	-0.496
	(0.489)	(0.673)	(0.676)	(0.814)	(0.442)
Experience	-0.054	0.020	0.069	0.109	0.261
	(0.042)	(0.049)	(0.070)	(0.221)	(0.306)
Leverage at the appointment date	0.500***	0.588***	0.501***	0.437***	0.109***
	(0.116)	(0.106)	(0.089)	(0.090)	(0.017)
Tenure Lag	0.002	0.026***	0.064***	0.268***	-0.348***
	(0.013)	(0.007)	(0.006)	(0.076)	(0.034)
Tenure*Leverage at the appointment date	-0.008	-0.028***	-0.028***	-0.016*	0.009*
	(0.006)	(0.007)	(0.007)	(0.009)	(0.005)
Return on assets	-102.872***	-117.796***	-113.788***	-190.925***	-209.265***
	(10.475)	(10.307)	(13.161)	(35.241)	(30.973)
Size	1.008***	0.949***	0.864***	0.855***	1.096***
	(0.107)	(0.107)	(0.064)	(0.062)	(0.091)
Tangibility	-1.989	-4.799	-9.065	-9.122*	-13.574***
	(5.545)	(3.906)	(5.625)	(5.006)	(5.247)
Growth opportunity	2.013***	2.367***	3.852***	3.782***	3.793***
	(0.207)	(0.223)	(0.656)	(1.127)	(0.492)
Constant	-52.966***	-59.106***	-49.903***	-40.557***	-10.830***
	(8.156)	(7.876)	(7.099)	(7.727)	(2.034)
Country dummies	Yes	Yes	Yes	Yes	Yes
Bank specialization dummies	Yes	Yes	Yes	Yes	Yes
Observations	10,041	10,041	10,041	10,041	10,041

Table 5 presents the estimation results from the quantile regressions of Eq. (2) using liabilities to total equity as an alternative dependent variable. Variable definitions are presented in Table 9 from Appendix 1. Bootstrapped standard errors are in parentheses. The bootstrap standard errors were obtained using 100 bootstrap replications. Significance at the 10%, 5%, and 1% levels is indicated by *, **, and ***, respectively.

7.2 Sub-sampling

One central element in banking corporate governance is the use of excessive leverage. In this sense, as excessive leverage has governance implications and encompasses agency problems that push banks towards more leverage, it may be the case that the results may be influenced by this behaviour. Therefore, we investigate whether the outcomes are confirmed, when we exclude banks with high leverage levels.

We define high leverage banks as those that present values for liabilities to total assets above the median value of that variable (0.918249). This criterion reduces the sample from 10,041 observations to 3,447 observations. We also use as a cut-off value of leverage the 75th percentile (0.9465431), which also reduces our sample to 7,082 observations.

Table 6 presents the results for the estimations that exclude high leverage banks. We observe that the main results of Table 3 remain almost qualitatively the same. In general, the variables keep the same sign, except for the variable tenure lag that turns out to be significant and positive, but only marginally, for the highest quantile in sample (sample A); the same occurs in sample B for the 75th and 90th quantile, however it is observed that for low levels of leverage (10th quantile) there is a negative effect. We also observe that it is only significant in sample B for the 10th quantile. With respect to the variable leverage at the appointment date, the results depict a situation in which the variable keeps the same sign and almost the same effect as reported in Table 3. The only remarkable comment is that for high quantiles (90th) of both samples it is not so strong.

Table 6: Simultaneous quantile regressions of liabilities to total assets (high leverage banks excluded)

Dependent variable: Liabilities to total assets	Sample A – Banks above the median excluded					Sample B – Banks above the 75th percentile excluded				
Variable	q10	q25	q50	q75	q90	q10	q25	q50	q75	q90
Age	-0.002	-0.000	-0.000	0.000	0.000	-0.016***	-0.001	0.000	0.000	0.005*
	(0.003)	(0.003)	(0.001)	(0.002)	(0.001)	(0.006)	(0.002)	(0.000)	(0.000)	(0.003)
Male	-0.029	-0.036	0.000	0.010	-0.000	-0.177**	-0.011	-0.000	-0.000	0.014
	(0.057)	(0.051)	(0.023)	(0.035)	(0.018)	(0.078)	(0.027)	(0.011)	(0.004)	(0.016)
Tenure	1.116	4.273***	6.696***	7.671***	2.300*	0.717	2.993***	5.218***	6.649***	2.629*
	(1.032)	(1.149)	(0.949)	(0.668)	(1.276)	(0.937)	(0.522)	(0.373)	(0.503)	(1.419)
Experience	-0.710	-0.131	-0.006	0.002	0.029	-0.120	-0.062	0.014	0.010	0.157
	(0.476)	(0.112)	(0.014)	(0.044)	(0.106)	(0.122)	(0.054)	(0.017)	(0.023)	(0.177)
Leverage at the appointment date	0.978***	1.006***	0.916***	0.792***	0.239**	0.976***	0.964***	0.884***	0.788***	0.321***
	(0.011)	(0.041)	(0.023)	(0.054)	(0.115)	(0.014)	(0.023)	(0.016)	(0.042)	(0.121)
Tenure Lag	-0.027	0.038	-0.019	-0.011	0.031*	-0.021**	0.012	-0.000	0.021***	0.030***
	(0.048)	(0.039)	(0.023)	(0.016)	(0.017)	(0.010)	(0.008)	(0.003)	(0.004)	(0.006)
Tenure*Leverage at the appointment date	-0.016	-0.050***	-0.075***	-0.084***	-0.025*	-0.011	-0.034***	-0.057***	-0.072***	-0.028*
	(0.011)	(0.013)	(0.010)	(0.007)	(0.014)	(0.010)	(0.006)	(0.004)	(0.005)	(0.015)
Return on assets	-111.737***	-65.111***	-46.835***	-28.626***	10.229	-91.978***	-89.235***	-72.616***	-49.148***	-51.495***
	(13.396)	(12.532)	(6.910)	(8.767)	(10.537)	(14.391)	(7.479)	(8.640)	(7.539)	(6.645)
Size	0.842***	0.267***	0.126***	0.103***	-0.027	0.240***	0.191***	0.121***	0.030**	0.060**
	(0.079)	(0.060)	(0.026)	(0.027)	(0.041)	(0.045)	(0.019)	(0.013)	(0.014)	(0.028)
Tangibility	0.649	-0.910	-0.036	-1.322**	-2.379***	-9.900	-11.401***	-2.468	-4.860***	-6.186***
	(3.947)	(3.434)	(1.730)	(0.551)	(0.404)	(11.312)	(3.871)	(3.095)	(0.754)	(0.889)
Growth opportunity	8.780***	6.372***	4.413***	2.382***	0.667	3.754***	2.987***	2.442***	2.319***	1.822***
	(1.271)	(1.019)	(0.714)	(0.672)	(1.311)	(0.540)	(0.347)	(0.310)	(0.331)	(0.287)
Constant	-16.654***	-10.209***	4.392**	17.089***	69.817***	-1.522	0.347	8.871***	20.348***	64.272***
	(2.058)	(3.290)	(2.130)	(4.833)	(11.004)	(1.879)	(2.148)	(1.351)	(3.801)	(11.057)
Country dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bank specialization dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,447	3,447	3,447	3,447	3,447	7,082	7,082	7,082	7,082	7,082

Table 6 presents the estimation results from the quantile regressions of Eq. (2) but excluding high leverage banks from the sample. In sample A, high leverage banks are defined as those that present values for liabilities to total assets above the median value (0.918249). In Sample B, high leverage banks are defined as those that present values for liabilities to total assets above the 75th percentile (0.9465431). Variable definitions are presented in Table 9 from Appendix 1. Bootstrapped standard errors are in parentheses. The bootstrap standard errors were obtained using 100 bootstrap replications. Significance at the 10%, 5%, and 1% levels is indicated by *, **, and ***, respectively.

7.3 Management team's contract time horizon

The management team's contract time horizon may influence the leverage decision process, as managers with short time horizons may not make decisions that are in the firms' best interest on a long-term basis. In line with Antia et al., (2010), Gonzalez-Uribe and Xu (2017), Xu (2009, 2011), and Xu and Cziraki (2014), who examine the relevance of the contract horizon and its relation to performance, investment and innovation, we consider that a short-term managerial horizon may harm firm value, enhancing the self-interested behaviour of the manager and its reflection on corporate capital structure decisions.

Antia et al. (2010) documented that a shorter decision horizon is associated with significant agency costs, thus in accordance to Berger et al. (1997) we adopt the view that managers will prefer higher levels of leverage. For example, Cronqvist el al. (2009) and Berger et al. (1997) refer that leverage may be used as a bargaining tool to keep wages lower, which may signal, as Antia et al. (2010) suggest, that a short-term focus could boost short-term profits by cutting costs, however it is clearly not a value enhancing strategy. In this sense, we may consider that managers will be more prone to short term results in order to maximize their preferences when they face a short time horizon. Thus, we expect that the management team's contract time horizon is negatively related to leverage.

The variable management team's contract time horizon is computed as the difference between the resignation date and the current year 2015 (current date). From the dataset we obtain information about the resignation date of managers. Following Gonzalez-Uribe and Xu (2017), Xu (2009, 2011), and Xu and Cziraki (2014), we obtain the variable contract time horizon as the number of years remaining on the manager's contract, but in our case, it will be computed as the average contract time horizon for each bank's management team. The inclusion of this variable allows us to assess, for instance, if leverage increases in a short contract horizon or not and how a bank's leverage behaves according to the positioning of the management team in their contract time horizon.

Table 7: Simultaneous quantile regressions of liabilities to total assets (additional explanatory variable – Management team's contract time horizon)

Dependent variable: Liabilities to total assets					
Variable	q10	q25	q50	q75	q90
Age	0.000	0.000	0.000*	0.000	0.000
	(0.001)	(0.001)	(0.000)	(0.000)	(0.003)
Male	0.000	0.000	0.000	0.000	0.000
	(0.021)	(0.001)	(0.000)	(0.000)	(0.008)
Tenure	6.703***	6.556***	5.142***	0.683	-0.615
	(0.854)	(0.694)	(1.937)	(0.934)	(0.896)
Experience	-0.350**	-0.292*	0.000	0.209	0.190
	(0.164)	(0.169)	(0.084)	(0.132)	(0.220)
Leverage at the appointment date	0.760***	0.757***	0.592***	0.224*	0.102
	(0.048)	(0.070)	(0.219)	(0.117)	(0.126)
Tenure Lag	0.205***	0.115	0.104	0.109	0.053
	(0.051)	(0.080)	(0.090)	(0.092)	(0.164)
Tenure*Leverage at the appointment date	-0.074***	-0.071***	-0.056***	-0.008	0.006
	(0.009)	(0.008)	(0.021)	(0.010)	(0.009)
Management team's horizon	-0.713***	-0.755**	-1.949**	-3.549***	-3.011***
	(0.249)	(0.368)	(0.974)	(0.754)	(0.767)
Return on assets	-	-	-	-	-
	114.107***	119.862***	111.464***	106.621***	132.896***
	(10.782)	(12.688)	(11.431)	(9.640)	(22.541)
Size	0.084	0.405**	0.403*	0.419***	0.296**
	(0.103)	(0.160)	(0.239)	(0.130)	(0.128)
Tangibility	-52.907***	-37.466***	36.869	64.741	-22.958
	(11.889)	(12.605)	(38.802)	(40.976)	(35.672)
Growth opportunity	0.673**	0.327	2.184**	2.489**	1.091
	(0.266)	(0.585)	(0.898)	(1.028)	(2.014)
Constant	10.477	18.483*	34.697*	71.835***	84.057***
	(8.658)	(10.085)	(18.931)	(11.421)	(12.649)
Country dummies	Yes	Yes	Yes	Yes	Yes
Bank specialization dummies	Yes	Yes	Yes	Yes	Yes
Observations	2,004	2,004	2,004	2,004	2,004

Table 7 presents the estimation results from the quantile regressions of Eq. (2) using an additional explanatory variable - management team's contract time horizon. Variable definitions are presented in Table 9 from Appendix 1. Bootstrapped standard errors are in parentheses. The bootstrap standard errors were obtained using 100 bootstrap replications. Significance at the 10%, 5%, and 1% levels is indicated by *, **, and ***, respectively.

Moreover, we also implement *F*-tests to test for the equality of the five quantile coefficients on liabilities to total assets and management team's contract time horizon. As observed in Table 8, the null hypothesis of coefficient equality is rejected.

Table 8: *F*-tests for equality of coefficients across different quantiles

Leverage at the appointment date
F (4, 2004) = 12.97
Prob > F = 0.0000
Management team's contract time horizon
F (4, 2004) = 5.15
Prob > F = 0.0004

Table 8 presents *F*-tests and the associated p-values for testing the equality of coefficients across different pairs of quantiles. The *F*-tests are based on the bootstrap method with 100 bootstrap replications.

Consistent with the premise that contract time horizon may influence the leverage decision process and a short-time managerial horizon may have reflections on capital structure decision (Antia et al., 2010; Berger et al., 1997), we find that the management team's contract time horizon has a negative influence on leverage. It is important to recall that we measure contract time horizon as the average contract time horizon for the management team of each bank. These findings are consistent with the idea that contract time horizon may influence the leverage decision process and a short-time managerial horizon may have reflections on capital structure decision. However, we observe that the effect differs considerably, having a significant and strong effect at higher quantiles. Thus, managers with a shorter decision horizon will prefer higher levels of leverage, especially for highly leveraged banks.

From Table 7, we observe some changes in our estimates. It turns out that some variables become insignificant, especially those related with manager characteristics, especially for levels of leverage above the median. These results may suggest, as referred by Cronqvist et al. (2012) based on Frank and Goyal (2009) that some observable managerial characteristics may not exert influence on leverage choices, and other variables that capture a manager's preferences may be preferable in explaining leverage. However, it is important to note that the inclusion of the management team's contract time horizon reduces the sample size to one fifth; therefore, these interpretations should be made with some caution.

We observe also some noticeable differences regarding the variable experience, which changes its sign for the 10^{th} and 25^{th} percentile, although only 5% and 10% significant, respectively. It is important to point out the loss of significance of the variable leverage at the appointment date at higher quantiles. This variable is only significant at 10% level at the 75^{th} quantile and insignificant at the 90^{th} quantile.

8 Concluding remarks

One of the main objectives of this study was to raise the question how manager's characteristics and traits may contribute towards explaining leverage decisions. For our purpose, we combined data from European banks and managers, using data on all banks from 19 countries of the Euro Area from Bankscope.

The results provide evidence that younger managers are less risk averse and less conservative in their leverage choices, thus suggesting that they are not as concerned with career stability as older managers, but they desire to signal their talent following aggressive and riskier strategies. Nevertheless, this behaviour is constrained as banks become more leveraged. On assessing the effects of gender on capital structure, we observed that gender differences are not determinant, thus it may be the case that for management this characteristic is not determinant, as special skills are required.

The tenure variable presents an interesting behaviour. Our departure hypothesis considered that tenure and leverage were negatively related, however we have found a positive relationship. The effect of tenure increases and becomes stronger, as leverage increases. This suggests that managers with a longer tenure will be more prone to increase leverage, however in spite of the influence of individual preferences towards financial risk, the positive effect of tenure on leverage varies according with the bank's risk exposure. Thus, the lower the level of leverage at the manager's appointment date, the more tenured managers will increase leverage.

Manager's experience has a positive influence on leverage, but it is only significant for higher levels. Results also suggest that bank's leverage at the manager's appointment date has an important and significant effect on leverage. Moreover, we observe that for alternative specifications, the main results remain similar, especially for the variable leverage at the appointment date, which remains significant and positive. The inclusion of the management team´s contract time horizon confirms a negative influence of this variable on leverage, which suggests that managers with shorter decision horizons will prefer more leverage, especially in highly leveraged banks. It is important to note, however, that the inclusion of this variable reduces the sample size.

Our findings bring some important insights. First, it is clear that the bank's leverage at the manager's appointment date exerts a strong and positive influence on the current level of leverage, suggesting that managers are risk-prone; moreover the tenure variable exerts an important effect together with the leverage at the appointment date as tenured managers

exert more influence on leverage when they present lower levels of leverage at the appointment date. However, the more the manager distances from the appointment date, the less will be the effect of the leverage at the appointment date on the current level of leverage. It is also interesting to observe that the manager's behaviour is constrained by higher levels of leverage, which may signal that debt may serve as a corporate governance tool and a disciplining device for managers, thus reducing agency costs.

In terms of research design, our findings present important conclusions, since we have demonstrated that the effect of explanatory variables is not constant across the leverage distribution. It is clear that quantile regression techniques give us a more complete picture, allowing for the possibility of non-linear effects.

Finally, the attempt to bring into this topic of discussion the relevance of the decision horizon expressed as the management team's contract time horizon and its relationship with capital structure, has revealed some interesting paths for future research. When considering this dimension, it turns out that some observable characteristics become insignificant, which may suggest that other variables relating to a manager's preferences or traits, will be preferable for explaining the leverage decision process.

Appendix 1

Table 9: Variables definition

Variables	Definition
Liabilities to total assets	It corresponds to liabilities divided to total assets. This ratio examines how much of a firm's assets are made of liabilities. Banks with higher liabilities to total assets ratios, should have higher financing and debt service costs, than banks with lower ratios.
Liabilities to total equity	It corresponds to liabilities divided to total equity. This ratio examines the amount of financial debt as a percentage of equity. Banks with higher liabilities to total equity ratios, should have higher financing and debt service costs, than banks with lower ratios.
Profitability	Return on average assets (ROAA), computed as net income, divided by average total assets. This ratio compares the efficiency and operational performance of banks, as it looks at the returns generated from the bank's assets.
Size	Natural logarithm of total assets.
Tangibility	Fixed assets to total assets.
Growth opportunity	Annual percentage change of total assets.
Age	A manager's age.
Gender	Dummy variable taking value one if male and zero otherwise.
Tenure	Number of years between appointment date and current date (2015).
Experience	Number of banks for which the manager is working.
Leverage at the appointment date	Bank's leverage (liabilities to total assets) at the manager's appointment date.
Tenure (Lag)	Distance (years) between the team's tenure and manager's tenure.
Management team's contract time horizon	Average (years) the management team's contract time horizon. It corresponds to the difference between the resignation date and the current year 2015 (current date), computed as the average contract time horizon for each bank's management team.

Appendix 2

Table 10: Bank specialization

Bankscope Classification	
Commercial banks	Mainly active in a combination of retail banking (Individuals, SMEs), Wholesale Banking (large corporates) and Private banking (not belonging to groups of savings banks, cooperative banks).
Savings banks	Mainly active in Retail Banking (Individuals, SMEs) and usually belonging to a group of savings banks.
Cooperative banks	Cooperative banks have a cooperative ownership structure and are mainly active in Retail Banking (Individuals, SMEs).
Real Estate & Mortgage banks	Mainly active in Mortgage Financing and Project Development.
Investment banks	Mainly active in Corporate Finance, Debt/Equity Issues, Mergers & Acquisitions, Securities Trading and usually in Private Banking.
Other non-banking credit institutions	Institutions providing guarantees, money transfer companies, companies providing banking and non-banking financial services to groups of financial institutions.
Specialized governmental credit institutions	Institutions providing National Development Finance, Sectoral Finance or Export/Import Finance. This specialisation category includes Public Institutions acting on privileged or protected segments, or those benefiting from Governmental guarantee or sponsoring.
Bank holdings & Holding companies	Holding companies of bank groups, which usually have very limited business activities.
Central banks	Supervising national banking systems.
Multi-lateral governmental banks	Active in multi-lateral development finance.
Micro-financing institutions	Providing micro finance to individuals and very small companies.
Securities firms	Mainly active in Securities Trading/Arbitrage activities/ Securities Brokerage/Derivatives.
Private banking/Asset management companies	Banks mainly active in private banking and asset management.
Investment & Trust corporations	Investment Corporations/Investment Trust Companies and Private Equity Companies/Property Developers and Covered Bond Issuers investing in various assets.
Finance companies	Consumer Finance Companies, Credit Card Companies, Factoring Companies, Leasing Companies, Trade Finance Companies
Clearing & Custody institutions	Institutions providing clearing and custody services.
Group finance companies	Companies mainly active in attracting funding for and lending on behalf of the group.

Source: Bankscope (2015).

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