

Does the Corporate Capital Structure Theory Apply to Banks? Evidence from the Field*

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Abstract

This paper investigates the value relevance of banking capital structure voluntary choices, their determinants, and the preferred debt / equity policy models, using a unique survey-based dataset gathered through a face-to-face interview, conducted to a sample of 51 Portuguese banks' CEOs (89.5% survey response rate), over the 1989-1998 period. Survey participants, elicited ownership structure control rights, growth opportunities, reputation in banking markets, financial flexibility, information signaling, and debt tax-shields, as some of the most relevant capital structure determinants at the bank level. The supervisory and regulatory discipline was indicated as the more influential external determinant for capital structure choice. A majority of 60 percent of state-owned bank CEOs declared a preference for following pre-determined guidelines on bank funding as capital structure policy model. Almost 53 percent of the privately-owned bank CEOs revealed a significant preference for the tradeoff capital structure policy model. The pecking order and the market-timing theories received moderate to weak preference. The paper extends the literature, providing field evidence that capital structure choice does matter for bank value, and may it be explained within the framework of the conventional corporate capital structure theory.

Keywords: survey, banking capital structure, target leverage, static trade-off, pecking order, market timing

JEL codes: C42; G21; G32

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1. Introduction

Banking capital structure is an enduring topic of debate among academic researchers, regulators and practitioners alike (e.g., Basel Committee on Banking Supervision 2019; Greenbaum et al. 2016; Demirgüç-Kunt et al. 2013; Gropp and Heider 2010; Flannery and Rangan 2008; Brewer III et al. 2008; Diamond and Rajan 2000; Osterberg and Thomson 1996; Miller 1995; Flannery 1994; Orgler and Taggart 1983).

At the academic level, important issues remain unanswered, for example, Bhattacharya and Thakor's (1993, 4) question on «how should banks be financed?»; Berger et al. (1995, 394) assertion that banks «... may be able to enhance their market values by taking on an 'optimal' amount of leverage»; Diamond and Rajan's (2000, 2431) interrogation, if bank capital structure do matter, «how should it be set?»; Brewer III's et al. (2008, 178) question on «why do capital ratios of (...) roughly similar banking organizations vary so much?»; Berlin (2011, 1) quest «can we explain banks' capital structures?»; and Greenbaum et al. (2016, 317) ponder if there is an «optimal capital structure (...) that maximizes the total value of the bank?».

Despite the accumulated research, we still have a limited understanding on why banking organizations are so extremely levered. In addition, consensual explanations on the capital structure effects on banks valuation, and on how banks manage their capital structures, still appear elusive.

When banks are exposed to the discipline of mandatory capital adequacy requirements, their capital structure decisions are both voluntary and involuntary. The former, are akin to the non-banking firms' funding mix choices, and the latter made to meet regulatory capital requirements (e.g., Besanko and Kanatas 1996; Cornett and Tehranian 1994; Keeley 1989).

Recent research has documented that, since the early 1990s, banks hold capital ratios in excess of the regulatory minima. This stylized fact suggests that capital regulation may be a second-order determinant of banking capital structure choice (e.g., Harding et al. 2013; Gropp and Heider 2010; Berger et al. 2008; Brewer III et al. 2008; Flannery and Rangan 2008; Dietrich and Vollmer 2004). Albeit the relevancy of banks' involuntary capital structure decisions may arguably be, this paper is focused on banks' voluntary capital structure decision-making.

According to Tufano (2001, 179), clinical and field-based research on corporate finance, «... through its inherently closer examination of purposely restricted samples, would complement and encourage theory and empirical tests» (see also Akerlof 2020; Bhandari et al. 2020; Herbert Simon 1997; Jensen et al. 1989).

However, field-based research in banking appears to have been relatively neglected. To our knowledge, Ashraf et al. (2020), Hensman and Sadler-Smith (2011), and Scroggins et al. (1995), are among the few exceptions that have conducted survey research in banking, not focusing on capital structure, though.¹

In this paper, we reexamine through the lenses of the recent related literature, the voluntary capital structure preferences of a sample of Portuguese bank CEOs, using a unique dataset gathered in a face-to-face interview survey, administered to a population of 57 bank CEOs with tenure during the 1989-1998 period (89.5 percent response rate).

The primary research objective of the paper, is examining the link between the conventional capital structure theory and banking voluntary capital structure choice, aiming at answering the following generic research questions: (i) Are capital structure choices relevant for bank valuation? (ii) What determinants arguably drive banks' capital structure choice? and (iii) What are banks' preferred capital structure policy models?

The paper distinguishes from prior recent research with similar scope and using a similar methodological approach, in a number of ways.² First, and to the best of our knowledge, this survey is the first conducted to banking capital structure. Second, is one of the very few designed and administered in a face-to-face interview format.³ Third, our survey received an 89.5 percent response rate, in sharp contrast with the average response rate of 20.3 percent in mail-administered capital structure surveys (Coutinho dos Santos 2003). Fourth, the series of events that has unfolded during the period of our investigation (1989-1998), provide a good laboratory, almost a quasi-natural experiment, to study capital structure choice at the bank level.⁴ Fifth, being the first to be conducted to the banking industry, it contributes for mitigating the variance that is typically associated with multi-industry surveys. Finally, although

¹ Ashraf et al. (2020), surveyed employees of a major multinational bank, on their values and their alignment with cultural contexts; Hensman and Sadler-Smith (2011), surveyed a FTSE-100 bank on intuitive decision making in banking and finance; Scroggins et al. (1995), surveyed directors / officers of 1,000 U.S. commercial banks, to study their perceptions and reaction to liability exposure.

² Recent non-banking capital structure survey-based papers include, e.g., Lee et al. (2014), de Jong and Verwijmeren (2011), de Jong and Van Dijk (2007), Brounen et al. (2006, 2004), Bancel and Mittoo (2004), Graham and Harvey (2001), and Harhoff and Körting (1998). Non-capital structure survey papers include: Dichev's et al. (2016) survey of chief financial officers on earnings quality and misrepresentation; Gompers' et al. (2016) survey on private equity investors about their practices in firm valuation, capital structure, governance, and value creation; Campello's et al. (2010), survey on the effects of the 2008 financial crisis on corporate financial constraints; Brau and Fawcett's (2006), survey on IPOs; and Brav's et al. (2005), survey on dividend payout and share repurchase policies.

³ Graham et al. (2005) used a combination of field interviews and a survey questionnaire asks CFOs to describe their CEOs' choices of corporate financial reporting and voluntary information disclosure.

⁴ Portugal joining the European Economic Community (EEC) in 1986, triggered major structural adjustments in the Portuguese economy, and in the banking system in particular, including, the reopening of bank ownership to private investment, and the reprivatization of the banks nationalized in 1975, over the 1989-1996 time period.

confidentiality and anonymity were guaranteed to survey participants, I was able to control for important bank characteristics, such as, ownership, position in the life cycle, listing and capitalization condition.

Survey evidence documents that the objectives of maximizing ROE and shareholder's returns, and minimizing the cost of capital, received, on a scale (1) to (6), mean scores of 4.8, 4.3 and 4.0, respectively. These results, in line with recent prior research, are congruent with the proposition that capital structure is relevant for bank valuation. Interviewed CEOs, elicited ownership structure and managerial control (mean score of 4.6), growth opportunities (mean score of 3.9), reputational capital in banking markets (mean score of 3.9), and financial flexibility (mean score of 3.7), among the most relevant capital structure determinants at the bank level. Managerial private information about banks' future prospects (mean score of 3.3), changes in business risk (mean score of 3.2), debt tax shields (mean score of 2.9), non-debt tax shields (mean score of 2.4), and financial distress and bankruptcy risk (mean score of 2.2), received moderate to weak support from CEOs responses. The supervisory and regulatory discipline was indicated as the more influential external determinants (mean score of 4.3) for capital structure decision-making.

Following pre-determined guidelines on bank funding, was the capital structure policy model preference of 60 percent of state-owned bank CEOs. Over 27 percent of those CEOs indicated the capital structure tradeoff model, and 13.3 percent the pecking order of financing.

Almost 53 percent of privately-owned bank CEOs revealed a significant preference for the tradeoff capital structure policy model, 25 percent for the pecking order model, and 19.4 percent for a policy model trading off managerial control rights dilution and capital structure choices. The market-timing theory received moderate to weak preference of surveyed CEOs.

Overall, the paper contributes to the banking capital structure literature, providing field-based evidence consistent with the proposition that the standard corporate capital structure theory is helpful in describing and explaining banking debt-to-equity voluntary choice.

The remaining of the paper is organized as follows: next section discusses the theoretical and the empirical background of the banking capital structure problem. Section three examines methodological and empirical implementation issues: describes survey design, sample selection criteria and testable propositions in the form of survey questions. Following section presents and discusses survey results. Last section summarizes and concludes the paper.

2. Theoretical and Empirical Background, and Testable Propositions

Modigliani and Miller (1958) provided the seminal impulse to the corporate capital structure theory. In the complete and perfect markets ideal economy they depicted, the mix of external financial claims issued by a firm, would be a matter of irrelevancy, because both individuals and firms, could replicate any particular debt-equity combination on their own.

Under this framework, the academic interest on banking capital structure choice should be a matter of indifference. Under the conventional corporate capital structure theory, banks should exhibit random leverage ratios. Albeit its unquestionable analytical elegance, the irrelevance theorem is not useful to explain or predict capital structure behavior of real-world, either banking or non-banking firms. Under imperfect and frictional markets, the market value of a bank is, all else constant, contingent on its capital structure decision-making (e.g., Greenbaum et al. 2016).

The observation of real-world banks' capital structures suggests that capital ratios seem to cluster around some target leverage ratios which, on average, are above the ones of non-banking firms. This evidence is consistent with the view that bank capital structure matters (e.g., Crouhy and Galai 2018; DeAngelo and Stulz 2015; Gropp and Heider 2010; Berger et al. 2008; Brewer III et al. 2008; Flannery and Rangan 2008).

For example, Gropp and Heider (2010) document that banks' book and market median leverage ratios during the 1991-2004 sample period, are 3,86 times higher than leverage ratios of non-banking firms, reported in Frank and Goyal (2009). Flannery and Rangan (2008) document that, despite the significant increase during the 1990s on book- and market-valued capital ratios of the U.S. banking industry, they still are far away from similar leverage ratios of non-banking firms. Brewer III et al. (2008) found average book capital ratios, from 1992 to 2005, of 8.4 percent for the U.S. and 3.0 percent for Germany. Saunders and Wilson (1997) document a secular trend of declining capital ratios on a sample of publicly traded banks headquartered in the UK, Canada and the U.S.

2.1. Literature review

An extensive literature provides abundant evidence on corporate capital structure observed behavior (e.g., Graham et al. 2015; DeAngelo and Roll 2015; Graham and Leary 2011; Frank and Goyal 2009; Kayhan and Titman 2007; Graham and Harvey 2001). Yet, despite all the accumulated research, there is «... no single theory of capital structure (...) capable of explaining all of the time-series and cross-sectional patterns that have been documented» (Huang and Ritter 2009, 238; see also, Frank and Goyal 2009; and Myers 2001). Nonetheless, «... there are several useful conditional theories» (*ib.*, 81).

Among the mainstream debt / equity policy models, the static trade-off capital structure theory points out that an interior optimal capital structure obtains at the point where the marginal costs and benefits of financing equate (e.g., Scott 1977; Kraus and Litzenberger 1973). The dynamic version of the theory predicts that firms rebalance dynamically leverage ratios towards their long-run target / preferred leverage range (e.g., Kayhan and Titman 2007; Leary and Roberts 2005).

The pecking order model, building on asymmetric information arguments, predicts that firms follow a financing hierarchy, aiming at minimizing the deadweight hidden-information costs associated with incremental funding (Myers 1984; Myers and Majluf 1984).

The market-timing theory, based on the negative correlation between leverage and market valuation, predicts that security issuance is contingent on the relationship between leverage and potential inefficient asset pricing (see, for example, Leary and Roberts 2005; Baker and Wurgler 2002).

The agency theory of capital structure is intimately intertwined with the argument of corporate diffuse ownership (Jensen and Meckling 1976). However, research on corporate ownership, has documented patterns of concentrated ownership in most countries in the world (e.g., Holderness 2003; Faccio and Lang 2002; La Porta et al. 2001; Franks and Mayer 1997; Holderness and Sheehan 1988).

Ross (1977) and Leland and Pyle (1977) signaling models, both predict that new securities issuance, convey insiders' private information to market participants. While Ross' model considers an atomistic ownership structure, Leland and Pyle's specifies a concentrated ownership with a blockholder in control. In this framework, debt / equity decisions may become a trade-off between security issuance, and dilution of control rights and increased monitoring associated with capital structure choices (e.g., Boot and Thakor 2011; Ellul 2009; Cronqvist and Nilsson 2005).

Prior research has documented abundant empirical regularities on the determinants of capital structure choice at the firm level. Among those stylized facts, the bankruptcy risk, the debt and non-debt tax shields, internal equity funding, size, and growth opportunities, are among the more ubiquitous (see, for example, DeAngelo and Roll 2015; Graham et al. 2015; Kurshev and Strebulaev 2015; Frank and Goyal 2009).

Because bankruptcy risk is a monotonic increasing function on leverage, rational investors require risk premia akin to their risky exposures, making the cost of capital an increasing function on leverage. Since bankruptcy costs are firm-specific, they are an important

explanatory factor of the differences in capital structure cross-sections (see, for example, Antill and Grenadier 2019; Claessens and Klapper 2005; François and Morellec 2004; Kahl 2002).

Stipulations of most national tax codes exhibit a lack of neutrality in respect to the taxation of cash flow distributions to firms' financial claimants, creating a key linkage between leverage and income taxes at the firm level (e.g., Graham 2008). The fiscal deductibility of borrowing costs and fixed assets depreciation makes them valuable debt- and non-debt tax shields, creating linkages between debt tax-shields and leverage, and asset tangibility and leverage.

However, because fixed assets depreciation is a perfect substitute, as a tax shelter, of the interest expense income tax deductibility, the relationship between leverage and asset tangibility may be ambivalent. On the one side, everything else constant, the higher the tangibility of assets, the higher their depreciation, and therefore the lower the effect on leverage (e.g., Leary and Roberts 2005; DeAngelo and Masulis 1980). On the other side, the higher the asset tangibility, the larger the collateralization potential, and all else equal, the higher the leveraging up potential (e.g., Campello and Giambona 2013; Rampini and Viswanathan 2013; Hall 2012; Graham 2008).

In the presence of specialization on residual risk-bearing and managerial decision-making functions, potential costly conflicts of interest over capital structure may affect claimholders property rights (e.g., Morellec et al. 2018; Mao 2003; Leland 1998). In this framework, leverage has a role as a mechanism to constrain managerial discretion, curtail propensity for opportunistic behavior, and to incentive the alignment of interests in agency relationships. Moreover, differences in risk preferences of inefficiently diversified agents and well-diversified principals, may lead to suboptimal capital structure decision-making (e.g., Boot and Thakor 2011; Kwan 2009b; Wall and Peterson 1998; Hughes and Mester 1994).

Under asymmetrical information, capital structure choices may convey private information to less informed outside investors. Therefore, more informed insiders have the incentive, to reap private information rents at the expense of less informed counterpart (e.g., Lemmon and Zender 2019; Gao and Zhu 2015; Halov and Heider 2011; Bharath et al. 2009; Lemmon et al. 2008).

A stream of literature examines how capital structure can be strategically chosen to influence firm behavior in product markets. For example, firms may use capital structure policies to commit to leveraging up to sustain higher equilibrium prices; expanding production and reducing prices to drive more leveraged rivals into bankruptcy; and to deleveraging in relation to competitors to shield reputational capital, e.g., pledging the quality of their products

/ services, aiming at mitigating potential losses in value in adverse bankruptcy states (see e.g., Campello 2006, 2003; Bolton and Scharfstein 1990; Chung and Smith 1987).

Prior research documents that capital structures of specific industries, tend to be mean reverting to preferred long-run leverage ranges, which are relatively stable over time, while firm leverage ratios vary cross-sectionally (see e.g., Frank and Goyal 2009; Huang and Ritter 2009; D'Mello and Farhat 2008; Lemmon et al. 2008; Kayhan and Titman 2007; Flannery and Rangan 2006; Leary and Roberts 2005; Mehrotra et al. 2005; Graham and Harvey 2001).

Another branch of this literature argues that capital structure choice may be sensitive to prevailing macroeconomic conditions, including business cycle fluctuations and governmental fiscal and sovereign debt policies (e.g., Bottero et al. 2020; Begenau and Salomao 2019; Graham et al. 2014; Erel et al. 2012; Bhamra et al. 2010).

Overall, whether the choice of an optimum range for banks' capital ratio can be explained by the conventional corporate capital structure theory, remains an empirical open question. The ambiguity surrounding this proposition may be related with a hypothetical excessive emphasis on the dissimilarities between banking and non-financial firms, somehow neglecting their similarities in this respect.

2.2. Testable propositions

In an à la Modigliani and Miller (1958) economy, the relative amount of equity capital a bank carries on its balance sheet is a matter of indifference. Because in real-world settings, the irrelevance theorem does not obtain, banks may be able to enhance their valuation by choosing an «'optimal' amount of leverage» (Berger et al. 1995, 394).

However, banks besides being financial intermediaries, are also firms and regulated entities. As firms, their capital structure decision-making tends to resemble those of their non-financial counterparts and may, arguably, be explained by extant corporate capital structure theory (e.g., Wall and Peterson 1998; Orgler and Taggart 1983). As financial intermediaries, banks' capital structure choice may endogenize industry idiosyncratic parameters that are likely to affect their funding policies (e.g., Wall and Peterson 1998). However, as regulated entities, banks are also prone «... to the same type of agency costs and other influences on behavior as other industries» (Berger and di Patti 2006, 1068).

Banking capital structure choice, arguably, may be described and explained under the standard corporate capital structure theory, namely in terms of determinants and policy models (see e.g., Greenbaum et al. 2016; Berlin 2011; Gropp and Heider 2010; Kwan 2009a; Brewer

III et al. 2008; Flannery 1994; Orgler and Taggart 1983).⁵ Under atomistic ownership, banks' residual claims and control rights tend to be separated, inducing inefficient principal-agent conflicts of interest and informational problems. In this setting, leverage choices of value-maximizing managers/owners of the real-world banks and non-financial firms, should aim at maximizing residual claimants' terminal wealth (e.g., Hart and Zingales 2017; Mehran and Thakor 2011; Jensen 2010; Thomson 1994).

The literature has documented a bank capital ratios buildup, in the aftermath of the 1988 Basel Capital Accord. This stylized fact can be broadly interpreted as evidence that banks, similarly to non-banking firms, may adjust leverage to preferred target ratios (e.g., Flannery and Rangan 2008; Berger et al. 2008; Dietrich and Vollmer 2004).

To test the proposition that bank capital structure choice matters in terms of bank value, survey participants were questioned about the importance they assigned, to a number of capital structure, internal and external, determinants, including the principles of shareholder value maximization and cost of capital minimization.

To assess CEOs' preferences on capital structure policy models, they were asked to select from the static trade-off, the pecking order, the market timing hypothesis, the neutral mutations theory, and the ownership and control rights motivated capital structure model (e.g., Harding et al. 2013; Mehran and Thakor 2011; Ellul 2009; Leland and Pyle 1977; Miller 1977)

To explore the importance assigned by surveyed CEOs to a number of determinants, both internal and external, of capital structure choice, they were questioned about its relationship, among others, with debt- and non-debt related tax shields, agency conflicts of interest, information signaling of capital structure choices and banks' strategic behavior on banking markets (e.g., Hoque and Kashefi-Pour 2018; Gropp and Heider 2010).

The lack of fiscal neutrality with respect to cash flow distributions to claimholders, creates a bias towards debt funding, making it to dominate over equity capital financing. As documented in Schepens (2016) this may lead to less well capitalized financial institutions. The tax-deductibility of other sources of tax economies than the costs of debt funding, such as fixed

⁵ For example, Greenbaum et al. (2016) argue that «there is no compelling distinction between F.I.s and others on the right-hand side of the balance sheet, except that F.I.s tend to be more leveraged». Gropp and Heider (2010) posit that «the similarities between banks' and nonfinancial firms' capital structure may be greater than previously thought». Kwan (2009a) suggests that «capital structure theories can help explain the choices banks made on raising capital». Orgler and Taggart (1983) asserts that the conventional corporate capital structure theory could provide «a useful framework for analyzing bank capital structure».

assets depreciation and provisions for loan losses, may have a role as perfect substitutes of debt tax shields (e.g., Schepens 2016; Osterberg and Thompson 1996; Scholes et al. 1990).⁶

Ross' (1977) predicts that managers of diffusely held firms, may signal their private information about firm's prospects to less informed outside investors, through security issuance activity (see also Wall and Peterson 1996). Otherwise, Leland and Pyle (1977) predict that whenever outsiders' verification of the true characteristics of the firm is too costly or infeasible, blockholders in control may signal their privileged information to less informed outside investors, maintaining or increasing their levels of ownership.

Lower capital ratios may be perceived by banking customers, as detrimental for the financial condition of banks' valuation (e.g., Harker and Zenios 2000). Changes in interest rate markets may also impact bank's capital ratios (e.g., Hannan and Hanweck 1988; Marcus 1983). Additionally, banks with valuable reputational capital may have incentives to lower leverage to avoid potential losses in charter and franchise values (e.g., Demirgüç-Kunt et al. 2013; Peura and Keppo 2006; Demsetz et al. 1996).

3. Research Design and Implementation

This survey research was designed as a face-to-face interview format on voluntary capital structure decisions, to be conducted to a sample of the population CEOs of the banks incorporated as autonomous entities under the Portuguese law, tenured during the 1989-1998 sample period.⁷

The target population was restricted to the CEOs of banks whose controlling shareholders were resident, because we were skeptical about the possibility of conducting personal interviews to those CEOs of non-resident international banks.

CEOs whose tenure was less than an arbitrarily set limit of two years, were excluded from the sample, because we assumed the horizon of capital structure planning going beyond that time limit.⁸ Because of the dissimilarities between the objective functions of mutual banks and banks organized as open-investment corporations, and the specificities of their banking and

⁶ Loan loss provisions may signal asset quality, potentially affecting bank leverage (e.g., Osterberg and Thompson 1996). Because of the relatively small book value of bank's fixed assets, the income tax economies associated with their depreciation and amortization, is consequently small. Therefore, in banking they do not play the substituting role predicted in, e.g., DeAngelo and Masulis (1980).

⁷ The survey target population was identified upon a documental analysis conducted to banks' annual reports, collected directly from the banks by the author.

⁸ Here the rationale is related to the fact that regulators require incorporating banks to hold a minimum amount of equity capital. We assumed that such amount was likely to be adequate for the first two years, and therefore no subsequent capital structure decisions would be taken during that period of time.

governance models, the CEOs of the two mutual banks present in the Portuguese banking system were not included in the target population.

After applying the above criteria, we end up with a target population of fifty-seven CEOs/bank. Because six CEOs were unavailable or unwilling to participate in the survey, our sample includes fifty-one CEO/bank, yielding an 89.5 percent response rate.

The survey was designed as a face-to-face interview supported by a structured questionnaire including one open-end question and fifty-five closed questions, aiming at minimizing both response and non-response biases, and the potential for survey participants interpreting survey questions differently.⁹ Where appropriate, survey questions were designed as a six-points Likert scale to force respondents to discriminate, either positively or negatively, their answers and consequently minimizing the tendency for mean answering behavior, typically associated with odd Likert scales.¹⁰

To avoid response-inducing due to the arbitrary ordering of response categories, we adopted the procedure to sort response items by alphabetic order in the Portuguese version of questionnaire, which was used in the interviews.

4. Results

Descriptive statistics

The disclosure of demographic statistics of our survey is necessarily constrained by the guarantees of anonymity and confidentiality given to survey participants. In order to provide some descriptive characteristics of the surveyed CEOs without compromising those guarantees, we report the following summary descriptive statistics: composition of the Portuguese banking system 1989-1998 (Table 1); sample demographics (Table 2); distribution of CEOs' tenure (Table 3); summary statistics (Table 4); and bank total assets, bank and industry capital ratios (Table 5).¹¹

[insert Tables 1, 2, 3, 4, and 5 about here]

According to Table 1, there were 27 banks affiliated with APB in 1989, and 46 in 1998.¹²

⁹ Interviews were conducted during the second half of 1999, using a Portuguese version of the survey instrument, results were tabulated and reported using its English version, which was professionally translated before the beginning of the fieldwork. A preliminary version of the survey instrument was pretested in September and November 1998, with bank executives holding senior positions, but none at bank CEO level. For further details on research design and empirical implementation, see Coutinho dos Santos (2003).

¹⁰ Our survey design and implementation followed the fieldwork procedures suggested on Dillman's (1978) 'Total Design Method'.

¹¹ Tables 1 to 5 use data drawn from banks annual reports, and financial statements published in "Boletim Informativo" by the Portuguese Banking Association, "Associação Portuguesa de Bancos" (APB).

¹² The Portuguese Central Bank (BdP) discloses data referring to banking institutions registered and authorized to operate in the Portuguese territory. BdP's listing include banks, branches of credit institutions with head offices in

After applying the criteria previously described, we identified a target population of fifty-seven CEOs. Fifty-one of them, affiliated with thirty-three banks, representing 80.5% of the average number of banks affiliated with APB during the 1989-1998 period, and exhibiting an average tenure of 4.43 years, participated in the survey.¹³

To deepen the analysis, we split survey data by different criteria: (i) bank ownership condition: (ii) state-owned (15 CEOs / bank) and privately-owned banks (36 CEOs / bank); (iii) capitalization condition: over-capitalized (23 CEOs / bank) and under-capitalized banks (28 CEOs / bank); (iv) performance condition: *de novo* (24 CEOs / bank) and established banks (27 CEOs / bank); and (v) listing condition: listed (19 CEOs / bank) and unlisted banks (32 CEOs / bank).

The average total assets of the banks which CEOs participated in the survey is 3,587 (10⁶ EUR), with a coefficient of variation of 0.8 (10⁶ EUR).

The average capital ratio of the banks which CEOs participated in the survey was 0.085, with a coefficient of variation of 1.25.

Survey Results

Survey participants were firstly queried about their preferred metrics for gauging bank financial leverage.

[insert Table 6 about here]

Ignoring valuation considerations, results document that 60.6 percent of CEOs revealed a preference for the ‘traditional’ capital ratio measure, while 22.5 percent for the debt-to-equity ratio. ‘Other’ specified leverage metrics accounted for 16.9 percent of responses.¹⁴

Results are consistent with prior academic and practitioners’ work, which identified the capital ratio as a ‘popular’ measure of bank leverage. In terms of valuation preferences — *book value* versus *market value* — book value-based ratios accounted for 56.3 percent of responses, and market value-based ratios for 26.8 percent.

The distribution of CEO responses on preferred measures of leverage by ownership — state-owned or privately-owned — indicate that the capital ratio was selected by 68.4 percent of the state-owned bank CEOs and by 76.9 percent of privately-owned bank CEOs. In terms of

the E.U., and credit institutions with head offices in third countries. BdP reported the presence of 26 representation offices, 36 subsidiaries of U.E. financial institutions and 3 subsidiaries of third country financial institutions.

¹³ Data on the CEO population and tenures was gathered through documental analysis, conducted by the author to banks’ annual reports.

¹⁴ Among the choices made under this last category, the solvency ratio, measured either under the rules of the 1988 Basle Accord and the Portuguese Central bank, was the most popular.

valuation, 65.4 percent of the selections favored book value ratios and 34.6 percent favored market value ratios, respectively.

[insert Table 6.1 about here]

Because multiple selections were allowed in answering this question, more weight is given to responses with more than one selection. Table 6.2 provides the distribution of CEOs preferred metrics of bank leverage.

[insert Table 6.2 about here]

A Fischer (exact) test of independence indicates that, at the 5 percent significance level (p -value: 0.0469), CEOs of listed banks might have a preference for market value-based leverage ratios.¹⁵

To test the proposition that bank capital structure matter for bank valuation, CEOs were questioned about the importance they assigned, on a scale from 1 (least important) to 6 (most important), to several bank management objectives when deciding on capital structure, including the maximization of shareholder value, and the minimization of the cost of capital.

[insert Table 7A about here]

The mean score assigned to the maximization of shareholder value (4.3) when choosing the debt / equity mix, is congruent with the conjecture that capital structure is relevant for bank value. The objective of maximizing banks' return on equity, received an mean score of 4.8, which is also consistent with the objective of maximizing shareholders' wealth. To test the hypothesis concerning the consonance of these two, we performed a signed rank test for the two expected values. The results show that, at the 5 percent level, the differences in the two-sample means are not statistically significant. Therefore, the null hypothesis of equal population means cannot be rejected.

Financial flexibility, long-term survival and financial independence, ranked high in CEOs' objective function (mean score of 4.3). These findings are in line with results reported the more recent non-banking survey-based research (see, e.g., Brounen et al. 2006 and 2004; Bancel and Mittou 2004; Graham and Harvey 2001).

According to the standard static tradeoff capital structure model, the minimization the cost of capital obtains at the optimal capital structure. The mean score on this item (4.0) is interpreted as evidence consistent with the proposition that CEOs consider reaching an 'optimal' capital structure, as relevant for bank value.

¹⁵ One of the assumptions of the chi-square test requires, under the hypothesis of independence, a minimum threshold for the expected count per cell. Failure to comply with the assumption implies that the chi-square distribution may provide inaccurate estimates (see, e.g., Sheskin 2003).

CEOs of state-owned banks are likely to have a different objective function from their privately-owned bank counterparts (e.g., Megginson 2005; Sapienza 2004; La Porta 2002; Dewenter and Malatesta 2001). To test for this proposition, we split the sample by CEOs of state-owned banks and CEOs of privately-owned banks.

[insert table 7B]

CEOs of state-owned and privately-owned banks, on the shareholders' wealth maximization objective, scored, respectively, 3.5 and 4.7. A one-sided Wilcoxon-Mann-Witney rank sum test of two independent samples, indicate that at the 5 percent level (p -value: 0.0468), CEOs of privately-owned banks are more oriented towards maximizing owners' wealth than the CEOs of state-owned banks are.

CEOs of state-owned and privately-owned banks' assigned mean scores of 2.5 and 3.7, respectively, on minimizing risk of financial distress and bankruptcy. A one-sided Wilcoxon-Mann-Witney rank sum test (of two independent samples) indicate, at the 5 percent level (p -value: 0.0234), that CEOs of state-owned banks are significantly less concerned with financial distress and bankruptcy than their privately-owned counterparts. This finding may be interpreted because of state-owned banks CEOs' proximity to government, they may take comfort from the presence of the governmental safety-net in financial distress states. The too big to fail doctrine, and the weakness of the disciplinary roles of capital markets and the market for corporate control, may enhance the potential for moral hazard behavior.

The mean scores of state-owned and privately-owned bank CEOs with respect to cost of capital minimization, 3.1 and 4.4 respectively, indicate that CEOs of state-owned banks perceive the issue as relatively unimportant, while CEOs of privately-owned banks seems much more preoccupied with it. A one-sided Wilcoxon-Mann-Witney rank sum test of two independent samples, provide significant evidence that, at the 5 percent level (p -value: 0.0257), CEOs of state-owned banks are less concerned with the minimization of capital cost than their privately-owned counterparts.

De novo banks are likely to experience different levels and patterns of performance, when compared to established banks, at least in the early years of their life cycles (e.g., Canhoto and Dermine 2003; DeYoung and Hasan 1998).¹⁶ As the argument goes, CEOs' objective functions of these two types of banks differ in some material dimensions. To study this conjecture, we split the sample by *de novo* and established banks.

¹⁶ We categorized as *de novo*, a bank chartered after 1984, and as established, a bank chartered before 1984, the year of the passing of the Constitutional amendment reallowing private investment in the Portuguese banking industry.

[insert table 7C about here]

The mean scores of *de novo* and established bank CEOs indicate that profitability is a common concern. The two cohorts of CEOs rate at similar levels the objective of maximizing return on equity (ROE) and earnings per share (EPS) growth rates, and at different levels the importance of credit ratings, and the importance assigned to bank reputation in banking markets.

Capital structure literature suggests that industry average leverage ratio can be a surrogate for the target / preferred capital structure (e.g., D'Mello and Farhat 2008). We hypothesize that the objectives of banks capital structure decision-making with different leverage condition, may also be distinct. To test this proposition, we split the sample by 'over-capitalized' versus 'under-capitalized' banks. We classified a bank as 'over capitalized', when its average capital ratio during CEO's tenure, was higher than the banking industry's average capital ratio during the same time period, and as 'under-capitalized' otherwise.¹⁷

[insert Table 7D about here]

Survey scores indicate that the significant differences in managerial objectives of 'over' and 'under-capitalized' bank CEOs relate, among other factors, to debt ratings, maximization of return on investment, and cash flow per share. In all these categories mean scores of CEOs of 'under-capitalized' banks are higher than those of their 'over capitalized' counterparts.

Results are interpreted as consistent with the hypothesis that CEOs of under-capitalized banks may be more concerned with the disciplinary role of leverage. Consequently, we expected that group of CEOs as being influenced by variables that relate to capital structure valuation, such as credit ratings, and deviation from industry target leverage ratio.

To gather CEOs perceived relevance on several internal determinants of capital structure choice, we ask for their ratings on the influence of, namely, debt- and non-debt related tax shields, conflicts of interest and informational incentives for opportunistic behavior, on strategic funding mix decision-making.

[insert Table 8A about here]

Survey participants elicited ownership structure and managerial control, and therefore its informational and governance implications, as the most relevant capital structure determinant at the bank level (mean score of 4.6, in a scale from 1 to 6, see Table 8A). CEOs

¹⁷ Banks and industry average capital ratios were computed from a dataset developed by the author based on banks' annual financial statements published by the Portuguese banking association (APB- Associação Portuguesa de Bancos). Both banks and banking sector average capital ratios were weighted by the deflated value of net total assets.

deemed growth opportunities (mean score of 4.0), reputation in banking markets (mean score of 3.8), financial flexibility (mean score of 3.7), managerial private information signaling (mean score of 3.4), bank size (mean score of 3.3), share listing (mean score of 3.3), business risk (mean score of 3.2), dividend policy (mean score of 3.1), and debt tax-shields (mean score of 3.0), as other important internal determinants of capital structure choice.

To deepen our examination of the signaling effects of capital structure choices, we asked CEOs to rate, in a scale from [1] ‘Strongly disagree’ to [6] ‘Strongly agree’, their degree of agreement with the proposition that the announcement of a common stock issue, may signal insiders’ unfavorable expectations about the issuer’s performance prospects (Ross, 1977).

[insert Table 8B about here]

Forty-eight survey participants (94.1 percent), provided valid answers, disagreeing and strongly disagreeing with the statement (1.8 mean score). This finding is inconsistent with Ross (1977) and Myers and Majluf’s (1984) predictions, that the announcement of a new stock issue by a diffusely held firm, is likely to command negative abnormal returns (see, e.g., Korajczyk, et al. 1990).

To control for the prior question, we asked CEOs to rate the magnitude, on a scale from [1] “strong decline” to [6] “strong rise”, of the expected bank’s stock price reaction, following the announcement of a bank’s (voluntary) stock issue.

[insert Table 8C about here]

The mean score of 3.5, suggests that CEOs perceive the magnitude of abnormal stock returns on the announcement of a bank (voluntary) equity issue, as relatively negligible.¹⁸ According to surveyed CEOs, stock price should not decline on the announcement of a new (voluntary) equity offering. Contrarily to Ross’s signaling model, Leland and Pyle’s model assumes a concentrated ownership structure with a block shareholder in control, predicting, in line with Besanko and Kanatas (1996) and Jensen and Meckling (1976), a positive relationship between ownership and value.

To assess the association between the responses to these two questions, we estimated the Spearman’s rank-order correlation coefficient (corrected for ties), between the scores assigned the two questions. We found a negative correlation of 0.435, which, in a one-tailed test, is statistically different from zero at the 1 percent significance level. Spearman’s

¹⁸ As documented in Coutinho dos Santos and Pacheco (2006), rights offerings were the prevailing form of raising new equity capital by Portuguese banks during the period 1989-1998. See also Besanko and Kanatas (1996), Tsangarakis (1996), for evidence on positive abnormal stock returns on the announcement of rights offerings, and its inverse relationship with the share of managerial ownership holdings.

correlation sign is consistent with the view that survey participants, on average, disagree that the announcement by a concentrated ownership issuer of a new (voluntary) stock offering, conveys bad news to investors.

CEOs considered as less relevant determinants (mean scores lower than 3), changes in profitability (mean score, 2.8), earnings dilution (mean score, 2.6), non-debt tax-shields (mean score, 2.4), stock price performance (mean score, 2.2), and financial distress and bankruptcy risk (mean score, 2.2).

There are significant differences on the perceptions of state-owned and privately-owned banks with respect to the influence of internal factors on bank capital structure decisions.

[insert Table 8D about here]

CEOs of privately-owned banks appear more concerned with the historical performance of bank share price, floating costs, the inclusion of covenants in debt financing contracts, mispricing in past and future security issues, and readjustment in asset portfolios.

Nonetheless, while the differences between state and privately-owned banks were statistically different, all of these internal factors were deemed as relatively unimportant for capital structure decisions by both cohorts of CEOs.

The examination of *de novo* and established banks' perceptions on the effect of internal determinants on capital structure choice, documents that, CEOs of established banks are more concerned with the potential influence of bank reputation on capital structure decision-making. The difference is significant at the 5 percent level for a two-sided Wilcoxon-Mann-Whitney test (p -value, 0.0500).

[insert Table 8E about here]

This result suggests that managers of higher franchise value banks may have incentives to adopt low risk-taking policies to prevent putting at risk bank franchise / charter value. CEOs of those banks assigned lower importance to asset risk than their established bank counterparts (p -value, 0.0423). This managerial risk averse behavior may be less likely among managers of *de novo* banks, because they appear to pursue more aggressive growth strategies, at least, in the early stages of *de novo* banks' life cycles.

As documented in Table 8D, CEOs of over-capitalized' and under-capitalized banks rate differently the influence of internal determinants on banks' capital structure.

[insert Table 8F about here]

Survey evidence documents statistically significant differences between the mean scores of the two groups of CEOs, including in relation to financial flexibility, covenants in debt

contracts, changes in profitability, reputational capital in banking markets, free cash flow, bank size, asset risk, asset portfolio restructuring, and security mispricing.

Overall, and despite the variation in the relative importance assigned by the two cohorts of CEOs to capital structure internal determinants, it seems well-founded concluding that our survey-based evidence is consistent with the proposition that capital structure matter for bank value.

It is conventional wisdom that external institutional and environmental factors, may affect banking capital structure choice. To elicit perceptions on the relevance assigned to several external determinants identified in extant research, CEOs were asked to appraise, on a scale from 1 (least important) to 6 (most important), the importance of several of those factors.

[insert Table 9A about here]

Response scores document that the changes in the banking regulatory and supervisory jurisdiction are perceived as the most relevant factor in capital structure decision-making (mean score: 4.2). Capital market performance is seen by CEOs as less important (mean score, 3.3) for such decisions what, to a certain extent, may be interpreted as contradictory with the market-timing hypothesis.

Takeover threats were not perceived as a meaningful corporate control disciplinary device (average score, 1.8). This result suggests that regulatory intervention in banking, may be a substitute, yet imperfect, for the discipline of both the capital market and the credit and deposit markets. Additionally, regulatory restrictions on takeover activity in banking may account for CEOs lack of concern about takeover threats (e.g., Prowse 1997). This conclusion is reinforced when the sample is split between CEOs of state-owned banks and privately-owned banks.

Changes in macroeconomic condition, such as the ratio of public deficit to gross domestic product, private consumption behavior, performance of both the domestic and global economies, and in institutional environmental factors, such as changes in tax laws, were among the external determinants, deemed as largely irrelevant to bank' capital structure decisions.

[insert Table 9B about here]

As expected, CEOs of privately-owned banks show more concern with the influence of capital market performance when deciding about bank capital structure, than the CEOs of state-owned banks. The difference is statistically significant at the 1 percent level for a two-sided test. Albeit both cohorts of CEOs appear to be relatively unpreoccupied with potential threats of hostile takeover bids, CEOs of state-owned banks exhibit a statistically significant lower degree of concern. This finding can be interpreted as a consequence of government

discretionary and distortionary potential intervention in the market for banking corporate control (e.g., La Porta et al. 2002).

The differences in how external factors affect CEOs of *de novo* and established banks in terms of capital structure decisions are included in Table 9C.

[insert Table 9C about here]

The perceived effects of interest rate changes on debt/equity decision-making, was more highly rated by the CEO of *de novo* banks. CEOs of established banks rated it, on average, as significantly unimportant, mean score 2.0 (*p*-value, 0.0368).

Ownership in banking may have an idiosyncratic nature, among other factors, because of the dual role of government as residual claimant, and economic, monetary and policymaker.¹⁹ Furthermore, politically motivated government intervention in management and governance conflicts, may explain private dominance of state ownership in terms of financial behavior and performance (e.g., La Porta et al. 2002; Shirley and Walsh 2000).

The literature documents empirical regularities consistent with the view that ownership matters in terms of capital structure (e.g., Sun et al. 2016; Margaritis and Psillaki 2010). For example, survey findings document that CEOs of privately-owned banks revealed to be significantly more concerned with shareholder's value and capital market performance, than their state-owned counterparts. This evidence suggests that CEOs of state-owned and privately-owned banks may have, in line with previous research, different objective functions (e.g., Megginson 2005; Sapienza 2004; La Porta 2002; Dewenter and Malatesta 2001). Further, the literature reports empirical regularities documenting changes in financial leverage policies, after transfers of state ownership over corporate assets to private investors (e.g., Megginson 2005; Dewenter and Malatesta 2001; Shirley and Walsh 2000; D'Souza and Megginson 1999).

During the 1989-1998 survey period, CEOs of both state- and privately-owned banks coexisted in the Portuguese banking system (see Table 2). Moreover, the major banking reprivatization program involving 10 banks, almost one third of the thirty-three banks involved in the survey, was conducted between 1989 and 1996.²⁰

We conjecture that preferences towards the different models of capital structure policy, are likely to reflect differences in banking ownership structure. Therefore, to probe the preferences of state-owned and privately-owned banks about capital structure policy models,

¹⁹ Under government ownership of banks, the monitoring and disciplinary roles of well-functioning competitive financial markets, and market for corporate control, may be hampered in performing those functions.

²⁰ See Coutinho dos Santos (2003), for the schedule of the Portuguese banks' reprivatization program.

CEOs were asked to identify the prevailing intention in the bank's capital structure decision-making, during their time in office.

[insert Table 10 about here]

Response items included, to follow a pre-determined set of funding, consistent with capital structure choice motivated by blockholders incentives to tradeoff leverage benefits for control rights dilution associated with debt / equity issuance; to achieve a target leverage ratio and to adopt a capital structure by balancing the economic costs and benefits associated with financing, both proxying for the tradeoff capital structure; to maintain the historical financing pattern followed by the bank, testing for the neutral mutations hypothesis; and to follow a hierarchy in the usage and exhaustion of the available funding sources, the pecking order theory of capital structure.

A majority of 60 percent of state-owned bank CEOs, indicated that capital structure was decided upon following pre-determined guidelines on bank funding. The evidence supports the view that in the presence of managerial concentrated ownership, capital structure choices may be determined by a tradeoff between the dilution of control rights and the benefits of debt / equity issuance. Over 27 percent of the state-owned bank CEOs indicated a preference for the capital structure standard static tradeoff model, and 13.3 percent for the pecking order of financing.

Almost 53 percent of privately-owned bank CEOs revealed a significant preference for the tradeoff capital structure policy model, 25 percent for the pecking order model, and 19.4 percent for a policy model trading off control rights and the benefits of capital structure choice.

The response item "maintaining the historical financing pattern", surrogating for the neutral mutations' hypothesis, failed to receive any preference from state-owned bank CEOs, and gathered the support of 2.8% of privately-owned bank CEOs.²¹

To probe the support for the market timing capital structure hypothesis, CEOs were questioned about the relevance of capital markets condition and stock price performance on the timing of security new issuances. A majority of 54.9 percent of the CEOs, considered that capital market *momentum* was relevant for timing new security offerings, what is interpreted as consistent with the market timing theory.²² Further, CEOs were also asked to reveal the

²¹ Overall surveyed CEOs assigned a 31.4 percent to the capital structure allocation of control rights model, 45.1 percent to tradeoff theory, 2.0 percent to the neutral mutations' hypothesis, and 21.6 percent to the pecking order theory.

²² The chi-square statistic suggests the presence of a significant relationship between capital market conditions and the timing of new equity and debt offerings (p-value: 0.00024). Because the requirement for a chi-square approximation, under the hypothesis of independence, was not strictly met, this result should be interpreted cautiously.

relevance they assigned to the influence of stock price performance on the timing of new debt or equity offerings. Approximately 55 percent of the CEOs considered as “somewhat relevant” or higher, the effect of stock price performance on the timing of security new issuance. A Z-test of a proportion indicates that the result is statistically significant at the 5 percent level (p-value: 0.0104). Thus, the null hypothesis that a majority of 50 percent of the CEOs does not time new security offerings to stock price performance, could be rejected.²³

Survey results on capital structure policy models, suggest that state-owned bank CEOs may be more concerned with government ownership discipline, whereas privately-owned banks CEOs, are more likely influenced by financial markets discipline, and therefore better aligned with the interests of their residual claimants. Overall, the evidence suggests that, even in the presence of government ownership of banks, as is the case of the Portuguese banking system, ownership does matter for capital structure choice.

5. Summary and Concluding Remarks

This paper provides field evidence gathered on a face-to-face interview survey of the capital structure choices of Portuguese bank CEOs’ during the 1989-1998 period.

Survey findings document that the maximization of ROE and shareholder’s returns, and the minimization the cost of capital, are significant drivers underlying banking capital structure choices. Consequently, those choices are not random, as implied by Modigliani and Miller (1958) irrelevance theorem, but are consistent with the proposition that capital structure decisions matter for bank value.

Banking ownership structure prevailing among Portuguese banks is distant from the prototypical Berle and Means (1932) diffusely and publicly held model, typically associated with conventional capital structure theory. Therefore, when drawing conclusions from our survey results, it should be taken into consideration that surveyed capital structure decision-making, is likely to be affected by the incentive structure and governance control rights embedded in the different funding options.

Survey participants elicited ownership structure and managerial control, growth opportunities, reputation in banking markets, financial flexibility, signaling private information about banks’ future prospects, bank size, share listing, business risk, dividend policy, and debt tax-shields, as the most relevant capital structure determinants at the bank level. Changes in profitability, earnings dilution, non-debt tax-shields, stock price performance, and financial

²³ Further, as documented in Table 9B, privately owned and listed bank CEOs also elicited capital market performance as a significant determinant of capital structure decision-making.

distress and bankruptcy risk, received moderate to weak support from CEOs responses. Overall, survey findings suggest that banking capital structure choice seems rationalizable, under the determinants of capital structure choices akin to non-banking corporations.

Supervisory and regulatory discipline was indicated as an influential external determinant for capital structure decision-making. The market for corporate control was not perceived as a meaningful disciplinary device, as takeover threats were not indicated as a concern, perhaps because of the potential intervention of the regulatory jurisdiction. Banking markets were not found to be effective mechanisms to discipline insiders' excessive risk-taking. The strong support received by effect of the *too big to fail* doctrine on capital structure, suggests that managerial risk aversion induced by impending bankruptcy might be small.

Survey results are consistent with the proposition that banks capital structure is relevant in terms of valuation. They provide varying support for similar internal and external determinants that, arguably, influence the choice of corporate debt / equity mixes of funding. And the findings on capital structure policy models were able to be explained, by the predictions of the relevant corporate capital structure theory.

Concluding, our survey findings allow establishing an empirical link with the capital structure theory of the non-banking corporate world. Thus, the accumulated theoretical and empirically motivated literature, seem helpful in explaining banks capital structure choices, once the idiosyncrasies of their role as regulated financial intermediaries are taken into due consideration.

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Table 1 – Composition of the Portuguese Banking System

The table includes the banks affiliated the Portuguese Banking Association, “Associação Portuguesa de Bancos” (APB), which financial statements are published on APB’s “Boletim Informativo”.

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Number of banks	27	36	37	36	45	46	46	46	45	46

Source: Coutinho dos Santos (2003)

Table 2 - Sample Demographics (1989-1998)

	Number
CEO population	57
CEOs	51
Banks	33
Bank/years population	246
Bank/years sample	227
CEOs of state-owned banks	15
CEOs of privately-owned banks	36
CEOs of listed banks	19
CEOs of non-listed banks	32
CEOs of <i>de novo</i> banks	24
CEOs of established banks	27
CEOs of underleveraged banks	23
CEOs of overleveraged banks	28

Source: Coutinho dos Santos (2003)

Table 3 - Distribution of CEOs’ Tenure (1989-1998)

Number of years	Frequency	Percent	Cumulative Percent
2	8	15.7	15.7
3	13	25.5	41.2
4	7	13.7	54.9
5	8	15.7	70.6
6	9	17.6	88.2
7	3	5.9	94.1
8	1	2.0	96.1
9	0	0.0	96.1
10	2	3.9	100.0

Source: Coutinho dos Santos (2003)

Table 4 - Summary Statistics (1989-1998)

The capital ratio was estimated as book value of equity to the book value of total net assets.

Variable	Mean	Standard Deviation	Minimum	Maximum
Total assets (10 ⁶ euros)	3,587	4,482	61	23,212
Capital ratio (book value)	0.085	0.068	0.015	0.315
CEOs tenure (years)	4.431	1.972	2	10

Source: Coutinho dos Santos (2003)

Table 5 - Bank Total Assets, Bank and Industry Capital Ratios (1989-1998)

Both the bank and the industry capital ratios were estimated for the tenure of each CEO.

To guarantee anonymity and confidentiality to individual responses of survey participants, we assigned a numerical code to each CEOs. In this table, the ordering of CEOs was randomized. PTE is the acronym for the pre-euro Portuguese unit of account, “escudo”.

CEO code ^a	Average Total Assets [unit: 10 ⁶ PTE]	Average Bank Capital Ratio	Average Industry Capital Ratio
1	1,514,367	0.0464	0.0693
2	3,084,525	0.0704	0.0693
3	829,572	0.0429	0.0723
4	298,172	0.0350	0.0639
5	524,994	0.0527	0.0585
6	12,141	0.3153	0.0482
7	290,817	0.0738	0.0465
8	80,648	0.0681	0.0440
9	783,863	0.0476	0.0594
10	439,028	0.0868	0.0444
11	619,520	0.0587	0.0512
12	1,271,808	0.0610	0.0427
13	562,918	0.0409	0.0427
14	1,923,500	0.0575	0.0594
15	2,097,225	0.0384	0.0446
16	157,264	0.0702	0.0482
17	250,571	0.0288	0.0482
18	17,281	0.2750	0.0465
19	500,253	0.0336	0.0723
20	546,718	0.0623	0.0800
21	307,227	0.0635	0.0440
22	1,021,643	0.0660	0.0554
23	557,614	0.0416	0.0501
24	90,939	0.1166	0.0482
25	708,498	0.0359	0.0554
26	569,637	0.0152	0.0465
27	16,529	0.2875	0.0444
28	1,135,765	0.0580	0.0723
29	473,584	0.0416	0.0524
30	29,661	0.0945	0.0444
31	865,538	0.0821	0.0800
32	495,396	0.0552	0.0774
33	165,792	0.1299	0.0723
34	1,840,135	0.0478	0.0506
35	52,626	0.1573	0.0446
36	4,653,560	0.0573	0.0446
37	362,583	0.1402	0.0800
38	853,900	0.0371	0.0440
39	65,257	0.1146	0.0465
40	52,848	0.0567	0.0440
41	137,648	0.0772	0.0549
42	672,571	0.0469	0.0446
43	295,263	0.0405	0.0482
44	82,051	0.2137	0.0639
45	2,553,354	0.0272	0.0465
46	1,933,902	0.0409	0.0465
47	591,900	0.0440	0.0440
48	126,471	0.1494	0.0444
49	17,077	0.0935	0.0440
50	103,123	0.1147	0.0761
51	39,184	0.2105	0.0823

^a To guarantee anonymity and confidentiality to individual responses of survey participants, we assigned a numerical code to each CEO, and their ordering was randomized. Source: Coutinho dos Santos (2003).

Table 6 - Responses to the question: Different measures are commonly used to gauge the intensity of capital use in a bank financing structure. During your time as CEO which of the following did you choose?

Multiple selection was allowed in answering this question. A total of 72 selections were registered. Percentages are based upon those 72 responses. Percentages may not add up to 100 percent due to rounding

	[unit: percent]
Book value of debt / Book value of equity	11.3
Book value of debt / Market value of equity	5.6
Book value of equity / Book value of net total assets	45.1
Market value of debt / Market value of equity	5.6
Market value of equity / Book value of net total assets	9.9
Market value of equity / Market value of net total assets	5.6
Other	16.9

Table 6.1 - Responses to Preferred Measures of Financial Leverage

CEOs of:	Capital Ratio	Debt-to-Equity	Book Value	Market Value
State-Owned Banks				
Number of selections	13	6	18	1
Percentage	68.4	31.6	94.7	5.3
Privately-owned Banks				
Number of selections	40	12	34	18
Percentage	76.9	23.1	65.4	34.6

Table 6.2 - Distribution of CEOs Preferred Measures of Financial Leverage

CEOs	Capital Ratio	Debt-to-Equity	Book Value	Market Value
Number	45	6	40	11
Percentage	88.2	11.8	78.4	21.6

Table 7A - Responses to the question:

During your time as CEO what importance did you assign to the following management objectives?

Mean scores are based on a scale of 1 (least important) to 6 (most important).

	Mean Scores
Achieve and maintain high debt ratings	3.6
Achieve a capital structure similar to that of other banks	2.5
Enhance and sustain financial flexibility	4.3
Maximize the market price of bonds and stock	2.3
Maximize the market share (in terms of net total assets)	2.4
Maximize the Price Earnings Ratio	2.1
Maximize the Return on Investment	3.6
Maximize the Return on Equity	4.8
Maximize the growth of earnings per share	3.5
Maximize shareholders' returns	4.3
Maximize stock book value	2.8
Maximize the book value of the bank's net total assets	2.2
Maximize cash flow per share	2.8
Minimize the risk of financial distress and bankruptcy	3.3
Minimize the bank's cost of capital	4.0

Table 7B - Responses of ‘State-Owned’ and ‘Privately-Owned’ Bank CEOs to the question: “During your time as CEO what importance did you assign to the following management objectives?”

Mean scores are based on a scale of 1 (least important) to 6 (most important).

A bank was considered as state-owned if the State holds a controlling stake, regardless of its size.

†, ††, denote a significant difference at the 5 and the 1 percent level for one-sided tests, respectively.

*, **, denote a significant difference at the 5 and the 1 percent level for two-sided tests, respectively.

	State-Owned Banks	Privately-Owned Banks
Mean Scores		
Achieve and maintain high debt ratings	3.6	3.6
Achieve a capital structure similar to that of other banks	2.2	2.6
Enhance and sustain financial flexibility	4.4	4.2
Maximize the market price of bonds and stock	1.3	2.8**
Maximize the market share (in terms of net total assets)	1.9	2.7
Maximize the Price Earnings Ratio	1.5	2.4*
Maximize the Return on Investment	3.9	3.4
Maximize the Return on Equity	4.5	4.9
Maximize the growth of earnings per share	2.7	3.8
Maximize shareholders’ returns	3.5	4.7†
Maximize stock book value	2.7	2.8
Maximize the book value of the bank’s net total assets	1.5	2.5*
Maximize cash flow per share	2.8	2.8
Minimize the risk of financial distress and bankruptcy	2.5	3.7*
Minimize the bank’s cost of capital	3.1	4.4†

Table 7C - Responses of *De Novo* and *Established* Bank CEOs to the question: “During your time as CEO what importance did you assign to the following management objectives?”

Banks were categorized as *de novo* if chartered after 1984, and as *established*, if chartered before 1984.

Mean scores are based on a scale of 1 (least important) to 6 (most important).

†, ††, denote a significant difference at the 5 and the 1 percent level for one-sided tests, respectively.

*, **, denote a significant difference at the 5 and the 1 percent level for two-sided tests, respectively.

	De Novo- Banks	Established- Banks
Mean Scores		
Achieve and maintain high debt ratings	2.8	4.3††
Achieve a capital structure similar to that of other banks	2.0	2.8
Enhance and sustain financial flexibility	4.3	4.2
Maximize the market price of bonds and stock	2.3	2.3
Maximize the market share (in terms of net total assets)	2.5	2.4
Maximize the Price Earnings Ratio	2.2	2.1
Maximize the Return on Investment	3.4	3.8
Maximize the Return on Equity	4.5	5.0
Maximize the growth of earnings per share	3.6	3.3
Maximize shareholders’ returns	4.5	4.2
Maximize stock book value	2.7	2.9
Maximize the book value of the bank’s net total assets	2.2	2.2
Maximize cash flow per share	2.6	3.0
Minimize the risk of financial distress and bankruptcy	3.3	3.4
Minimize the bank’s cost of capital	4.3	3.7

Table 7D - Responses of ‘Over’ and ‘Under Capitalized’ Bank CEOs to the question: “During your time as CEO what importance did you assign to the following management objectives?”

Bank and industry average capital ratios were estimated for the tenure of each surveyed CEO, using data banks’ annual financial statement, published in APB’s “Boletim Informativo”. Banks whose capital ratio during the CEO tenure was higher than the industry’s average capital ratio during the same time period, was classified as ‘overcapitalized’, and as ‘undercapitalized’, if the capital ratio during the CEO tenure was lower than the industry’s. Bank and industry capital ratios were weighted by deflated net total assets. Mean scores are based on a scale of 1 (least important) to 6 (most important).

†, ††, denote a significant difference at the 5 and the 1 percent level for one-sided tests, respectively.

*, **, denote a significant difference at the 5 and the 1 percent level for two-sided tests, respectively.

	Over-Capitalized Banks	Under-Capitalized Banks
	Mean Scores	
Achieve and maintain high debt ratings	3.1	4.2 [†]
Achieve a capital structure similar to that of other banks	2.1	2.9 [†]
Enhance and sustain financial flexibility	4.0	4.6
Maximize the market price of bonds and stock	2.1	2.5
Maximize the market share (in terms of net total assets)	2.2	2.7
Maximize the Price Earnings Ratio	1.9	2.5
Maximize the Return on Investment	3.2	4.1 [†]
Maximize the Return on Equity	4.5	5.1
Maximize the growth of earnings per share	3.0	4.0
Maximize shareholders’ returns	4.1	4.6
Maximize stock book value	2.2	3.5 ^{††}
Maximize the book value of the bank’s net total assets	1.8	2.7 [†]
Maximize cash flow per share	2.3	3.5 [†]
Minimize the risk of financial distress and bankruptcy	3.0	3.7
Minimize the bank’s cost of capital	3.7	4.3

Table 8A - Responses of Bank CEOs to the question: “During your time as CEO which of the following internal factors has had the most important impact on bank’s decisions on capital structure?”

Mean scores are based on a scale of 1 (least important) to 6 (most important).

	Mean Scores
Get the bank’s shares listed	3.3
Ownership structure and managerial control	4.6
Tax economies related to factors other than debt financing	2.4
Size of free cash flow	2.1
Earnings per share (avoid earnings dilution)	2.6
Historical performance of bank’s shares	2.2
Dividend policy	3.1
Investment policy / growth opportunities	4.0
Financing viability of strategic objectives	3.7
Assets’ risk	3.2
Tax economies associated with debt financing	3.0
Correct mispricing in past security issues	2.0
Issuing costs	1.9
Bank size	3.3
Avoid mispricing in future security issues	1.8
Covenants in debt financing contracts	1.6
Risk and costs of financial distress and insolvency	2.2
Managerial expectations for bank’s future performance	3.4
Restructuring of bank’s asset portfolio	2.6
Reputation in banking markets	3.8
Changes in bank’s level of profitability	2.8

Table 8B - Responses to the question: How do you agree that “the announcement of a future stock issue is a way for managers to signal capital markets unfavorable expectations about the bank’s future performance”? rate on a scale from: [1] “strongly disagree” to [6] “strongly agree”

	Mean score	Percent
Degree of agreement	1.8	94.1
Not sure / no opinion		5.9
Prefer not to answer		0.0

Table 8C - Responses to the question: on scale from [1] ‘strongest decline’ to [6] ‘strongest rise’ “What impact upon a bank’s share price would you typically expect following the announcement of a bank’s (voluntary) stock issue?”

	Mean score	Percent
Magnitude of reaction	3.5	62.7
No change		0.0
Not sure / no opinion / Prefer not to answer		37.3

Table 8D - Responses of ‘State-Owned’ and ‘Privately-Owned’ Bank CEOs to the question: “During your time as CEO which of the following internal factors has had the most important impact on bank’s decisions on capital structure?”

Mean scores are based on a scale of 1 (least important) to 6 (most important).

†, ††, denote a significant difference at the 5 and the 1 percent level for one-sided tests, respectively.

*, **, denote a significant difference at the 5 and the 1 percent level for two-sided tests, respectively.

	State- Owned Banks	Privately- Owned Banks
	Mean Scores	
Get the bank’s shares listed	2.9	3.4
Ownership structure and managerial control	4.1	4.9
Tax economies related to factors other than debt financing	1.9	2.6
Size of free cash flow	2.0	2.1
Earnings per share (avoid earnings dilution)	2.2	2.8
Historical performance of bank’s shares	1.1	2.6**
Dividend policy	3.5	3.0
Investment policy / growth opportunities	3.5	4.2
Financing viability of strategic objectives	3.0	4.0
Assets’ risk	3.7	3.0
Tax economies associated with debt financing	2.7	3.1
Correct mispricing in past security issues	1.4	2.3†
Issuing costs	1.1	2.2**
Bank size	3.4	3.3
Avoid mispricing in future security issues	1.1	2.1††
Covenants in debt financing contracts	1.0	1.8*
Risk and costs of financial distress and insolvency	1.9	2.3
Managerial expectations for bank’s future performance	3.8	3.2
Restructuring of bank’s asset portfolio	1.9	2.9*
Reputation in banking markets	4.1	3.7
Changes in bank’s level of profitability	2.5	2.9

Table 8E - Responses of *De Novo* and Established Bank CEOs to the question: “During your time as CEO which of the following internal factors has had the most important impact on bank’s decisions on capital structure?”

Mean scores are based on a scale of 1 (least important) to 6 (most important).

†, ††, denote a significant difference at the 5 and the 1 percent level for one-sided tests, respectively.

*, **, denote a significant difference at the 5 and the 1 percent level for two-sided tests, respectively.

	De Novo Banks	Established Banks
	Mean Scores	
Get the bank’s shares listed	2.8	3.6
Ownership structure and managerial control	4.8	4.5
Tax economies related to factors other than debt financing	2.3	2.5
Size of free cash flow	1.9	2.3
Earnings per share (avoid earnings dilution)	2.5	2.7
Historical performance of bank’s shares	2.0	2.3
Dividend policy	2.8	3.4
Investment policy / growth opportunities	3.8	4.1
Financing viability of strategic objectives	3.9	3.6
Assets’ risk	2.8	3.6 [†]
Tax economies associated with debt financing	2.8	3.1
Correct mispricing in past security issues	2.0	2.0
Issuing costs	1.8	1.9
Bank size	3.3	3.4
Avoid mispricing in future security issues	1.8	1.9
Covenants in debt financing contracts	1.3	1.8
Risk and costs of financial distress and insolvency	1.9	2.4
Managerial expectations for bank’s future performance	3.1	3.6
Restructuring of bank’s asset portfolio	2.4	2.9
Reputation in banking markets	3.5	4.2 [†]
Changes in bank’s level of profitability	2.7	3.0

Table 8F - Responses of ‘Over-Capitalized’ and ‘Under’ Bank CEOs to the question: “During your time as CEO which of the following internal factors has had the most important impact on bank’s decisions on capital structure?”

Mean scores are based on a scale of 1 (least important) to 6 (most important).

†, ††, denote a significant difference at the 5 and the 1 percent level for one-sided tests, respectively.

*, **, denote a significant difference at the 5 and the 1 percent level for two-sided tests, respectively.

	Over-Capitalized Banks	Under-Capitalized Banks
	Mean Scores	
Get the bank’s shares listed	2.8	3.9
Ownership structure and managerial control	4.7	4.6
Tax economies related to factors other than debt financing	2.2	2.7
Size of free cash flow	1.6	2.7 [†]
Earnings per share (avoid earnings dilution)	2.5	2.8
Historical performance of bank’s shares	2.1	2.3
Dividend policy	3.1	3.2
Investment policy / growth opportunities	3.8	4.2
Financing viability of strategic objectives	3.2	4.4 [†]
Assets’ risk	2.7	3.9 ^{††}
Tax economies associated with debt financing	2.6	3.3 [†]
Correct mispricing in past security issues	1.5	2.7 ^{††}
Issuing costs	1.7	2.0
Bank size	2.8	3.9 [†]
Avoid mispricing in future security issues	1.4	2.4 [†]
Covenants in debt financing contracts	1.2	2.0 [†]
Risk and costs of financial distress and insolvency	1.7	2.7
Managerial expectations for bank’s future performance	3.2	3.6
Restructuring of bank’s asset portfolio	2.2	3.2 [†]
Reputation in banking markets	3.4	4.3 [†]
Changes in bank’s level of profitability	2.2	3.6 ^{††}

Table 9A - Responses to the question: “During your time as CEO, which of the following external factors has had the most important impact on the bank’s capital structure decisions?”

Mean scores are based on a scale of 1 (least important) to 6 (most important).

†, ††, denote a significant difference at the 5 and the 1 percent level for one-sided tests, respectively.

*, **, denote a significant difference at the 5 and the 1 percent level for two-sided tests, respectively.

	Mean Scores
Possibility of a takeover bid	1.8
Change in the ratio of public deficit to gross domestic product	1.5
Changes in the regulation and supervision framework	4.3
Private consumption behavior	1.6
Currency market behavior	1.5
Capital market performance	3.3
World economy performance	1.8
Domestic economy performance	2.9
Political instability	2.3
Change in the dynamics of credit demand	3.1
Change in firms’ and investors’ income taxation	2.8
Legal restrictions on share repurchases	1.8
Interest rate changes	2.6

Table 9B - Responses of ‘State-Owned’ and ‘Privately-Owned’ Bank CEOs to the question: “During your time as CEO, which of the following external factors has had the most important impact on the bank’s capital structure decisions?”

Mean scores are based on a scale of 1 (least important) to 6 (most important).

†, ††, denote a significant difference at the 5 and the 1 percent level for one-sided tests, respectively.

*, **, denote a significant difference at the 5 and the 1 percent level for two-sided tests, respectively.

	State-Owned Banks	Privately-Owned Banks
	Mean Scores	
Possibility of a takeover bid	1.0	2.1**
Change in the ratio of public deficit to gross domestic product	1.7	1.4
Changes in the regulation and supervision framework	3.7	4.5
Private consumption behavior	1.1	1.9††
Currency market behavior	1.0	1.6**
Capital market performance	2.2	3.8**
World economy performance	1.4	2.0††
Domestic economy performance	2.3	3.2†
Political instability	1.8	2.4
Change in the dynamics of credit demand	2.8	3.2
Change in firms’ and investors’ income taxation	1.9	3.1*
Legal restrictions on share repurchases	1.0	2.1**
Interest rate changes	1.7	2.9**

Table 9C - Responses of *De Novo* and Established Bank CEOs to the question: “During your time as CEO, which of the following external factors has had the most important impact on the bank’s capital structure decisions?”

Mean scores are based on a scale of 1 (least important) to 6 (most important).

†, ††, denote a significant difference at the 5 and the 1 percent level for one-sided tests, respectively.

*, **, denote a significant difference at the 5 and the 1 percent level for two-sided tests, respectively.

	De Novo Banks	Established Banks
	Mean Scores	
Possibility of a takeover bid	2.0	1.7
Change in the ratio of public deficit to gross domestic product	1.4	1.6
Changes in the regulation and supervision framework	4.6	4.0
Private consumption behavior	1.9	1.4
Currency market behavior	1.5	1.4
Capital market performance	3.3	3.3
World economy performance	1.8	1.8
Domestic economy performance	3.1	2.8
Political instability	2.3	2.2
Change in the dynamics of credit demand	3.0	3.1
Change in firms’ and investors’ income taxation	3.0	2.6
Legal restrictions on share repurchases	1.9	1.7
Interest rate changes	3.2	2.0*

Table 10 - Responses of ‘State-Owned’ and ‘Privately-Owned’ Bank CEOs to the question: “During your time as CEO, please identify the prevailing intention in the bank’s strategic financing decision-making”.

†, ††, denote a significant difference at the 5 and the 1 percent level for one-sided tests, respectively.

*, **, denote a significant difference at the 5 and the 1 percent level for two-sided tests, respectively.

	[unit: percent]	
	State- Owned Banks	Privately- Owned Banks
Follow a pre-determined set of guidelines on funding	60.0	19.4**
Achieve and sustain a target capital structure	13.3	2.8
Balancing the economic costs and benefits of financing	13.3	50.0*
Maintain the historical financing pattern	0.0	2.8
Follow a hierarchy in using and exhausting available funding sources	13.3	25.0