The Effect of Committed Ownership on the Financing Decisions of Firms

A Study on Listed Firms in the U.S.

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Abstract

This paper investigates the effect of committed ownership on the financing decisions of the firm. Committed owners are purpose-driven and committed to a long-term mission extending beyond profit-making. Moreover, they are expected to maintain favorable relations with stakeholders since it strengthens the credibility of commitment and aligns interests toward the defined purpose. On a large number of U.S. listed firms, this paper shows that committed owners employ a more conservative capital structure than institutional owners. This is possibly attributable to the commitment role of equity, that is, a signal of dedication to upholding implicit contracts with stakeholders by assuming less risk. By taking on less debt, committed owners encourage the choice of stewardship among stakeholders and promote trust and pro-organizational behavior. What is more, the analysis shows that committed owners adjust to the target leverage at a higher speed than do institutional owners. This could be indicative of the close attention paid by committed owners to the maintenance of low leverage ratios, but also of a narrower optimal leverage range. Given the concerns of committed owners to demonstrate a credible devotion to the purpose and maintain favorable relations with stakeholders, default costs are likely to be higher than for institutional owners, thus, deviating from target leverage is costlier for committed owners.

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Contents

List of Abbreviations

BV	Book Value
EBIT	Earnings Before Interest and Taxes
EBITDA	Earnings Before Interest and Taxes, Depreciation and Amortization
EV	Enterprise Value
FCFF	Founding Family Controlled Firms
FE	Fixed Effects
GDP	Gross Domestic Product
GMM	Generalized Methods of Moments
IPO	Initial Public Offering
LD	Long Differencing
M&A	Mergers and Acquisitions
MSO	Managerial Share Ownership
MB	Market-to-Book
MLE	Maximum Likelihood Estimation
M&M	Modigliani and Miller
MV	Market Value
NBER	National Bureau of Economic Research
OLS	Ordinary Least Squares
PPE	Property, Plant, and Equipment
R&D	Research and Development
SG&A	Sales, General, and Administrative

Chapter 1

Introduction

The capital structure puzzle, i.e. the dilemma of the optimal capital structure, remains one of the largest unsettled concerns in the finance and governance literature. Subsequent to Modgliani and Miller's (1958) capital structure irrelevance problem, a substantial strand of literature has been developed in the aspiration to explain based on which factors firms make such decisions and at which level the optimal capital structure resides. One branch of research, established by Kraus and Litzenberger (1973), concerns balancing the advantages and disadvantages of debt; on the one hand, tax savings deriving from the tax-deductibility of interest payments, on the other hand, the additional risk in the form of bankruptcy costs. This theory, known as the trade-off theory, gained wide approval and support within the field of corporate finance. A second branch of research traces back to Myers (1984) who postulates that firms are subject to adverse selection and, thus, favor internal over external sources of financing and debt over equity. This theory of financial hierarchy is known as the pecking-order theory.

More contemporary finance research has been concerned with investigating capital structure in a dynamic setting, which enables external leverage shocks and incorporates the possibility of firms deviating from their target leverage ratio. Thus, adjustment costs are added to the assessment of the optimal leverage level. This has given rise to a division of research involved with explaining the adjustment behavior of firms, mainly the speed of adjustment toward the target leverage ratio. Most studies on this topic have adopted a partial adjustment model in order to estimate the effect of certain firm-specific and macroeconomic variables on leverage, as well as one single speed of adjustment coefficient for the entire sample of firms. However, fewer studies attempt to investigate how leverage levels and adjustment behavior differ among different owners.

An extensive collection of corporate governance research has been dedicated to ownership. Anecdotal evidence emphasizes the diverging preferences of committed owners. To such owners, economic rents are merely a mean of achieving a purpose beyond profit-making rather than the end in itself. Committed owners, with their peculiarities and different preferences, might not pursue the same debt levels as institutional owners who are expected to be driven by profit-maximization in congruence with the predictions made by the classical capital structure theories. What is more, the speed at which the firms adjust toward its optimal leverage ratio might by the same logic differ as well. Against this background, this paper will investigate the effect of committed ownership on the financing decisions of firms.

1.1 Problem Formulation

Although a myriad of studies have attempted to estimate the determinants of the financing decisions of firms, most simply consider a set of firm-specific and macroeconomic variables to possess explanatory power (Flannery and Rangan, 2006; Frank and Goyal, 2008; Fama and French, 2002; Huang and Ritter, 2009). Studies of this kind are primarily concerned with testing classical finance theories of capital structure, often in the light of various industries or countries. However, such studies only seem to find limited evidence for the classical theories of capital structure, in turn, there is no consensus regarding the extent to which these theories can explain the financing decisions of firms.

A narrower strand of research, particularly connected to corporate governance, has investigated alternative determinants relevant to firms' financing decisions. An objection raised by multiple researchers is that classical theories of capital structure assume that owners constitute a homogeneous unit and, therefore, any differences with regards to ownership structure, concentration or type is irrelevant (Thomsen and Pedersen, 2000). In corporate governance, however, it is a well-entrenched view that ownership has important implications for the governance and, in particular, the performance of the firm (Short, 1994; Shleifer and Vishny, 1997). Along these lines, a few studies engage in applying governance concepts to investigate capital structure decisions. For instance, a handful of studies address the effect of ownership structure on capital structure with varying results

(Guo et al., 2015; Kayo et al., 2018; Pindado et al., 2015; Gonzalez et al., 2013; Thomsen et al., 2018). More specifically, Guo et al. (2015) explore how ownership concentration influences leverage. Their findings suggest that the overall relationship is negative since blockholders are risk averse, however, for firms with only small blockholders the effect is positive. Gonzalez et al. (2013) and Pindado et al. (2015) investigate the effect of family ownership on financing in Colombia and the Eurozone countries, respectively. Gonzalez et al. (2013) suggest a negative effect on leverage levels for young and median-age firms when the founder or heirs are in control. The effect is more profound when the founder is in control. However, for old firms, the findings suggest a positive effect on leverage levels. Moreover, Pindado et al. (2015) demonstrate that considering the peculiarities of the family firm business model, such as a transparent ownership structure and long-term relationships with creditors, information asymmetries with lenders are effectively mitigated. Thus, family control is positively related with leverage levels and the speed at which firms revert to their target leverage.

Although the aforementioned studies do intend to explain capital structure decisions in the light of ownership, attention has primarily been aimed at owner concentration or owner types (e.g. families and state ownership) as opposed to the motivation behind owning the firm. The traditional view of the firm advocates that the company only bears a financial commitment to its own constituents and that its sole responsibility is maximizing shareholder value (Friedman, 1970). According to Thomsen and Pedersen (2000), institutional investors act in a similar manner, thus, their primary objective is expected to revolve around the maximization of financial returns in accordance with the classical theories of capital structure. However, Thomsen and Conyon (2019) postulate that certain owners are purpose-driven and committed to a long-term mission extending beyond profit-making. For such owners, the purpose of owning the business could differ but it commonly relates to solving a societal problem or to the products or services of the firm. Although profit is central to these firms, economic rents are means to an end rather than ends of themselves (Purpose Foundation, 2020). Given the purpose-driven approach, such firms by ordinary experience a high level of accountability toward society (Purpose Foundation, 2020). Moreover, the demonstration of commitment also to non-financial stakeholders, such as employees, is an important mechanism in aligning efforts towards a

common purpose (Purpose Foundation, 2020).

Given the contrasting missions and purposes of committed owners, it is likely to believe that financing decisions are not made on a pure profit-maximizing basis. As follows, the limited predictive power of the classical capital structure theories in previous empirical studies might stem from the assumption that all firms seek profit as their primary mission. A research gap has been identified and, along these lines, the main contribution of the paper to the existing literature is the provision of novel empirical evidence on the motivation behind firm ownership and how it affects financing decisions. In order to investigate this, this paper will address the following problem:

Do firms with committed owners differ from firms with institutional owners with respect to financing decisions?

To fully answer the problem statement, it has been further segmented into two subcomponents. When assessing financing decisions, it is important not only to consider leverage levels but also the speed of adjustment toward the target leverage. As follows, the procedure of the analysis is structured according to two research questions:

1. *Do firms with committed owners differ from firms with institutional owners with respect to leverage levels?*

2. *Do firms with committed owners differ from firms with institutional owners with respect to the speed of adjustment?*

1.2 Structure of the Paper

The remainder of the paper is structured as follows: Chapter 2 lays the theoretical foundations of the paper, initially by providing an overview of capital structure theories, then by introducing the concept of adjustment speed. Subsequently, stewardship theory and the governance implications of debt and equity financing are presented in detail as theoretical tools for analyzing the financing decisions of firms from a governance perspective. Chapter 3 develops testable hypotheses as regards the leverage level and adjustment speed of committed owners. Chapter 4 provides a reflection of the methodological course of action in conducting this research. Chapter 5 thoroughly clarifies the process of data collection and construction of variables for the econometric analysis. Chapter 6 presents descriptive

statistics on the data set. Chapter 7 first elaborates on the econometric model specification, upon which the statistical regressions are performed and the results analyzed. Moreover, robustness tests are performed and limitations to the procedure are discussed. Lastly, in chapter 8, the findings are concluded and summarized. In addition, the contribution this paper makes to the existing literature is reviewed and future research suggested.

1.3 Scope of the Paper

The scope of the paper is to enrich the preceding finance and governance literature by investigating the effect of committed ownership on financing decisions. The financing decisions are limited to external financing and, thus, the extent to which internal funds are used will not be considered. Although some studies suggest that there is a difference among owners in their preference of internal contra external funds to finance their operations, this study will be limited to investigating the characteristics of debt and equity and the effect of committed ownership on the preference of external financing sources.

Furthermore, based on previous studies aiming at investigating the determinants of capital structure, a set of firm-specific and macroeconomic determinants have been identified. Although the paper takes these determinants into consideration, it is not within the scope to test their predictive power or evaluate how well they explain financing decisions. The consideration of classical determinants of capital structure are important to isolate the effect of ownership and mitigate omitted variable bias. Nonetheless, their importance for explaining capital structure will be taken as a given on the basis of previous empirical studies within the field. It is also beyond the scope of the paper to make inferences about the optimal capital structure or predictions regarding the future capital structure of committed owners. Instead, the scope is restricted to investigating how the observed capital structure and changes in the capital structure are driven by owner commitment.

Moreover, regulatory aspects, such as ownership restrictions, are beyond the scope of this paper. Corporate law is enacted on a state level in the U.S., while security law is subjected to federal legislation (Jackson, 2010). While regulation is likely to affect the financing decisions of firms, a detailed analysis of the state-specific regulations is necessary

to explain the regulatory effects on the financing decisions of the firm. This is not within the scope of the paper, which primarily focuses on the effect of committed owners on financing decisions.

Chapter 2

Literature Review

This chapter will introduce the fundamental concepts of capital structure and corporate governance theory and will lay the theoretical fundament for the subsequent analysis. Section 2.1 will present the basic foundations of capital structure theories, while section 2.2 introduces the trade-off theory, section 2.3 the pecking-order theory, and 2.4 the free cash flow hypothesis. Section 2.5 will delve deeper into adjustment behavior and present the speed of adjustment concept. Followingly, in section 2.6, an introduction to corporate governance concepts will be given. In section 2.7, the assumption of owner homogeneity in classical theories of capital structure will be challenged. In section 2.8, the concepts of stewardship and committed ownership will be introduced. Lastly, in section 2.9, theories on the commitment role of equity financing will be presented.

2.1 Introduction to Capital Structure Theories

Modigliani and Miller's (M&M) irrelevance proposition of capital structure (1958) is regarded as a cornerstone of modern business and finance literature and the publication is arguably the most fundamental within capital structure research (Frank and Goyal, 2008). In their publication, M&M stated that given perfect capital markets[1] the value of an enterprise is not driven by the funding of its operations. In other words, the capital structure of the firm is irrelevant. M&M (1958 and 1963) make their argument through

[1]Perfect capital markets are characterized by : 1) No market frictions, 2) agents can lend and borrow at the risk free rate, 3) no taxes, 4) no bankruptcy costs, 5) companies can issue equity and debt without restrictions, 6) future operational earnings are for each company presented by a subjective stochastic variable, 7) all companies have identical operational risk that also is time constant, 8) company earnings are constant, 9) companies have a payout ratio of 1, and 10) all market participants have perfect information regarding the return to the firm. While assumptions 1 - 9 are from Modigliani and Miller (1958), assumption 10 was added by Stiglitz (1988).

two propositions[2]. Proposition I states that since the firm and the investors are assumed to have equivalent access to capital markets, investors are able to create leverage themselves by borrowing capital and investing according to their preferences. In reverse, the investor could decrease leverage by purchasing shares in a company and an equal proportion of bonds. The ability of investors to create leverage as they prefer implies that leverage has no effect on the share price of the firm. Proposition I is enforced by proposition II, which states that the cost of equity depends on the return on assets, the cost of debt, and the leverage ratio. Changing the leverage ratio will change the expected returns on equity but leave the average cost of capital unaffected. In M&M (1963), the assumption of a tax-free world is eased which results in an optimal leverage level of 100%, given the fact that interest expenses are tax-deductible. However, entirely debt-financed companies are not observed in reality, thus, following research has introduced the existence of bankruptcy costs and agency costs.

The divergence from M&M's set of unrealistic assumptions has brought about the emergence of two central classical theories of capital structure. First, according to the static trade-off theory, a taxable corporation should increase its leverage until an optimum where the marginal present value of the tax shield is offset by the marginal potential costs associated with financial distress (Kraus and Litzenberger, 1973). Second, the static pecking-order theory states that firms use funds that entail the least informational asymmetries. Thus, firms prefer using internal funds over external funds and choose debt over equity. The subsequent sections will elaborate on the trade-off theory and pecking-order theory of capital structure.

2.2 The Trade-Off Theory

Kraus and Litzenberger (1973) note that, in contrast to M&M's capital structure irrelevance theory, capital structure affects the value of an enterprise and firms balance the benefits and the costs of debt. An optimal capital structure is determined by weighing the marginal benefits of debt against the marginal costs (Myers, 1984). Based on tax effects and costs of financial distress rational managers will take their optimal debt-to-equity

[2]Proposition III will be excluded since it considers investment policy (Modigliani and Miller, 1958)

ratio as a target for the firm (Kraus and Litzenberger, 1973). The benefit of debt is the tax shield that enterprises get due to the tax-deductibility of interest expenses. At the same time, higher leverage will increase direct and indirect bankruptcy costs (Kraus and Litzenberger, 1973). Direct bankruptcy costs could be incurred through legal and administrative costs associated with bankruptcy. Meanwhile, indirect bankruptcy costs could be incurred through the reputational loss amongst the firms' stakeholders leading to a general unwillingness to do business with a company that will not be around for much longer or through increased interest expenses. In the model, presented by Kraus and Litzenberger (1973), bankruptcy costs are assumed to be known and are available to determine the optimal leverage. However, in reality, bankruptcy costs, particularly of indirect nature, are not easily quantifiable complicating the determination of an optimal capital structure that accounts accurately for bankruptcy costs (Parum, 1987).

Frank and Goyal (2008) oppose the static setting of this model, contending that it is inconsistent with how firms make financing decisions since the determinants of capital structure are dynamic by nature. For instance, the static capital structure model does not account for internally or externally generated changes in the market value of equity of a firm. Frank and Goyal (2008) exemplify the in-aptness of static models by arguing that the amount of retained earnings a firm decides to keep will inherently influence the total value of equity. Similarly, share prices tend to change continuously and will, thus, have a similar effect. Furthermore, the static model does not allow for any divergences from the optimal levels of leverage (Frank and Goyal, 2008). Such dynamic assumptions imply that with different firm characteristics come differences in adjustment behavior. Frank and Goyal (2009) instead propose a dynamic setting for the model for which they identify two main aspects. First, the capital structure optimum depends on the subsequent period optimum. In other words, the ideal financing decision in the next period establishes what is optimal in the first period. Second, the optimum depends on a comparison of the firm's rate of return with that of the investors. Capital should, it is argued, reside with whoever can obtain the highest return [3] (Frank and Goyal, 2008). In consequence, the dynamic trade-off model introduces the important notions of expectations and transaction costs of leverage alteration.

[3] This legitimizes the external financing choices of firms through issues or repurchases of securities (Frank and Goyal, 2009)

Although earlier versions exist[4], Fischer et al. (1989) introduced the first elaborate dynamic trade-off model. In this model, the optimal capital structure depends on the tax advantages and bankruptcy costs in light of recapitalization costs. Due to the incorporation of transaction costs stemming from recapitalization, enterprises let their leverage fluctuate within a certain range (Fischer et al., 1989). While enterprises can rebalance at any point in time, they will only do so when the benefits of rebalancing outweigh the re-adjustment costs, i.e. when a lower or upper boundary is reached. When it does reach either of the boundaries, enterprises increase or decrease their leverage, respectively. In other words, the model estimates that continuous readjustments of the capital structure are suboptimal as companies aim at maintaining optimal leverage ranges rather than optimal leverage ratios (Fischer et al., 1989).

The contribution made by Fischer et al. (1989) gives rise to an empirical challenge for capital structure research. Given that the attitude towards optimal capital structures changes from a specific ratio perspective to a dynamic range perspective, the finding entails that individual observations of capital structures contain significant noise and are not necessarily indicative of a leverage ratio target. Instead, due to the presence of adjustment costs, firms deviate from the leverage optimum within a certain range. The study of optimal leverage ranges, therefore, appears more in line with intuition in contrast to studies of single observations.

An assumption made by Fischer et al. (1989) inconsistent with empirics is the absence of market frictions. Strebulaev (2007) develops a model that encompasses market frictions leading to infrequent leverage readjustments of enterprises. As a result, firms' debt levels are permitted to move beyond the optimal range. The main finding of the paper is that the explanation of leverage at readjustment points differs significantly from the explanation of leverage when no rebalancing occurs. When comparing periods with readjustment and without readjustments, Strebulaev (2007) finds a positive relationship between leverage and profitability at times of readjustment, while a negative relationship between the variables is shown at times of no readjustment. It is contested that existing cross-sectional

[4]Kane et al. (1984) find that fluctuations in bankruptcy costs can only partially explain observed debt levels. Furthermore, their conclusions imply that minor tax benefits of debt are related to low costs of deviation from an optimal debt level. Thus, the authors reject the static trade-off theory in a dynamic multi-period setting, implying that there are other factors that influence the leverage ratio of enterprises.

dynamic models insufficiently account for the enterprise's positioning in the readjustment cycle, emphasizing the relevance of discussing firm characteristics, macro-economic factors, and their respective influence on debt (Strebulaev, 2007).

2.3 The Pecking-Order Theory

Myers and Majuliuf (1984) proclaim the meaningful impact of information asymmetry between managers and investors on the cost of financing sources by defining a model of financial hierarchy. In their model, it is assumed that managers act to maximize shareholder value. Furthermore, it is argued that inside executives generally have more information about the enterprise than outside investors. Similar to Akerlof's "lemons" problem (1970) outside investors underprice the share value of enterprises with high equity value because of information asymmetry regarding the true value (Myers and Majuliuf, 1984). Investors are, therefore, merely willing to pay an average of equity values. In turn, average valuations will make it attractive for firms to issue equity if managers perceive it as overvalued, which is the case for firms with low equity values. Investors will notice that the equity issued is below the average value and, therefore, are only willing to pay a low price for the security. In other words, issuing equity implies a negative signal that managers believe that the share price is overvalued, which affects the share price negatively and will lead to underinvestment (Myers and Majuliuf, 1984). Owing to information asymmetries an enterprise will prefer internal sources of financing over external (Myers and Majuliuf, 1984). Given that retained earnings are often insufficient, the enterprise can revert to either equity or debt. Although there are several problems related to adverse selection for both equity and debt financing, enterprises prefer debt over equity because the value of debt is less sensitive to the true value compared with equity (Myers, 1984). Thus, Myers and Majluf (1984) concluded that enterprises finance deficits[5] with debt to the extent possible, implying that, in contrast to the prediction of the trade-off theory, firms have no target leverage ratio.

Myers and Majiluf (1984) show that debt financing is favored over equity in a static environment and that this might lead to underinvestment. Under asymmetric information,

[5]Deficits refer to initial project outlays that surpass retained earnings (Myers and Majluf, 1984)

the prevalence of underinvestment stems from the fact that new financing can dilute the investments of existing shareholders. To date, however, no dynamic pecking order theory that is entirely satisfying has been developed[6] (Clausen and Flor, 2011).

2.4 The Free Cash Flow Hypothesis

In addition to the trade-off theory and the pecking-order theory, the free cash flow hypothesis frequently is mentioned in a capital structure context. First presented by Jensen (1986), the fundamental argument is that debt can play an important role in aligning the interests of managers and shareholders in publicly listed firms. Particularly, Jensen (1986) postulates that debt is an efficient device for alleviating agency problems related to free cash flows, which are controlled by management[7]. The agency problem derives from the separation of ownership and control (Jensen, 1986). Managers in companies with a high level of free cash flows are more likely to initiate investments that are value-decreasing instead of paying them out to shareholders (Jensen, 1986). The reasons for doing so could be the improved reputation for managers of establishing a bigger firm, the increasing resources under their control, and the compensation of managers that incentivizes them to grow the firm beyond its optimal size (Jensen, 1986). Both executives and shareholders are assumed to maximize their respective utility functions and, thus, the executives do not always act in the owner's interest to maximize shareholder value. Conflicts of interest related to payout policy are expensive and it raises the question of how to incentivize managers to disgorge these free cash flows instead of investing them below the cost of capital or undertaking inefficient acquisitions (Jensen, 1986).

To protect investors a contract can be signed which specifies the use of the funds and how financial returns are divided (Shleifer and Vishny, 1997). However, in order to completely protect shareholders, this contract would have to be incredibly detailed and encompass most operating aspects of the company including project risk (Jensen and Meckling, 1976). Since management is a continuous decision-making process, it would be impossible to

[6] It is impossible to estimate the dynamic pecking order model and most empirical studies testing the static pecking order theory merely find weak support (Helwege and Liang, 1996; Frank and Goyal, 2003; Leary and Roberts, 2010).

[7] Free cash flows are defined as cash flows that are in excess of that required to fund all projects with positive NPV when discounted at the relevant cost of capital (Jensen, 1986).

make these specifications and it would affect firm value negatively as managers would be constrained to take optimal financing decisions in some circumstances (Jensen and Meckling, 1976).

While managers could also be disciplined by the product market competition or capital markets, competitive market forces have largely proven to be ineffective, particularly for mature companies with low investment opportunities and substantial economic rents (Jensen, 1986). Jensen (1986) suggests that companies should use debt to limit the discretion of managers despite the well-known agency costs of debt[8]. Taking on debt requires strict debt service payments, which bond the managements promise to pay out future free cash flows in a way that cannot be achieved by increasing dividends or repurchasing shares since these are rather soft commitments (Jensen, 1986). When not maintaining the repayment promise on interest and principal, the debtholders have the right to take the firm into bankruptcy court (Jensen, 1986). Thus, the use of debt reduces the agency cost of free cash flow by lowering the cash flow at the discretion of executives (Jensen, 1986). In addition, empirically leverage-increasing transactions have a positive effect on the stock price since the agency problem is alleviated (Jensen, 1986). In sum, debt is a particularly useful device for mature companies with stable cash flows.

Møller and Parum (2016) and Møller (2020) oppose the argument presented by Jensen (1986) and question the alleged effectiveness of debt as a disciplinary device. The implicit assumption, Møller (2020) argues, is that managers are motivated by pressure. According to Møller (2020), if the executive management is under liquidity pressure on a continuous basis and experiences that any operational improvements do not increase their safety but instead leads to larger distributions of excess capital, then the management will be incentivized to establish hidden reserves and increase operational costs since these can be cut down in times of crisis. In other words, by systematically limiting the free cash flow available to run the company, the management will create their own safeguards to ensure going concern in the future (Møller and Parum, 2016). For this reason, while Jensen (1986) anticipates high leverage levels and low free cash flows in companies, Møller and Parum (2016) make the argument that observed leverage levels should be lower and free

[8]The agency costs of debt refers to (1) financial distress, (2) risk shifting, and (3) debt overhang (Jensen,1986).

cash flows higher than predicted by Jensen (1986).

2.5 The Speed of Adjustment

As aforementioned in section 2.2, the static setting of early theories of capital structure constitutes a set of unrealistic assumptions and is inconsistent with how firms make financing decisions since the determinants of capital structure are dynamic by nature. As was emphasized in the model by Fischer et al., (1989), the dynamic nature of the trade-off model gives rise to transaction costs and, thus, non-continuous leverage adjustments. In turn, the financing decisions and adjustment behavior of firms differ. A common method of evaluating firms' financing decisions is to estimate the speed at which firms rebalance their capital structure. The speed of adjustment (SOA) concept it built upon the assumption that firms face an actual target leverage ratio. In a frictionless world, the observed leverage ratio, $L_{i,t}$, is equal to the optimal capital structure, $L^*_{i,t}$. Leverage would be adjusted towards the optimal ratio in each period and, therefore, the firm would always hit the target leverage. However, considering the adjustment costs, presented in Fischer et al. (1989), firms do not fully adjust towards the optimal leverage structure (Flannery et al., 2012). In partial adjustment models, firms deviate from their target leverage and adjust towards the optimal capital structure over time (Flannery et al., 2012). The pace at which firms offset deviations from their target leverage can be defined as the speed of adjustment.

While mean reversion alone does not suffice to prove the existence of a target leverage, the empirical SOA literature is primarily concerned with showing that firms have a target leverage (Graham and Leary, 2011; Faulkender et al., 2012). The assumption of the existence of a target leverage ratio is in line with the assumptions of the trade-off theory and, generally, a faster SOA is interpreted as that trade-off factors have first-order consequences on capital structure considerations while a slower SOA can be considered as evidence that trade-off factors are only of secondary importance for capital structure determination (Flannery and Rangan, 2006). Based on logical exclusion, any evidence that firms actively adjust towards a target ratio would support the trade-off theory over other explanatory models since such models are not based on mean reversion. Some researchers

are skeptical about the presence of mean reversion as evidence of target leverage. Most notably, Chen and Zhao (2005) question the use of the estimated SOA as evidence for the trade-off theory. They suggest that the estimated SOA constitutes a mechanical relationship if enterprises finance (semi) randomly. However, this is refuted by Huang and Ritter (2009) who demonstrate in their study that enterprises do not follow a random financing pattern.

Zhou et al. (2016) define the speed of adjustment as the difference in the leverage ratio in period t and period *t-1*, divided by the difference between the target leverage in period t and the leverage in period *t-1*:

$$SOA = \frac{L_{it} - L_{it-1}}{L^*_{it} - L_{it-1}} \tag{2.1}$$

Hence, the SOA will only be equal to 1 if the firm adjusts instantaneously to its target. Further, SOA>1 if the company over-adjusts and SOA<1 if the company partially adjusts. The equation shown above builds the theoretical foundation for further statistical analysis.

Most of the preceding studies in this area assume that the average SOA is homogeneous across all companies. Since the opportunity costs of deviating from the target leverage are likely to have important firm-specific components, it is likely that the SOA differs across companies (Elsas and Florysiak, 2011). This is because capital structure theories are conditional and may work better under certain conditions (Frank and Goyal, 2009). Although a larger strand of capital structure literature examines the SOA, a broader body of research that nuances the SOA between firms with heterogeneous characteristics has developed only recently (Elsas and Florysiak, 2011).

2.6 Introduction to Corporate Governance Concepts

The previous sections presented a set of classical capital structure theories which intend to explain the financing decisions of firms. However, a common denominator of the aforementioned theories of capital structure is the assumption of owner homogeneity and the disregard of the effect of differences in owner characteristics when it comes to preferences for financing and purpose of ownership. Against this background, the subsequent sections

will present corporate governance concepts in three steps. First, an argument for why ownership differences matter to the decisions and trajectory taken by the firm will be presented. Second, stewardship theory will be introduced. Third, governance literature concerning the effect of committed ownership on capital structure will be introduced.

2.7 Owner Heterogeneity

A related objection to the classical theories of capital structure concerns the underlying assumption that owners constitute a homogeneous unit, although they may have dissimilar preferences and needs, which, in turn, could affect capital structure decisions (Thomsen and Pedersen, 2000). Corporate finance theories revolve around the image of a widely held firm, conceptualized in the landmark study by Berle and Means (1932). Yet, even among the U.S. firms, ownership is moderately concentrated (La Porta et al., 1999). Research suggests that in many countries it is common to have large shareholders who are actively involved in corporate decision-making (La Porta et al., 1999). While dispersed ownership is more common in countries with good protection of minority shareholder rights, often found in common law countries, such as the U.S., it is less common in countries with poor protection minority shareholder rights, often found in civil law countries, such as France (La Porta et al., 1999). While Berle and Means (1932) postulate that ownership is dispersed among many small shareholders and control is concentrated in the hands of managers, many firms have large owners with significant control (La Porta et al., 1999). Holderness (2009), with a sample of U.S. firms, finds that 96% of the firms have blockholders, who actively control their portfolio companies[9]. Shleifer and Vishny (1986) report that their sample of 456 Fortune 500 companies had a mean ownership percentage for the largest shareholder of 14.3% while the mean ownership percentage for the five largest shareholders was 28.8%. In 354 cases in their sample, the largest shareholder owns at least 5% of the firm.

Furthermore, Fahlenbrach and Cronqvist (2009) show that larger shareholders have a stronger effect on corporate decisions, such as financial policies. Arguably, larger shareholders have more at stake and, thus, a greater incentive to monitor managerial decision-

[9]Blockholders are defined as those shareholders who have at least 5% of the voting rights of the common stock (Holderness, 2009).

making (Edmans, 2014). Also, the greater the voting power the stronger the ability of the controlling shareholder to influence corporate decisions (Edmans, 2014). While a growing body of research shows that blockholders have a significant effect on financing decisions, the effect seems to vary by owner type. According to Holderness and Edmans (2016), heterogeneous blockholder types have particular preferences, although research frequently treats blockholders homogeneously. For instance, there is a systematic variation across blockholder types as regards ownership horizons and the amount of committed capital (Hadlock and Schwartz-Ziv, 2019). Moreover, Stulz (2005) argues that large shareholders pursue their own objectives, which affect capital structure decisions. In an empirical study, Kaserer et al. (2013) find that the payout behavior of European firms reflects the tax preferences of the firms' largest shareholders. Moreover, Ellul (2009) and Chen et al. (2014) uncover a positive relationship between leverage and family ownership stakes. However, Bui (2018) finds that corporate blockholder ownership is negatively related to leverage and suggests that blockholders play an important role in monitoring corporate decisions.

Overall, this suggests that one should be more concerned with the differences in financing preferences of the controlling shareholders. Against this background, the subsequent section will present the concept of stewardship which builds the fundament for defining committed owners.

2.8 Stewardship

Stewardship theory was first introduced by Donaldson and Davis (1989) as a normative alternative to agency theory. While agency theory assumes that executives are utility-maximizing and, therefore, might show self-interested and opportunistic behavior at the expense of shareholders, stewardship theory contends that managers could be intrinsically motivated to serve the firm and act as stewards of the corporate assets rather than just being extrinsically (i.e. financially) motivated (Donaldson and Davis, 1989). On a similar note, Hernandez (2012, p. 174) defines stewardship as "the extent to which an individual willingly subjugates his or her personal interests to act in protection of others' long-term welfare". Based on sociology, psychology, and leadership, stewardship theory contends

that incentives between principals and agents can be aligned built on a psychological contract, where the agent's behavior is loyal and trustworthy towards the company and its owners (Donaldson and Davis, 1989). At the core of stewardship theory is the underlying belief that the principal-agent relationship depends on a behavioral choice. When both parties choose to behave as stewards by prioritizing the principal's objective, there is a positive effect on performance as they work towards a shared objective (Davis et al., 1997). Psychological factors, such as intrinsic motivation and identification, and situational factors, such as a collectivistic organizational culture, can steer the choice towards stewardship (Davis et al., 1997). Thus, the principal should create an environment that is conducive to pro-organizational behavior, which in turn facilitates the choice of stewardship. In other words, governance characteristics that encourage employees to behave as stewards facilitate the alignment of interests (Davis et al., 1997).

A more contemporary view on stewardship is provided by Thomsen and Conyon (2019). They define stewardship as a responsible, long-term form of ownership. While in some cases it may be deemed more responsible to sell the shares to a better owner, in the majority of the cases, stewardship entails a commitment to owning shares in the long-run and many times forever (Thomsen and Conyon, 2019). Ultimately, stewards are held accountable by society at large given the meaningful impact of their decisions on the well-being of many revolving stakeholders, such as customers and employees (Thomsen and Conyon, 2019). Importantly, while some firms try to maximize shareholder value, stewards may be driven by a purpose (Purpose Foundation, 2020). The definition of this purpose varies across firms. While some companies derive their purpose from a broader mission, such as defeating diseases, other companies derive purpose from the core product or service that they offer to customers or from the way they do business (Purpose Foundation, 2020). For steward-owned companies, it holds that economic rents are means to an end rather than ends of themselves (Purpose Foundation, 2020). In other words, profits are a product of business and not a purpose per se (Mayer, 2019). Although stewardship is commonly associated with ''impact companies", for instance those which fight poverty, it can be applied to any company building useful products or providing useful services (Mayer, 2019). Mayer (2019) emphasizes that purpose is not about charity or philanthropy but "hardnosed business". It is about producing profits to shareholders by recognizing ways

of solving problems. Furthermore, stewardship is a strong commitment to the company's employees ensuring that their work benefits the purpose of the firm and not only the shareholders (Mayer, 2019). Consequently, a psychological basis for the profound motivation of the workforce is constructed. Empirically, the employees of steward-owned firms face better job security and fairer pay resulting in high levels of employee productivity (Kuhn and Thomsen, 2015).

Mayer (2019) makes the connection between the purpose of committed owners and performance. He defines the company's purpose as the contribution of business to finding profitable solutions that address the issues of people and the planet. For two reasons, he argues, a system based on delivering purposes beyond profit could be more efficient than a system with a sole profit purpose. The first concerns the response of the beneficiaries of trust-based firms and the second is the response of the regulators of other firms (Mayer, 2019). Firms with an ownership and governance arrangement that demonstrate a commitment to solving problems and not profiting at the expense of others may genuinely be perceived as more trustworthy by the parties with whom they transact (Mayer, 2019). The rationale is that other-regarding or benevolent preferences might install trust to a greater extent than the promotion of self-interest since it encourages loyalty, engagement, reliability, and support from important stakeholders. Trustworthiness, Mayer (2019) argues, translates into trust in counterparties resulting in superior firm performance. Trust-based firms and trusteeship systems are, thus, a source of competitive advantage.

The concept of stewardship has increasingly been related to family owners. Family firms are the most common type of organization around the world and many family firms are characterized by stewardship (Debicki et al., 2009; Craig and Dibrell, 2006). While less research has been done on the effect of steward ownership on capital structure decisions, scholars have commonly applied stewardship theory to family-owned firms and covered the identification in family firms and commitment (Vallejo, 2009). Since most of the family members are committed to the firm and altruistic to each other as a result of kinship, the behavioral assumptions underlying agency theory may not hold too well for families (Ang et al., 2000). Corbetta and Salvato (2004, p. 357) postulate that "the owning family has a crucial impact in shaping the 'model of man' prevailing within the organization

as either the self-serving, economically rational man postulated by agency theory, or the self-actualizing, collective serving man suggested by stewardship theory". On a similar note, Pearson and Marler (2010) argue that the stewardship choice by the family owner can facilitate reciprocal stewardship in the relationship with the employees.

Based on stewardship theory, family members act as stewards by putting collective organizational goals above personal interests (Corbetta and Salvato, 2004). Congruently, surveys find a higher level of trust in family-owned companies compared with other types of firms (Edelman Trust Barometer, 2017). The level of employee satisfaction in family-owned businesses is high and, thus, employees appear to be highly motivated (Mayer, 2019). In addition, family firms have a high degree of employee identification, which induces higher profitability and survivability in family-owned enterprises (Vallejo, 2009). Chu (2009) empirically supports the theory of stewardship in firms where family members take important roles in management and ownership.

Foundation ownership has also been associated with stewardship. Foundations are independent, irrevocably self-owned legals with a long-term scope and purpose-related objectives ranging beyond profit-maximization (Thomsen and Conyon, 2012). In addition, foundation ownership is highly stable with fewer replacements in management. Similar to family owners, such characteristics work as commitment mechanisms (Thomsen et al., 2018; Purpose Foundation, 2020). Foundations uphold the purpose and values and ensure that they remain embedded in the business (Mayer, 2019). In turn, a firm with well-enshrined purposes and values may benefit from recruiting better employees or a good reputation amongst its customers (Henderson and van den Steen, 2015; Rob and Fishman, 2005).

Lastly, founder ownership has been related to stewardship (Dawson et al., 2018; Davis et al., 1997; Nelson, 2003). Since founders created the firm they develop a strong sense of commitment towards the organization (Nelson, 2003). Founders may experience psychological ownership[10] since they have invested their entire self into the firm and have deep knowledge of the business (Pierce et al., 2001). In turn, psychological ownership creates a

[10]Psychological ownership extends beyond legal ownership since it bears a strong sense of attachment (Dawson et al., 2018)

deep link to the organization and, therefore, founders are likely to show pro-organizational behavior (Davis et al., 1997).

The concept of stewardship stands in contrast to the traditional view of the firm, which advocates that the company should designate its resources to maximizing shareholder value, which is its sole responsibility (Friedman, 1970). Thomsen and Pedersen (2000) suggest that institutional owners commonly adhere to a traditional imperative and that they are expected to bear a short-term financial commitment to their own constituents rather than pursuing a purpose beyond profit-making. Institutional owners are merely money managers and seldomly experience psychological ownership (Pierce et al., 2001). Thus, in contrast to the predictions of stewardship theory, they are expected to exhibit low levels of personal identification and emotional attachment with the firms they own and, as follows, the firm is rather viewed as an investment object (Pierce et al., 2001).

2.9 The Commitment Role of Equity

Graham (2000) observes that many firms appear to be substantially underleveraged compared to what is predicted by classical corporate finance theories[11]. He estimates that the capitalized tax benefit is equal to 9.7% of the market value of the typical enterprise. The average company could almost double the tax advantages by issuing debt up to the point where the marginal benefit is offset by the increasing costs of financial distress (Graham, 2000). Furthermore, Graham (2000) notes that conservative debt policies are consistently observed in large and liquid companies. While the benefits of the tax shield of debt seem high and the bankruptcy risk seems low, companies heavily finance their operations with equity (Graham, 2000; Myers, 2003). Based on these observations, Graham and Leary (2011) conclude that traditional explanations of the financing structures of firms are incomplete and attention must be paid to other characteristics of debt and equity, in particular the impact of capital structure on implicit contracts with stakeholders.

There is a growing body of research that investigates the effect of non-financial stakeholders, such as customers and employees, on capital structure decisions. Titman (1984) was

[11] This is commonly referred to as the debt conservatism puzzle (Graham, 2000)

first with theorizing that stakeholders' incentives to make firm-specific investments have an impact on the financing decisions of the firm. From analyzing the effect of debt and equity on the firm's implicit contracts with its customers and suppliers, Titman (1984) concludes that if the firm produces durable goods that need maintenance, a liquidation of the firm would inflict costs on its customers. Since stakeholders' switching costs are positively related to the uniqueness of the products produced, to maximize firm value, firms with unique products are incentivized to maintain low leverage to curb stakeholders' concerns of liquidation risks (Titman, 1984). In such cases, equity could represent a commitment from the firm to its customers (Titman, 1984). Another early theory was put forward by Brander and Lewis (1986) in which they emphasized the benefits of debt as a negotiation tool to request larger concessions from employees. For instance, highly levered firms could pressure employees into taking pay-cuts to avoid financial distress.

Maksimovic and Titman (1991) investigate the effect of capital structure on the firm's incentives to preserve its reputation as a high-quality producer. They show that in certain circumstances, debt lowers the firms' ability to credibly offer high-quality products, which effectively reduces firm value. A key insight Maksimovic and Titman (1991) provide is that stakeholders are less willing to do business with a severely levered firm since the probability of financial distress is raised, which, in turn, hampers the firm's' ability to honor its implicit contracts with stakeholder groups. For instance, to avoid immediate bankruptcy, a highly levered firm has strong incentives to increase liquidity by means of cost-cutting measures, such as the downsizing of employee-related benefits. The loss of the firm's reputation could impose significant costs on the revolving stakeholders, which comprise the indirect costs of bankruptcy. Maksimovic and Titman (1991) further argue that firms caring for a strong reputation amongst their stakeholders should limit the amount of leverage they use. The authors duly note that their "analysis can be applied to many types of implicit contracts other than product quality in which the terms of trade are determined in part by reputation considerations. Examples might include a firm's reputation for treating suppliers and employees fairly" (Maksimovic and Titman, 1991; p. 194). In other words, capital structure considerations play an important role in relationships where the reputation mechanism is important.

Congruently, Bae et al. (2011) investigate the stakeholder theory of capital structure, however, from an employee perspective. They find that there is a significantly negative relationship between leverage and the company's ability to treat the employees fairly. In other words, Bae et al. (2011) suggest that the fair treatment of employees is an important determinant for capital structure decisions. Furthermore, they argue that an implication of the Maksimovic and Titman (1991) model is that the negative relationship between leverage and the firm's' ability to treat the employees fairly is more pronounced when the firm has a larger incentive to preserve a good reputation amongst its employees.

What is more, Fahn et al. (2017) argue that leverage levels below what is predicted by traditional corporate finance theories are particularly significant in companies with a strong commitment to their employees and high levels of employee satisfaction. In their paper, Fahn et al. (2017) show how the use of equity as a source of financing strengthens the belief of the workforce that the company will uphold its commitments. The firm raises external capital since it does not have sufficient capital for investments, and it may either use debt or equity financing for this purpose. The issuance of debt influences the enforceability of the relational contracts negatively given that the consequences of reneging on implicit agreements between the firm and its employees are partly moved towards the debtholders (Fahn et al., 2017). Upon reneging, expected payments made to debtholders are curtailed since the firm is less profitable and, thus, is subject to higher bankruptcy risk (Fahn et al., 2017). Consequently, debt increases the firm's marginal propensity to renege (Fahn et al., 2017). The issuance of equity, however, does not influence the enforceability of relational contracts since claims by shareholders reduce the firm's cost by the same amount as they benefit the relational commitment to the workforce (Fahn et al., 2017).

The implicit costs on the firm's relational contracts connected to the issuance of debt, in turn, affect the motivation of the employees (Fahn et al., 2017). As the provision of effort by employees is contingent on their motivation, debt affects the future profits of the firm. In case the employees provide a low effort the bankruptcy risk rises, which in turn would raise the probability that the firm breaks its promises with both its employees and debtholders (Fahn et al., 2017). The issuance of equity, however, does not affect the relational contracts since the interests between the firm and other shareholders remain

aligned (Fahn et al., 2017). In sum, low debt levels are connected to highly effective relational contracts and a better alignment of interests.

Chapter 3

Hypotheses

In this chapter, hypotheses about the role of committed ownership on the financing decisions of the firm are formulated. This chapter will be structured into three sections. The first section will define committed ownership. The second section concerns the formulation of a hypothesis about committed ownership and leverage levels. The third section concerns the formulation of a similar hypothesis about committed ownership and speed of adjustment toward the target leverage.

3.1 Definition of Committed Ownership

In section 2.7 through 2.9, multiple perspectives on committed ownership were introduced upon which a theoretical foundation for why committed ownership might matter for financing decisions was constructed. Yet, in congruence with Saunders et al. (2009), hypotheses must be expressed in operational terms, that is, indicating precisely how the concepts or variables are to be measured. Thus, in order to establish valid and testable hypotheses, it is vital to adopt a clear definition of committed ownership. This will be done in contrast to institutional ownership, which will constitute the control group.

Along these lines, committed ownership will be defined based on three owner characteristics; i) purpose, ii) longevity, and iii) accountability. First, committed owners are purpose-driven and have a mission beyond profit-making. The definition of such a purpose varies across firms. While some firms derive their purpose from a broader mission, such as defeating diseases, other companies derive purpose from the core product or service that they offer to customers or from the way they do business. It is, however, important to distinguish between a purpose and a positive impact on, for instance, a social or environ-

mental level. Although the two are combinational, the purpose is not necessarily related to corporate responsibility, but rather to the firm's *raison d'etre*, the problems it wants to solve, or what it wants to be. Thus, the purpose could merely relate to companies building useful products or providing useful services. Moreover, for purpose-driven owners, it holds that economic rents are a means to an end rather than ends of themselves. In other words, profits are a product of business and not a purpose per se.

Second, committed owners are devoted to owning the firm in the long-run and often indefinitely. In many cases, committed owners are strongly associated with their firms, therefore, they are personally vested in the survival of the firm. Moreover, such firms may benefit from long-term decision making in order to fulfill the defined purpose and, thus, long-term value creation.

Third, committed owners commonly experience high levels of accountability toward stakeholders. Given the explicitly defined purpose and the long-term horizon, committed owners benefit from cultivating a good relationship with stakeholders as it strengthens the credibility of commitment. By maintaining a favorable reputation amongst stakeholders, not the least the employees, the committed owner can align interests toward the defined purpose and build lasting relationships, which in turn, improve the likelihood of the long-time survival of the firm.

In contrast to committed owners, institutional owners are not purpose-driven but often concerned with financial returns (Thomsen and Pedersen, 2000). Institutional owners are intermediate agents for the ultimate beneficiaries and, as follows, they are expected to bear a financial commitment to their own constituents rather than pursuing a purpose beyond profit-making. Moreover, contrary to the long-term orientation of committed owners, institutional owners tend to have a short investment horizon since they are under strong pressure to deliver financial returns and due to the fierce competition amongst the money managers (Graves and Waddock, 1990). Lastly, Shleifer and Summers (1989) provide anecdotal evidence that institutional owners, such as private equity firms, violate implicit contracts with their revolving stakeholders and, therefore, they are not expected to exhibit a similar level of stakeholder commitment or accountability.

3.2 Committed Ownership and Leverage

Committed owners, given their peculiarities and preferences, are expected to diverge from other owners in their financing decisions. Central to the classical theories of capital structure is the use of leverage as a mechanism to maximize the financial value of the firm. However, such theories would, by reason, have less predictive power for the financing decisions of committed owners since they are driven by a purpose beyond profit-making. Although they recognize profits as desirable and necessary, committed owners are likely to attach relatively more weight to the implications of debt and equity on governance and stakeholder relations.

As was theorized by Fahn et al. (2017), committed owners should be significantly less levered than other owners since the use of equity as a source of financing strengthens the belief of the workforce that the company will uphold its commitments. The implicit costs on the firm's relational contracts connected to the issuance of debt, in turn, affects the motivation of the employees negatively. As the provision of effort by employees is contingent on their motivation, debt affects the future profits of the firm and, specifically, the alignment of joint efforts toward the mission. Moreover, committed owners are expected to encourage the choice of stewardship and pro-organizational behavior among employees. In congruence, Bae et al. (2011) hypothesize that debt is likely to have an adverse effect on the intrinsic motivation of employees and other non-financial stakeholders. Thus, the use of debt as a governance mechanism may discourage employees from putting collective goals above self-interested goals, whereby committed owners should favor lower levels of leverage.

Although Fahn et al. (2017) and Bae et al. (2011) primarily consider employees in their theories, for committed owners, the governance effects of debt are expected to range beyond employee relations to other stakeholders as well. Given their explicitly defined purpose and the long-term horizon, committed owners benefit from maintaining a good relationship with stakeholders as it strengthens the credibility of commitment and devotion to their mission.

Furthermore, although no empirical research has been done on the effect of committed

ownership on financing decisions, a handful of empirical studies found that owner types related to committed owners, such as families and foundations, have a significant and negative relation to capital structure[1]. Gonzalez et al. (2013) analyze the effect of controlling family blockholders on the capital structure of Columbian firms[2]. Their study suggests a negative effect on leverage levels for young and median-age firms when the founder or heirs are in control[3]. The effect is more profound when the founder is in control. However, for old firms, the findings suggest a positive effect on leverage levels (Gonzalez et al., 2013). The two-sided results stress the relevance of the trade-off between two contrasting motivations that affect the leverage decision in family firms. On the one hand, they argue, risk aversion is higher among family owners which induces them to take on less debt. This is in congruence with the expectation of committed owners being reluctant to take on risk to ensure the long-term survival of the firm. Similarly, it is argued that family ownership commonly implies lower debt levels since the objective is to maximize family value instead of firm value, similar to how committed owners are expected to define value based on their explicit purpose rather than profit. On the other hand, it is suggested that family ownership is associated with higher debt levels due to a need for financing growth without losing control (Gonzalez et al., 2013). This is consistent with Wiwattanakantang (1999) who states that family-owned firms rely on debt to a larger extent in order to protect the voting power of family members[4]. Although this trade-off is logically sound, the former effect is expected to be dominant for committed owners since equity bears a commitment role (Fahn et al., 2017).

Contrastingly, Lean et al. (2015) in an empirical study on Malaysian firms find that family firms, on average, are less levered compared with non-family firms[5]. Ampenberger et al. (2009) show with a sample of publicly listed German firms that family firms have a significantly lower leverage ratio than non-family firms[6]. In a study of firms listed in the

[1] After a thorough study of related literature, no studies on committed ownership and capital structure decisions could be identified.

[2] Gonzalez et al. (2013) define family firms as companies where the largest shareholder is a founding family.

[3] Gonzalez et al. (2013) divide the firms in their sample into two groups; below and above the sample median age.

[4] Family firms are defined as companies where families own at least 25% of the outstanding shares (Wiwattanakantang,1999). Apart from holding the shares directly a controlling family may hold its shares through their subsidiaries or affiliated firms (Wiwattanakantang,1999).

[5] Lean et al. (2015) define a family firm as a company where a family holds most voting rights.

[6] Family firms are defined as companies where >25% of voting rights are held by a family (Ampenberger et al., 2009)

U.S., Mishra and McConaughy (1999) find that family ownership matters for determining the level of debt financing. They show that founding family-controlled firms (FFCF) use a more conservative capital structure than non-FFCFs, emphasizing the effect of commitment on leverage levels[7]. Additionally, Mishra and McConaughy (1999) suggest that studies on capital structure that do not control for ownership may be misspecified.

What is more, Thomsen et al. (2018) show that foundation-owned companies have conservative leverage compared with family firms[8]. Furthermore, it is argued that firms with foundation owners have a preference for company survival and, thus, low risk-taking (Thomsen et al., 2018). This is consistent with Radner (1998), Dutta and Radner (1999), and Dutta and Sundaram (2001) who show that companies with a preference for survival favor more conservative capital structures which on the one hand has a negative effect on their return on investment compared to profit-maximizing firms, but at the same time makes them more resilient to demand shocks and, thus, increases the probability of survival. Further, consistent with Møller (2020), lower leverage will put less pressure on management and, thereby, support management continuity (Thomsen et al., 2018). Since debt is likely to have an adverse effect on the intrinsic motivation of employees, it holds that committed owners employ less debt in order to steer the behavioral choice of the employees towards stewardship (Davis et al., 1997).

On another note, in a study on U.K. firms, Sun et al. (2015) investigate the effect of institutional ownership and managerial share ownership (MSO) on capital structure[9]. Their empirical results show a homogeneously positive relation between institutional ownership and firm leverage levels. This, they argue, is consistent with that institutional investors are often focused on maximizing financial returns whereas the scope of other owner types might be more diverse[10] (Thomsen and Pedersen, 2003). Another paper by Huang and Ling (2011) finds that institutional ownership is associated with higher leverage among high-levered firms but not low-levered firms[11]. Lastly, Hayat et al. (2018), who conducted

[7]FFCs are defined as publicly listed corporations, where the CEO is the founder or a family member of the founder (Mishra and McConaughy, 1999).

[8]A foundation-owned firm is defined as a firm, where the largest owner is a foundation (Thomsen et al., 2018).

[9]A firm is defined as institutionally-owned if an institution holds at least 3% of the outstanding shares, while also being the largest shareholder.

[10]Although Thomsen and Pedersen (2000) suggest that there are exemptions, institutional investors are assumed to more often than not be shareholder-value maximizing and specialized owners.

[11]Huang and Ling (2011) define a firm as institutionally-owned if an institution owns the highest pro-

a comparative study on the effect of managerial and institutional ownership between the U.S. and China on capital structure, find a positive relationship between institutional ownership and leverage in the U.S., however, negative in China[12].

Although Antoniou et al. (2008) argue that capital structure decisions are affected by the economic and institutional environment, multiple studies in various contexts have found that certain owner identities, such as families and foundations, have a significant and negative effect on the capital structure (Gonzalez et al., 2013; McConaughy et al., 2001; Lean et al., 2015; Thomsen et al., 2018; Mishra and McConaughy, 1999). As explained in section 2.8, these owner identities are strongly connected with committed ownership. In contrast, empirical findings largely suggest that institutional ownership is positively related to leverage levels (Sun et al., 2015; Huang et al., 2011; Hayat et al., 2018). As follows, the following hypothesis is formulated:

H1: *Committed owners employ less leverage than institutional owners*

3.3 Committed Ownership and Adjustment Behavior

As highlighted in the preceding section, committed owners must credibly demonstrate devotion to their mission and that they honor their implicit promises with revolving stakeholders. As was suggested by Maksimovic and Titman (1991), stakeholders are less willing to do business with a severely levered firm since the probability of financial distress is raised which, in turn, hampers the firm's ability to honor its implicit contracts with stakeholder groups. Since an over-leveraged firm facing a considerable risk of default is likely to reduce social expenditure, such as on employee benefits or supplier training, excessive debt is detrimental to stakeholder relations. Consequently, for committed owners, although debt levels may reside at below-bankruptcy levels, deviation from the target leverage is expected to be costlier since their concern about longevity, firm reputation, and the demonstration of commitment to the explicitly defined purpose is contingent on favorable stakeholder relations. In contrast, institutional owners are not expected to tend

portion of shares.

[12] A firm is defined as institutionally-owned if the largest shareholder of the firm is an institution (Hayat et al., 2018)

to stakeholder relations similarly to committed owners. As aforementioned, institutional owners bear a financial commitment to their own constituents and are not to the same extent reliant on favorable stakeholder relations to ensure a license to operate (Shleifer and Summers, 1989). For example, Shleifer and Summers (1989) argue that private equity owners extract value from revolving stakeholders such as employees and thereby violate implicit contracts. What is more, institutional investors are not expected to demonstrate a similar level of psychological ownership or identification with the owned firm, suggesting that they would be more inclined toward extracting value through restructuring if reaching a state of financial distress (Pierce et al., 2001, Jensen 1989). Thus, deviation from the target leverage is not expected to be as costly as for committed owners. As follows, committed owners are expected to adjust leverage levels at a higher speed than institutional owners.

Only a handful of studies consider the effect of the owner's identity on adjustment speed. López-Gracia and Sánchez-Andújar (2007) show with a sample of Spanish and Portuguese firms that family-owned firms have on average lower leverage levels and adjust faster toward their optimal capital structure than their non-family counterparts[13]. They suggest that while non-family owners face higher adjustment costs, being a family-owned firm entails reduced agency costs and better access to resources since family activism substitutes for the disciplinary role of debt, rendering it unnecessary to control the discretion of managers. Similarly, in an article by McKinsey (2010), it is suggested that family firms face a lower cost of debt than a benchmark of peer companies which might explain why some studies find a higher speed of adjustment for family-owned companies[14]. This finding is consistent with Anderson et al. (2003) and Anderson and Reeb (2003b) who also find a lower cost of debt in family firms[15]. Consistently, committed owners may also face a lower cost of debt due to the transparency of their devotion to a purpose, their preference for long-term ownership, and accountability to stakeholders, which could mitigate information asymmetries with lenders regarding committed owners' intention of honoring the interest

[13] A family-owned firm is defined as a firm that has a family shareholder larger than 50% (López-Gracia and Sánchez-Andújar, 2007).

[14] McKinsey (2010) found that on a sample of 250 industrial firms in S&P 500 between 1993-1998, the average yield spread on corporate bonds is 32 basis points lower for family-owned businesses. McKinsey (2010) define a family firm as a company where family ownership >10%.

[15] Family firms are defined as companies, where families claim at least 5% in ownership (Anderson and Reeb, 2003).

payments. Lastly, since committed owners are believed to be less levered, additional debt may be more accessible which facilitates more rapid adjustments.

Pindado et al. (2015) show that family-owned firms exhibit a higher adjustment speed compared with their non-family counterparts[16]. Among other factors, they explain that family firms can increase or decrease their debt levels without incurring significant costs since these firms have long-term relationships with their debtholders. In turn, this allows family firms to reach their target capital structure at a higher pace, similar to what is expected from committed owners.

In sum, a few studies have found a significant and positive relationship between family ownership and the speed at which the firm reverts to the target leverage (López-Gracia and Sánchez-Andújar, 2007; Pindado et al., 2015). Based on the empirical and theoretical evidence the following hypothesis is formulated:

H2: *Committed owners exhibit a higher speed of adjustment than institutional owners*

Study	Sample	Country	Dependent variable	Involvement proxy	Control group	Definition of ownership	Impact on leverage level	Impact on SOA
Gonzalez et al. (2013)	523 listed and unlisted	Colombia	Debt to total assets	Family ownership	Non-family firms	Largest owner is founding family	Dependent on firm age	-
Lean et al. (2013)	201 listed firms	Malaysia	Debt to equity	Family ownership	Non-family firms	Family is the largest ultimate owner	Dependent on firm size	-
Ampenberger et al. (2009)	660 listed firms	Germany	Long-term market leverage	Family ownership and management	Non-family firms	>25% of voting rights held by a family	Negative	-
Mishra and McConaughy (1999)	219 listed firms	USA	Debt to total assets	Founding Family Controlled Firms	Non-FFCFs	CEO is founder or a family member of the founder	Negative	-
Thomsen et al. (2018)	394 listed and unlisted firms	Not specified	Total equity to total assets	Industrial foundations	Family owners	Largest owner is an industrial foundation	Negative	-
López-Gracia and Sánchez-Andújar (2007)	828 listed and unlisted firm	Spain and Portugal	Market or book leverage	Family ownership	Non-family firms	>50% family shareholder	Negative	Positive
Wiwattanakantang (1999)	270 non-financial listed firms	Thailand	Market and book leverage	Family ownership	Non-family firms	>50% of total holdings (indirect and direct) held by a family	Positive	-
Anderson et al. (2003)	319 listed firms	USA	Cost of debt	Family ownership and management	Non-family firms	Family has at least 5% of ownership	Positive	-
Anderson and Reeb (2003)	252 listed firms	USA	Debt to total assets	Family ownership and management	Non-family firms	Family has at least 5% of ownership	Neutral	-
Pindado et al. (2015)	645 listed and unlisted firms	Eurozone countries	Market leverage	Family ownership	Non-family firms	>10% voting rights held by a family	Positive	Positive
Kayo et al. (2018)	257 listed firms	Brazil	Market value of debt	Family ownership	Non-family firms	>50% of voting rights held by a family	Positive	Negative
Sun et al. (2015)	383 firms from the FTSE All	UK	Market value of debt	Institutional ownership	MSOs	>3% of outstanding shares held by institutional investors	Positive	-
Huang and Ling (2011)	767 listed firms	China	Book value of debt to total assets	Institutional ownership	State ownership	Proportion of ownership owned by institutions or the state	Dependent on firm leverage	-
Hayat et al. (2018)	630 listed firms	USA and China	Total liabilities to total assets	Institutional ownership	Managerial ownership	Largest owner is an institution or a manager	Depends on country	-

Figure 3.1. *A table of previous studies on capital structure and speed of adjustment per owner identities*

[16] A family-owned firm is defined as a company that has an ultimate owner, which is a family, that is larger than 10% (Pinado et al., 2015).

Chapter 4

Methodology

An important aspect of the research process is reflecting upon the methodological considerations in order to account for the assumptions of the researchers. This chapter will use Saunders' et al. (2009) 'research onion' as an overriding structure to guarantee a comprehensive account of the methodology. The 'research onion' comprises the elemental philosophical worldview, the research approach, the time horizon, and data collection methods[1]. The following chapter will be structured accordingly, although with the addition of the last section assessing the credibility of the research findings.

4.1 Philosophy of Science

Determining the philosophy of science plays an important role in the research methodology (Saunders et al., 2009). Creswell (2014) defines the philosophical worldview as the general direction and elemental beliefs brought into the research by the author, which guide the research process. Since this paper is an empirical investigation of financing decisions by firms with committed owners, the research philosophy chosen to best fit the research question is positivism. The positivist research philosophy suggests that a thorough understanding of behavior by individuals is established through observation and reason (Saunders et al., 2009). In other words, only the observable, objective facts are considered as a foundation for science when following the positivist paradigm. Along these lines, this paper concentrates on quantifiable observations that lend themselves to statistical analysis (Saunders et al., 2009). Furthermore, the positivist paradigm implies that 'the researcher is independent of and neither affects nor is affected by the subject of the research' (Remenyi et

[1]The research onion also comprises the research strategy and the research choice, however, these aspects have been excluded.

al. 1998). As regards axiology, conducting research value-free has been facilitated by the collection of measurable and quantifiable data, where little can be done to change the substance (Saunders et al, 2009). Arguably, however, it is impossible to completely disregard personal values since decisions regarding the research topic and the data collection were influenced by personal interests and values[2]. Nonetheless, when conducting the research, recognizing the positivist paradigm helped with maintaining an objective stance. From an ontological point of view, the research question has been objectively addressed and is independent of social actors. In terms of epistemology, the research question is addressed by observable, measurable phenomena. In line with the positivist paradigm, the data handling followed a structured process, as emphasized by Gill and Johnson (2010), in order to facilitate the replication of the study. Chapter 5 is devoted to present in a structured way how the data is obtained and handled.

4.2 Research Approach

The intended function of theory in a research project is displayed through the consideration of the approach towards theory development (Saunders et al., 2009). Following Veal (2011) the reasoning in the paper can be characterized as predominantly deductive since hypotheses have been formulated based on existing literature and empirical studies, which subsequently were subjected to testing and then either rejected or not. The hypotheses are based on well-developed corporate finance and governance theories of capital structure. To test these measurable, quantitative data has been collected. As elucidated in the subsequent chapter, all variables are unambiguously defined to facilitate the quantitative measurement and a thorough understanding of the problem.

In accordance with the deductive approach, well-researched firm-specific and macro-economic factors have been controlled for, such as the tangibility of firm assets and macroeconomic growth. These controls contribute to a mitigation of the omitted variable bias in the regressions and ensure a higher validity of the owner-related coefficients.

In order to draw statistical inferences and generalize about the relationship between the

[2]In addition, it can be argued that the adoption of a value-free position implies the presence of a certain value position (Saunders et al, 2009).

ownership group and financing decisions, the underlying sample has to be of sufficient numerical size. The sample in the main dataset encompasses a significant amount of observations from firms of diverse backgrounds, which allows for some degree of generalization within the boundaries implied by the characteristics of the firms in the sample. This is in congruence with the deductive approach (Saunders et al., 2009).

4.3 Modes of Data Gathering

The econometric analysis in chapter 7 is based on two strands of secondary data. While the first strand comprises secondary data related to financial and ownership information, the second strand comprises secondary data drawn from books, academic journals, and reports. As aforementioned, the first strand of secondary data will be elaborated on further in chapter 5. Moreover, to gain a more comprehensive understanding of capital structure decisions by committed owners, a myriad of material was analyzed. Academic journals and related literature have been useful in establishing a context as regards the underlying econometric method, capital structure theories and determinants, previous empirical findings, and governance-related aspects. While the secondary data has been collected for another purpose than for our study, the material is publicly available allowing for a careful assessment of the validity and reliability.

4.4 Time Horizon

The nature of data in this study is panel data as it investigates the same firms over multiple periods to yield a holistic understanding of their financing decisions over time. Panel data, which is commonly referred to as longitudinal data, has a great capacity to examine the behavior of firms over time, as in the case of investigating changes in firms' capital structures (Yaffee, 2003). Panel data comprises both time series and cross-sectional dimensions. Combining cross-sectional with time series improves the quality and quantity of data in ways that would not be possible when only looking at a single dimension (Gujarati, 2003). Further, panel data is well-suited to study the dynamics of adjustment. According to Nerlove (2002, p. 5), "economic behavior is inherently dynamic so that most econometrically interesting relationship is explicitly or implicitly dynamic". While the

ownership data retrieved from BvD is cross-sectional, the researchers used Zephyr to find previous M&A transactions, IPOs, and PE or VC deals during the observation period. This is done in order to account for changes in ownership over the sample period[3].

Panel data can be classified as balanced or unbalanced. While in balanced panel data all the information can be observed throughout the entire observation period, in an unbalanced panel some information is missing for certain panel members. Early empirical studies on capital structure, for instance Titman and Wessels (1988), used balanced panel data and included only firms that existed over the whole sample period. As noted by Frank and Goyal (2003), this leads to a survivorship bias since it only includes firms that continue to exist. Therefore, subsequent studies commonly use unbalanced panels of firms[4]. The dataset in this study can be classified as unbalanced since not all firm-specific financial information is available during the entire observation period from Q1 2009 until Q4 2018.

4.5 Credibility of the Research Findings

It is important to ensure the credibility of data by reflecting upon the quality, replicability, and trustworthiness of the research. In doing so, the reliability and validity of the data must be assessed. Validity and reliability are the most important features in the evaluation of measurement instruments (Mohajan, 2018).

4.5.1 Reliability

The essence of reliability lies in proving the stability of the findings. Following Yin (2009), the methodology and data collection were comprehensively documented to scale down potential biases and errors. The transparency in documentation assures that trust will be put into the methods used for data collection and analysis (Remeyi et al., 2005). To test the stability of the findings, a robustness check will be performed on a restricted sample where two arbitrary owner groupings have been removed. The regressions with the restricted sample test whether the assumptions about the classification of owner groups

[3]It is also necessary to screen the data for M&A, IPOs, and PE or VC events since these may produce significant changes in the capital structure of firms.

[4]Another related problem is the missing data bias. Frank and Goyal (2003) argue that there is no completely unbiased solution to this problem.

hold, therefore, the regression run with the restricted sample constitutes a stability test on the results.

4.5.2 Validity

At the core of measuring validity is the extent to which the results are truthful. Validity measures what an instrument measures and how well it does so (Mohajan, 2018). To assess this, another robustness test will be performed on the underlying econometric technique by running similar regressions using another statistical model. The results of both robustness tests can be found in section 7.2.5. To ensure that the variables measure what they are supposed to measure the used proxies have been carefully analyzed, which will be explained in greater detail in chapter 5. Furthermore, it must be noted that the evidence yielded by comparing the model's predictions with the data does not inevitably result in indisputable conclusions about the validity of the model (Giere, 2001). In other words, a confirmation of the hypotheses may not be positive evidence of the model itself but, instead, it could be caused by various other factors, such as the falsity of auxiliary assumptions.

As regards external validity or generalizability, although the findings are specific to the U.S. context and only apply to publicly listed companies, the researchers concluded that there are certain aspects that are generalizable. In alignment with Crespí and Martín-Oliver (2015) and López-Gracia and Sánchez-Andújar (2007), this study suggests that heterogeneity between owners is related to differences in capital structure decisions. However, in contrast to these studies, this paper finds a difference in leverage and adjustment behavior when comparing purpose-driven committed owners with financially-motivated institutional owners. These differences are likely to persist across different institutional contexts, while the extent to which the findings can be generalized may depend on the definition of the variables, the econometric techniques, and related governance concepts, such as ownership concentration and investor protection law.

Chapter 5

Data

Thus far, the theoretical and conceptual foundations of classical capital structure and corporate governance literature have been introduced. Moreover, the hypotheses have been determined and the methodological concerns addressed. This chapter will present the data set consisting of U.S. listed firms that will form the foundation for the statistical analysis. The chapter is organized as follows: Section 5.1 will outline the procedure of sample selection as well as any modifications and removal of observations. Section 5.2 will provide the definition of capital structure that will be used as a dependent variable throughout the analysis. In Section 5.3, definitions of all independent variables and relevant proxies will be provided. Finally, section 5.4 will discuss the ownership variables.

5.1 Sample Selection

The data set consists of unbalanced panel data of publicly listed firms residing in the U.S. As will be further elaborated in section 5.2 and 5.3, a set of firm-specific and macroeconomic determinants demonstrated to have a significant effect on financing decisions have been identified and included as control variables (e.g. Titman and Wessel, 1988; Harris and Raviv, 1991; Frank and Goyal, 2009). Those variables building on data from financial statements have been retrieved from Compustat. With regards to macroeconomic variables, data on recessions was derived from the Centre for Economic Policy Research, data on GDP growth has been extracted from OECD.Stat, and government bond yields for the computation of term structures were derived from the U.S. Department of the Treasury. In addition, ownership data has been collected from BvD Orbis. Given that BvD only holds current cross-sectional data on firm ownership, BvD Zephyr was used to find pre-

vious M&A, IPOs, VC and PE transactions in order to account for changes in ownership over the sample period[1]. Since ownership over time is relatively stable, there were only 15 changes in the owner identities throughout the sample period (La Porta et al., 1999).

The observation period is restricted to calendar quarters between 2009 Q1 and 2018 Q4, while the sample is restricted to firms that are listed on public stock exchanges in the U.S and active at the end of the sample period. Moreover, only firms that also legally reside in the U.S. are considered, which is why a small number of Canadian firms listed on U.S. stock exchanges have been removed. In congruence with Rajan and Zingales (1995), the financial data is restricted to consolidated financial statements. This is since firms with unconsolidated balance sheets tend to report affiliates' net assets as long-term investments resulting in a higher asset base (Rajan and Zingales, 1995). In other words, this avoids duplication of firm subsidiaries.

In addition, the following adjustments and eliminations have been made. All ultimate owners labeled as corporations have been removed from the sample. The underlying rationale is that a corporation is unlikely to be an ultimate owner, but is itself by definition owned by shareholders of various types. Although it might be possible to find the major shareholders of these corporate owners and then look up the major shareholders in the major shareholders and so on until the ultimate shareholder is found, this data was not available in the BvD database. Given that this owner group was very large and comprised varying types of firms, it would be troublesome to draw conclusions about the corporate owners' effect on leverage decisions since there is no reason to believe that corporations would be homogeneously profit-maximizing nor purpose-driven, which makes the classification ambiguous.

In addition, all firms with the state as the ultimate owner were removed due to a similar ambiguity of ownership motive. Government-owned firms frequently pay special attention to political goals, rendering their objectives both non-profit optimizing and misaligned with those of committed owners (Thomsen and Pedersen, 2000). Nonetheless, only a small number of state-owned firms existed in the dataset[2]. The negligible amount of

[1] It is also necessary to screen the data for these events since they may produce significant changes in the capital structure of the firms included in the dataset.

[2] A total of less than 40 observations (from 3 companies) of state-owned firms were found in the data

publicly listed state-owned firms is in accordance with Holderness (2009), who noted that in his sample of U.S. firms there was no company where the government was the largest shareholder[3].

Furthermore, the sample excludes financial firms with SIC codes ranging between 6000 to 6999 given that these firms are subjected to strong financial supervision which, in turn, affects capital structure decisions. Similarly, regulated utilities with SIC codes in the spectrum 4900 to 4999 have been excluded. This was done in accordance with previous empirical studies on capital structure, such as Frank and Goyal (2009) and Leary and Roberts (2005). Consistently unleveraged firms were excluded as such firms cannot be hit by leverage shocks caused by changes in asset prices as described by Fischer et al. (1989)[4]. Congruently, Cook and Tang (2010) argue that including zero leverage firms may create a bias in the estimation of the speed of adjustment when the decision of whether to issue a type of financing is assumed to be similar to the decision of the amount of such financing to use. Lastly, to mitigate the effect of outliers all firm-specific variables have been winsorized at the upper and lower one percentile in congruence with previous work on the speed of adjustment[5] (Elsas and Florysiak, 2015; Drobetz et al., 2015; Flannery and Rangan, 2006; and Fitzgerald and Ryan, 2019).

5.2 Dependent Variable Specification

Throughout the econometric analysis, the leverage ratio of the sample firms will be used as the dependent variable. However, the measurement of the leverage ratio is disputed amongst capital structure researchers. Hereafter, the different measures of leverage will be discussed and a selection of the most relevant measure will be undertaken.

A central nuance in capital structure literature is that between accounting and finance

set.

[3]Holderness (2009) also note that the Troubled Asset Relief Program (TARP) may change this. However, Holderness (2009) chose a 5% ownership threshold, thus such explanations may be more appropriate.

[4]The removal of consistently unleveraged firms reduced the sample from 25,744 to the final of 20,943 observations (from 956 to 799 firms). Among the removals, 54% stemmed from the committed owner category, while 45% were from the institutional owner category (which only represents 7.6% of the total sample).

[5]The macroeconomic variables are not winsorized since they are less sensitive to the influence of spurious outliers. In addition, the recession and ownership variables are binary and thus not subjected to winsorizing.

measures (Møller and Parum, 1999). While accounting measures build on book values to calculate firm leverage, finance measures concern market values (Møller and Parum, 1999). Myers (1977) advocates the use of book leverage because, as he argues, debt is better supported by assets in place than by growth opportunities. Congruently, Fama and French (2002) postulate that the theoretical predictions mainly apply to book leverage, while Thies and Klock (1992) argue that book ratios better reflect the managers' target leverage. The market value of equity depends on multiple factors that are exogenous to the firm and thus market values may not capture the underlying alterations conducted by the managers. Further, managers may perceive information that is obtained through constantly fluctuating markets as unreliable. In accordance, Graham and Harvey (2001) presented data including many managers indicating that they do not rebalance capital structures in reaction to market fluctuations[6]. However, the drawbacks of book leverage are that it is presumed to be backward-looking and that book value of equity is only a residual which balances assets, liabilities, and equity and disregards future growth prospects (Welsh, 2004). Moreover, the book value of equity could be negative although assets cannot be.

Market values, however, reflect all available market information which is why it is commonly preferred by finance scholars. Nonetheless, the drawbacks of rebalancing leverage based on market values are that it allows for significant fluctuations due to, for instance, macroeconomic conditions or investor optimism[7]. Even so, market values are generally preferred in the broad finance literature and commonly used in capital structure estimations (Frank and Goyal, 2009). Against this background, both book and market leverage will be used as dependent variables.

Still, the measurement of the leverage ratio is contested in the finance literature (Welch, 2011). A broad measure deployed by both Rajan and Zingales (1995) and Harris and Raviv (1991) is total liabilities to total assets. While it is an acknowledged approach, it encompasses operating liabilities, such as accounts payable and, therefore, leverage is overstated. Hence, a better measure may be to take the sum of short-term and long-

[6]Graham and Harvey (2001) further argue that a given adjustment costs, continuous rebalancing is not beneficial which is why market fluctuations have a smaller effect on leverage decisions, at least in the short term.

[7]Investor optimism could drive up valuations to levels not supported by fundamentals.

term debt to total assets. However, as Welch (2011) noted, this measure may understate leverage since non-debt liabilities are categorized as equity. Although one could correct total assets for non-debt liabilities, this measure would be affected by items that can be considered irrelevant to capital structure decisions, such as pension obligations. Based on these arguments, Flannery and Rangan (2006) postulate that total debt to capital can best measure the effect of past recapitalization policies, which is supported by Hovakimian et al. (2001), Leary and Roberts (2005) and Harris and Raviv (1991). Thus, it will be used as the main leverage ratio in this analysis. In accordance, the book leverage ratio is calculated by dividing the book value of short-term and long-term debt (DLCQ + DLTTQ) with the sum of the book value of short-term and long-term debt and the stockholders' equity (DLCQ + DLTTQ+ TEQQ)[8]. Similarly, the market leverage ratio is calculated by dividing the book value of short-term and long-term debt (DLCQ + DLTTQ) with the sum of the book value of short-term and long-term debt and the market value of equity (DLCQ + DLTTQ + MKVALTQ). Given the unavailability of the market value of debt and that the market values of debt do not tend to deviate much from the book values of debt, book debt is used also in the computation of market leverage (Møller and Parum, 1999).

5.3 Independent Variables

A myriad of studies have investigated the financing decisions of firms (e.g.Titman and Wessel, 1988; Harris and Raviv, 1991; Frank and Goyal, 2009). Frequently, the objective involves identifying the determinants of capital structure and the extent of their effect on leverage decisions. Based on such studies, a set of firm-specific and macroeconomic determinants demonstrated to have a significant effect on financing decisions have been identified. As was elucidated in section 1.3, it is not within the scope to test their predictive power or evaluate how well they explain financing decisions. Instead, the scope of this paper is limited to investigating how the observed capital structure and changes in the capital structure are related to committed ownership. Nonetheless, the classical determinants of capital structure are important control variables used to isolate the effect of ownership and mitigate omitted variable bias. The following subsections concern the

[8]The Compustat data codes are given within parentheses.

specification of such control variables.

5.3.1 Size

Firm size has been found to be a significant determinant of capital structure in multiple papers (Warner, 1977; Ang et al., 1982; Hol et al., 2002; Titman and Wessels, 1988; Frank and Goyal, 2009). Larger firms tend to have lower bankruptcy costs, be more diversified, better access to capital markets, less volatile cash flows, and fewer information asymmetries with lenders, thus, often high debt levels. Firm size can be measured in numerous ways, such as by the number of employees, revenue, and market capitalization. Rajan and Zingales (1995) suggest using the natural logarithm of sales, while Gonzalez and Gonzalez (2012) argue to use the natural logarithm of total assets. Based on Titman and Wessels (1988), the logarithmic transformation is necessary since size mainly affects the leverage of small firms. This analysis uses the natural logarithm of the book value of total assets (ATQ) in accordance with Gonzalez and Gonzalez (2012) and Kayhan and Titman (2007).

5.3.2 Growth Opportunities

Titman and Wessels (1988) argue that firms with numerous opportunities for growth experience an increased risk of discretion among managers. Moreover, although growth is valuable, it does not serve as collateral in a liquidation event. Thus, multiple studies suggest that growth opportunities have a significant effect on leverage (Chang and Dasgupta, 2006; Korajczyk and Levy, 2003; Mukherjee and Mahakud, 2010; Korteweg and Strebulaev, 2012; Leary and Roberts, 2005). Proxies for growth are contested in literature. Since high-growth firms generally engage in research and development to generate future income, Titman and Wessels (1988) suggest R&D over sales as an indicator of growth. While Wald (1999) uses growth in revenues as a proxy for growth opportunities, Rajan and Zingales (1995) and Myers (1977) use the market-to-book (MB) ratio as a growth measure, which compares the market value with the book value of a firm. A high MB ratio indicates that the investors believe in the strong future growth prospects of the firm. Although this measure is more appropriate for capital-intensive firms with many tangible assets, it will be deployed as an indicator of the growth attribute in this analysis to

yield comparable results with previous capital structure research, which consistently used the MB ratio. The proxy for growth is calculated using the firm's market capitalization (MKVALTQ) to the stockholder equity (TEQQ).

5.3.3 Non-Debt Tax Shield

Numerous studies postulate that alternative tax-shields crowd out the marginal benefit of additional debt (DeAngelo and Masulis, 1980; Kim and Sorensen, 1989; Graham, 2006; Flannery and Rangan, 2006). Two common measures of the non-debt tax shield include the ratio of investment tax credits over total assets and depreciation over total assets. Given the different state tax regimes in the sample[9], the ratio of total depreciation expense over total assets will be used. However, this indicator excludes tax deductions that are not associated with capital expenditures, such as research and development. In addition, this indicator solely represents tax deductions instead of tax deductions net of true economic depreciation and expenses. Nonetheless, this measure is used in capital structure studies by Bradley et al. (1984), Titman and Wessels (1988), Wald (1999) and Rajan and Zingales (1995). The proxy for non-debt tax shields is calculated using Compustat's depreciation variable (DPQ) divided by the book value of total assets (ATQ).

5.3.4 Tangibility

In the case of firm liquidation, it is often easier to properly value assets of a tangible nature than intangible ones, which is why they serve as better collateral (Frank and Goyal, 2003). Simultaneously, lower tangibility entails higher information asymmetry between insiders and outsiders, which lowers the likelihood of equity issuance (Frank and Goyal, 2003). Multiple studies have confirmed a significant effect of firms' asset tangibility on leverage (Titman and Wessels, 1988; Flannery and Rangan, 2006; Byoun, 2008; Chang and Dasgupta, 2006; Korteweg and Strebulaev, 2015). The measure used for tangibility should be selected in accordance with the dependent leverage variable. If a broader measure of leverage was selected, such as total liabilities to total assets, a broader proxy for tangible assets should be used that encompasses possible collateral, such as inventory. For instance,

[9] At the end of the sample period, the state corporate income tax varied between 0% in states such as Texas and Washington (among others) to 12% in Iowa (Tax Foundation, 2019).

Titman and Wessels (1988) suggest using the sum of inventory and property, plant, and equipment (PPE) to total assets. However, since this the leverage ratio is defined as total debt to capital, PPE (PPENTQ) over total assets (ATQ) will be used as a proxy in accordance with Rajan and Zingales (1995).

5.3.5 Uniqueness

For firms with unique or specialized products, the cost of bankruptcy will often be high since they commonly have employees and suppliers with job-specific skills and customers who have cannot easily find substitute products[10]. Moreover, earnings volatility may also be high. Along these lines, many studies suggest that product uniqueness is important to control for (Rajan and Zingales, 1995; Frank and Goyal, 2009; Flannery and Rangan, 2006; Mukherjee and Mahakud, 2010). While it can be challenging to find a good indicator for uniqueness, Titman and Wessels (1988) propose three ways for measuring this independent variable. First, it is postulated that firms in industries with high attrition rates are relatively less unique because firms who sell unique products rely on job-specific human capital that is costly to replace. Therefore, employee attrition is indicative of the product uniqueness feature. Second, it is argued that firms who sell unique products are more likely to spend more on research and development and, thus, R&D expenses over sales can be used to measure the uniqueness attribute. Third, companies with more unique products are expected to advertise more and spend more on promoting and selling their products and, thus, selling expenses (SG&A) over sales is an indicator of the uniqueness feature. Since data on employee retention is difficult to obtain, as is quarterly data on R&D expenses, this analysis uses selling expenses (XSGAQ) over sales (REVTQ) as a proxy for the uniqueness attribute in accordance with Leary and Roberts (2005) and Hovakimian et al. (2001).

[10]Product uniqueness impacts leverage similar to asset intangibility. Titman and Wessel (1988) suggest that this is due to the high correlation between intangibility and the uniqueness of products. The reason is that many resources are often invested in intangible assets (for instance R&D) to produce a unique product or service.

5.3.6 Profitability

Since profitability has a direct effect on both equity prices and debt terms, it is frequently suggested that is has a large impact on leverage levels (Korajczyk and Levy, 2003; Flannery and Rangan, 2006; Byoun, 2008; Chang and Dasgupta, 2006, Mukherjee and Mahakud, 2010). Various measures of profitability are used by financial scholars. In studies by Banerjee et al. (2009) and Mukherjee and Mahakud (2010), net income to total assets has been used to assess profitability. The drawback of this proxy is that it is affected by the financing decisions of the firm[11]. Frank and Goyal (2009), as well as Chang and Dasgupta (2006), instead use EBITDA to total assets. However, EBITDA incorporates depreciation and amortization expenses which differ across firms since accounting standards often allow for some degree of creativity when it comes to the capitalization of assets. This analysis will, therefore, use EBIT to total assets as a profitability measure which is supported and used by Fama and French (2002) and Flannery and Rangan (2006). It is worth noting, however, that EBIT might be affected by differences in taxation of depreciation and amortization expenses across states. The proxy for profitability is calculated using the EBIT variable (OIADPQ) divided by the book value of total assets (ATQ).

5.3.7 Recession

Hackbarth et al. (2006) suggest that leverage is counter-cyclical and that the state of the economy impacts the speed of adjustment toward the target leverage. The proposition that economic conditions affect leverage is suggested in numerous studies (Levy, 2001; Drobetz et al., 2007; Hackbarth et al., 2006; Korajczyk and Levy, 2003). The National Bureau of Economic Research (NBER) provides recession data in the form of a recession indicator equaling 1 if the NBER has declared an economic recession in the U.S. and 0 if not. This provides an intuitive and manageable way to control for economic recessions and will, consequently, be used in the analysis.

5.3.8 Macroeconomic Growth

Macroeconomic conditions are not fully accounted for by the recession variable. Also, macroeconomic growth is important (Frank and Goyal, 2009; Korteweg and Strebulaev,

[11]The size of the interest payments will affect net income.

2015). The literature is not consistent in the measures of macroeconomic growth. Frank and Goyal (2009) adopt a measure of the real GDP growth rate based on 1996 U.S. dollars. Korteweg and Strebulaev (2015), however, use the annualized seasonally adjusted real GDP growth rate based on 2009 U.S. dollars. Whereas the first measure computes marginal growth as the change in GDP compared to the previous time period, the second measure compares to the same time period one year ago. In this way, seasonal effects are accounted for. The second method will be used throughout this paper and, thus, the marginal growth rate will be calculated by comparing GDP in the current quarter to GDP in the same quarter one year previously. GDP data included in the sample has been collected from OECD's database.

5.3.9 Economic Prospects

The expectation of economic expansions or contractions has been found to significantly affect security prices and, thus, leverage levels (Fischer et al., 1989; Frank and Goyal, 2009; Korajczyk and Levy, 2003; Drobetz et al., 2007). Indications of economic prospects are often obtained from government bonds. An increasing term structure and low interest rates are generally suggesting positive economic prospects. Frank and Goyal (2009) adopt a definition of the term spread as the difference between annualized 10-year and 1-year treasury note interest rates. Using a slightly distinct method, Korteweg and Strebulaev (2015) define the term spread as the difference between annualized 10-year and 2-year treasury note interest rates. The latter measure will be adopted throughout this analysis and the term spreads will be calculated per quarter based on data derived from the U.S. Department of the Treasury.

5.4 Ownership Types

To classify ultimate owners by identities, ownership information was extracted from the BvD Orbis database. Orbis collects data on ownership from annual reports, press releases, regulatory bodies, and other external information providers. Followingly, Orbis categorizes the global ultimate owner (GUO) in 18 different types[12]. The ownership stakes in Orbis

[12]BvD defines the global ultimate owner (GUO) as the individual or entity at the top of the corporate ownership structure.

are based on voting rights. Overall, the data set contained the following owner types:

1. *One or more known families or individuals*
2. *Foundation / Research Institute*
3. *Employees / Managers / Directors*
4. *Financial company*
5. *Insurance company*
6. *Private equity firm*
7. *Mutual and Pension Fund/Nominee/Trust/Trustee*

The committed owner category comprises owner types 1-3 which can be defined as long-term, committed, and purposeful owners. The first category, *'One or more known families or individuals'* encompasses single individuals, families, and other shareholders designated by more than one individual. The Orbis database assumes that these individuals would likely assert their voting power jointly. Congruently, stewardship theory assumes that family members exercise their voting power collectively as a result of kinship and altruistic behavior (Tagiuri and Davis, 1996). The family or individual names are often connected with the reputation of the firm and, therefore, the owner is deeply motivated to act in the long-term interest of the organization (Tagiuri and Davis, 1996).

The *'Foundation / Research institute'* category is rather arbitrary. Foundations in the U.S. can be structured either as trusts or non-profit organizations (Driver et al., 2018). Trusts differ from European foundations, which are legal persons and subject to specific foundation law (Driver et al., 2018). Since both trusts and non-profit organizations are flexible organizational forms in the U.S. they can be used to structure almost any kind of economic organization, from investment companies to charities (Driver et al., 2018). Nonetheless, based on a spot-check of the companies within this category, it is believed that foundations and research institutes often exercise long-term ownership and experience a high degree of accountability to society, thus such owners will be classified as committed. However, based on the arbitrariness of *'Foundations / Research institutes'*, a robustness test excluding said group will be conducted in section 7.2.5.

The category *'Employees / Managers / Directors'* is also pooled into the committed owner group since these owners are expected to have a long-term approach. Goyder and Ong (2019) suggest that employee or collective ownership is most likely to promote the purpose, values, and long-term focus of the company. Ultimately, employee ownership guarantees that the decisions of the firms' management are also in the best interest of its workforce (Goyder and Ong, 2019). Similarly to the first group, Orbis assumes that the *'Employees / Managers / Directors'* group assert their voting power collectively.

The institutional owner category comprises owner types 4-7. As opposed to committed owners, these owners are believed to be predominantly concerned with shareholder value and profit-making[13] (Thomsen and Pedersen, 2000). This may be because institutional investors are intermediate agents for ultimate owners and their performance is measured in terms of financial success (Thomsen and Pedersen, 2000). Although the risk profiles and investment horizons are likely to differ amongst these heterogeneous institutional owner types, they are expected to bear a financial commitment to their own constituents rather than pursuing a purpose beyond profit-making (Thomsen and Pedersen, 2000).

There is some ambiguity surrounding the seventh category, *'Mutual and Pension fund / Nominee / Trust / Trustee'* since the objective of such an owner might vary significantly. Trusts in the U.S. may be structured in a way that they functionally resemble industrial foundations and, therefore, it is difficult to separate these two groups from each other (Driver et al., 2018). However, the seventh group also comprises mutual and pension funds, which are typically associated with institutional investments. Based on the arbitrariness of pooling this group into the institutional owner group, the aforementioned robustness test in section 7.2.5 excluding *'Foundations/Research institutes'* from the committed owner group will also exclude *'Mutual and Pension fund / Nominee / Trust / Trustee'* from the institutional owner group.

This study defines ownership based on a lower threshold of 25.01% of the voting rights. Governance research typically uses a 5% threshold for identifying blockholders since owners

[13]Thomsen and Pedersen (2000) identify exceptions to this statement. For instance, financial institutions might value the security of their debt as much as their owner interest. Pension funds often have links to trade unions and governments and are therefore sensitive to political concerns. However, these owners are commonly more concerned with shareholder value than with social benefits.

above this threshold need to be disclosed in the U.S. (Bauguess et al., 2009). However, the empirical findings in chapter 3 have shown that many papers have chosen a higher ownership threshold, often 50%, when examining the effect of owner identity on financing decisions (e.g. Kayo et al., 2018; López-Gracia and Sánchez-Andújar, 2007). The selected threshold is closer to La Porta et al. (1999), who suggest a threshold of 20% which they estimate as the stake required to assert control. Voting rights can be obtained either through direct holdings or through a chain of indirect holdings. Orbis gives both direct and total ownership stakes, however, it does not explicitly list indirect holdings. While a direct stake is held directly by a shareholder, total ownership is the sum of the stakes held directly or indirectly in companies by the shareholder. For example, a shareholder holding 75% in company Y, which in turn owns 40% of company X, bears a total ownership stake in company X of 30%. All companies included in the sample have an ultimate owner with total ownership exceeding 25.01%.

Chapter 6

Descriptive Statistics

As a preliminary analysis, this chapter will introduce the data set. As described in chapter 5, the data set comprises quarterly financial information on 799 firms listed in the U.S. The data is distributed over 40 calendar quarters spanning between 2009 Q1 and 2018 Q4. Over the sample period, 20,493 observations of consecutive quarterly financial and ownership data have been gathered.

6.1 Geographical and Industry Distribution

Examining the data set uncovers compelling insights about the representation of observations per U.S. states and industries. Figure 6.1 shows the representation of observations per state in the dataset. A plethora of firms are headquartered in California, New York, Florida, and Texas, which collectively comprise 44% of the observations in the sample. The second largest group is composed of Colorado, New Jersey, Illinois, and Nevada. These states contribute by around 4.5% each and, thus, almost 18% collectively. Simultaneously, states like Hawaii, Alaska, Wyoming, and Mississippi give close to 0% of the observations. The significant representation of California, New York, Florida, and Texas is economically justified given that these four states are also the biggest contributors to the American economy as measured by GDP (Statista, 2019). Moreover, the same four states are also the most populated (Statista, 2019). However, these states do seem to be slightly overrepresented. While New York, for instance, comprises 10.7% of the observations, it only makes up 8.1% of the U.S. economy as per GDP and 5.9% of the population (Statista, 2019). By the same measure, California and Florida are modestly overrepresented. The disparity could be explained by the large number of financial companies residing in New

York or the tech companies in California. Moreover, large companies tend to reside in metropolitan areas where the infrastructure and availability of a skilled workforce are better (PwC, 2016). Overall, there seems to be a relatively stable relationship between the number of observations, the GDP per state, and the population per state.

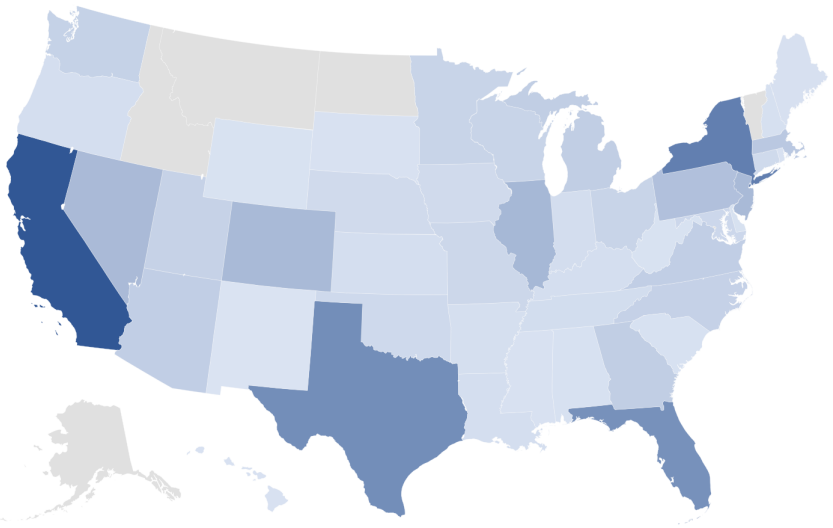

Figure 6.1. *A heatmap depicting the geographical distribution of the observations in the data set*

In addition to the representation of observations per state, figure 6.2 shows the distribution of observations per industries as indicated by SIC code. There is a strong focus on manufacturing firms with 42% of the observations stemming from this industry, while the service industry encompasses 26% of the observations. Although manufacturing firms are well represented, figure 6.2 shows that their aggregate enterprise value is far less than the aggregate enterprise value of services companies. This stems from the on average higher enterprise value of service companies in the sample, also evident in figure 6.2. Moreover, the number of observations is relatively proportional to the number of firms per industry, although there are minor deviations. This gives some assurance to the quality of reporting across industries and, accordingly, the validity of statistical inferences.

6.2 Ownership Distribution

As seen in appendix L, the distribution of observations per owner type appears highly concentrated. The largest category, *'One or more named families or individuals'*, constitutes

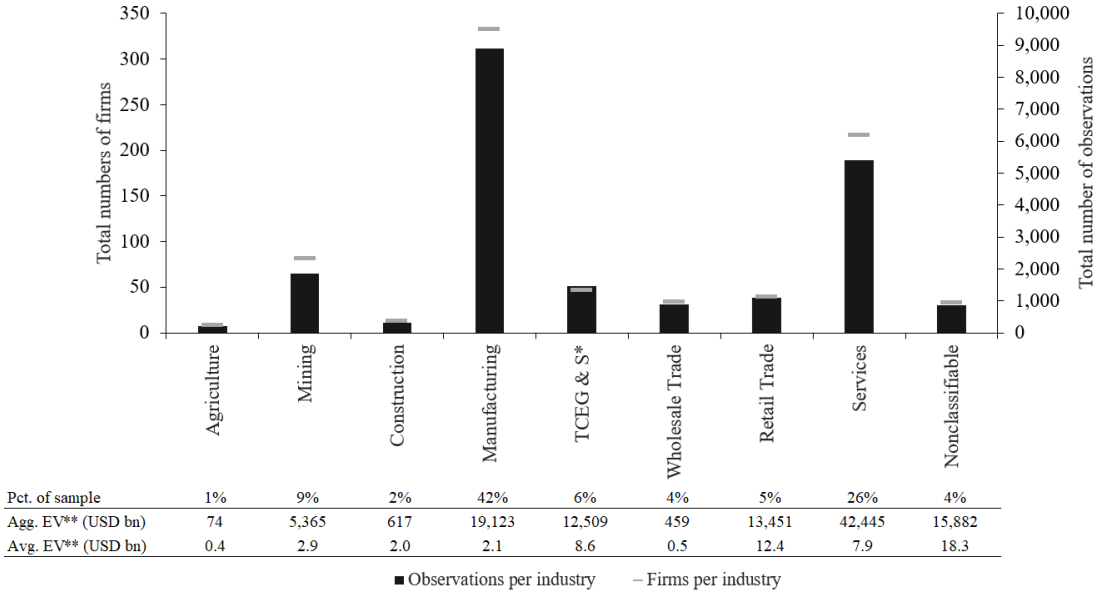

Figure 6.2. *A graphical depiction of the distribution of observations and firms per industry*

92.2% of the total number of observations in the sample while the two other categories comprising the committed owner category are negligible. As for institutional owners, *'Financial companies'* represent 2.4% of the observations, *'Banks'* 2.2%, *'Mutual and Pension funds / Nominees, Trusts / Trustees'* 1.9%, *'Private equity'* 0.7%, and *'Insurance companies'* 0,4%. Furthermore, the division of above groups into the pooled owner groups which will be investigated in this paper illustrates that 92,4% of the observations are of firms with committed owners whereas 7,6% are of firms with institutional owners.

Although the large representation of the family or individual owner group may seem unintuitive, the exclusion of firms operating in the financial sector explains why the observations are skewed towards this ownership group. By excluding financial firms, many institutional owners were eliminated. Furthermore, by solely focusing on listed firms this study excludes firms that are entirely privately owned which might have an effect on the owner distribution.

While there are only a few institutional owners, this reflects the portfolio strategy of such investors. La Porta et al. (1999) have found that institutional owners have small but, nonetheless, influential stakes. Even at an ownership threshold of 10% of voting rights they only find 6% institutional owners in their sample. Holderness (2009) finds that 29% of the selected U.S. companies have an institutional owner with an average ownership

percentage of 12%[1]. Consequently, a small number of institutional owners is expected since they typically have ownership percentages below the 25.01% threshold selected in this paper.

In addition, foundations in the U.S. that have a controlling interest of 20% or more in a business company are subjected to hefty fines based on U.S. law, which is likely to explain why there are very few foundation owners (Fleishman, 2001). In contrast, previous studies have found family or individual ownership to be very common (La Porta et al., 1999; Holderness, 2009). For example, Holderness (2009) finds that 53% of the controlling shareholders in his sample of U.S. firms are family owners. In conclusion, this gives some clarification to the skewed distribution of ownership groups.

6.3 Capital Structure

Figure 6.3 depicts the distribution of market leverage and book leverage for all firms in 2018 Q4[2]. Market and book leverage are both bounded within the range 0 to 1 encompassing the endpoints. When looking at the first histogram showing the distribution of market leverage, it can be observed that the mode ratio is 0 while the mean is 0.25 and the median is 0.13. The distribution is heavily positively skewed, i.e. skewed to the right, meaning that lower leverage ratios are overrepresented in the sample[3]. Based on appendix F, it can be inferred that manufacturing firms, the largest industry group in the sample, are on average slightly higher levered than the average which has driven the average market leverage up slightly. Contrastingly, service firms, the second largest industry group in the sample, are on average slightly less levered than the average and have, thus, affected the sample mean somewhat negatively. On the contrary, smaller industry groups such as TCEG&S and construction demonstrate higher average market leverage but do not affect the overall average to the same extent.

As demonstrated in appendix G, the differences in market leverage among owner types are

[1]Holderness (2009) defines controlling shareholders as owners with at least 5% of voting rights of the common stock.

[2]2018 Q4 has been chosen since the data has been collected on firms active at this point in time. Thus, it will give a representative picture of the distribution of leverage ratios.

[3]Note that the data has been censored at the values 0 and 1. Therefore, the threshold values are overrepresented, especially among book leverage values where the largest number of outliers were identified.

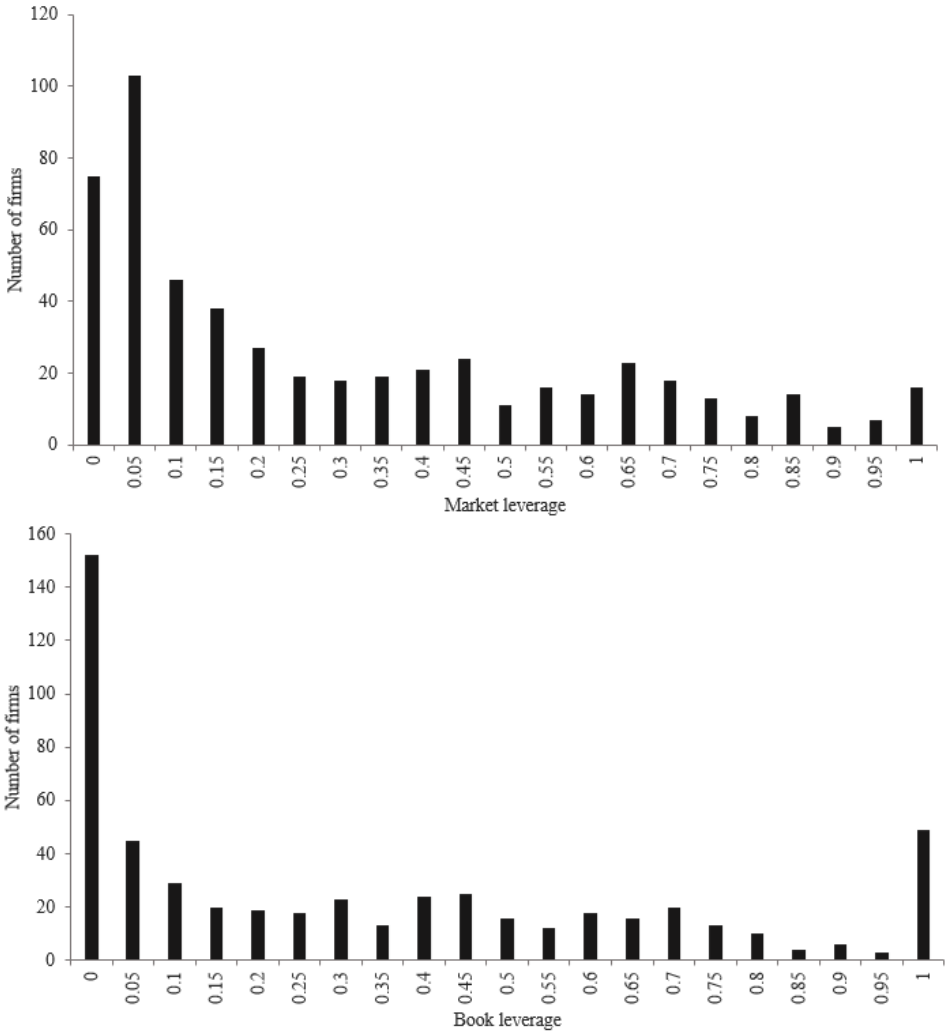

Figure 6.3. *Histograms depicting the distribution of leverage levels in 2018 Q4 post censoring*

more distinct than for industry groups. Firms with owners belonging to the largest group, 'One or more named individuals or families', are generally less levered than the overall average. The same holds for *'Foundations / Research institutes'* which also belong to the aforementioned committed owner category. On the contrary, firms with institutional owners such as *'Financial companies'*, *'Banks'*, *'Mutual and Pension funds / Nominees / Trusts / Trustees'*, and *'Insurance companies'* are, on average, consistently higher levered than the average of the sample. However, firms with *'Private equity'* owners are generally slightly less levered than the average whereas those owned by *'Employees / Managers / Directors'* are slightly more leveraged than the average. Nonetheless, these groups make up a negligible part of the sample. Regarding the pooled owner groups, committed owners exhibit an average market leverage of 24% whereas institutional owners exhibit an average market leverage of 30%.

In the second histogram, similar data is illustrated for the book leverage measure. It can be observed that the mode ratio is also 0 while the mean is 0.28 and the median is 0.14, both slightly higher than for market leverage. It is graphically visible that the censoring implied by running Tobit regressions has clustered book leverage observations around 0 and 1. The specifics of the estimation method will be further elaborated on in the analysis chapter. Moreover, similar to the distribution of market leverage, there is a high concentration of companies with a leverage ratio of zero or close to zero implying that a large number of firms manage their capital structure conservatively. As illustrated in appendix F and G, the discrepancies in book leverage among the industry groups and owner types are larger than for market leverage. However, the relation between average leverage within said groups and the weighted average are consistent with those for market leverage. Lastly, regarding the pooled owner groups committed owners exhibit an average book leverage of 28% whereas institutional owners exhibit an average book leverage of 39%.

6.4 Time Series Aspects of the Dataset

Figure 6.4 illustrates the distribution of observations over calendar quarters from 2009 Q1 to 2018 Q4. The figure indicates that there is an increase in observations during the early period from 2009 to 2014. Thereafter, the number of observations is relatively stable until the last quarter of 2018 where a small decrease is apparent. The increase in observations throughout the early period is likely explained by an improved reporting quality in the Compustat database[4]. In addition, the data search is specified to yield firms active as per 2018 Q4, although not necessarily active throughout the entire sample period. Therefore, part of the increase in observations is doubtlessly due to new listings on U.S. stock exchanges between 2009 and 2018.

As with the number of observations, the dataset comprises enterprise values of included firms, which vary with time. Figure 6.5 distinguishes between the aggregate enterprise value of all included company observations (left axis) and the average enterprise value

[4]Compustat gives a limited, though increasing, amount of data for quarterly observations of U.S. firms from 2009 to 2018.

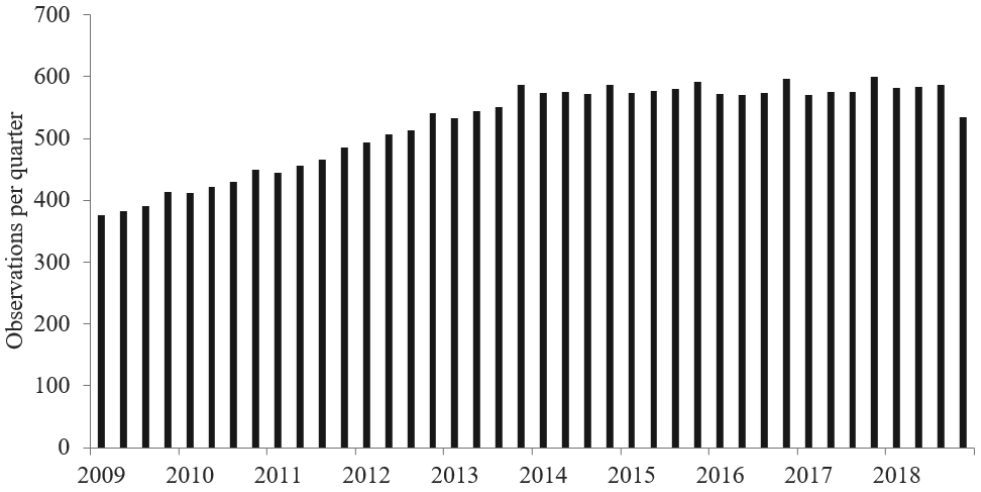

Figure 6.4. *A graphical depiction of the number of observations over the sample period*

(right axis). Over the first half of the sample period, in particular from 2009 Q1 to 2013 Q4, the average enterprise value seems to increase at a slightly slower pace than the aggregate enterprise value. Although the difference is small, this lends credence to the conclusion that the aggregate growth in enterprise value over this initial period is not only a result of the increase in firm valuations but also due to the formerly mentioned increase in observations over time. However, over the second half of the sample period, from 2014 Q1 to 2018 Q4, the growth in both measures appears more aligned. Therefore, changes in aggregate enterprise value seem to be less driven by the increase in observations but rather by increases in valuations and, hence, by the composition of firms as well as value reactions to variables that are not observed in Figure 6.5.

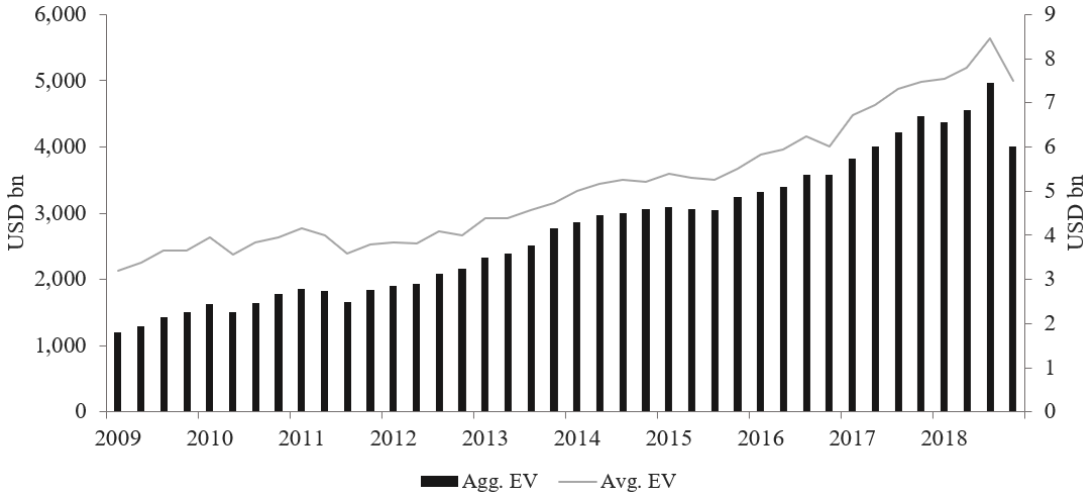

Figure 6.5. *A graphical depiction of the average and aggregate enterprise value in the data set over time*

Leverage levels are affected by macroeconomic conditions. Throughout recession periods, market values of equity are by the most part subject to value decreasing shocks which positively affects the leverage ratio (Drobetz et al., 2007). In figure 6.6, the development of the average book leverage and market leverage ratios over time are illustrated, while the grey area emphasizes the period where a recession was declared by the National Bureau of Economic Research (NBER). As can be seen below, the market leverage ratio fluctuates more than the book leverage ratio. Comparing both leverage ratio measures with the recession in 2009 Q1 and 2009 Q2, there seems to be a clear correlation. Contrary to economic intuition, the average market leverage ratio seems to decrease over the recession period. However, the recession period is very short and the observed trends are most likely significative of an ending recession and the inception of an economic upturn. Although there are further spikes from 2011 to 2013, 2016 to 2017 and in 2018, these seem to be caused by unobserved parameters as both market and book leverage are affected.

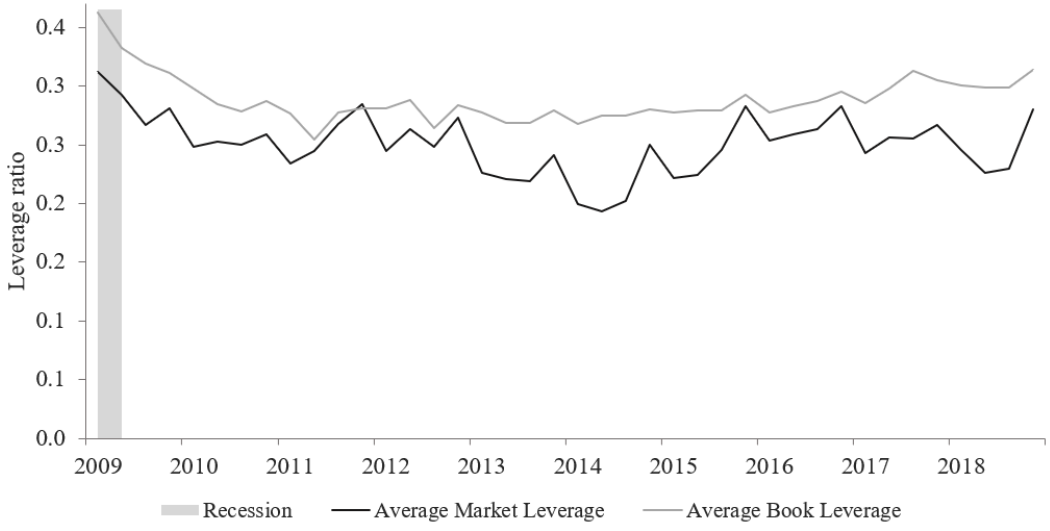

Figure 6.6. *A graphical depiction of the development of the average book leverage and market leverage ratios over time*

As illustrated in figure 6.7, the distribution of owner types is not entirely uniform across industries. Considering the pooled owner groups, committed owners are relatively over-represented in the manufacturing industry while institutional owners are relatively more common in the mining and services industries. Awareness should be raised to this difference since certain defining characteristics of leverage, such as tangibility, differ significantly across these industries. Nonetheless, the differences are not major and should not have a

distorting effect on findings in the analysis. In addition, differences will be alleviated by the inclusion of firm characteristics as control variables.

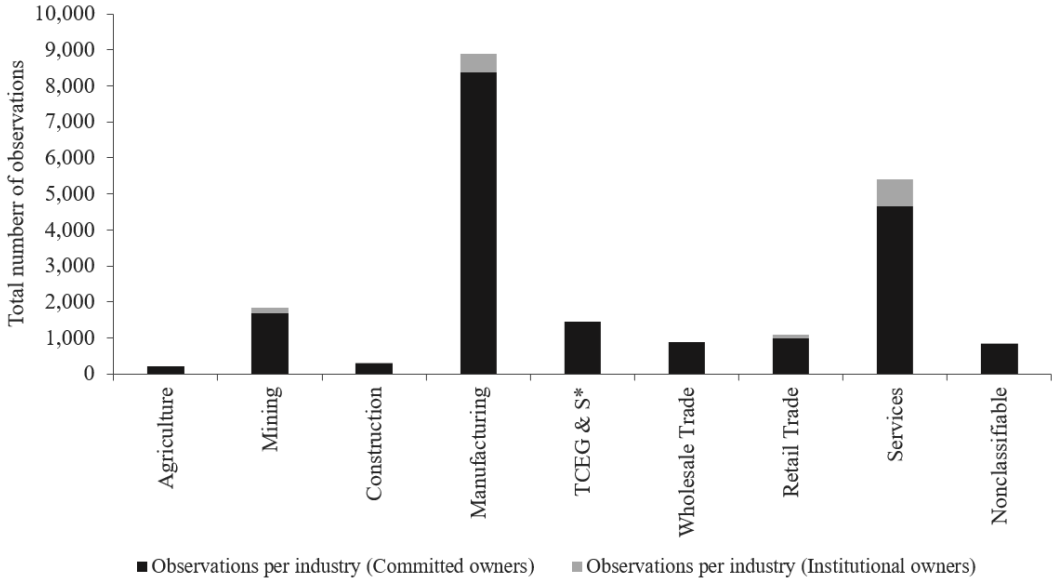

Figure 6.7. *A graphical depiction of the distribution of owner types per industry*

Moreover, figure 6.8 shows that leverage varies by owner group over time. Although market leverage ratios are relatively similar for institutional owners and committed owners until 2010 Q2, institutional owners have a consistently higher market leverage ratio after this period. When it comes to book leverage, institutional owners have a higher leverage ratio throughout most of the sample period. While the book leverage ratio is relatively constant for committed owners from 2011 and onwards at 0.26, it fluctuates widely for institutional owners with a minimum of 0.27 in 2010 Q3 and a maximum of 0.46 in 2017 Q3. In sum, firms with institutional owners are on average higher levered than firms with committed owners throughout the sample period.

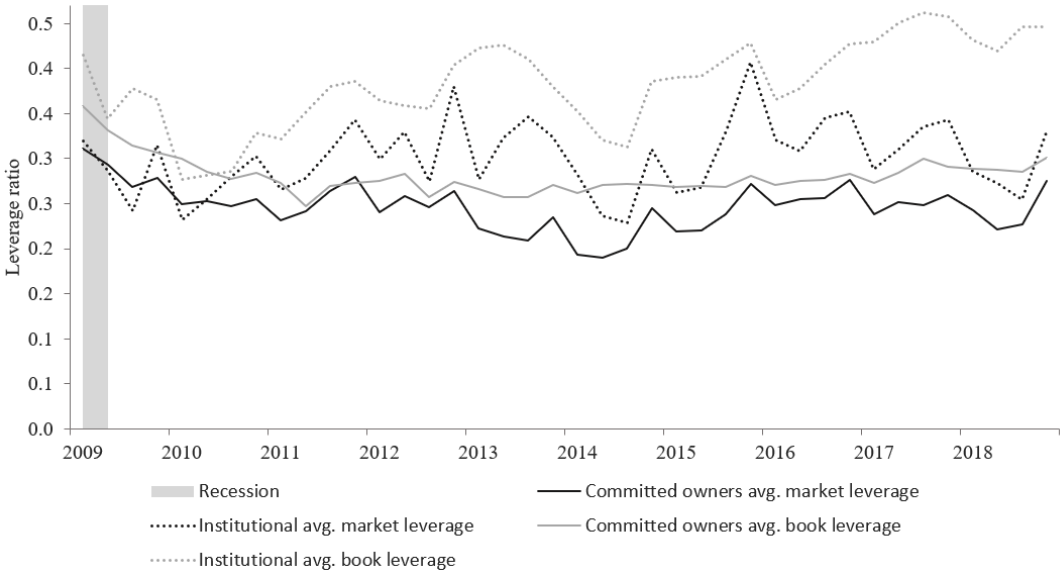

Figure 6.8. *A graphical depiction of the development of the average book leverage and market leverage ratios per pooled owner group over time*

Chapter 7

Analysis

In this chapter, an analysis of the effect of committed ownership on financing decisions will be conducted. First, in section 7.1, the econometric model will be specified and discussed. In section 7.2, the regression results will be presented and the hypotheses tested. Subsequently, the results will be analyzed in the light of preceding theories and empirical findings on owners and financing decisions. Lastly, robustness tests and limitations on the statistical analysis will be presented.

7.1 Model Specification

This section will elaborate on the regression specifications and econometric model employed in the analysis. In analyzing the effect of committed owners on leverage levels, a standard multiple regression similar to equation 7.1 will be applied, therefore, this will not be specifically discussed. Thus, first, the partial adjustment model commonly used to estimate the speed of adjustment will be presented. Second, the extension made to the partial adjustment model in order to account for differences in ownership will be outlined. Third, the Tobit model will be introduced and alternative methods discussed.

7.1.1 The Partial Adjustment Model

Assuming that firms adjust their capital structure toward a defined optimal level, target leverage can be time-varying since adjustment costs might prevent full adjustment. Consequently, capital structure literature conventionally adopts partial adjustment models for the estimation of the speed of adjustment (De Miguel and Pindado, 2001; Ozkan, 2001; Flannery and Rangan, 2006; Gonzalez and Gonzalez, 2008; and Flannery and Hankins,

2012)

As was laid out in section 2.5, the target leverage of firm i at time t is conditional on a vector of firm characteristics $X_{i,t-1}$. It is given by:

$$L^*_{i,t} = \beta X_{i,t-1}, \tag{7.1}$$

where β is a coefficient vector and L denotes the leverage ratio. The partial adjustment model, in turn, takes the form:

$$L_{i,t} - L_{i,t-1} = \lambda(L^*_{i,t} - L_{i,t-1}) + \epsilon_{i,t}. \tag{7.2}$$

By embedding the definition of the target leverage in equation 7.1 into equation 7.2 and rearranging, the partial adjustment model is given by:

$$L_{i,t} = \lambda(\beta X_{i,t-1}) + (1-\lambda)L_{i,t-1} + c_i + \epsilon_{i,t}. \tag{7.3}$$

where $0 < \lambda < 1$ represents the adjustment speed coefficient calculated as $1 - L_{i,t-1}$, c_i is the time-constant unobserved effect (firm fixed effect), and $\epsilon_{i,t}$ is the error term. This model identifies the degree to which the deviations from the optimal leverage ratio are mitigated in each period. If $\lambda = 0$, the SOA = 0. In other words, no adjustment towards the optimal leverage level has been done. Reversely, if $\lambda = 1$, the leverage adjustment is instant. Defining $\alpha = 1$ - λ and $\gamma = \lambda\beta$ results in a testable model:

$$L_{i,t} = \gamma X_{i,t-1} + \alpha L_{i,t-1} + c_i + \epsilon_{i,t}. \tag{7.4}$$

7.1.2 Extensions to the Partial Adjustment Model

In the partial adjustment model adopted in previous studies it is assumed that the SOA is equal across firms. In order to analyze the impact on the SOA between committed owners and institutional owners, an extended partial adjustment model is proposed. The model is specified as follows:

$$L_{i,t} = \gamma X_{i,t-1} + (\alpha + \delta CD_{it})L_{i,t-1} + c_i + \epsilon_{i,t}. \tag{7.5}$$

in which $CD_{i,t}$ is a dummy variable that equals 1 for committed owners and 0 for institutional owners. As follows, in this specification, the speed of adjustment of firms with an institutional owner is captured by α, whereas for firms with a committed owner it is estimated by $(\alpha + \delta)$. In such a way, this extension to the partial adjustment model allows for the consideration that firms with different owner types adjust their leverage levels at different speeds.

7.1.3 Econometric Models

The estimation of leverage levels and the speed of adjustment is econometrically challenging due to certain inherent complexities. Specifically, Elsas and Florysiak (2015) mention that i) corporate financial data is commonly unbalanced panel data[1], ii) the model must allow for adjustment over time (that is, a lagged dependent variable should be included as a regressor), and iii) the dependent variable is fractional. Previous literature has employed various econometric models to carry out the task, however, the adjustment speed estimate is highly sensitive to the econometric design. Fama and French (2002) employed a pooled OLS model, Drobetz et al. (2006) used a fixed effects (FE) model, Flannery and Rangan (2006) selected the generalized methods of moments (GMM) model, and Huang and Ritter (2009) applied long differencing (LD) to model the SOA. Bond (2002) shows that although the pooled OLS takes the unbalanced panel nature of the data into account, it generally ignores the unobserved fixed effects and, therefore, produces a downward-biased SOA. Nickell (1981) demonstrates that the FE model, however, overestimates the SOA since the lagged leverage variable and the error term are correlated which leads to an endogeneity problem[2]. Furthermore, while GMM and LD models are certainly better in this aspect as they account for the dynamic model structure and unobserved heterogeneity, they fall short on considering the fractional nature of the leverage variable (Drobetz et al., 2015; Moyo, 2016). Therefore, it is not possible to distinguish between the unobserved fixed effects from and the maximum likelihood estimates of the regressor coefficients[3].

To address this problem, Elsas and Florysiak (2015) propose the estimation of the dynamic

[1] Entry and exit to the sample is common resulting in non-observed data points.

[2] Endogeneity refers to the correlation between explanatory variables, in this case the lagged leverage variable and the error term which ultimately causes a bias in the coefficient estimates.

[3] This is referred to as the "incidental parameters problem" (Elsas and Florysiak, 2015).

panel fractional (DPF) estimator, which will also be adopted in this paper[4]. The DPF estimator uses a doubly-censored Tobit specification which censors the dependent variable at a lower level of 0 and an upper level of 1 while relying on a latent variable approach to account for fractionality and for unobserved heterogeneity. As follows, the doubly censored dependent variable is given by:

$$L_{i,t} = \begin{cases} 0 & if \;\; L^*_{i,t} \leq 0 \\ L^*_{i,t} & if \;\; 0 < L_{i,t} < 1 \\ 1 & if \;\; L^*_{i,t} \geq 0 \end{cases} \tag{7.6}$$

In economic terms, a latent variable indicating the leverage ratio of the firm can be defined as the debt capacity of the firm. While the debt capacity can lie outside the 0 to 1 range, the leverage ratio is bounded between 0 and 1[5]. Empirically, censoring according to the Tobit specification mainly corrects data errors since leverage ratios outside the 0 to 1 range are unusual (Drobetz et al., 2015). The Tobit model can be estimated by the maximum likelihood estimation (MLE) method.

7.2 Results

In order to test the two hypotheses set up in chapter 3, a series of regressions have been run. First, a regression including all firm-specific and macroeconomic control variables together with a committed dummy variable has been estimated in order to investigate **H1**. Second, a similar regression but including the lagged dependent variable has been estimated in order to investigate **H2**. Both regressions have been run for market leverage and book leverage, respectively, and the results will be presented in the succeeding two sections.

[4]The DPF builds on a Tobit specification for fractional response variables developed by Loudermilk (2007). Although this specification allows for censored observations at both 0 and 1 ("doubly censored Tobit") with a lagged dependent variable and unobserved heterogeneity, it requires balanced panel data. Thus, it is inapplicable to capital structure data since entry and exit to the sample is very frequent (Elsas and Florysiak, 2012).

[5]Elsas and Florysiak (2015) describe that the debt capacity can assume values above 100% e.g. when highly profitable firms have not fully exploited the tax deductibility of interest payments. In contrast, the debt capacity can be negative when firms experience high agency costs and information asymmetry.

7.2.1 Testing Hypothesis 1

Table 7.1 shows the results of estimating the first regression. Both market and book leverage have been used as dependent variables where all firm-specific and macroeconomic control variables and the committed owner dummy have been used as independent variables. On the whole, the models yield significant estimates with several coefficients being significant at the 1%, 5%, and 10% level, respectively.

7.2.1.1 Firm-Specific and Macroeconomic Variables

The firm-specific variables provide mixed results. A positive relationship between leverage and firm size is found which is significant at the 1% level. This is harmonious with the similar findings in Rajan and Zingales (1995) and Frank and Goyal (2003), and the explanation of the positive relation might lie in that relative direct bankruptcy costs decrease with firm size indicating that larger firms could take on more debt before jeopardizing their ability to meet interest obligations. By way of explanation, larger firms are less risky (Scott and Martin, 1975). Alternatively, larger firms could face lower levels of information asymmetry with lenders given their established reputation in the credit markets. Presumably, larger firms in the sample have less volatile cash flows which reduce the costs associated with financial distress and increases the debt capacity. The finding supports the ability of firms to borrow more as they become larger (Rajan and Zingales, 1995; Frank and Goyal, 2003).

Ambiguous results are yielded for the effect of growth opportunities on leverage. Surprisingly, both the negative coefficient in the market leverage regression and the positive coefficient in the book leverage regression are significant at a 1% level. On the one hand, since growth opportunities cannot serve as collateral, bankruptcy costs increase substantially with increasing market-to-book ratios, the selected proxy for growth opportunities. In turn, according to Jensen (1986), low growth firms should use more leverage to alleviate the free cash flow problem. However, the positive relation in the book leverage regression can be explained by the finance hierarchy proposed in the pecking-order model: high-growth firms might exhaust internal funds causing increased reliance on debt. This is empirically supported by Shuetrim, Lowe, and Morling (1993).

Dependent Variable:	*Market Leverage*	*Book Leverage*
Firm-specific variables		
Size	0.042	0.036
	(0,003)***	(0,000)***
Growth Opportunities	0.001	-0.003
	(0,000)***	(0,000)***
Non-debt Tax Shield	2.777	0.798
	(0,163)***	(0,235)***
Tangibility	0.144	0.112
	(0,004)***	(0,015)***
Uniqueness	0.031	0.004
	(0,006)	(0,012)
Profitability	0.017	0.038
	(0,006)***	(0,010)
Macroeconomic variables		
Recession	-0.017	0.002
	(0,012)	(0,016)
Macroeconomic Growth	-0.005	-0,000
	(0,001)	(0,002)
Economic Prospects	-0.029	-0.010
	(0,002)***	(0,003)***
Ownership variables		
Committed Owner	-0.120	-0.121
	(0,012)**	(0,003)***
R^2	0.12	0.17
Adj. R^2	0.10	0.15

Standard errors are in brackets and are adjusted for heteroskedasticity.
***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Figure 7.1. *Regression results*

The non-debt tax shield seems to have the most considerable impact on leverage. However, as seen in appendix B, the minimum and maximum value range is quite narrow for both variables, thus, higher coefficients are expected[6]. Surprisingly, there is a positive relationship between leverage and the non-debt tax shield which is significant at the 1% level. The non-debt tax shield is expected to be negatively related to leverage since companies with alternative ways of generating tax advantages may benefit less from financing with debt (DeAngelo and Masulis, 1980). This non-intuitive result may be due to intervening factors. First, the size of the non-debt tax shield may be positively related to firm investments and profitability[7]. Second, the positive relationship between depreciation and leverage may bias the coefficient which erroneously causes the positive relationship between the non-debt tax shield and leverage. Therefore, it may be that the non-debt tax shield, in fact, proxies asset tangibility[8], an effect that Bradley et al. (1984) refer to as 'debt securibility'. Thus, it is difficult to isolate the non-debt tax shield effect connected to the depreciation of fixed assets.

Tangibility is consistently positively related to leverage and statistically significant at the 1% level, which is in line with the empirical findings by Frank and Goyal (2009), Titman and Wessels (1988), Korteweg and Strebulaev (2015), and Flannery and Rangan (2006). Since assets of tangible nature can be collateralized more easily than intangible assets, bankruptcy costs are lower for firms with a more tangible asset base. Further, tangible assets reduce the agency costs of debt[9] and, as such, high tangibility firms can take on more debt. Congruently, since firms with a higher proportion of tangible assets can provide more collateral for debt financing, these companies are less subjected to credit rationing.

The regressions yield positive coefficients on product uniqueness both for market leverage and for book leverage. However, neither of the coefficients are significant, thus, both the economic and statistical significance is weak. The literature suggests an ambiguous impact of product uniqueness on leverage stemming from the contradicting effects that

[6]The non-debt tax shield variable ranges from 0 to 0.035 whereas the tangibility variable ranges from 0 to 0.812. Very large coefficients can, thus, be expected from the non-debt tax shield variable in particular.

[7]By having a proxy for profitability this problem should be largely controlled. However, it can be assumed that the selected proxies do not completely control for profitability.

[8]As shown in the correlation matrix there is a strong and positive relationship between tangibility and the non-debt tax shield.

[9]The agency costs of debt refer to (1) financial distress, (2) risk shifting, (3) debt overhang.

uniqueness has on leverage. On the one hand, enterprises that produce specialized and unique products often have higher costs of bankruptcy stemming from costs imposed on the firms' key stakeholders, such as their suppliers, clients, and employees. Employees and suppliers may have job-specific skills and clients may find it difficult to find an alternative service provider for their unique products (Titman and Wessels,1988). Moreover, these enterprises carry substantial volatility due to the risk that the unique product feature becomes obsolete (Carlson et al., 2004). In addition, higher investments in riskier assets raise the probability that the costs of financial distress exceed the costs of equity issuance (Frank and Goyal, 2009; Rajan and Zingales, 1995; Flannery and Rangan, 2006; Titman and Wessels, 1988). On the other hand, unique products are frequently sold at a significant margin which entails stable profitability. Although regressions fail to demonstrate a significant effect from uniqueness on leverage, the variable will be kept as a control variable since multiple studies have established its significance (Frank and Goyal, 2009; Rajan and Zingales, 1995; Flannery and Rangan, 2006; Titman and Wessels, 1988).

A positive relationship between profitability and leverage is found. For market leverage, the profitability coefficient is significant at a 5% level although for book leverage it is insignificant even at a 10% level. The finding is congruent with Frank and Goyal (2009) who contend that higher profitability lessens the default risk. Also, the finding is in line with Jensen (1986) who predicts that the disciplinary effect of leverage is more pronounced for profitable firms with excess cash holdings. On the same note, the finding is consistent with the static trade-off theory which suggests a positive impact on profitability from debt financing.

The recession coefficient is negative for market leverage and positive for book leverage, although they are both insignificant. Although previous empirical findings are ambiguous, most findings suggest a positive relationship between recessions and leverage due to tumbling equity values (Levy, 2001; Drobetz et al., 2007; Hackbarth et al., 2006; Korajczyk and Levy, 2003). However, the results might be unreliable since the observation period begins towards the end of the financial crisis in 2009 where market valuations already have risen in anticipation of the economic upswing, causing lower leverage ratios. In addition, only having two quarters with recessions in the sample may lead to a short-time period

bias. Contrastingly, another explanation might be that banks tighten their loan activities during recessions, which impedes the access to credit facilities and, therefore, negatively affects firm leverage. Nonetheless, similar to other insignificant variables, the recession variable will be kept as a control variable.

Macroeconomic growth is found to have a modestly negative effect on leverage. However, both coefficients are insignificant. Although this contrasts the findings in Chen (2010), Frank and Goyal (2009) find similar results. A possible explanation could be that economic growth often entails increasing equity prices which, in turn, brings average leverage levels down. As for economic prospects, previous research suggests that the economic outlook affects leverage counter-cyclically (Fischer et al., 1989; Frank and Goyal, 2009; Korajczyk and Levy, 2003; Drobetz et al., 2007). Therefore, leverage drops when the economic prospects are promising since equity prices incorporate the market's expectations. This is in congruence with the negative coefficients in table 7.1, both of which are significant at a 1% level. When economic prospects are good, leverage levels decrease on average.

With respect to significance, there are varying results and, in some instances, several insignificant variables even at a 10% significance level. Nonetheless, a multitude of previous studies presented has supported the importance of these variables in the determination of capital structure. In order to minimize the risk of omitted variable bias and obtain a fair estimation of the effect of owner type on capital structure, all variables will be kept as control variables.

7.2.1.2 Ownership Variables

The regression results yield negative coefficients for the committed owner dummy. For market leverage, the coefficient is -0.120 and significant at a 5% level. For book leverage, the coefficient is -0.121 and significant at a 1% level. The coefficients indicate that leverage preferences differ among owner types and that firms with committed owners are on average less levered than firms with institutional owners.

However, it is central to acknowledge that the model specification gives rise to an endogeneity problem. In other words, the causal effect between committed ownership and

debt policies is uncertain since committed owners, given their distinguishing preferences, could make the decision to be involved with those companies with certain debt policies (Pindado et al., 2015). Thus, the direction of causality does not necessarily run from committed ownership to capital structure (Pindado et al., 2015). In fact, some previous studies have found that leverage levels affect some explanatory variables, indicating that the opposite might actually be the case (Miguel et al., 2005; Pindado and de la Torre, 2006; and Setia-Atmaja et al., 2009). Nonetheless, this problem is present in essentially all economic research, and ruling out endogeneity completely is practically impossible in a non-experimental setting. A viable approach could have been to investigate changes in ownership over the sample period in order to assess the effect it has on financing decisions. However, as aforementioned, the number of ownership changes over the 10-year sample period is relatively few, and more often than not the new owner belongs to the same owner type as the previous owner, making such investigations difficult. Again, this issue will not be dealt with in more depth but merely brought up in order to shine a light on the limitations of making causal inferences[10]. However, the statistical significance of the coefficients provides compelling support for the leverage preferences of committed owners. Against this background, hypothesis **H1** is confirmed.

7.2.2 Testing Hypothesis 2

Table 7.2 shows the results from the estimation of regression 7.4 taking both market leverage and book leverage as dependent variables. On the whole, the model yields significant estimates and several coefficients are significant at the 1%, 5%, and 10% level.

7.2.2.1 Firm-Specific and Macroeconomic Variables

The firm-specific variables in table 7.2 largely provide results congruent with those in table 7.1. Nonetheless, in a few instances, the variable coefficients have either changed in value or even changed signs. For instance, firm size, non-debt tax shield, and tangibility now all yield smaller coefficients although they remain positive, statistically significant, and of substantial impact. The product uniqueness coefficients have also decreased and, for book

[10]Note, however, that although causal inferences are problematic in this sense, it is possible to show support for the overall preferences of committed owners in relation to institutional owners.

Dependent Variable:	*Market Leverage*	*Book Leverage*
Firm-specific variables		
Size	0.005	0.008
	(0,001)***	(0,002)***
Growth Opportunities	-0,000	0,001
	(0,000)***	(0,000)
Non-debt Tax Shield	0.615	0.114
	(0,153)***	(0,043)***
Tangibility	0.065	0.042
	(0,004)***	(0,012)***
Uniqueness	0.003	-0.012
	(0,005)	(0,006)
Profitability	-0.008	0.074
	(0,004)**	(0,011)
Macroeconomic variables		
Recession	-0.017	0.005
	(0,009)*	(0,008)*
Macroeconomic Growth	0.001	-0.001
	(0,001)	(0,001)
Economic Prospects	-0.012	-0.001
	(0,001)***	(0,001)***
Ownership variables		
Committed Owner	0.030	0.025
	(0,006)*	(0,006)
Leverage $_{t-1}$	0.810	0.842
	(0,015)***	(0,009)***
Committed Owner * *Leverage* $_{t-1}$	-0.018	-0.086
	(0,017)**	(0,012)***
SOA Institutional Owner	19.0%	15.8%
SOA Committed Owner	20.8%	24.4%
R^2	0.39	0.44
Adj. R^2	0.35	0.41

Standard errors are in brackets and are adjusted for heteroskedasticity.
***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Figure 7.2. *Regression results*

leverage, the coefficient has even turned negative. The same holds for the profitability coefficients, although the transformation to a negative value occurred in the market value regression. While the recession and macroeconomic growth coefficients remain roughly unchanged, there is a small increase in the coefficients for the economic prospects variable.

The deviation in coefficient sizes and signs could be explained by Achen (2000) and Keele and Kelly (2005) who suggest that the inclusion of a lagged dependent variable can suppress the explanatory power of other independent variables. When an autoregressive term is included in the regression, it commonly takes a large and statistically significant coefficient while also enhances the fit immensely (Achen, 2000). On the other hand, these results often come at the expense of the descend and insignificance of substantial coefficients (Achen, 2000). Occasionally, coefficients even take on the wrong sign (Achen, 2000). Although this issue does not seem to be addressed in previous studies attempting to estimate the SOA, it is deemed as a reasonable and likely explanation of the at times unintuitive or contradicting results. Notwithstanding, the estimation of the SOA requires an inclusion of the lagged dependent variable, wherefore this issue will merely be pointed out to clarify the contrasting results. Therefore, the firm-specific and macroeconomic coefficients in table 7.2 will not be interpreted in detail but merely included to control for their suggested effect on leverage.

7.2.2.2 Ownership Variables

The regression results indicate a positive relationship between the committed owner group and the level of leverage. These results sing a different tune than those presented in section 7.2.1.1, where it was established that firms with committed owners on average were less levered than those with an institutional owner. However, as was just made clear, the inclusion of a lagged dependent variable as an independent variable may have altering effects on the coefficients of other independent variables. This is a likely explanation for the distorted coefficients. For this reason, the coefficient on the committed owner dummy variable in table 7.1 is deemed more relevant for evaluating the effect of committed ownership on leverage levels.

Moreover, the lagged dependent variable coefficient is 0.810 for market leverage and 0.842

for book leverage. The coefficients are of considerable magnitude and statistically significant at a 1% level suggesting that, for firms with an institutional owner, leverage in the previous period has a relatively sizeable effect on leverage in the next period. This is consistent with the predictions made by Frank and Goyal (2009) regarding leverage expectations and the dynamic trade-off theory, which suggests that the optimal capital structure in the current period depends on the optimal capital structure in the subsequent period. In other words, the ideal financing decision in the next period establishes what is optimal in the first period and, as such, leverage in the previous period explains a large part of leverage in the current period. However, this does not confirm the trade-off theory itself, but merely indicates the importance of expectations and transaction costs of leverage alteration. Moreover, the relation is more pronounced for book leverage than for market leverage. This is intuitively sound since the market leverage measure is affected by fluctuations in equity values[11] which produce continuous variations even when no deliberate rebalancing has occurred.

What is more, the coefficient on the interaction term between lagged leverage and committed ownership is -0.018 for market leverage and -0.086 for book leverage. Whereas the coefficient is significant at a 5% level in the market leverage regression, it is significant at a 1% level in the book leverage regression. This suggests that, for committed owners, leverage in the previous period has a relatively sizeable effect on leverage in the next period, although to a lesser degree than for firms with institutional owners. Furthermore, the coefficients allow for the estimation of the SOA for the respective owner types. It appears that firms with committed owners exhibit an SOA equal to 20.8% for market leverage and 24.4% for book leverage. Institutional owners have an SOA equal to 19% for market leverage and 15.8% for book leverage. As follows, committed owners exhibit a higher adjustment speed toward the optimal leverage level compared with the firms with institutional owners. Accordingly, hypothesis **H2** is confirmed.

[11] Market leverage is theoretically also affected by fluctuations in debt values but in this paper market leverage is defined as the market value of equity plus the book value of debt divided by the sum of both. The reason, as aforementioned, is that the market values of debt are expected to be very similar to book values of debt (Møller and Parum, 1999).

7.2.3 The Importance of Committed Ownership on Financing Decisions

The confirmation of hypotheses **H1** and **H2** lays bare a fundamental shortcoming of the established corporate finance theories of capital structure; ownership. While empirical research on the financing decisions of firms often acknowledges the relevance of certain firm characteristics, macroeconomic conditions, industry aspects, or institutional settings, they generally fall short in recognizing the heterogeneity of owner preferences and its influence on financing decisions. As proposed in section 3.1, committed owners have particular preferences relating to the intention of owning the firm, the purpose of doing business, the perception of what constitutes success, and the relationship with stakeholders. The peculiarities of committed ownership are manifested in three aspects: i) purpose, ii) longevity, and iii) accountability. These distinguished characteristics of committed owners introduce doubt as to whether the determinants of capital structure as put forward in the established corporate finance theories are of equal significance to all types of owners.

Although the non-experimental construction of the econometric analysis disallows causal inferences and indisputable conclusions to be made, the results supporting the confirmation of hypothesis **H1** provides empirical support for the hypothesis laid forward by Fahn et al., (2017) on the commitment role of equity. Arguably, committed owners are less levered than institutional owners since the use of equity as a source of financing strengthens the belief of the workforce that the company will uphold its commitments. On the grounds that debt issuance influences the enforceability of relational contracts with stakeholders negatively since the consequences of reneging are partly moved to debtholders, committed owners will prefer lower levels of debt than institutional owners. In such a way, similar to the prediction by Maksimovic and Titman (1991), committed owners demonstrate their commitment to stakeholders. In other words, to fulfill their stipulated purpose, secure the long-term survival of the firm, and ensure a license to operate, committed owners are expected to act as stewards in order to foster stakeholder relations as well as nurture and direct employee motivation toward the defined mission. At the core of stewardship theory is the assumption that the principal-agent relationship depends on a behavioral choice. When both parties choose to behave as stewards, there is a positive effect on performance as they work towards a shared objective (Davis et al., 1997). Psychological factors, such as intrinsic motivation and identification, and situational factors, such as a

collectivistic organizational culture, can steer the choice towards stewardship (Davis et al., 1997). Since the implicit costs on the firm's relational contracts connected to the issuance of debt affects the motivation of employees negatively, and the provision of effort by employees is contingent on their motivation, the issuance debt has a marginal negative effect on the achievement of the shared objective and the assurance of the longevity of the firm (Fahn et al., 2017). Thus, committed owners favor lower levels of leverage. In contrast, institutional owners seem to have less consideration for the impact of debt on stakeholder relations since they exhibit significantly higher leverage levels

The confirmation of hypothesis **H2** casts doubt upon the empirical appropriateness of the trade-off theory. Although the trade-off theory highlights important financial implications of debt financing, it fails to recognize certain governance characteristics of debt and equity. Committed owners are seemingly less concerned with the tax benefits of debt than institutional owners, and arguably more concerned with the negative implications debt could inflict on both their ability to fulfill a long-term purpose and on relations with stakeholders. What is more, the confirmation of hypothesis **H1** stands in contrast to the prediction made by Jensen (1986) regarding debt as a disciplinary device. The enactment of governance structures with the purpose of curbing management discretion seems to hold to a lesser degree for committed owners. While agency mechanisms may limit the opportunistic behavior by agents, they may not work as well to motivate committed employees as they might undermine the encouragement to adopt a purpose-driven base for motivation (Corbetta and Salvato, 2004; Davis et al., 1997; Wasserman, 2006). In other words, governance mechanisms that signal mistrust towards the employees and induce pressure on management can have a detrimental effect on intrinsic motivators and discourage stewardship amongst employees (Møller, 2020). Reciprocal stewardship is encouraged when owners promote trust, commitment, and pro-organizational behavior amongst employees, thus, committed owners oppose using debt as a disciplinary device. Moreover, the removal of excess cash mitigates the funds available for policies aimed at enhancing stakeholder value. Hanka (1988) suggests that confining the free cash flows by levering up is associated with more frequent employee reductions, lower wages, and reduced pension funding. As follows, the lower levels of leverage employed by committed owners may be significative of the reluctance of bearing high levels of leverage since it hinders the extent to which they

can invest in employee benefits (Hanka, 1998).

The results supporting the confirmation of hypothesis **H2** augments the understanding of the effect of committed ownership on financing decisions and provide empirical support for the hypothesis laid forward by Maksimovic and Titman (1991). It is argued that stakeholders are less willing to do business with a severely levered firm due to an increased probability of financial distress which, in turn, hampers the firm's ability to honor its implicit contracts with stakeholder groups. Since an over-levered firm facing a considerable risk of default is likely to reduce social expenditure, such as on employee benefits or supplier training, excessive debt is detrimental to stakeholder relations. Moreover, the reputational and relational concerns of committed owners suggest that the default costs are more substantial than for institutional owners. In other words, although debt levels may reside at below-bankruptcy levels, committed owners likely experience additional adverse effects from approaching the upper rebalancing threshold. In consequence, a lower leverage level and higher speed of adjustment suggest not only profound attention to maintaining low leverage levels but also a narrower range of optimal leverage levels than for institutional owners.

Moreover, the speedier adjustments of committed owners lend credence to the hypothesis laid forward by Mayer (2019) on purpose and performance. Arguably, the demonstration of a purpose extending beyond profit-making may genuinely be perceived as more trustworthy and, in turn, facilitate access to capital markets and lower the cost of capital of committed owners. Such advantages would depress transaction costs and permit more frequent leverage adjustments to be made. As follows, this also suggests a narrower range between the optimal rebalancing thresholds for committed owners.

Although the non-experimental setting of the study denies causal inferences, the results suggest that committed owners have a low-debt preference but also a narrower range of optimal leverage levels. The results, however, stand in contrast to the control group of institutional owners. The exhibited low-debt preferences of committed owners could be indicative of a comparison with the high-debt preference of institutional owners. In addition, Jensen (1989) suggests that institutional owners, in particular private equity firms, face financial distress more frequently but bankruptcy less frequently, indicating that the

adverse effects from approaching the upper rebalancing threshold are not as severe for institutional owners. Upon approaching the upper rebalancing threshold, institutional owners are highly incentivized to restructure and extract value from their investments and, thus, avoid bankruptcy. For committed owners, however, the interconnectedness between the owner and the firm on an emotional and reputational level discourages restructurings entailing the inability to pursue their purpose, impaired stakeholder relations, detrimental reputational effects, and the failure of long-term survival of the firm. Although the results are given by comparison with institutional owners, the characteristics of committed ownership suggest a preference for lower debt levels and a narrower target level range as compared to the predictions made in the classical theories of capital structure.

7.2.4 Comparison of Results

As elucidated in sections 3.2 and 3.3, studies attempting to estimate leverage levels and adjustment behavior per owner identity are few and far between. A relatively large number of studies have attempted to investigate leverage levels for family owners and often found that family-owned firms are less levered than non-family owned firms (Gonzalez et al., 2013; McConaughy et al., 2001; Lean et al., 2015; Mishra and McConaughy, 1999; López-Gracia and Sánchez-Andújar, 2007; Pindado et al., 2015). Nonetheless, only a handful of studies consider the speed of adjustment, however, they mostly find that family firms rebalance toward the target leverage at a higher speed than non-family firms (Pindado et al., 2015; Kayo et al., 2018; López-Gracia and Sánchez-Andújar, 2007).

The findings of this paper are to some extent comparable with such previous studies since family ownership is often related to committed ownership and the committed owner group in this study largely comprises family and individual owners. Nonetheless, it is important to note that the control group of institutional owners stands in contrast to the broader control groups of many previous studies, which may engender an effect on the relative results. Figure 7.3 illustrates the findings of this paper in the company of the findings of previous studies. Although the findings are congruent, there are some notable differences. Firstly, this study employs the Tobit model to estimate the capital structure and the SOA, whereas previous empirical research has relied on other techniques, such as pooled OLS and system GMM models. Since the speed of adjustment estimates are highly sensitive

to the econometric design, the estimates are likely to differ from previous findings. For instance, Pindado et al. (2015) found that family firms revert towards the target leverage at a speed of 40% whereas this paper finds a speed of adjustment of 20.8% for committed owners[12]. However, Pindado et al. (2015) employed the system GMM model which likely produces an upward-biased adjustment speed (Huang and Ritter, 2009).

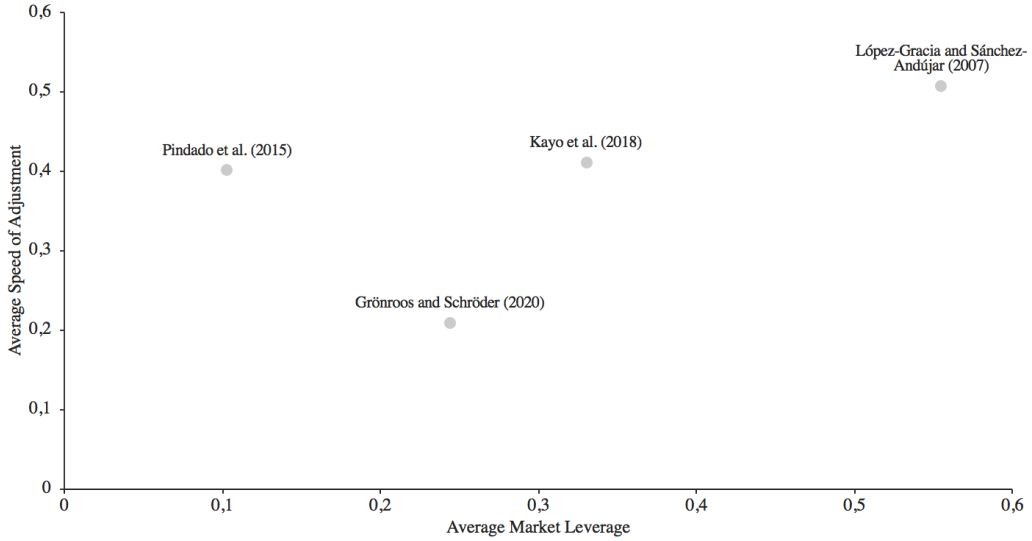

Figure 7.3. *A graphical depiction of the average leverage levels and SOA for committed owners found in this paper in comparison to what has been found for family owners in other papers*

Secondly, Antoniou et al. (2008, p. 59) postulate that "findings relating to financing decisions are highly influenced by the economic environment, its institutions, corporate governance practices, tax systems, borrow-lender relations, exposure to capital markets, the level of investor protection in the country in which the firm operates". Although Kayo et al. (2018) found an adjustment speed for family firms of 41% using the system GMM method, it is noted that the result could be specific to the Brazilian environment given the peculiar characteristics of the Brazilian credit market. Since Brazilian firms have access to government-subsidized loans, it is uncertain to which extent it is possible to deviate from the target leverage (Kayo et al., 2018). On a similar note, Lööf (2003) argues that the adjustment behavior depends on the country-specific context. In a bank-based system, predominant in Germany, firms mainly rely on banks for financing, while in a market-based system, predominant in the U.S. and U.K., firms tend to rely more heavily on the

[12]These findings refer to market leverage.

issuance of market securities. Therefore, the adjustment speed estimate may differ due to differences in the institutional context.

7.2.5 Robustness Testing

To test the robustness of the findings presented in tables 7.1 and 7.2, two different alterations have been applied to the regressions. Firstly, a similar set of regressions have been estimated through a standard pooled OLS specification. This allows for the testing of the robustness of the Tobit model and the effect of censoring in estimating the determinants of capital structure. Although criticized for underestimating the SOA, the pooled OLS model has been commonly applied in capital structure research and is expected to provide a fair comparison to the Tobit model (Fama and MacBeth, 1973). Secondly, a similar set of regressions have been estimated although after removing the owner groups *'Foundations / Research institutes'* and *'Mutual and Pension fund / Nominee / Trust / Trustee'*. As discussed in section 5.4, both these groups are rather arbitrary. Foundations in the U.S are flexible organizational forms and they can be used to structure almost any kind of economic organization, from investment companies to charities (Driver et al., 2018). Similarly, trusts are sometimes charitable and may have varying objectives with respect to social, environmental and economic responsibility. However, these two owner groups comprise slightly above 2% of the sample and, thus, these regressions are not expected to yield significantly different results[13].

The results from the first robustness test, conducted by estimating the regressions using a pooled OLS specification, are found in appendices H and I. Importantly, the MLE estimates from the Tobit model must not be directly compared with OLS estimates since the first are non-linear regressions whereas the latter are linear regressions. However, this robustness test serves as a confirmation that the sign of the coefficients are stable. Considering appendix H, for market leverage, most coefficients take on the same sign as in the Tobit model. Nonetheless, the firm size coefficient is slightly negative in the OLS model, while it is positive in the Tobit model. The profitability variable has no significance in the OLS model, while the macroeconomic growth variable is significant at the 1% level.

[13]While they only constitute slightly above two percent of the sample, the owner group *'Mutual and Pension fund / Nominee / Trust / Trustee'* constitutes 29% of the institutional owner group.

For book leverage, the signs remained unaltered, however, the profitability coefficient is now significant in the OLS model. Although the comparison of coefficient magnitudes is not very informative, the coefficients on the committed owner dummy in appendix H are -0.088 for market leverage and -0.107 for book leverage. The SOA for committed owners, found in appendix I, is estimated to 17.4% for market leverage and 18.1% for book leverage. For institutional owners, the SOA is 15.7% for market leverage and 13.9% for book leverage.

An important distinction between the Tobit and pooled OLS regressions is that in the latter no dependent variable censoring has been performed. Thus, some leverage observations are located outside the theoretically established 0 to 1 range which, evidently, has an effect on the predictive power of the independent variables. Moreover, the regular pooled OLS ignores fixed effects, thus, a downward bias in the SOA is expected. Lastly, the SOA results yielded in the Tobit and pooled OLS are reasonable in comparison to the results in Elsas and Florysiak (2015) and Drobetz et al. (2007), both in absolute and relative terms[14]. Therefore, the results yielded in the Tobit model are deemed robust to the econometric model.

The results from the second robustness test, conducted after the removal of the two arbitrary owner groups, are presented in appendices J and K. The removal yielded small changes in the output although the overall interpretation remains unchanged. Although the coefficients on certain control variables deviate slightly, all signs are similar. Most notably, in appendix J, both coefficients on the committed owner dummy variable are slightly more negative than previously, indicating a larger leverage level difference between the committed owner and institutional owner group. This is intuitively sound since the *Mutual and Pension fund / Nominee / Trust / Trustee* owner group exhibited average leverage levels below the weighted average for the entire sample. Constituting approximately 29% of the institutional owners, the removal of said group raises the average leverage levels amongst institutional owners which has an increasing effect on the differ-

[14]Although Elsas and Florysiak (2015) and Drobetz et al. (2015) do not look into ownership as such, they use both the Tobit and pooled OLS to estimate the adjustment speed. Elsas and Florysiak (2015) find a SOA of 26.3% for the Tobit estimator and 15.2% for the pooled OLS (market leverage). Drobetz et al. (2015), on a comprehensive set of G7 firms, find 31.2% and 14% for the Tobit and pooled OLS, respectively (market leverage).

ence in leverage levels. Moreover, in appendix K, the SOA has uniformly increased slightly for both owner groups in the market and book leverage regressions. However, the relative difference remains unchanged, that is, committed owners still seem to adjust quicker toward the target leverage than institutional owners. In sum, the results suggest a reasonable level of robustness to the owner classifications and lends credence to the assumption of intragroup similarities with regard to financing decisions and behavior.

7.2.6 Limitations

As was explained in section 7.2.1.2, a particularly pronounced issue in all non-experimental research is the endogeneity issue, referring to a situation in which an explanatory variable is correlated with the error term (Wooldridge, 2009). This gives rise to a reverse causality problem when analyzing how the identity of the owner affects capital structure decisions since committed owners, based on their peculiarities and preferences, might only engage with companies with particular capital structure policies. Thus, although the intention is to investigate the effect of committed ownership on capital structure decisions, causality could run in both directions. While the endogeneity problem is considered common in finance and corporate governance research, it can be difficult to address (Wintoki et al., 2012). In capital structure research, the system GMM model is believed to address endogeneity as it employs an instrumental variable technique, however, numerous instrumental variables can overfit the endogenous variables in a finite sample and as a consequence lead to bias (Bun and Sarafidis, 2013). Ideally, this paper would consider exogenous changes in ownership and, as such, investigate the effect on the capital structure in a firm brought about by a new owner. However, LaPorta et al. (1999) emphasize that ownership is relatively stable over time, and, congruently, only a few blockholder changes were observed in the data set. Moreover, nearly no such changes were from a committed blockholder to an institutional blockholder, or vice versa, rendering this solution impractical. Alternatively, a possible solution would be to use instrumental variables, nonetheless, in this context, a suitable instrumental variable could not be identified.

Moreover, although the Tobit model is frequently employed to model the conditional expectation of a continuously measured proportion, such as capital structure, the censored normal regression is conceptually flawed in modeling fractional data. As observed by

Maddala (1991), capital structure data is not observationally censored but theoretically restricted within a 0 to 1 range. By reason, the conditional mean is a nonlinear function of the regressors, which entails a heteroskedasticity problem. Thus, censoring may entail biased estimators, however, it seemingly is the least biased model for estimating capital structure decisions and speed of adjustment (Elsas and Florysiak, 2015).

What is more, the relatively small representation of the institutional owner group relative to the committed owner group, as laid out in chapter 6, could affect the generalizability of the conclusions drawn in the analysis. Since the variance decreases with sample size, a larger sample size results in more reasonable estimators (Wooldridge, 2002). At the same time, the removal of the consistently unleveraged firms impacted the institutional owner group to a larger extent than the committed owner group which might affect the relative findings. Yet, since all removals and modifications to the data set are deemed reasonable, the sample is believed to be representative of the population.

Furthermore, there are limitations concerning the ownership measure. According to Short (1994), an appropriate measure of ownership should not only include owner identity but also the concentration levels. The owner variable in this paper, however, is discontinuous since all shareholders that own more than 25.01% in voting rights are classified as the ultimate owner, no matter the actual ownership stake. The ability to control shareholders to influence the capital structure decisions may be contingent on their voting power. Nonetheless, this paper is limited to the ownership information retrieved from BvD which reported a significant amount of missing values as regards concentration levels. In addition, BvD holds cross-sectional data on ownership concentration, while the dynamic nature of financing decisions requires panel data. Based on these considerations, concentration levels are delimited to this paper.

In addition, Rauh and Sufi (2010) argue that since different debt types have different risk profiles, it is vital to distinguish amongst these. However, such differentiation is rarely found in empirical capital structure research and is not considered in this paper.

Lastly, this paper is restricted to the analysis of external funds for financing. Firms, however, might also choose between internally generated funds and external capital in

accordance with the financing hierarchy theory. Particularly, since the issuance of equity has a dilution effect, committed owners may prefer to finance their operations with internally generated funds, such as the owners' personal capital or retained earnings. However, previous research has so far not established a model for the dynamic pecking-order theory that is theoretically testable and, thus, it could not be tested.

Chapter 8

Conclusion

This paper contributes to a new perspective on ownership and capital structure decisions. Although there is previous empirical research on ownership and financing decisions, attention has primarily been aimed at the effect of ownership structures. However, less consideration has been given to owner characteristics such as the intention of owning the firm, the purpose of doing business, the perception of what constitutes success, and the relationship with stakeholders have remained empirically unexplored. While classical corporate finance theories assume that owners maximize the financial value of their firm, Thomsen and Conyon (2019) postulate that certain owners are purpose-driven and committed to a long-term mission extending beyond profit-making. Although committed owners consider profits as a means to pursue their purpose, they are likely to attach a higher value to the governance implications of debt and equity on the firm's stakeholders. This stands in contrast to the financial value-maximizing objective of institutional owners. Given the particular preferences of committed owners, the following two research questions were formulated:

1. *Do firms with committed owners differ from firms with institutional owners with respect to leverage levels?*

2. *Do firms with committed owners differ from firms with institutional owners with respect to the speed of adjustment?*

Based on econometric hypothesis testing, the committed owner dummy variable yielded a coefficient of -0.120 for market leverage and -0.121 for book leverage. In other words, the analysis showed that committed owners, with their preference for purpose over profit, longevity, and a good reputation among stakeholders, on average are significantly less lev-

ered than institutional owners. Although the dynamic trade-off theory theorizes that the tax benefits of debt are weighed against increasing bankruptcy costs and transaction costs, the argument leaves no room for the governance characteristics of debt and equity and firm preferences deviating from financial value maximization. Committed owners seem to maintain lower leverage ratios than institutional investors, indicating that they are concerned about the tax-shield of debt to a lesser degree. This stands in congruence with the expectations of the preferences and behavior of committed owners as opposed to institutional owners. Moreover, while Jensen (1986) argues that managers need to be constrained from diverting free cash flows to obtain private benefits by taking on debt, he ignores the detrimental effect that debt has on the maintenance of credible commitments with stakeholders. Arguably, firms with committed owners assume less leverage to construct lasting relationships with their revolving stakeholders, which raises the probability of long-term survival. By assumption, low leverage conduces reciprocal stewardship behavior between the owners and the firm's stakeholders, which supports the alignment of effort toward a shared objective.

Moreover, the analysis showed that committed owners exhibit a speed of adjustment of 20.8% for market leverage and 24.4% for book leverage. For institutional owners, the speed of adjustment was 19.0% for market leverage and 15.8% for book leverage. Thus, committed owners revert toward their target leverage faster than do institutional owners. The speedier adjustments could be indicative of the great attention committed owners pay to the maintenance of low leverage ratios, while it could also be evidence of a narrower range of optimal leverage levels for committed owners. Given the reputational and relational concerns of committed owners, the default costs are likely to be higher than for institutional owners who are not expected to be as dependent on favorable stakeholder relations. Therefore, deviating from target leverage is costlier for committed owners, and, by the same reasoning, they revert to the target capital structure at a higher speed.

The findings of this paper are particularly intriguing in a contemporary context since the current economic climate offers a glimpse at the exposure of debt financing, both in terms of financial risk but also in terms of stakeholder and reputation management. Since the dawn of the financial crisis, global corporate debt has risen from $97 trillion in 2007 to

$167 trillion in 2018 (McKinsey, 2018). In the U.S., corporate debt amounted to $10 trillion in 2019, a 52% increase since its last peak of $6.6 trillion in the third quarter of 2008 (Forbes, 2019). In the wake of the COVID-19 pandemic, which at the time of writing still is aggravating, the indebtedness of industry and commerce elucidates a central theme in this paper; how the conservative capital structures of committed owners have a positive effect on the enforceability of relational contracts with stakeholders. A good example from the sample is Ralph Lauren, a founder-controlled business with significantly lower leverage ratios than the peer average (Forbes, 2020). Due to manageable fixed interest obligations, Ralph Lauren is expected to endure the economic downturn better than many competitors (Forbes, 2020). In fact, the company has announced relief packages for employees and although furloughs have been announced, employees will retain their healthcare benefits (GQ, 2020). Even though corporations have demonstrated an aggressive increase in leverage levels throughout the last decade, several committed owners, like Ralph Lauren, now seem better positioned than their peers to meet their obligations to creditors, but also to other stakeholders (Forbes, 2020).

To conclude, the findings of this paper hold important implications for capital structure research, both within the fields of corporate finance and corporate governance. It is suggested that two aspects have a significant effect on the financing decisions of firms: i) the motivation of owning the firm, and ii) the governance implications of debt and equity. Although empirical findings on financing decisions are tremendously context-dependent, this paper provides support for the effect of committed ownership on financing decisions.

8.1 Future Research

In the pursuit of examining the influence of committed owners on financing decisions, multiple areas for further research have been identified. This paper investigates firms in the period from 2009 to 2018 and, therefore, the time period is restricted. Expanding the time horizon could be valuable, particularly in order to capture economic cycles and long-term capital structure trends. Further, understanding the effect of committed ownership on financing decisions of unlisted firms would provide additional depth since it is likely that these firms have different accounting standards, financial disclosure requirements, and less

liquid equity, which could affect the financing decisions (Nörbjerg and Plenborg, 2009). Also, several papers nuance financially constrained from financially unconstrained firms and it could be interesting to further investigate the effect of financial constraint on capital structure decisions. For severely distressed firms the access to external finance is limited and, therefore, adjusting towards the target capital structure might not be possible.

While this paper concentrates on the effect of committed owners on financing decisions in the U.S., it could be interesting to investigate this issue in European bank-based countries, such as Germany. Specifically, it would be worthwhile to examine to what extent the findings of this paper are contingent on the market-based system present in the U.S. It could also be interesting to examine how the level of ownership concentration mediates the relationship between the committed owner and the financing decisions. Committed owners with larger holdings are expected to have a more pronounced effect on the financing decisions. At the same time, it may be worthwhile analyzing whether financing decisions differ across firms with committed owners when there is a second blockholder present. What is more, the effect of firm-specific variables on leverage could be different between a firm owned by committed owners and a firm owned by institutions. Further research is needed to uncover how the firm-specific determinants vary across owner groups. Lastly, further investigating how committed owners, like families, treat their revolving stakeholders could be valuable to gain a more holistic understanding of ownership commitment. In sum, the results show the need to continue investigating how governance mechanisms affect the firms' financing decisions.

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Appendix A

Correlation Matrix

	Market Leverage	Book Leverage	Size	Growth	Non-debt Tax Shield	Tangibility	Uniqueness	Profitability	Recession	Macroeconomic Growth	Economic Prospects	Steward
Market Leverage	1											
Book Leverage	0.51	1										
Size	0.10	0.25	1									
Growth	-0.01	-0.04	0.31	1								
Non-debt Tax Shield	0.10	0.11	0.09	0.00	1							
Tangibility	0.15	0.18	0.18	0.02	0.41	1						
Uniqueness	-0.02	-0.20	-0.59	-0.30	-0.05	-0.18	1					
Profitability	0.01	0.21	0.64	0.35	0.02	0.14	-0.83	1				
Recession	0.02	0.01	0.02	0.00	0.01	0.02	-0.02	0.02	1			
Macroeconomic Growth	-0.03	-0.01	-0.02	0.01	-0.01	-0.04	0.03	-0.03	-0.62	1		
Economic Prospects	-0.02	-0.02	-0.03	-0.02	-0.01	0.04	0.00	0.02	0.06	-0.26	1	
Steward	-0.05	-0.09	-0.19	-0.05	0.02	0.02	0.09	-0.08	0.01	-0.01	0.02	1

Appendix B

Summary Statistics

	Mean	Median	S.D.	Min.	Max.	Skewness	Kurtosis
Market Leverage	0.25	0.13	0.29	0.00	1.00	1.15	0.19
Book Leverage	0.29	0.14	0.34	0.00	1.00	0.94	-0.45
Size	3.82	4.04	3.38	-2.87	20.05	1.31	2.20
Growth	0.10	1.21	10.87	-36.29	20.05	-1.76	7.78
Non-debt Tax Shield	0.01	0.01	0.01	0.00	0.03	1.77	3.64
Tangibility	0.23	0.14	0.24	0.00	0.81	1.85	3.12
Uniqueness	0.23	0.00	0.44	0.00	1.82	3.09	9.52
Profitability	-0.23	0.00	0.59	-2.35	0.07	-3.24	9.65
Macroeconomic Growth	1.95	2.16	1.49	-3.92	3.98	1.06	2.80
Economic Prospects	1.61	1.62	0.71	0.24	2.82	1.21	2.07

Appendix C

Observations per Industry over Time

Quarter	Agriculture	Mining	Construction	Manufacturing	TCEG & S*	Wholesale Trade	Retail Trade	Services	Nonclassifiable	Total
2009Q1	3	29	4	169	32	16	22	85	16	**376**
2009Q2	4	30	4	170	32	15	22	90	16	**383**
2009Q3	3	30	4	174	32	17	22	92	16	**390**
2009Q4	4	33	6	181	33	19	23	97	17	**413**
2010Q1	4	30	6	180	32	19	23	99	19	**412**
2010Q2	4	34	6	185	32	20	23	98	20	**422**
2010Q3	4	35	6	185	32	21	24	103	20	**430**
2010Q4	6	35	6	191	34	22	24	110	21	**449**
2011Q1	5	37	6	192	33	22	23	107	20	**445**
2011Q2	5	42	6	200	33	21	23	108	18	**456**
2011Q3	5	45	6	201	33	21	23	111	20	**465**
2011Q4	6	44	6	207	35	22	24	119	22	**485**
2012Q1	6	45	6	212	34	23	23	123	22	**494**
2012Q2	6	47	6	218	33	23	24	127	22	**506**
2012Q3	6	48	6	218	34	24	24	130	23	**513**
2012Q4	6	53	7	226	35	25	26	142	21	**541**
2013Q1	6	54	7	221	37	24	25	136	22	**532**
2013Q2	6	56	7	226	36	25	26	141	22	**545**
2013Q3	6	55	7	228	36	26	27	143	23	**551**
2013Q4	6	60	8	247	36	25	29	150	25	**586**
2014Q1	6	60	7	235	37	27	29	147	25	**573**
2014Q2	6	57	8	237	36	26	29	152	25	**576**
2014Q3	6	55	8	237	36	25	28	151	26	**572**
2014Q4	6	54	9	247	37	23	31	155	25	**587**
2015Q1	6	53	9	237	38	23	29	153	25	**573**
2015Q2	6	53	9	241	38	23	30	153	24	**577**
2015Q3	6	51	9	242	38	24	30	154	26	**580**
2015Q4	6	52	9	247	38	23	33	160	23	**591**
2016Q1	5	49	10	241	38	23	31	150	25	**572**
2016Q2	5	51	10	238	38	23	30	151	25	**571**
2016Q3	5	52	11	244	38	23	30	146	24	**573**
2016Q4	4	52	10	253	41	22	34	159	22	**597**
2017Q1	4	50	10	240	40	22	32	149	23	**570**
2017Q2	5	49	9	242	41	22	32	154	22	**576**
2017Q3	5	47	9	245	41	22	31	155	21	**576**
2017Q4	5	46	9	257	41	20	32	168	21	**599**
2018Q1	5	43	10	251	41	20	31	158	22	**581**
2018Q2	4	43	10	251	41	19	31	163	22	**584**
2018Q3	4	44	10	252	41	19	31	163	22	**586**
2018Q4	4	44	8	235	41	17	23	147	16	**535**
Total	204	**1,847**	**304**	**8,903**	**1,454**	**876**	**1,087**	**5,399**	**869**	**20,943**

Appendix D

Average Market Leverage per Industry over Time

Quarter	Agriculture	Mining	Construction	Manufacturing	TCEG & S*	Wholesale Trade	Retail Trade	Services	Nonclassifiable	W. Avg
2009Q1	0.18	0.19	0.70	0.29	0.54	0.25	0.38	0.30	0.25	**0.31**
2009Q2	0.35	0.19	0.69	0.26	0.48	0.25	0.34	0.31	0.26	**0.29**
2009Q3	0.14	0.19	0.61	0.23	0.44	0.26	0.32	0.29	0.25	**0.27**
2009Q4	0.33	0.26	0.67	0.24	0.44	0.27	0.31	0.30	0.25	**0.28**
2010Q1	0.31	0.19	0.72	0.21	0.40	0.18	0.30	0.26	0.29	**0.25**
2010Q2	0.07	0.19	0.70	0.22	0.41	0.13	0.32	0.26	0.33	**0.25**
2010Q3	0.17	0.16	0.46	0.21	0.42	0.13	0.35	0.26	0.38	**0.25**
2010Q4	0.27	0.18	0.52	0.22	0.43	0.18	0.32	0.27	0.34	**0.26**
2011Q1	0.12	0.13	0.51	0.21	0.41	0.17	0.29	0.23	0.37	**0.23**
2011Q2	0.10	0.14	0.43	0.23	0.39	0.17	0.30	0.25	0.34	**0.25**
2011Q3	0.10	0.21	0.49	0.25	0.44	0.19	0.38	0.27	0.23	**0.27**
2011Q4	0.25	0.20	0.45	0.26	0.48	0.26	0.36	0.29	0.24	**0.29**
2012Q1	0.08	0.22	0.41	0.22	0.44	0.19	0.33	0.24	0.23	**0.25**
2012Q2	0.09	0.23	0.49	0.25	0.45	0.22	0.31	0.26	0.24	**0.27**
2012Q3	0.08	0.16	0.51	0.23	0.44	0.23	0.27	0.26	0.24	**0.25**
2012Q4	0.10	0.18	0.46	0.26	0.46	0.29	0.28	0.28	0.30	**0.28**
2013Q1	0.09	0.16	0.32	0.21	0.43	0.22	0.24	0.21	0.31	**0.23**
2013Q2	0.16	0.14	0.30	0.22	0.40	0.25	0.24	0.20	0.23	**0.22**
2013Q3	0.12	0.15	0.33	0.21	0.38	0.26	0.29	0.19	0.29	**0.22**
2013Q4	0.13	0.19	0.40	0.24	0.35	0.22	0.29	0.23	0.25	**0.24**
2014Q1	0.10	0.15	0.20	0.18	0.35	0.19	0.26	0.20	0.19	**0.20**
2014Q2	0.11	0.15	0.23	0.18	0.32	0.19	0.26	0.19	0.21	**0.19**
2014Q3	0.12	0.18	0.23	0.18	0.36	0.19	0.25	0.20	0.19	**0.20**
2014Q4	0.14	0.26	0.26	0.24	0.37	0.19	0.33	0.24	0.18	**0.25**
2015Q1	0.15	0.25	0.28	0.21	0.33	0.21	0.26	0.21	0.18	**0.22**
2015Q2	0.19	0.26	0.23	0.20	0.33	0.22	0.29	0.21	0.20	**0.22**
2015Q3	0.22	0.29	0.21	0.22	0.36	0.25	0.34	0.23	0.21	**0.25**
2015Q4	0.22	0.37	0.24	0.25	0.34	0.20	0.38	0.30	0.21	**0.28**
2016Q1	0.23	0.31	0.25	0.24	0.33	0.19	0.34	0.24	0.21	**0.25**
2016Q2	0.28	0.30	0.26	0.24	0.36	0.20	0.35	0.24	0.24	**0.26**
2016Q3	0.26	0.33	0.34	0.25	0.41	0.24	0.36	0.21	0.24	**0.26**
2016Q4	0.27	0.30	0.29	0.26	0.42	0.20	0.35	0.28	0.21	**0.28**
2017Q1	0.31	0.27	0.31	0.22	0.39	0.23	0.35	0.20	0.22	**0.24**
2017Q2	0.20	0.28	0.24	0.25	0.36	0.23	0.31	0.22	0.23	**0.26**
2017Q3	0.20	0.29	0.37	0.24	0.36	0.25	0.34	0.22	0.21	**0.26**
2017Q4	0.23	0.30	0.35	0.26	0.36	0.24	0.36	0.24	0.19	**0.27**
2018Q1	0.25	0.27	0.34	0.23	0.39	0.28	0.37	0.20	0.20	**0.25**
2018Q2	0.29	0.23	0.23	0.21	0.37	0.25	0.34	0.20	0.15	**0.23**
2018Q3	0.45	0.24	0.35	0.20	0.37	0.24	0.36	0.20	0.15	**0.23**
2018Q4	0.48	0.30	0.36	0.25	0.45	0.25	0.47	0.25	0.18	**0.28**
Average	**0.20**	**0.22**	**0.39**	**0.23**	**0.40**	**0.22**	**0.32**	**0.24**	**0.24**	

Appendix E

Average Book Leverage per Industry over Time

Quarter	Agriculture	Mining	Construction	Manufacturing	TCEG & S*	Wholesale Trade	Retail Trade	Services	Nonclassifiabl	W. Avg
2009Q1	0.41	0.32	0.44	0.34	0.54	0.27	0.40	0.36	0.32	**0.36**
2009Q2	0.38	0.26	0.50	0.31	0.49	0.21	0.36	0.37	0.26	**0.33**
2009Q3	0.17	0.27	0.50	0.28	0.50	0.17	0.36	0.37	0.25	**0.32**
2009Q4	0.25	0.33	0.37	0.27	0.52	0.21	0.37	0.32	0.24	**0.31**
2010Q1	0.27	0.30	0.40	0.26	0.50	0.20	0.38	0.28	0.33	**0.30**
2010Q2	0.11	0.30	0.39	0.26	0.48	0.21	0.34	0.28	0.26	**0.28**
2010Q3	0.16	0.29	0.38	0.25	0.48	0.18	0.36	0.27	0.21	**0.28**
2010Q4	0.27	0.31	0.34	0.26	0.50	0.23	0.33	0.28	0.19	**0.29**
2011Q1	0.10	0.30	0.34	0.25	0.49	0.21	0.35	0.25	0.25	**0.28**
2011Q2	0.08	0.23	0.35	0.25	0.45	0.13	0.37	0.22	0.17	**0.25**
2011Q3	0.08	0.25	0.33	0.28	0.46	0.12	0.40	0.26	0.23	**0.28**
2011Q4	0.23	0.22	0.33	0.28	0.47	0.20	0.36	0.27	0.15	**0.28**
2012Q1	0.22	0.25	0.30	0.28	0.48	0.16	0.40	0.27	0.17	**0.28**
2012Q2	0.05	0.31	0.30	0.28	0.45	0.22	0.36	0.28	0.20	**0.29**
2012Q3	0.13	0.23	0.32	0.26	0.46	0.20	0.33	0.24	0.22	**0.27**
2012Q4	0.26	0.23	0.29	0.28	0.47	0.19	0.34	0.27	0.24	**0.29**
2013Q1	0.23	0.26	0.25	0.28	0.42	0.13	0.29	0.27	0.30	**0.28**
2013Q2	0.26	0.21	0.25	0.26	0.46	0.25	0.26	0.26	0.27	**0.27**
2013Q3	0.17	0.23	0.25	0.27	0.46	0.19	0.31	0.24	0.26	**0.27**
2013Q4	0.15	0.27	0.33	0.29	0.49	0.20	0.31	0.25	0.15	**0.28**
2014Q1	0.08	0.27	0.36	0.25	0.48	0.19	0.34	0.26	0.18	**0.27**
2014Q2	0.09	0.35	0.32	0.26	0.46	0.18	0.34	0.25	0.16	**0.28**
2014Q3	0.14	0.31	0.33	0.26	0.48	0.24	0.34	0.25	0.16	**0.28**
2014Q4	0.20	0.30	0.36	0.25	0.47	0.24	0.39	0.27	0.16	**0.28**
2015Q1	0.30	0.31	0.38	0.24	0.46	0.26	0.39	0.27	0.16	**0.28**
2015Q2	0.32	0.35	0.38	0.25	0.46	0.28	0.37	0.25	0.18	**0.28**
2015Q3	0.15	0.33	0.35	0.25	0.47	0.17	0.43	0.27	0.16	**0.28**
2015Q4	0.15	0.36	0.35	0.27	0.49	0.15	0.40	0.28	0.18	**0.29**
2016Q1	0.18	0.28	0.31	0.25	0.49	0.17	0.36	0.28	0.17	**0.28**
2016Q2	0.17	0.29	0.34	0.26	0.52	0.19	0.36	0.28	0.18	**0.28**
2016Q3	0.15	0.31	0.32	0.26	0.53	0.21	0.37	0.27	0.23	**0.29**
2016Q4	0.20	0.29	0.31	0.27	0.54	0.22	0.42	0.27	0.20	**0.29**
2017Q1	0.22	0.28	0.32	0.26	0.53	0.25	0.43	0.25	0.19	**0.28**
2017Q2	0.12	0.27	0.28	0.28	0.57	0.28	0.43	0.26	0.21	**0.30**
2017Q3	0.10	0.30	0.32	0.30	0.55	0.38	0.44	0.28	0.12	**0.31**
2017Q4	0.11	0.31	0.33	0.31	0.50	0.33	0.42	0.25	0.15	**0.31**
2018Q1	0.10	0.32	0.31	0.29	0.52	0.40	0.44	0.25	0.11	**0.30**
2018Q2	0.11	0.25	0.24	0.28	0.53	0.40	0.45	0.28	0.11	**0.30**
2018Q3	0.09	0.25	0.35	0.27	0.53	0.35	0.46	0.28	0.15	**0.30**
2018Q4	0.17	0.33	0.41	0.29	0.49	0.29	0.45	0.30	0.20	**0.31**
Average	**0.18**	**0.29**	**0.34**	**0.27**	**0.49**	**0.23**	**0.38**	**0.27**	**0.20**	

Appendix F

Average Leverage per Industry

Average leverage ratio per industry

Industry	Avg. ML	Avg. BL	W.Avg ML	W. Avg. BL	More or less than w. avg	More or less than w. avg
Agriculture	0.249	0.288	0.247	0.278	More	More
Mining	0.249	0.289	0.247	0.278	More	More
Construction	0.252	0.290	0.247	0.278	More	More
Manufacturing	0.250	0.289	0.247	0.278	More	More
TCEG & S*	0.269	0.306	0.247	0.278	More	More
Wholesale Trade	0.247	0.273	0.247	0.278	Less	Less
Retail Trade	0.250	0.278	0.247	0.278	More	More
Services	0.237	0.261	0.247	0.278	Less	Less
Nonclassifiable	0.238	0.197	0.247	0.278	Less	Less
W. Avg.	0.247	0.278				

Appendix G

Average Leverage per Owner

Average leverage ratio per owner type

Owner type	Avg. ML	Avg. BL	W.Avg ML	W. Avg. BL	More or less than w. avg	More or less than w. avg
One or more named individuals or families	0.24	0.28	0.25	0.29	Less	Less
Financial company	0.33	0.42	0.25	0.29	More	More
Bank	0.30	0.38	0.25	0.29	More	More
Mutual and pension fund, nominee, trust, trustee	0.27	0.36	0.25	0.29	More	More
Insurance company	0.43	0.53	0.25	0.29	More	More
Private equity firm	0.22	0.32	0.25	0.29	Less	More
Employees, managers, directors	1.00	0.41	0.25	0.29	More	More
Foundation, research Institute	0.15	0.13	0.25	0.29	Less	Less
W. Avg.	0.25	0.29				

Appendix H

OLS Regression 1

Dependent Variable:	*Market Leverage*	*Book Leverage*
Firm-specific variables		
Size	-0.009	0.034
	(0,002)***	(0,003)***
Growth Opportunities	0,001	-0.003
	(0,000)***	(0,000)**
Non-debt Tax Shield	1.488	0.818
	(0,229)***	(0,281)***
Tangibility	0.160	0.183
	(0,013)***	(0,016)***
Uniqueness	0.006	-0.007
	(0,007)	(0,008)
Profitability	0.004	0.043
	(0,006)	(0,007)***
Macroeconomic variables		
Recession	-0.016	-0.001
	(0,012)	(0,015)
Macroeconomic Growth	-0.005	-0.001
	(0,001)***	(0,002)
Economic Prospects	-0.032	-0.013
	(0,002)***	(0,002)***
Ownership variables		
Committed Owner	-0.088	-0.107
	(0,016)**	(0,034)**
R^2	0.06	0.09
Adj. R^2	0.01	0.01

Standard errors are in brackets and are adjusted for heteroskedasticity.
***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Appendix I

OLS Regression 2

Dependent Variable:	*Market Leverage*	*Book Leverage*
Firm-specific variables		
Size	0.009	0.008
	(0,001)***	(0,002)***
Growth Opportunities	0.000	0,000
	(0,000)	(0,000)
Non-debt Tax Shield	0.695	0.042
	(0,150)***	(0,215)***
Tangibility	0.050	0.069
	(0,009)***	(0,012)***
Uniqueness	0.003	0.001
	(0,004)	(0,006)
Profitability	-0.003	-0,000
	(0,004)**	(0,005)
Macroeconomic variables		
Recession	-0.014	0.002
	(0,008)	(0,011)
Macroeconomic Growth	0.001	-0.001
	(0,001)	(0,001)
Economic Prospects	-0.014	-0.006
	(0,001)***	(0,002)***
Ownership variables		
Committed Owner	0.028	0.014
	(0,006)*	(0,022)
Leverage $_{t-1}$	0.843	0.861
	(0,015)***	(0,021)***
Committed Owner * *Leverage* $_{t-1}$	-0.017	-0.042
	(0,016)**	(0,022)***
SOA Institutional Owner	15.7%	13.9%
SOA Committed Owner	17.4%	18.1%
R^2	0.32	0.35
Adj. R^2	0.29	0.34

Standard errors are in brackets and are adjusted for heteroskedasticity.
***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Appendix J

Tobit Reduced Sample 1

Dependent Variable:	*Market Leverage*	*Book Leverage*
Firm-specific variables		
Size	0.039	0.036
	(0,003)***	(0,000)***
Growth Opportunities	0.001	-0.003
	(0,000)***	(0,000)***
Non-debt Tax Shield	2.549	0.712
	(0,141)***	(0,199)**
Tangibility	0.142	0.111
	(0,003)***	(0,012)***
Uniqueness	0.057	0.002
	(0,007)*	(0,011)
Profitability	0.026	0.036
	(0,004)***	(0,009)
Macroeconomic variables		
Recession	-0.015	-0.002
	(0,013)	(0,013)
Macroeconomic Growth	-0.005	-0,000
	(0,001)**	(0,002)
Economic Prospects	-0.027	-0.008
	(0,002)***	(0,002)***
Ownership variables		
Committed Owner	-0.154	-0.147
	(0,007)***	(0,003)***
R^2	0.14	0.20
Adj. R^2	0.11	0.16

Standard errors are in brackets and are adjusted for heteroskedasticity.
***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Appendix K

Tobit Reduced Sample 2

Dependent Variable:	*Market Leverage*	*Book Leverage*
Firm-specific variables		
Size	0.009	0.008
	(0,001)***	(0,002)***
Growth Opportunities	0.000	0.002
	(0,000)**	(0,000)*
Non-debt Tax Shield	0.624	0.128
	(0,147)***	(0,045)***
Tangibility	0.050	0.074
	(0,004)***	(0,013)***
Uniqueness	0.005	-0.012
	(0,005)	(0,006)
Profitability	-0.008	0.071
	(0,004)**	(0,009)
Macroeconomic variables		
Recession	-0.016	0.005
	(0,007)*	(0,009)*
Macroeconomic Growth	0.001	-0.001
	(0,001)	(0,001)
Economic Prospects	-0.010	-0.001
	(0,001)***	(0,001)***
Ownership variables		
Committed Owner	0.038	0.026
	(0,005)*	(0,006)
Leverage $_{t-1}$	0.794	0.821
	(0,013)***	(0,010)***
*Committed Owner * Leverage* $_{t-1}$	-0.021	-0.102
	(0,018)**	(0,014)***
SOA Institutional Owner	20.6%	17.9%
SOA Committed Owner	22.7%	28.1%
R^2	0.37	0.43
Adj. R^2	0.34	0.42

Standard errors are in brackets and are adjusted for heteroskedasticity.
***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Appendix L

Distribution of Owner Types

Owner type	Observations	%
One or more named individuals or families	19,311	92.2%
Financial company	509	2.4%
Bank	457	2.2%
Mutual and pension fund, nominee, trust, trustee	398	1.9%
Insurance company	80	0.4%
Private equity firm	144	0.7%
Employees, managers, directors	4	0.0%
Foundation, research Institute	40	0.2%