# CAPITAL STRUCTURE IN INDUSTRIAL FOUNDATIONS AND THEIR FIRMS[*]

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## 1. INTRODUCTION

There is a demand side and a supply side to a firm's capital structure. Thinking about a firm's capital structure, it is important to note not only the determinants of its preferred leverage, but also the constraints on the firm's ability to increase its leverage. Both sides are, of course, affected by firm characteristics. In this respect, capital structure theories tend to consider assets characteristics. In this paper, we focus on the implications of ownership characteristics and in particular the implications of having a foundation as the controlling owner.

The effect of foundation ownership on capital structure is not obvious. On the one hand, foundations are legally obliged to preserve their capital, which in large part consist of stock in the companies they own. This is essentially a lower boundary on equity. Their charters often mandate that they aim for the survival of the companies they own. As more debt increases the probability of default, this is essentially an upper boundary on debt. Dutta and Radner (1999) predict that survival maximizing companies will be less leveraged. These considerations point toward a financial conservatism that aims for relatively high equity and low leverage.

Moreover, foundations are often represented in the boards in the companies they own. This should reduce the asymmetric information between managers and shareholders and facilitate new equity issues (Rajan and Zingales, 1995). Under certain conditions, holding equity or partaking in equity issues also serves as a long term commitment to the firm. This commitment can be measured from the depth of capital committed and the length of time for which it is committed (Mayer, 2013). These considerations, again, point toward relatively high equity and low leverage in foundation-owned firms.

The usefulness of such a commitment depends critically on the takeover market. Mayer (2013, p. 145) asks: "How durable is your commitment in the face of adversity – is it resilient in different times or vulnerable to alternative temptations?" And active and hostile takeover market makes it difficult for equity capital to serve as a commitment. The concentration of ownership in firms owned by foundations, and the obligations that comes with the ownership, does however moderate the effect of the market for corporate control, as does the fact that only a very small share of the foundation-owned firms are publicly listed (Hansmann and Thomsen, 2013).

On the other hand, the takeover market, to the extent that these firms are part of it, can force them to increase leverage. Debt holds a commitment to pay out future cash earnings, which, in turn, makes the firm less attractive to raiders (Rajan and Zingales, 1995). This commitment may also be a way for owners to make managers disgorge cash instead of investing it below the cost of capital (Jensen, 1986). Access to bank finance also makes it possible for firms with capital constrained owners to grow without diluting ownership, i.e. easier for foundations to maintain their controlling share.

Considering asset characteristics, foundation ownership may be particular important for (conducive of) immaterial, long-term assets. Foundations are long term owners and managers of foundation-owned firms should thus be less prone to the inefficiencies of short termism, of which underinvestment in research and development is an important one. This underinvestment problem comes from managers' attempt to avoid underpricing of long term assets (Shleifer and Vishny, 1990). Since immaterial assets are more likely to be financed with equity, this also suggests that firms that are owned by foundations, ceteris paribus, hold more equity.

Finally, generalizing the contract failure argument for non-profits in Hansmann (1980), foundations, when acting as owners, have less of a profit motive to breach implicit contracts with its stakeholders. Owners have limited liability and may in some situations push for more risky projects. Lenders, on the other hand, may push for less risky projects. Not all of this can be contracted, and striking the right balance may require implicit contracts. That such contracts could be more reliable in foundation-owned firms should make both types of capital more available.

Eventually, it becomes an empirical question what the effect of foundation-ownership on capital structure is, but summing up the arguments above, our proposition is that foundation-owned firms have less debt. There is very limited existing evidence on the capital structure in firms owned by foundations. Hansmann and Thomsen (2013) compare the largest Danish foundation-owned firms with Nordic non-foundation-owned listed firms and find that the debt to equity ratio in the former, on average and without controlling for anything, is significantly lower than in the latter – in spite of significantly higher return on assets. This result favors the pecking order theory of a firm's capital structure and suggests that foundation-owned firms prefer internal financing to other sources.

There are a few papers on capital related issues in non-profits, but these papers study a different type of organization, as the non-profits do not have business activity outside the foundation. Ramirez (2011) finds that non-profits use excess cash to take advantage of growth opportunities. This result is also in line with the pecking order. Calabrese (2012) finds that profits are accumulated for the purpose of reducing financial vulnerability, and that profit accumulation is negatively correlated with debt.

We add to this literature in two ways. First, compared to papers on non-profits, we study the financing of business activity in firms that are owned by foundations rather than business activity within foundations. All foundations care about their endowments, and therefore they may make similar capital structure decisions regardless of the organization of the business activity. On the other hand, the fact that business activity is conducted in a separate entity may alter the circumstances under which these decisions are made.

Second, compared to Hansmann and Thomsen (2013), we study a larger set of foundation- and non-foundation-owned firms, and we focus explicitly on the capital structure decision. Leverage is the dependent variable in our regressions, and that allows us to control for a relevant set of firm and industry characteristics when estimating the effect of foundation ownership on capital structure. Our empirical outset is the entire population of Danish industrial foundations and firms over the time period from 2000 to 2012. This complements the picture of the largest foundation-owned firms previously studied.

The rest of the paper is organized as follow. To establish a framework for understanding firms' capital structures, section 2 introduces four of the most established theories of capital structure. These are Modigliani and Miller's theory of irrelevance, the trade-off theory, the pecking order theory, and Jensen's free cash flow theory. Since no capital structure theory has been developed specifically for nonprofits, and since foundation-owned firms in many respects are regular firms (with a special type of controlling owner), these theories are a natural starting point for the analysis. Section 3 describes the data sources and the decisions made in the course of constructing the dataset and identifying and characterizing the different organizational layers. Section 4 presents both univariate and multivariate results on the capital structure in industrial

foundations and the firms owned by these foundations. This section also compares foundation-owned firms with other firms. Section 5 concludes.

## 2. THEORIES OF CAPITAL STRUCTURE

Modern capital structure theory starts with Modigliani and Miller (1958). The central notion in their theory is that capital structure is irrelevant to the value of a firm in perfect capital markets, provided that the assets are held constant. Firm value is determined on the left-hand side of the balance sheet. As long as shareholders can borrow or lend on the same terms as the firm, they can undo the effect of the firm's capital structure, making it irrelevant to the value of the firm. Their theory also holds that the rate of return that shareholders can expect to receive on their shares increases as the firm's debt to equity ratio increases. Increased leverage increases the expected return, but the shareholder's should be indifferent about this, because any increase in expected return is exactly offset by an increase in risk and therefore in shareholder's required rate of return (Brealey, Myers, and Allen, 2013). In other words, it is not possible to substitute cheap debt for expensive equity.

The logic of Modigliani and Miller (1958) is widely accepted, nevertheless financing clearly matters (Myers, 2001). The main reasons are considered to be taxes, asymmetry of information, and agency costs. Theories of optimal capital structure differ in their emphases on these factors. To begin, the trade-off theory emphasizes taxes. Under this theory, a firm will increase debt to the point where the marginal value of the tax shield on additional debt equal to the increase in the present value of possible costs of financial distress. Firms for whom the tax shields of debt are greater and the costs of financial distress lower are expected to be more highly

levered. The tax shield is the reduction in taxable income from tax-deductible interest expenses. Financial distress refers to the costs of bankruptcy or reorganization.

If the trade-off theory is right, a value-maximizing firm should never pass up the tax shield of debt when the probability of financial distress is low (Myers, 2001). Higher profit means more debt-servicing capacity and more taxable income to shield, yet some of the most successful firms operate with little debt. Graham (2000) finds that the average U.S. firm in his data could double its interest payments in confident expectation of doubled interest tax shields – and in the process add significant value. Graham's results are based on the assumption that firms have the opportunity to increase their leverage. An alternative explanation is that firms are rationed by their lenders (Stiglitz and Weiss, 1981). Consistent with the theory, Mackie-Mason (1990) finds that tax paying firms are more likely to issue debt versus equity than non-tax paying firms and thus shows that taxes do affect financing decisions. Fama and French (1998) do not find any evidence that tax shields of debt contributed to firm value.

Asymmetric information between a firm's incumbent management and potential capital providers is the cornerstone in Myers and Majluf's (1984) pecking order theory. Management is assumed to know more about the firm's true value and to act in the interest of existing shareholders. Therefore, new shareholders perceive an equity issue as beneficial only to the existing shareholders, and, consequently, lower the price they are willing to pay. These dynamics turn equity into an unattractive source of capital. Debt has a prior claim on the firm's assets and earnings that makes debt holders less exposed to errors in valuing the firm (Myers, 2001). A debt issue should therefore have a smaller downward impact on a firm's stock price than an equity issue. There is no asymmetric information at all and hence any change in price – due to

the choice of financing, when financing with internal funds (e.g. retained earnings). Thus, the pecking order is: Internal funds, then debt, and finally equity.

If the pecking order theory is right, equity issues should reduce stock prices, and debt issues should be more frequent than equity issues. These predictions are to some degree confirmed (see for example Asquith and Mullins, 1996; Brealey et al., 2013). The infrequency of stock issues by established firms have been attributed to the separation of ownership and control as well as the managers desire to avoid the discipline of the capital markets (Myers, 2001), but the pecking order theory offers an alternative explanation. The theory also explains why more profitable firms may borrow less.

The final theory to be presented here is Jensen's (1986) free cash flow theory in which it is argued that debt can be an effective way to restrain managers from using up free cash flow. Jensen argues for the inevitability of agency costs and finds that "the problem is how to motivate managers to disgorge the cash rather than investing it at below the cost of capital or wasting it on organization inefficiencies" (Jensen, 1986, 324). Managers with substantial free cash flow can increase dividends or repurchase stock and thereby pay out current cash that would otherwise be invested in low-return projects or wasted. Debt also reduces the agency costs by reducing the cash flow available for spending at the discretion of managers. According to Jensen (1986), these control effects of debt are potential determinant of capital structure.

## 3. DATA

The data for this study comes from two different sources and covers the time period from 2000 to 2011. We use the Danish Business Authority's register of industrial foundation to identify the

industrial foundations. We then use the ownership data from Experian to identify all subsidiaries (if any) of these foundations. In some foundations, the business activity is entirely in the foundation. In other foundations, it is in one or more subsidiaries, which again can have its own subsidiaries. We can track subsidiaries of subsidiaries but not beyond that, and we can only identify ownership of Danish firms. The links between foundations and subsidiaries are made irrespective of ownership stakes, i.e. as long as a foundation in the register owns part of a company it is included as a subsidiary. This procedure is justified as the Business Authority only register foundations with controlling influence as industrial foundations.

For the capital structure discussion, it is also worth noting that some foundations may find it beneficial to set up a holding company in between the foundation and the subsidiary with the business activity. Dividends, for instance, can be stored in such a holding company and called upon when needed. The benefit is that some tax payments can be avoided (in the foundation, tax deductibility are only allowed once free income such as dividends from subsidiaries are used) and, maybe more important, that the foundation can manage its donations better (as soon as money enter into the foundation it is, to some degree, necessary to pass them on to the beneficiaries; it is only to a certain extent that foundations are allowed to pile up money). If a subsidiary is a holding company and a subsidiary of this company is also a holding company, it is removed from the data. We use the industrial classification DB07 by Statistics Denmark to identify holding companies.

Having established these links between foundations, holding companies and businesses, we remove all financial companies and all non-holding companies with less than 20 employees. The capital structure in financial companies is very different from and incomparable to other firms. Secondly, some foundations run small museums, seamen's homes, etc. that may not be

financed in the same way as a "normal" business, and that, from a business point of view, are less relevant. We set the floor at 20 employees in order to remove such firms from our data. This is 20 employees in foundations without subsidiaries, i.e. where the business activity is in the foundation, or 20 employees in subsidiaries. If a subsidiary is a holding company, it is 20 employees in the subsidiary of the subsidiary. Data on firm characteristics and firm financials are also obtained from Experian.

We use unconsolidated financial data for foundations and consolidated financial data for subsidiaries. This distinction is necessary to isolate the capital structure in the foundations. It is only by isolation that we can learn something about their capitalization vis-a-vis the subsidiaries. However, if a foundation's 1st subsidiary is a holding company, we use unconsolidated data for this entity and consolidated data for the subsidiary of the subsidiary. To sum up: We divide the population of industrial foundations into two groups based on whether or not they have subsidiaries. If a foundation has a subsidiary and it is not a holding company, we stop there. If the subsidiary is a holding company, we move on to the 2nd subsidiary. If this is also a holding company, the observation (foundation, 1st subsidiary, and 2nd subsidiary) is deleted.

Besides mapping the capital structure in foundations and their subsidiaries, it is also interesting to compare with non-foundation-owned firms. But many foundation-owned firms are unique, not least in terms of their size, making such a comparison less than straight forward. As a first attempt, we compare to all other firms in Experian for which we have consolidated financial data. It is therefore important to bear in mind that these firms are not necessarily equal to the foundation-owned firms in all their (sometimes unobserved) characteristics.

## 4. RESULTS

Table 1 presents descriptive statistics about the capital structure in industrial foundations and their subsidiaries. Panel A shows the numbers of foundations with and without subsidiaries, and, when there are subsidiaries, by whether the subsidiary is a holding company or not. The first observation is the differences in firm size as measured by total assets. Foundations with no subsidiaries, i.e. when the business activity is in the foundation, are substantially smaller than foundations with subsidiaries. The second observation is that these size differences are not to the same extent reflected in the capital structure. In the literature, and especially in the trade-off theory, the ability to carry debt is often associated with tangibility assets rather than size per se. Tangible assets can serve as collateral that reduces the probability of financial distress and thus allows for more debt. At the foundation level, this association does indeed exit, as foundations with no subsidiaries have a higher share of tangible assets, a higher share of debt, and a higher share of long term debt, which is usually considered to be more risky than short term debt. The mean (median) total debt to total assets ratio is 0.49 (0.50) for foundations with no subsidiaries and 0.13 (0.06) and 0.25 (0.21) for foundations with subsidiaries. There are also some noteworthy differences between foundations with subsidiaries. As it shows from the reported numbers, there is substantially less debt in foundations where the subsidiary is not a holding company. All else equal, the capital reserve that follows from having low debt should make the foundation a more stable owner. This is not, however, further strengthened when we look at the

ratio between liquid assets and total debt. Foundations with subsidiaries that are holding companies have more liquid assets.

[Please insert table 1 here]

The capitalization of the foundation may support the subsidiary, but the subsidiary may also support the foundation. We have therefore looked at the dividends being paid out in the subsidiaries, although a couple of non-trivial data issues come with this. First, the data coverage is poor, leaving us with only a few observations (30 to be exact). Second, since we do not know the exact ownership structure, we cannot calculate the exact share of the dividends that ends up in the foundation. Dividends from a subsidiary are registered as financial income in the foundation, but the financial income in our data can also comprise of interest, stock return, etc. As a compromise, we have calculated the ratio of financial income to total debt and the ratio of dividends received to total debt, where we have allocated all the dividends from the subsidiary to the foundation with the restriction that they cannot exceed the financial income in the foundation. We do not tabulate the results, but the mean (median) financial income to total debt ratio is 11.71 (2.27) and the mean (median) dividends to total debt ratio is 1.19 (0.01).

Panel B shows the numbers for subsidiaries based on whether they are holding companies or not. In relation to the capital structure discussion, it is of course expected to make a difference if a subsidiary is one or the other. A holding company typically has a different balance sheet and with that a different capital structure. Furthermore, recall that we are using unconsolidated financial data when the subsidiary is a holding company. This makes the comparison with

subsidiaries that are not holding companies difficult, but it allows us to investigate the capitalization vis-a-vis the 2nd subsidiaries that are presented in panel C. Looking at results for subsidiaries that are holding companies (but where the subsidiary of the subsidiary is not a holding company) we see that they are to some degree comparable to the results for foundations with subsidiaries that are not holding companies. The debt is relatively low, or, put differently, the capitalization is better when there is business activity in the subsidiary.

This has potential implications for the capital structure in the subsidiary. On the one hand, there are a number of reasons for the subsidiary to have more debt. First, it allows for more intra-firm debt. Second, it also allows for more parent-guaranteed subsidiary debt. Third, debt can be used as a governance instrument. On the other hand, better capitalization in the holding company, allows it to commit more capital and in that sense to act as a more committed owner. In table 2, we compare the capital structure in foundation-owned firms (that are not holding companies) with that in other firms.

[Please insert table 2 here]

Again, it is important to note the size and the differences between mean and median values. There are big differences in the size of the balance sheets. The mean (median) foundation-owned firm is more than 5 times the size of the non-foundation-owned firm. The ratios, however, are similar, except for the capital structure (total debt to total assets). Foundation-owned firms have less debt relative to total assets, which is somewhat surprising

considering that firm size and leverage typically are positively correlated. It can be that the ownership makes a difference.

The numbers reported above are simple descriptive statistics, meaning that the observed differences or similarities may not necessarily be due to the ownership status but some other, third factor. For instance, it may be that, on average, foundation-owned firms tend to concentrate in specific types of industries – the observed differences, therefore, may be due to the fact that debt may be less useful or accessible in certain industries, in which foundation ownership tends to concentrate. We therefore go a step further and estimate multivariate regressions relating the capital structure to a number of firm-specific variables, while controlling for industry characteristics and year effects.

Previous studies have established that capital structure is cross-sectionally correlated with certain firm-specific factors (e.g. Rajan and Zingales, 1995; Fama and French, 2000; Baker and Wurgler, 2002). We follow this literature in our choice of variables. The firm characteristics are intended to control for demand factors (supposedly balancing the relative benefits and costs of debt). Our measure of capital structure or leverage is the ratio of total debt to total assets. Our main explanatory variable is a dummy variable for foundation ownership. Based on the descriptive statistics it seems to correlate negatively with debt.

The first characteristic is the size of the firm. The expected effect is ambiguous. On the one hand, larger firms tend to be more diversified and less risky with lower expected costs of financial distress. According to this argument, size and leverage should correlate positively. Moreover, larger firms may also have lower issue costs. On the other hand, and in the spirit of the pecking order theory, size may also be a proxy for the information that outside investors

have. Larger firms tend to release more information, which should increase their preference for equity relative to debt. We use the natural logarithm of net sales as a transformed measure of firm size.

The type of assets on the balance sheet, or the tangibility of the assets, has been found to correlate positively with leverage. Tangible assets can serve as collateral, which, ceteris paribus, lowers the costs of financial distress, the cost of debt and makes banks (lenders in general) more willing to supply loans. We use the firm's property, plant, and equipment to total assets as a measure of tangibility.

The tax shield that comes with debt is central to the trade-off theory. While the tax advantage of debt is similar across firms in our data (the effective tax rate may, however, differ because of earnings etc.), the advantage of non-debt tax substitutes, primarily depreciation, may differ and affect leverage. Higher depreciation expenses are expected to correlate positively with leverage. We use the firm's depreciation expense to total assets as a measure of non-debt tax shield.

Finally, the expected effect of performance on leverage is ambiguous. On the one hand, the pecking order theory predicts a negative relationship. This is because firms prefer to finance with internal funds rather than debt. If the market for corporate control is ineffective, Jensen's free cash flow hypothesis also predicts that managers of well-performing firms prefer to avoid the disciplinary role of debt. On the other hand, banks should be more willing to lend to well-performing firms. We measure performance as the firm's earnings before interest, taxes, and depreciation divided by total assets.

Before presenting the results of the multivariate regression analysis, figure 1 shows that, independently, all these variables are indeed relevant for explaining the variation in leverage across firms. The figure shows the univariate explanatory power ($R^2$) of each variable in an OLS regression, i.e. how much of the variation in leverage that can be explained by a certain variable. Performance has the highest explanatory power although it does not stand out by comparison to the other variables.

[Please insert figure 1 here]

The next step is to isolate the effect of foundation ownership. To this end, we estimate a number of multivariate regressions. The results are presented in table 3. Each column reports the same regression using different estimators. We do this to test the robustness of the results, i.e. to make sure that they are not driven by our choice of estimation method. Both the direction of the relationship, its magnitude, and statistical significance are consistent across the columns. Our data is longitudinal, but we cannot include firm fixed effects in these first regressions, as they would remove the dummy variable of foundation ownership because it is constant over time within a firm.

[Please insert table 3 here]

Among the control variables, all except tangibility behave in line with predictions or previous studies, and all prove to be statistically significant determinants for leverage. Tangibility was expected to correlate positively with leverage but comes out with a negative coefficient. It turns out that some of the difference may be driven by our definition of leverage. When we use long-term debt to total assets as the dependent variable, the coefficient on tangibility turns positive (regressions not reported). Some of the difference may also be due to an omitted variable bias related to industries. When we cluster the standard errors by industry instead of firm,[1] the coefficient on tangibility also turns positive (regressions not reported).

Looking at the main explanatory variable, the dummy variable for foundation ownership, we see that it is very robust – same coefficient and same level of significance across all four different estimation methods. The result is that the ratio of total debt to total assets, on average, is 5%-points lower in foundation-owned firms after having controlled for other relevant firm characteristics.

In some respects, foundation-owned firms may differ from other firms, and it is interesting to see if the correlations hold generally when we sort the data into foundation-owned and non-foundation-owned firms, respectively. The fact that variables do or do not work in the predicted way in foundation-owned firms (conditional on no measurement or econometric problems) means that the ownership difference does or does not alter the theoretical rationale for how the factors work.

Therefore, table 4 presents the regression results separately for the two types of firms. For firms that are not owned by foundations, the results are almost mirror images of those in table 2.

[1] Assuming that standard errors are correlated within industries instead of within firms.

The marginal effect of performance is higher but otherwise the coefficients are exactly the same, which is not surprising considering that more than 90% of the firm-year observations are firms that are not owned by foundations. We can include firm fixed effects in these models. This could potentially solve the "misbehavior" of the tangibility variable, since this method does not use across firm variation to estimate the regression coefficients (because this variation might reflect omitted variable bias). And then tangibility does indeed come out positive and statistically significant. For firms that are owned by foundations, the results are similar, indicating that standard theories of capital structure are appropriate also in this case. It is also worth noting that, in the fixed effects regressions, the constant is significantly lower for foundation-owned firms, which means that, all other things equal, these firms have lower debt than non-foundation owned firms. This seems to be a very robust result.

The outcome of the performance variable for the foundation-owned firms is interesting. This variable can tell us something about the relative importance or relevance of the different capital structure theories because it has a predicted impact in all of them. In the trade-off theory, performance and leverage is positively correlated. The free cash flow theory predicts the same, while, according to the pecking order theory, performance and leverage should be negative correlated. The change of sign in column 5 is due to performance differences across industries. With firm fixed effects, the effect of performance on leverage is negative, indicating that foundation-owned firms prefer internal financing.

## 5. CONCLUSION

In this paper, we have focused on the capital structure implications of ownership characteristics and in particular the implications of having a foundation as a controlling owner. A foundation is a special type of owner also when it comes to capital structure. For example, it has obligations to the endowment, which could mean that their share ownership is locked in, and a foundation is governed by charter that may mandate activities that require a certain type of financing. Based on a reading of the literature, our proposition was that foundation-owned firms have less debt than other firms, and this is exactly what we find. Our univariate results show that the mean (median) total debt to total assets ratio is 7%-points (9%-points) lower in foundation-owned firms than in other firms. Our multivariate results show that the ratio is 5%-point lower after having controlled for industry and year effects and relevant firm characteristics. There is a tendency for firms that are owned by holding companies that are owned by foundations to have higher debt to assets ratios; in fact, ratios similar to those in non-foundation-owned firms.

We see indications of a preference for internal financing, but this is not unique for firms owned by foundations. The effect of the different, traditional determinants of capital structure is very similar in all firms, suggesting that managers in foundation-owned firms act in the same way as other managers. The difference may, therefore, be due to something more fundamental such as the abovementioned characteristics of foundations as owners of business companies.

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**Figure 1. Explanatory power of capital structure determinants.**

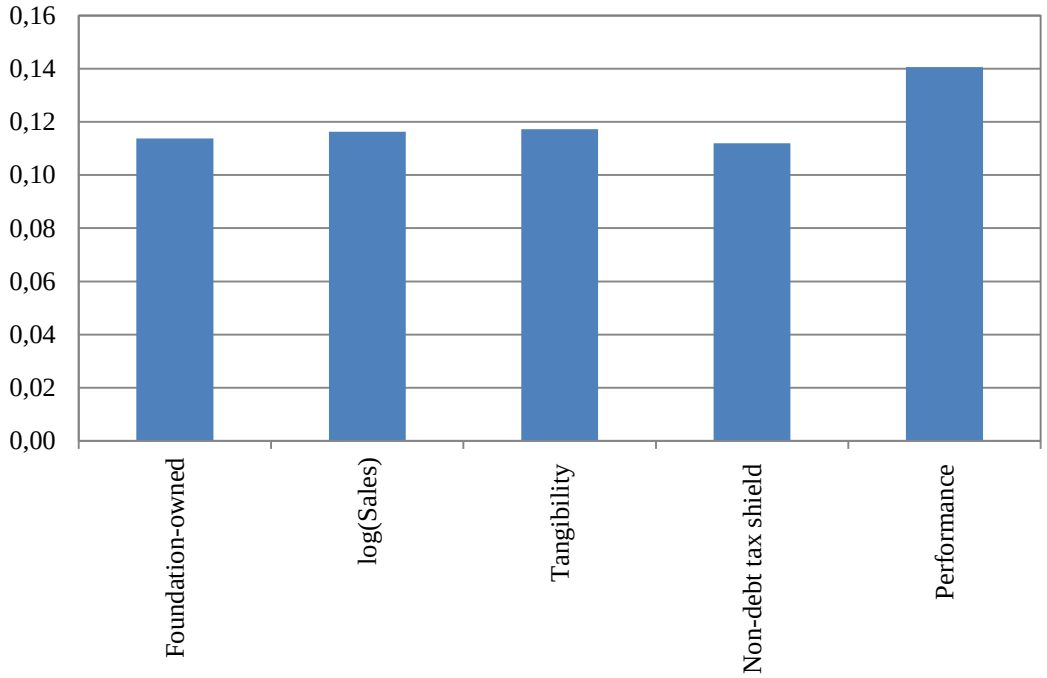

**Table 1. Descriptive statistics.**

| Panel A: Foundations | No sub | | Sub is not holding | | Sub is holding | |
|---|---|---|---|---|---|---|
| | Mean | Median | Mean | Median | Mean | Median |
| Total assets | 162,633 | 106,842 | 2,576,165 | 544,899 | 1,976,326 | 948,318 |
| Long term debt | 52,741 | 19,716 | 41,090 | 16,674 | 107,121 | 52,925 |
| Short term debt | 38,828 | 16,199 | 62,898 | 4,803 | 124,907 | 15,717 |
| Equity | 65,028 | 28,521 | 2,467,550 | 469,699 | 1,736,882 | 693,484 |
| Tangibility | 0.66 | 0.73 | 0.13 | 0.02 | 0.28 | 0.24 |
| Total debt/total assets | 0.55 | 0.54 | 0.13 | 0.06 | 0.25 | 0.21 |
| Long term debt/total debt | 0.50 | 0.55 | 0.48 | 0.48 | 0.62 | 0.75 |
| Equity/total assets | 0.45 | 0.46 | 0.87 | 0.94 | 0.75 | 0.79 |
| Liquid assets/total debt | 0.20 | 0.06 | 0.46 | 0.12 | 1.22 | 0.17 |
| N | 176 | 176 | 57 | 57 | 58 | 58 |
| Panel B: 1st subsidiaries | | | No holding | | Holding | |
| | | | Mean | Median | Mean | Median |
| Total assets | | | 22,978,943 | 1,030,399 | 3,382,566 | 133,8150 |
| Long term debt | | | 5,929,054 | 123,826 | 240,430 | 18,600 |
| Short term debt | | | 10,166,342 | 383,371 | 1,464,555 | 58,812 |
| Equity | | | 6,363,405 | 420,515 | 1,572,177 | 945,999 |
| Tangibility | | | 0.32 | 0.28 | 0.09 | 0.00 |
| Total debt/total assets | | | 0.54 | 0.54 | 0.29 | 0.15 |
| Long term debt/total debt | | | 0.32 | 0.30 | 0.37 | 0.29 |
| Equity/total assets | | | 0.46 | 0.46 | 0.71 | 0.85 |
| Liquid assets/total debt | | | 0.20 | 0.11 | 1.76 | 0.04 |
| N | | | 423 | 423 | 94 | 94 |
| Panel C: 2nd subsidiaries | | | | | No holding | |
| | | | | | Mean | Median |
| Total assets | | | | | 2,142,307 | 807,209 |
| Long term debt | | | | | 453,338 | 100,206 |
| Short term debt | | | | | 770,905 | 355,425 |
| Equity | | | | | 892,719 | 145,445 |
| Tangibility | | | | | 0.33 | 0.32 |
| Total debt/total assets | | | | | 0.62 | 0.62 |
| Long term debt/total debt | | | | | 0.35 | 0.37 |
| Equity/total assets | | | | | 0.38 | 0.38 |
| Liquid assets/total debt | | | | | 0.08 | 0.06 |
| N | | | | | 122 | 122 |

Note: All financials are in 1,000 DKK.

**Table 2. Descriptive statistics for firm characteristics.**

| | Foundation-owned | | Other | |
|---|---|---|---|---|
| | Mean | Median | Mean | Median |
| Total assets | 18,314,595 | 992,267 | 2,743,027 | 152,856 |
| Long term debt | 4,703,298 | 119,562 | 805,597 | 21,881 |
| Short term debt | 8,063,143 | 374,670 | 1,400,109 | 57,505 |
| Equity | 5,138,774 | 379,648 | 461,669 | 47,249 |
| Tangibility | 0.32 | 0.29 | 0.34 | 0.31 |
| Total debt/total assets | 0.56 | 0.56 | 0.63 | 0.65 |
| Long term debt/total debt | 0.32 | 0.32 | 0.31 | 0.28 |
| Equity/total assets | 0.44 | 0.44 | 0.37 | 0.35 |
| Liquid assets/total debt | 0.17 | 0.09 | 0.18 | 0.06 |
| N | 545 | 545 | 13,611 | 13,611 |

Note: All financials are in 1,000 DKK.

**Table 3. Determinants of capital structure.**

| | OLS | OLS Robust | Maximum Likelihood | Clustered SE Firm |
|---|---|---|---|---|
| Foundation-owned | -0.05*** | -0.05*** | -0.05*** | -0.05** |
| | (0.00) | (0.00) | (0.00) | (0.02) |
| log(Sales) | 0.01*** | 0.01*** | 0.01*** | 0.01*** |
| | (0.00) | (0.00) | (0.00) | (0.00) |
| Tangibility | -0.05*** | -0.05*** | -0.05*** | -0.05** |
| | (0.00) | (0.00) | (0.00) | (0.05) |
| Non-debt tax shield | -0.21*** | -0.21*** | -0.21*** | -0.21*** |
| | (0.00) | (0.00) | (0.00) | (0.01) |
| Performance | -0.39*** | -0.39*** | -0.39*** | -0.39*** |
| | (0.00) | (0.00) | (0.00) | (0.00) |
| Constant | 0.21 | 0.21*** | 0.44*** | 0.21*** |
| | (0.12) | (0.00) | (0.00) | (0.00) |
| Industry effects | Yes | Yes | Yes | Yes |
| Year effects | Yes | Yes | Yes | Yes |
| Observations | 8,662 | 8,662 | 8,662 | 8,662 |
| R-squared | 0.16 | 0.16 | NA | 0.16 |

**Table 4. Determinants of capital structure separated by ownership.**

| | **Non-foundation-owned firms** | | | | |
|---|---|---|---|---|---|
| | OLS | OLS Robust | Maximum Likelihood | Clustered SE Firm | Firm fixed effects |
| log(Sales) | 0.01*** | 0.01*** | 0.01*** | 0.01*** | 0.05*** |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Tangibility | -0.05*** | -0.05*** | -0.05*** | -0.05* | 0.16*** |
| | (0.00) | (0.00) | (0.00) | (0.06) | (0.00) |
| Non-debt tax shield | -0.21*** | -0.21*** | -0.21*** | -0.21*** | -0.24*** |
| | (0.00) | (0.00) | (0.00) | (0.01) | (0.00) |
| Performance | -0.41*** | -0.41*** | -0.41*** | -0.41*** | -0.39*** |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Constant | 0.07 | 0.07 | 0.45*** | 0.07 | -0.05 |
| | (0.59) | (0.15) | (0.00) | (0.20) | (0.29) |
| Industry effects | Yes | Yes | Yes | Yes | No |
| Year effects | Yes | Yes | Yes | Yes | Yes |
| Observations | 8,189 | 8,189 | 8,189 | 8,189 | 8,189 |
| R-squared | 0.16 | 0.16 | NA | 0.16 | 0.12 |
| | **Foundation-owned firms** | | | | |
| log(Sales) | -0.00 | -0.00 | -0.00 | -0.00 | 0.08*** |
| | (0.73) | (0.74) | (0.71) | (0.87) | (0.00) |
| Tangibility | 0.02 | 0.02 | 0.02 | 0.02 | 0.19*** |
| | (0.79) | (0.80) | (0.78) | (0.89) | (0.00) |
| Non-debt tax shield | -0.39 | -0.39 | -0.39 | -0.39 | -0.35* |
| | (0.20) | (0.28) | (0.18) | (0.54) | (0.06) |
| Performance | 0.24** | 0.24* | 0.24** | 0.24 | -0.39*** |
| | (0.02) | (0.07) | (0.02) | (0.42) | (0.00) |
| Constant | 0.28 | 0.28** | 0.37** | 0.28 | -0.68** |
| | (0.26) | (0.03) | (0.04) | (0.26) | (0.01) |
| Industry effects | Yes | Yes | Yes | Yes | No |
| Year effects | Yes | Yes | Yes | Yes | Yes |
| Observations | 473 | 473 | 473 | 473 | 473 |
| R-squared | 0.38 | 0.38 | NA | 0.38 | 0.15 |