

WP 2002-3

**Foundation ownership and financial performance
- Do companies need owners?**

af

Steen Thomsen & Caspar Rose

**INSTITUT FOR FINANSIERING, Handelshøjskolen i København
Solbjerg Plads 3, 2000 Frederiksberg C
tlf.: 38 15 36 15 fax: 38 15 36 00**

**DEPARTMENT OF FINANCE, Copenhagen Business School
Solbjerg Plads 3, DK - 2000 Frederiksberg C, Denmark
Phone (+45)38153615, Fax (+45)38153600
www.cbs.dk/departments/finance**

**ISBN 87-90705-60-2
ISSN 0903-0352**

Foundation ownership and financial performance¹

Do companies need owners?

Steen Thomsen²
Caspar Rose³

Copenhagen Business School

9/04/2002

Abstract

A curious ownership structure is found in Northern Europe – foundations that own and operate business companies. The foundations are non-profit entities, they have no members and no owners, and they cannot be dissolved, but regard it as a goal in itself to run a business. In many cases these entities control more than 50% of the votes in successful international companies such as Carlsberg and IKEA. Obviously this structure completely blocks the market for corporate control, but it also violates other basic principles of agency theory and corporate finance: the personal profit motive and portfolio diversification of risk. Nevertheless we present evidence that a sample of foundation-owned companies listed on the Copenhagen Stock Exchange are at least as efficient as other listed companies in terms of risk adjusted stock returns, accounting returns and firm value (Tobin's Q). These findings have potentially important implications for the theory of the firm, in particular they question whether profit-seeking ownership is a necessary condition for competitive enterprise. They also invite caution against forcing a harmonization of European corporate governance to Anglo-American standards.

¹ We are grateful for helpful comments by Niels Christian Nielsen and participants at a seminar at the Department of Finance, Copenhagen Business School, March 6, 2002.

² Professor. Department of International Economics and Management. Copenhagen Business School, Howitzvej 60, 2000 Copenhagen F, Denmark. E-mail st.int@cbs.dk.

³ Assistant professor. Department of Finance, Copenhagen Business School, Solbjerg Plads 3, 5A, 2000 Copenhagen F, Denmark. E-mail cr.fi@cbs.dk.

1. Introduction

Does corporate ownership matter? Do companies need owners? 50 years ago many economists would probably have said no.

As anecdotal evidence consider Debreu (1959), who wrote that “.. *when one abstracts from legal forms of organisation (corporations, sole proprietorships, partnerships,...) one obtains the concept of a producer, i.e. an economic agent whose role is to choose (and carry out) a production plan*” (p. 37) and “ *Given the price system.. the producer chooses his production.. so as to maximize his profit*” . (p. 43).

Or recall Lange (1938) who imagined that socialist companies could be managed by public officials who were simply ordered to minimize social costs by taking prices as given and paying due attention to externalities (equilibrium being determined by a planning board or by a trial and error process) thereby guaranteeing a Pareto-optimal social outcome. Lange recognized that government bureaucrats might not be as efficient as private sector managers (p. 109) but argued that this was a sociological rather than an economic question and that large capitalist enterprises were anyhow run by bureaucrats (who presumably do not maximize profits).

Since then an enormous body of literature has emerged which emphasizes that ownership and incentives play a key role in the efficient operation of business companies (e.g. Jensen and Meckling 1976, Putterman 1993, Hart 1995, Hansmann 1996, Williamson 1996, Shleifer and Vishny 1997). Company performance may benefit, if company managers own a share of the company (Jensen and Meckling 1976), or if they are monitored by large outside owners (Shleifer and Vishny 1976) or

members of a cooperative (Hansmann 1988). For widely diffused ownership there is always a threat of hostile takeovers (Manne 1965) or proxy contests as well as lawsuits (Shleifer and Vishny 1997). Even government-owned companies are to some extent monitored by the bureaucracy, the politicians and ultimately the voters (Putterman 1993). A possible exception is non-profit organizations, which are clearly not monitored by owners, but rather by donors or users (Hansmann 1980, Fama and Jensen 1983). But a non-profit organization is generally believed to be competitive only in certain industries (hospitals, universities, charities and the like) and not (in the absence of tax subsidies) to be a viable business model for commercial enterprises in general (Fama and Jensen 1983).

The implication is that non-profit entities – companies without owners – should be a rare phenomenon outside these special industries, and if they exist, their performance – in terms of profitability, growth, cost efficiency or other measures - would be expected to be abysmal. Non-profit enterprises lack a personal profit motive to monitor managers, and their ability to attract capital from outside investors is also limited.

Contrary to this widely held belief, we present evidence that a particular type of non-profit organization, the industrial foundation, is a viable business organization and also a competitive one. This is shown to hold true even when performance is measured by stock-market-based performance measures. Moreover, we also review the literature on non-profit enterprise and ownership and show that our findings are less paradoxical than they might seem at first glance.

An industrial foundation is an organization created to administer a large ownership stake in a particular company, very often donated by the company's founder or his family. The foundation itself is a non-profit entity. It has no owners. Its board of directors is often self-elective, constrained only by the law and its charter which generally stipulates that the foundation should serve some broadly defined social purpose, e.g. to act in the company's "best interest" and use excess revenue for charitable purposes. Often, but not always, the founder's family continues to play a role in the management of the company. The institutional set up resembles what would have been the case if the Ford foundation maintained majority control of Ford Motor Company.

Foundation-ownership is found mainly in Northern Europe – Denmark, Germany, Sweden, Denmark, Norway, the Netherlands, and Switzerland. Examples include world-class companies like Ikea from Sweden, Carlsberg from Denmark or Krupp, Carl Zeis and Robert Bosch from Germany.

Previous studies on Danish data over the period 1982-1992 (Thomsen 1996, 1999) and a study on German data (Herrmann and Franke 2002) found that the economic performance of foundation owned companies to be no worse or even slightly better than that of companies with more common ownership structures. However, these studies relied on accounting-based performance measures such as return on equity which are subject to various measurement problems including manipulation by managers and boards that are obviously not un-biased in the view of the corporation which they want to present to the outside world.

This study, while also presenting some calculations on updated accounting figures, takes a more extensive approach by examining how market-based performance measures like risk-adjusted stock returns and firm value (Tobin's Q) are influenced by foundation ownership over the 4-year period 1996-1999.

The paper is conventionally structured. Section 2 reviews some relevant theory, both some standard agency theory and alternative perspectives related to ownership structure, non-profit enterprise and corporate objectives. In addition we consider some reasons why these models may not predict a causal relationship between foundation ownership and economic performance (profitability). Section 3 explains the institutional context, which the empirical analysis relies on. Section 4 presents the data and methodology. Section 5 presents the results, using both market and accounting-based performance measures. The implications are discussed in section 6. We conclude that the relationship between corporate ownership and performance is more complex than what is predicted by standard agency theory. This has potentially important implications both for the economic theory of the firm and current policy initiatives to adjust European corporate governance to Anglo-American standards.

2. Theory

Could a business firm exist without owners? Theoretically, one could think of a self-governing entity with an endowment, a commercial non-profit that buys factor services and sells products on market terms and accumulates the profits. Investment could be financed by these retained earnings or by loans. Or, similarly, a charitable foundation could own shares in a single company instead of a portfolio of stocks and

bonds – as was the case with Welcome foundation before it sold its business activities to Glaxo. It turns out that the market economies of Northern Europe have in fact provided us with several examples of this, natural experiments that seem interesting to the study of corporate ownership structure. The traditional story is that a founder of a company donates his shares to a charitable foundation in the understanding that the company should continue to operate in his spirit (we know of no examples of female founders). The foundation is run by a board. It receives dividends from its shares and invest these earnings in financial assets or it distributes part of the revenue for charity as stipulated in the charter, which is in fact the constitution. In the absence of a better word these have been termed “industrial foundations”.

It is possible to think of this question in even more abstract terms. Imagine a central planner who wants to create a market economy without capitalism, i.e. without outside ownership of firms. This central planner could nationalize business firms and donate the shares to foundations. The foundations could then supervise the companies. Apparently, this model of socialism was actually suggested in Eastern Germany after the second world war because of the example set by Carl Zeiss, a famous German optical firm, which was owned by a foundation.

Could such a scheme work? Standard agency theory has quite clear predictions on this issue (Fama and Jensen 1983 p. 344, p. 348). Non-profit enterprise is essentially a solution to donor agency problems (preventing owners from expropriating donations as profits). When the supply of donations is zero non-profit enterprise is unlikely to survive in the absence of tax exemption advantages. Industrial foundations cannot attract funds from the market, and decision makers lack economic incentives to operate efficiently.

In contrast Hansmann (1980) sees more of a role for commercial non-profits. Hansmann explains the survival of these institutions by a contract-failure argument: when the buyer is uncertain about the quality of a service provided to her, a market failure occurs since the producer has the capacity to reduce quality of the good in ways the cannot be detected by the buyer. To facilitate contracting under these circumstances the supplier may organize as a non-profit enterprise, which is free of any profit-incentive to cheat on customers. Non-profit enterprise can therefore be seen as a binding commitment not to maximize profits opportunistically at the expense of buyers, and in principle the argument can be generalized to include safeguarding all economic relationships in which a company has decisive information advantages. Other kinds of transaction costs related to high asset specificity may in principle also be mitigated by non-profit ownership.

Glaeser and Shleifer (1998) develop this perspective formally in an incomplete contracts framework. Here, the problem is not asymmetric information per se, but rather that quality or certain aspects of it are unverifiable and cannot be contracted on. They conclude that there is scope for non-profit enterprise in sectors of the economy where there are opportunities for severe ex post expropriation of consumers, employees and donors.

In their model a firm has the opportunity to reduce cost at the expense of non-verifiable product quality to the buyer. The owner/managers of a for-profit firm will do this as long as the marginal cost reduction exceeds the marginal expense/effort involved (i.e. until the marginal costs of effort equals the marginal reduction in costs). But on the assumption that the manager of a not-for-profit firm will value a marginal

increase in profits by less than the owner-manager of a for profit firm, she will have less of an incentive to reduce costs and lower quality. Therefore not-for-profit firms will invest less in cost reduction that reduces non-verifiable product quality and hurts the buyer. Quality-sensitive buyers will recognize this and prefer to deal with the not-for-profit firm.

Given this theoretical rationale, the survival and performance of non-profit ownership is essentially an empirical question. While unobserved and unverifiable aspects of quality are present to some degree in all economic relationships, their importance is likely to vary by nature of the product, the institutional environment and other characteristics. Furthermore, possible benefits of non-profit ownership related to limiting the profit motive have to be weighed against the disadvantages of not being able to attract outside equity and lower cost efficiency because of less intense monitoring (Fama and Jensen 1983).

In summary, there are two conflicting views pertaining to foundation ownership of business enterprise. The standard agency view is that the disadvantages of a not-for-profit structure are too large for foundation ownership to be a viable business model. Most economists would probably a priori subscribe to this sceptical view. Another view (drawing on Hansmann's work and the Glaeser/Shleifer paper) is that there may be a rationale for foundation ownership as a safeguard for non-verifiable product quality and implicit contracts with employees or other stakeholders. According to the standard agency view, foundation-owned companies should *ceteris paribus* tend to do worse than shareholder-owned firms in terms of profitability (and perhaps also other performance measures such as growth).

According to the not-for-profit theory, the relative profitability and performance of foundation-owned companies should depend on the importance of non-verifiable quality etc. and is a priori undecided.

Ownership and performance

These factors may seem to point to a causal relationship between non-profit ownership and economic performance. Depending on industry- and firm specific characteristics one would expect foundation owned companies to do slightly worse (or more rarely slightly better) than a control group of normal joint stock firms. In this paper we focus on performance measured in financial terms using accounting and market based profit measures although these measures are clearly biased towards the objectives of for-profit firms. Other performance measures like growth or survival are clearly also relevant, but if foundation-owned can match the financial performance of normal joint stock companies, this is a strong indication of competitiveness.

On closer examination, however, even the link between ownership and financial performance may be more complex than a direct causal relationship.

One reason is uncertainty concerning what it means to maximize profits. Alchian (1950) argued that it is impossible a priori to maximize profits in an uncertain world. Under uncertainty firms can only devise certain strategies, which they may believe to maximize expected profits. Regardless of their motives, however, it will only ex post - with the benefit of hindsight - become clear to what extent these strategies actually did maximize profits (and in complex situations perhaps not even then).

By an evolutionary argument, those firms that came close to profit maximization will tend to survive and grow (barring the cases in which exit would have been optimal) - still regardless of the motives that led them to adopt these strategies. Foundation-owned companies may therefore in certain circumstances be profit-maximizing even though they did not intend to be so a priori

A second argument is survival pressure (Friedman 1953): if profits are necessary for company survival and the continued provision of perquisites to the management, why don't foundation-owned companies imitate shareholder-owned ones? And if under certain circumstances it proves rewarding in terms of profits not to seek those profits too eagerly, why don't for-profit firms learn to mimic non-profit-maximizing behavior? One guess is that they actually do so to a significant extent. In industries where long-term thinking is thought to be well rewarded, firms will adopt long-term strategies regardless of their ownership structure - and those that do not will tend to lose out in competition. In the same way, foundation-owned companies may mimic profit-maximizing companies in order to maximize survival. The Friedman argument somewhat limits the expected effects of ownership structure on economic behaviour and performance. This does not mean that ownership never matters, since for example there is a difference to credibility of various types of commitment under alternative ownership structures (e.g. the non-verifiable quality emphasized in the Glaeser/Shleifer model). But the impact of ownership structure again turns out to depend very much on the extent to which possible advantages related to ownership structure can be effectively imitated by other means.

A related line of research is Roy Radner's exploration (Radner 1998) of the distinction between profit-maximizing and survival-maximizing firms (particularly since survival-maximization appears not to be a bad first-cut approximation of the goals of foundation-owned enterprises). One important result of this research (Dutta and Radner 1999) is that if there are both survival maximising and profit maximizing firms in a population of firms the proportion of profit maximisers will quickly dwindle into insignificance. *Ceteris paribus* profit-maximizing companies should be more profitable, build up smaller economic reserves (equity) and fail more often. While this is not a complete story (since e.g. entry also needs to be taken into account) the implication is that *ceteris paribus* the proportion of single-minded profit maximizers should be small at any given moment since most of them should have been weeded out by natural selection.

A third factor could detract even further from the importance of ownership structure. In practice, profit maximization means that companies should undertake investment projects whose rate of return exceeds the costs of capital. A foundation with an endowment faces a choice between investing in the company that it owns or a portfolio of stocks and bonds (Fama and Jensen 1985). Now even if the foundation board aims to maximize survival of a company that it owns, the volume of perquisites produced by that company or some other non-profit goal, it faces a choice between investing in the company and an alternative investment in the market for which it can obtain a market rate of return while postponing consumption of its non-profit goods for a given period of time. In principle the foundation would therefore choose to invest only when the utility/profits generated by the investment exceeds the discounted utility that could be had next period by a somewhat larger sum of money.

In other words, even a foundation-owned company might very well end up using the market rate of return as its costs of capital. In particular, a survival maximising board will be able to extend the expected life-time of a loss making company (whose marginal investments do not cover its cost of capital) by an alternative investment in a financial portfolio.

Fourth, ownership may be an endogenous variable, which reflects optimising behaviour by the key decision makers (Demsetz 1983). For example, foundation boards may decide to reduce their shareholdings or sell off parts of the company (or all of it) if they perceive that this serves goals like maximizing the expected the company's survival probability. This appears to have been one reason why the Wellcome foundation decided to sell its pharmaceutical to Glaxo.

Finally, there is the general scepticism concerning the importance of ownership, which may be derived from the Coase theorem (Coase 1960). If the distribution of ownership rights generally does not matter for resource allocation in the absence of transaction costs, why should the allocation of corporate ownership? To what extent are contracts really as incomplete as assumed in the incomplete contracts framework, and is it possible to contract around the possible limitations of foundation ownership. One could argue that the Coase theorem properly understood shifts the burden of proof to the theorists who claim that ownership matters. Are we really so sure that economically insurmountable information asymmetries create large agency problems in practice? Do companies really face important (wealth reducing) financial constraints? What is to prevent them from contracting around the ownership barrier using bank credits, securitization or joint ventures to finance projects that they want to undertake? If markets are complete or at least well developed, ownership might be less of a binding constraint.

3. Institutional context

Foundation ownership is found mainly in Northern Europe - Germany, Sweden, Denmark, Norway and the Netherlands, where foundation-owned companies account for a non-trivial share of the business sector. For example, during the preparation of this study we found that industrial foundations own 1/6 of the market capitalization quoted on Copenhagen Stock Exchange. One plausible explanation is the relatively high rates of taxation in these countries, particularly wealth taxes (including inheritance and capital gains taxation) which were historically high, but have now been reduced by tax reforms (Thomsen 1999). Owners that prefer to retain family control of a company have avoided some of these taxes by donating their shares to a foundation instead of bequeathing them to their descendants. In addition the foundation structure is a way to avoid dilution of ownership by bequest to several beneficiaries. Although a general charitable purpose is required by law (in the sense that the founder and her closest family cannot be beneficiaries) the foundation may also to some extent distribute funds to more remote members of the founder's family (including her grown-up children and their descendants). The foundation may therefore act as a trustee. But while taxation may partially explain why industrial foundations are relatively common in Northern Europe, the foundations themselves are currently taxed with normal company tax rates (with deduction for their charitable donations), and there are no tax subsidies for the foundation-owned companies (Thomsen 1999). This means that their performance is in principle comparable to that of other companies.

Legally, an industrial foundation can be defined by an irreversible donation of a company's stock (or a majority of the voting rights) to a foundation, which is

governed by a foundation board according to the foundation charter (Kronke 1982). The decisive factor is a clear separation between the personal economic affairs of the founder and those of the foundation. The separation effectively transforms the foundation into a non-profit entity which as emphasized by Hansmann (1980, 1987) may earn profits but cannot redistribute them, except in this case for charitable purposes. The irreversibility is what distinguishes foundations from US style family trusts. Moreover, while running a company is considered to be an acceptable aim that is consistent with a charitable intention, a foundation can only to a limited extent redistribute income to the founder or his closest family. The foundation is an independent, private (non-government) institution. It has no owners and no members. Once created, however, foundations are in principle *self-perpetuating* bodies provided that they are financially viable. In principle they will continue to carry out the will of the founder in all eternity.

Like other foundations the industrial foundation is formally governed by a charter which defines its purpose and organization, including how the board is elected and whether parts of its income should be used for other kinds of charity than running a company. For example, the charter may proscribe that certain worthy causes (like research, art or charity) should be supported by revenues beyond what is considered necessary to reinvest in the business. The foundation charter may also specify that the foundation should act for the benefit of the company, the employees or the national interest. Moreover, the charter may oblige the foundation to maintain majority ownership of the company. Under the constraints set by the charter (which are subject to government approval and supervision) the board acts at its own discretion.

If the foundation is the sole owner (no minority shareholders) the company and foundation board members may be identical and even (in a few cases) use the foundation structure to conduct business without incorporating a separate company. But if part of the company's shares are held by other shareholders - e.g. if they are listed on the stock exchange - the company will in principle act as any other joint stock company. The company is legally responsible to (all of) its shareholders and at an annual general meeting they will elect a board to represent their interests. However, as a majority owner, the foundation possesses a controlling influence, which it may (or may not) choose to exercise. Danish industrial foundations often retain a voting majority by holding the shares with superior voting rights (A shares), whereas they issue shares with reduced voting rights to the public (B-shares).

4. Data

This paper aims at examining the performance of foundation-owned companies using market-based performance measures. The data consists of all companies listed on Copenhagen Stock Exchange during 1996-1999. Firms that have not been listed during the entire 4-year period are excluded together with mutual funds. This leaves a sample of 171 firms, of which 20 are majority-controlled by an industrial foundation. All observations are based on average values over the period.

A list of variables, descriptive statistics and a correlation matrix are given in the appendix. Financial information for each firm is based on the firm's annual accounts. Information about foundation ownership is also obtained from the annual accounts,

which report indirect ownership and the number of votes controlled by each foundation.

Stock market information is downloaded from the database BORSDATA located at the Aarhus School of Business, Centre for analytic finance (www.caf.dk) which contains a unique and extensive collection of stock market information of Danish shares and bonds. Stock returns are continuously compounded on a daily basis (arithmetic averages) and adjusted for stock splits as well as new emissions according to the Danish Association of Financial Analysts (DAF).

We use four different performance measures in order to draw general inferences between foundation ownership and firm performance.

The first performance measure is risk adjusted stock returns (α) measured by *Jensen's alpha* (Jensen 1968 and 1969). Jensen's alpha is a differential performance index, which measures the average return on a portfolio over and above that predicted by the Capital Asset Pricing Model (CAPM), given the portfolio's beta and the average market return. This performance measure is widely used in financial economics. It was originally designed to measure the performance of mutual funds since it explicitly incorporates a firm's systematic risk i.e. the risk that is not eliminated by holding a diversified portfolio.

The mean excess return on firm (i) in our sample of companies is based on the following expression:

$$E(R_{i,t}) - r_{f,t} = \alpha_i + \beta_i(E(R_{M,t}) - r_{f,t}) \quad (1)$$

$E(R_{i,t})$ denotes expected return on firm i on day t , while $r_{f,t}$ equals the risk free interest rate on day t . The risk free interest rate (spot rate) is based on estimated daily Danish zero coupon treasury bonds which is downloaded from the database BORSDATA.

$E(R_{M,t})$ is equal to the expected return on the market portfolio on day t . This is equal to the return on KAX CSE all Share Index. The parameters, α_i (Jensen's alpha) and β_i for each firm are estimated by OLS. We use α_i as a measure of risk adjusted stock performance.

In addition, we also measure the actual, unadjusted stock *return* at year t , R_t by the following expression $R_t = \frac{P_t + D_t}{P_{t-1}} - 1$, where D_t denotes the shares dividend payment at year t and P_t the price at year t , respectively.

The third performance measure is Tobin's Q which measures expected future profitability due to valuable growth opportunities and/or a competitive advantage. This article calculates the Q ratio as the market value of equity and book value of debt divided by the book value of total assets (denoted the "simple Q" by Loderer and Martin 1997), since the Tobin's Q measure of equity at replacement costs was not available. Chung and Pruitt (1994) found that the correlation between the "simple Q" and a measure of Q that attempts to use market values throughout is as high as 0.97.

The last performance measure is *return on assets or ROA*, which is the most common measure of accounting profitability defined as net income plus interests before tax divided by total book assets.

Found is defined as a dummy variable that equals one if a foundation controls more than fifty percent of the votes, otherwise it equals zero.

We also add some control variables.

When analysing stock returns we correct for two risk measures, which have now become standard in the financial economics literature, *firm size* and the *book-to-market ratio*. These measures were suggested by Fama and French (1992), who found that they influence the cross sectional variation of stock returns. They found a negative effect of firm size (market value) and a positive effect of the book/market ratio defined as book value of equity divided by the market value of equity. Presumably higher stock returns for small firms are necessary to compensate investors for higher portfolio risks related to liquidity, information access and other factors. To avoid a definitional association between size and market based performance measures we prefer to measure size as the natural logarithm of yearly sales. The positive book/market effect may be attributable to risk related to financial distress. Firms which the market judges to have poor prospects, signalled by a low stock price and high ratios of book to market equity, have higher expected returns due to higher costs of capital compared to firms with strong prospects.

In regressions on firm value (Q) and accounting returns (ROA) we include measures of the equity ratio (equity/assets), growth (of assets) and earnings variance (variance of ROA). Both earnings variance and the equity/assets ratio are standard proxies for financial risk (e.g. bankruptcy risk). The growth variable is intended to control for differences in growth potential related to industry, life cycle and regulation.

Furthermore we add dummy variables for industry using the official industry classification by the Copenhagen Stock Exchange (www.cse.dk) during the period.

In order to avoid problems associated with heteroscedasticity that sometimes occur in cross sectional regressions we use White's (1980) estimates with consistent standard errors. Descriptive statistics and a correlation matrix are given in the appendix.

In order to check the robustness of the results, all regression equations are re-estimated, where we have excluded more extreme observations. Only one observation is excluded when we use Jensen's alpha (with an alpha value of 0,010). Two observations have been excluded in the equations where the dependent variable is stock return (returns of 369 and 793 percent, respectively). Two observations with ROA of 27 and 17,7 percent are also excluded. Tobin's Q values larger than 6 were omitted which resulted in the exclusion of two firms (with Q values of 16,37 and 14,70 respectively). Robustness tests including extreme observations did not lead to qualitatively different results.

5. Results

Tables 1-4 presents some estimations of the performance of foundation-owned companies relative other ownership structures. We present estimations on alternative performance measures both with and without relevant control variables.

In table 1, foundation ownership is found to have no significant effect on risk adjusted stock returns. This holds true both in a simple regression (model 4) and when controlling for size and book-to-market value effects, both of which are negative. The negative size effect indicates (as expected) that portfolio risk decreases with firm size, but the negative book-to-market ratio is contrary to the results found by Fama and French. The reason may be that a low book value also signals (default) risk.

An alternative specifications using market value as a size variable did not make the results conform to expectations. The size effect now became insignificant which possibly reflects a definitional positive association between average market values over a period and the stock returns which are highly correlated with increases in market value. The industry effects were insignificant expect that banks earned larger-than expected stock returns during the period.

On its own, the insignificant performance effect is consistent with market efficiency. If stock markets are efficient and a (positive or negative) premium for foundation ownership is already contained in the share price at the beginning of the period, this is what we would expect to find. However it is notable that the results are robust to statistical control for a valuation-dependent measure like the book/market ratio.

Table 1. Regression estimates of *risk adjusted stock returns* (Jensens alpha) as the dependent variable with heteroscedasticity consistent standard errors (White 1980). 171 observations. The numbers in the parentheses are significance levels.

Independent variables	1	2	3	4
Constant	0,024 (0,028)**	0,026 (0,074)	0,178 (0,154)	-0,006* (0,000)
Found	-0,003 (0,657)	-0,006 (0,464)	-0007 (0,442)	-0,010 (0,301)
Size	-0,002** (0,006)	-0,002** (0,023)	-0,002** (0,034)	
Book/market	-0,004** (0,023)	-0,005** (0,026)		
Bank	0,010** (0,039)	0,014** (0,001)	0,013** (0,001)	
Trade	-0,001 (0,989)			
Industry	-0,004 (-0,435)			
Insurance	0,002 (0,846)			
Shipping	-0,030 (0,210)			
<i>Adj. R²</i>	<i>0,18</i>	<i>0,13</i>	<i>0,09</i>	<i>0,02</i>

** Significant at the 5 percent level

Table 2. Regression estimates of *stock returns* as the dependent variable with heteroscedasticity consistent standard errors (White 1980). 171 observations. The numbers in the parentheses are significance levels.

Independent variables	1	2	3	4	5
Constant	71,343 (0,075)	84,149 (0,060)	83,476 (0,077)	32,032** (0,002)	66,231 (0,113)
Found	-2,186 (0,739)	-2,869 (0,687)	-3,085 (0,623)	-5,910 (0,434)	-4,346 (0,539)
Size	-3,848 (0,140)	-3,751 (0,131)	-3,682 (0,175)		-3,321 (0,207)
Book/market	-11,856** (0,029)	-12,037** (0,022)	-11,988** (0,026)	-11,509** (0,027)	
Bank	15,103** (0,028)	1,119 (0,844)			
Trade	23,844 (0,303)				
Industry	11,215 (0,176)				
Insurance	18,892 (0,073)				
Shipping	14,948 (0,235)				
<i>Adj. R²</i>	<i>0,04</i>	<i>0,03</i>	<i>0,03</i>	<i>0,02</i>	<i>0,02</i>

** Significant on a 5 percent level

Table 3. Regression estimates of *Tobins Q* as the dependent variable with heteroscedasticity consistent standard errors (White 1980). 171 observations. The numbers in the parentheses are significance levels.

Independent variables	1	2	3	4	5
Constant	0,012 (0,987)	0,049 (0,950)	0,846** (0,000)	1,068** (0,000)	1,249** (0,000)
Found	1,422 (0,083)	1,588 (0,077)	1,635 (0,076)	1,618 (0,079)	1,666 (0,077)
Size	0,068 (0,169)	0,056 (0,271)			
Equity ratio	0,174 (0,129)	0,195 (0,080)	0,177 (0,089)	0,183 (0,083)	
Growth	0,163 (0,195)	0,164 (0,195)	0,162 (0,208)		
Bank	-0,349 (0,214)				
Trade	-0,077 (0,795)				
Industry	-0,014 (0,960)				
Insurance	-0,481 (0,147)				
Shipping	1,782 (0,400)				
<i>Adj. R²</i>	<i>0,11</i>	<i>0,12</i>	<i>0,12</i>	<i>0,12</i>	<i>0,09</i>

** Significant on a 5 percent level

Table 4. Regression estimates of *return on assets (ROA)* as the dependent variable with heteroscedasticity consistent standard errors (White 1980). 171 observations. The numbers in the parentheses are significance levels.

Independent variables	1	2	3	4	5
Constant	4,697 (0,214)	7,706** (0,000)	7,355** (0,000)	6,491** (0,000)	4,685** (0,000)
Found	1,002 (0,490)	1,247 (0,362)	1,512 (0,273)	1,122 (0,401)	1,594 (0,221)
Size	0,155 (0,559)				
Equity ratio	-0,869 (0,091)	-0,886 (0,072)	-0,907 (0,076)		
VarROA	-0,006** (0,047)	-0,006 (0,054)		-0,006 (0,061)	
Bank	-5,046** (0,001)	-5,689** (0,000)	-5,356** (0,000)	-4,606** (0,000)	
Trade	0,631 (0,774)				
Industry	0,978 (0,542)				
Insurance	-5,638** (0,001)	-5,847** (0,000)	-5,501** (0,000)	-4,796** (0,000)	
Shipping	-4,248** (0,022)	-4,906** (0,000)	-4,806** (0,000)	-4,364** (0,000)	
<i>Adj. R²</i>	<i>0,19</i>	<i>0,21</i>	<i>0,16</i>	<i>0,16</i>	<i>0,02</i>

** Significant on a 5 percent level

In table 2 a similar result is found for total (unadjusted) stock returns (incl. dividends). Foundation-owned companies have obtained slightly lower stock returns over the period, but the effect is not statistically significant. The size-effect is now also insignificant, but the book to market effect remains significant and negative contrary to expectation. As in table 2 the industry effects are insignificant (with the possible exception of banks which earned higher returns than “other companies” (model 1), but not above-average returns (model 2)).

Table 3 examines effects on firm value measured by Tobin’ s Q. Here foundation ownership appears to increase firm value by 1.5 – a considerable effect given the average Q-value of 1.4. The effect is significant at the 10% level. Firm size and growth have no significant effect, but a higher equity ratio (lower leverage) has a weakly significant positive effect indicating perhaps that firm value increases with bankruptcy risk.

In principle, the higher Q-value for foundation-owned companies may reflect higher expected profitability, but it may also be attributable to other factors. Foundation-owned companies may be particularly cautious in their choice of accounting principles so that they tend to understate their equity. It is also possible that the equity of the foundations (which is not included in the balance sheet of the companies that they own) is correctly as a low cost source of capital and as an insurance against bankruptcy and financial distress. They may also invest more in intangible firm specific assets like research and development, reputation or implicit contacts with employees (an explanation which is consistent with the Hansmann/Glaeser/Shleifer theory of non-profits). Ideally we would therefore have liked to control for variables like research and adverting intensity but we did have access to these figures. Instead,

we experimented with a dummy variable for firms in the pharmaceutical industry, but this did not qualitatively affect the statistical results.

Table 4 presents estimates of effects on accounting profitability (return on total assets). Foundation-owned companies are found to earn one percentage point more on accounting assets, but the difference is clearly insignificant. The equity/assets effect is negative (and weakly significant) and so is the effect of earnings volatility (Var ROA). The negative equity ratio effect makes sense as a trade off between risk and return if financial risk increases with leverage and so is negatively correlated with the equity ratios. But the negative earnings volatility effect does not conform to expectation. A possible alternative explanation could be that profitable companies use part of their surplus to stabilize profit rates. The industry effects turn out to be highly significant indicating that financial institutions (banks, insurance) and shipping have much lower accounting returns than industrial and trading companies.

In conclusion, none of the 4 performance measures indicate that foundation-owned companies have done significantly worse than other ownership categories over the period.

To test the robustness of our findings we tried with a number of alternative model specifications, but none of these changed the basic result. For example, we introduced industry-dummies for pharmaceutical companies. We redid the regressions omitting two particularly large shipping companies that are part of the same company group (and have high Q-values). We replaced the book/market control variable by a more familiar measure of financial risk (the debt/equity ratio). And we controlled for initial rather than average Q- and book/market values in order to test for statistical bias and selection effects (i.e. that the market value of foundation-owned companies is likely to be high ex ante).

6. Discussion

This paper has found that foundation-owned companies do at least as well as other companies in terms of stock performance, firm value and accounting profitability. Could it be a coincidence? The small sample of 20 firms used in the present study is sensitive to random effects even over a 4-year period. However, previous empirical studies on other data sources (Thomsen 1996, 1999, Herrmann and Franke 2002) have also failed to find a negative performance effect of foundation ownership.

Another possibility might be that agency problems are solved by alternative mechanisms such as creditor monitoring, product market competition, monitoring by minority investors or competitive markets for managerial labour. However, these hypotheses are analysed and rejected by Thomsen (1999) who finds that foundation-owned companies have low debt/equity ratios, high profit/sales ratios, high survival rates and low replacement rates for top managers and that companies.

Other explanations are therefore called for. Could it be that the agency-theoretic emphasis on high-powered profit incentives is inappropriate? If the supervisory boards of foundation-owned companies are motivated by reputation, intrinsic motivation and other factors, the adverse selection and moral hazard problems may be no more serious than what is observed on the boards of other companies.

Alternatively, there may be compensating advantages to stable long-term ownership, which makes foundation-ownership competitive. For example, myopic behaviour related to takeover pressure (Stein 1989) may be less of a problem in foundation-owned companies.

Or is it simply that ownership structure is endogenous (Demsetz 1983)? For example, a foundation could decide to sell off their company or parts of it if it perceives that

this maximises the expected survival chances of the company or other objectives that the foundation may have. Several recent studies have found no significant performance effect of ownership structure when accounting for endogeneity using simultaneous models (Loderer and Martin 1997; Cho 1998; Himmelberg, Hubbard and Palia 1999, Demsetz and Villalonga 2001). And even if it is not there may be ways of reaching efficient outcomes by means of alternative contracts (Coase 1960, Fama and Jensen 1985).

While we cannot answer these questions in the present paper, it seems clear that the relative success of foundation-owned companies is inconsistent with the simple agency-theoretic emphasis on incentives and risk aversion. The causes and effects of ownership structure are more complex than that. Echoing Ronald Coase (1972) it is premature to automatically attribute deviations from ideal markets to monopoly or inefficiency (Coase 1972). A more promising perspective is to explore the efficiency characteristics of these non-market institutions, especially when they emerge in market economies.

This has important policy implications in the ongoing debate of whether policy makers should promote the convergence of European corporate structures – such as foundation ownership – to Anglo-American standards, which are currently considered to be more attractive. For example the Bolkestein report (2002) has recently suggested that the differential voting rights of dual class shares schemes, which several industrial foundations use to maintain control, should be suspended in case a takeover bid is supported by $\frac{3}{4}$ of the share capital. Our viewpoint is no, let alternative institutional structures compete and let the markets decide. If they decide that strange institutions like foundation ownership are viable, social welfare may even be served by respecting that decision.

References

- Alchian, A. A. 1950. Uncertainty, Evolution and Economic Theory. *Journal of Political Economy* 58, 211-222.
- Alchian, A. A. and Demsetz, H. 1972. Production, Information Costs and Economic Organization. *American Economic Review*. 62 (5), 777-795.
- Arrow, K. J. 1963. Uncertainty and the Economics of Medical Care. *American Economic Review*. 53(5). 941-73.
- Bolkestein report. 2001. http://europa.eu.int/comm/internal_market/en/company/compan news/hlg01-2002.pdf.
- Campbell, Lo and MacKinlay: *The Econometrics of Financial Markets* Princeton University Press 1997.
- Cho, M. 1998. Ownership Structure, Investment, and The Corporate Value: An Empirical Analysis. *Journal of Financial Economics*, 47(1): 103-121.
- Coase, Ronald H. 1960. The Problem of Social Cost. *Journal of Law and Economics* 3. 1-44.
- Coase, R. H. 1972. Industrial Organization: A Proposal for Research, in V. R. Fuchs. Ed. *Policy Issues and Research opportunities in Industrial Organization*, New York. National Bureau of Economic Research.
- Debreu, Gerard. 1959. *Theory of Value*, New York. Wiley.
- Demsetz, H. 1983. The structure of ownership and the theory of the firm. *Journal of Law and Economics*, 26(2): 375-394.
- Demsetz, H., & Lehn, K. 1985. The structure of corporate ownership: Causes and consequences. *Journal of Political Economy*, 93 (6): 1155-1177.
- Demsetz, H., & Villalonga, B. 2001. Ownership structure and corporate performance. Working Paper. *Social Science Research Network*.
- Dutta, Prajit and Roy Radner. 1999. Profit Maximization and the market selection hypothesis. *Review of Economic Studies*. 66(229). 769-798.
- Fama, E. F. 1980. Agency Problems and the Theory of the Firm. *Journal of Political Economy*. 88(2).
- Fama, E. F. & Jensen, M. C. 1983a. Separation of Ownership and Control. *Journal of Law and Economics*. 26. 301-325.
- Fama, E. F. & Jensen, M. C. 1983b. Agency Problems and Residual Claims. *Journal of Law and Economics*. 327-349.
- Fama, E. F. & Jensen, M. C. 1985. Organizational Forms and Investment Decisions. *Journal of Financial Economics*. 14. 101-119.
- Fama, E. F. & K. R. French. 1992. The Cross-Section of Expected Stock Returns. *Journal of Finance*, XLVII(2)
- Friedman, M. 1953. The Methodology of Positive Economics. *Essays in Positive Economics*. Chicago: University of Chicago Press.
- Grossman S. J. and Hart, O. 1986. The Costs and Benefits of Ownership: A Theory of Vertical and Lateral Integration. *Journal of Political Economy*. 94 (4).
- Hansmann, H. 1980. The Role of Nonprofit Enterprise. *The Yale Law Review*. 89(5). 835-901
- Hansmann, H. 1987. Economic Theories of Nonprofit Organization. Powell, Walter W. (ed.): *The Nonprofit sector - A Research Handbook*, Yale University Press.
- Hansmann, H. 1988. Ownership of the Firm. *Journal of Law, Economics and Organization*. (2), 267-305.
- Hansmann, H. 1996. *The Ownership of Enterprise*. The Belknap Press of Harvard University Press. Cambridge Ma.

- Glaeser, Edward L. and Andrei Shleifer. 1998. Not-For-Profit Entrepreneurs. Working Paper 6810. *National Bureau of Economic Research*. Cambridge Ma.
- Hart, O. 1988. Incomplete Contracts and the Theory of the Firm. *Journal of Law, Economics and Organization*. 4(1).
- Hart, O. 1995. *Firms, Contracts and Financial Structure*. Oxford University Press: New York.
- Herrmann, M. and G. Franke. 2002. Performance and Policy of Foundation-Owned Firms in Germany. *European Financial Management*, 2002, forthcoming.
- Himmelberg, C. P., Hubbard, R. G. & Palia, D. 1999. Understanding the Determinants of Managerial Ownership and the Link between Ownership Structure and Performance. *Journal of Financial Economics*. 53: 353-384.
- Jensen, M. and Meckling W.: Managerial Behaviour, Agency Costs and Ownership Structure. First published in *Journal of Financial Economics*, October 1976 no. 3.
- Jensen, M. 1993. The Modern Industrial Revolution, Exit and the Failure of Internal Control Systems. *The Journal of Finance* vol. XLVIII no. 3. July 1993.
- Kronke, H. 1988. *Stiftungstypus und Unternehmensträgerstiftung*. Tübingen: J.C.B. Mohr. 1988.
- Large, Oscar and Fred M. Taylor. 1938 (1964). *On the Economic Theory of Socialism*. New York. McGraw-Hill.
- La Porta, R. Lopez-de-Silanes, F., Shleifer, A. & Vishny, R.W. 1998. Law and Finance. *Journal of Political Economy*, 106: 1113-1155.
- Loderer, C. & Martin, K. 1997. Executive stock ownership and performance. *Journal of Financial Economics*, 45: 223-255.
- Manne, Henry. 1965. Some Theoretical Aspects of Share Voting. *Columbia Law review* 64. 534-554.
- Milgrom, P. and Roberts, J. 1992. *Economics, Organization and Management*, Prentice-Hall International 1992
- Putterman, L. 1993. Ownership and the Nature of the Firm. *Journal of Comparative Economics*, 17:243-63.
- Radner. Roy. 1998 Economic Survival, Nancy Schwartz Memorial Lecture, Northwestern University, 1996; reprinted in D. P. Jacobs, et al, *Frontiers of Research in Economic Theory*, Cambridge University Press, Cambridge, 1998, pp. 183-209.
- Shleifer, A. and Vishny, R.. W. 1997. A Survey of Corporate Governance. *Journal of Finance*. 52(2). 737-783.
- Stark, O. *Altruism and beyond: An economic analysis of transfers and exchanges within families and groups*. Cambridge: Cambridge University Press 1995.
- Stein J. 1989. Efficient Capital Markets, Inefficient Firms: A Model of Myopic Corporate Behaviour. *Quarterly Journal of Economics*. 104 (4): 655-669.
- Thomsen, Steen. 1996. Foundation Ownership and Economic Performance. *Corporate Governance*. 4(4).
- Thomsen. Steen. 1999. Corporate Ownership by Industrial Foundations. *The European Journal of Law and Economics*. 7(2).
- Tirole, J. 1992. *The Theory of Industrial Organization*., MIT Press. Fifth edition.
- White, Halbert, A 1980. Heteroscedastic-Consistent Covariance Matrix Estimator and a Direct Test for Heteroscedasticity. *Econometrica*. 48. 817-838.
- Williamson, O. E. *The Mechanisms of Governance*. New York. Oxford University Press. 1996.

Appendix

List of variables: All variables are based on four year averages if not stated otherwise:

- *Tobins Q*: Market value of equity and book value of debt divided by total book assets. Market value equals share price times the number of outstanding shares. All book values are obtained at the end of the year
- *Jensens Alpha* is obtained for each firm by regressing daily share return minus the daily risk free interest rate against the return on KAX CSSE all Share Index minus the risk free interest rate.
- *Return* equals the ratio of share price at the end of the year plus dividend per share divided by share price at the beginning of the year minus 1. The series is corrected for stock splits, share issues, warrants issues etc.
- *ROA* equals Net income plus interests before tax divided by total book assets the end of the year
- *VarROA* is identical to the variance of the yearly ROA
- *Found* is a dummy that equals one if a foundation controls more than fifty percent of the votes, otherwise it equals zero
- *Size* equals to the natural log of market value of equity
- *Book/Market* equals book value of equity divided by market value of equity
- *Equity ratio* book value of equity divided by total book assets
- *Growth* equals the book value of total assets in 1999 divided by total book value in 1996
- *Banks* The official branch code at Copenhagen Stock Exchange year 2001
- *Trade* The official branch code at Copenhagen Stock Exchange year 2001
- *Industry* The official branch code at Copenhagen Stock Exchange year 2001
- *Insurance* The official branch code at Copenhagen Stock Exchange year 2001
- *Shipping* The official branch code at Copenhagen Stock Exchange year 2001
- *Investment Associations*. The official branch code at Copenhagen Stock Exchange year 2001.

Appendix. Descriptive statistics

Variable:	Obs	Mean	Std Error	Minimum	Maximum
Q	171	1.453	1.741	0.383	16.370
GROWTH	171	1.399	0.858	0.128	10.661
VARROA	171	41.070	239.119	0.000	2937.796
EQUITY RATIO	171	1.020	1.682	0.047	13.104
RETURN	171	19.413	68.685	-36.882	793.433
ALPHA	171	-0.007	0.0215	-0.216	0.036
FOUND	171	0.122	0.3291	0.000	1.000
LNSIZE	171	13.929	1.7763	9.298	20.157
BTM	171	1.033	0.8462	0.041	7.376
ROA	171	4.880	5.8383	-27.040	22.750
BANKS	171	0.269	0.4447	0.000	1.000
TRADE	171	0.192	0.3957	0.000	1.000
INDUSTRY	171	0.409	0.4931	0.000	1.000
INSUR	171	0.017	0.1316	0.000	1.000
SHIP	171	0.040	0.1987	0.000	1.000
INVASS	171	0.052	0.2239	0.000	1.000

Correlation matrix

	ALPHA	Q	RETURN	ROA	FOUND	EQUITYR	VARROA	GROWTH	SIZE	BTM	BANKS	TRADE	INDUST	INSUR	SHIP
ALPHA	1,00														
Q	0,12	1,00													
RETURN	0,10	0,07	1,00												
ROA	0,06	0,14	0,00	1,00											
FOUND	-0,16	0,31	-0,03	0,09	1,00										
EQUITYR	0,04	0,19	-0,03	-0,12	0,05	1,00									
VARROA	0,02	0,09	0,05	-0,21	-0,05	0,06	1,00								
GROWTH	0,10	0,08	0,16	0,00	-0,04	0,07	0,04	1,00							
LNSIZE	-0,12	0,04	-0,09	0,04	0,14	-0,31	-0,28	-0,04	1,00						
BTM	-0,19	#####	-0,14	-0,18	0,03	0,00	-0,12	-0,17	-0,06	1,00					
BANKS	0,25	#####	-0,02	-0,31	-0,11	-0,31	-0,10	-0,04	0,22	0,06	1,00				
TRADE	0,04	#####	0,09	0,09	-0,09	0,04	0,17	0,00	-0,13	#####	-0,30	1,00			
INDUST.	-0,11	0,12	0,00	0,24	0,16	0,28	-0,02	0,08	-0,18	#####	-0,51	-0,41	1,00		
INSUR	-0,03	#####	-0,02	-0,07	-0,05	-0,07	-0,02	0,02	0,24	0,04	-0,08	-0,07	-0,11	1,00	
SHIP	-0,35	0,17	-0,04	-0,09	0,19	-0,02	-0,01	-0,01	0,12	0,20	-0,13	-0,10	-0,17	-0,03	1,00
INVASS	0,06	#####	-0,05	-0,04	-0,09	0,00	-0,02	-0,11	-0,05	0,11	-0,14	-0,12	-0,20	-0,03	-0,05