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Corporate Financial Performance and the Use of Takeover Defences

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Abstract: *This paper tests the hypothesis that the threat of a contested takeover improves corporate performance. This is done by a cross-sectional analysis of listed Danish firms with and without effective takeover defenses. Takeover defenses adopted by Danish firms mainly consist of dual class voting rights often in combination with foundation ownership. Using simultaneous equation estimation to deal with the problem of causation, the results show that unprotected firms do not outperform protected firms. This suggests that management in unprotected firms are disciplined by other corporate governance mechanisms than the market for corporate control, including the legal protection of shareholders.*

JEL: C31, G32, G34, K22

Keywords: *Takeovers, Company law, Corporate Control, Corporate Governance, Simultaneous equation estimation.*

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Introduction

The market for corporate control has played and still plays an important role in Britain and the United States, where bidders make tender offers to shareholders of target firms in order to obtain control of the firm and replace existing management. Continental Europe has not to the same extent laid the ground for a struggle between the existing management and active shareholders, seeking full control of the firm through tender offers and proxy fights. This difference is just one out of several that reflects a fundamental difference between the Anglo-American and the Continental European corporate governance system, although there is a tendency towards convergence. Thus, the European Union has attempted to harmonize the legislation towards the Anglo-American principle of "one share-one vote" and mandatory tender offers through the 5th and 13th Directives, in order to promote a free market of goods and services, including companies.

Even though all EU member states now have implemented the 13th Directive of mandatory tender offers and equal treatment of shareholders, European countries have not yet adopted the principle of one share-one vote. For example on the Copenhagen Stock Exchange over half of the firms have shares with dual class voting rights. As a consequence, the number of contested takeovers in Denmark has been limited. This is not only the case for Denmark but also for the largest economy in EU, Germany, where no public hostile takeover bid has been successful (see Baums in Davis and Stapledon (1993)).

The EU proposal will influence the ownership structure. This is because foundation ownership is very common on the Danish Stock Exchange. Abolishing shares with dual class voting rights would therefore require foundations to buy a larger proportion of the company's shares to maintain control. It is doubtful whether the majority of the foundations have the necessary capital, and this would cause the foundations to lose control, thereby changing the ownership structure.

The management entrenchment hypothesis states that takeover defenses are initiated by the incumbent management that opportunistically seeks job protection (see Williamson (1975)). This view is supported by OECD which notice that “markets for corporate control should be allowed to function in an efficient and transparent manner. Anti-takeover devices should not be used to shield management from accountability” c.f. section I, E in OECD Principles of Corporate Governance.

Proponents of a market for majority votes argue that it may serve as a mechanism to solve the principal-agent problem where it serves as an arena in which managers compete for resources to manage (see Jensen and Ruback (1983)) and therefore may be regarded as a valuable asset (see Manne (1965)). Grossman and Hart (1980) develop a model where they show that it may be in the interest of minority shareholders to write a charter that explicitly permits dilution by paying an amount to the raider in case of a takeover. This is to overcome the problem of free-riding since present shareholders can free ride on the raider’s efforts to improve the firm. Although dilution reduces the price shareholders receive the tradeoff is between better management and a higher probability of takeovers versus a lower bid price and less residual income. In the discussion of an optimal corporate charter Grossmann and Hart (1987) present a model where they show that the principle of one share-one vote encourages to the selection of an efficient management team. However, they also notice that when private benefits are large, e.g. a family that receives significant private benefits from control, deviations from the one share-one vote principle may be optimal. In addition, Grossman and Hart (1980) also notice that when market participants are informed of a takeover attempt, the price will increase, thereby making the takeover less profitable for the raider. Potential raiders will anticipate this free rider problem, undermining the existence of a market for corporate control.

Scharfstein (1988) presents a theory of the disciplinary role of takeovers. Based on a model with asymmetric information he argues that an informed raider can reduce incentive problems by making managerial compensation

more sensitive to information unavailable to shareholders. Jensen (1992) argues that a market for corporate control is necessary to prevent the existing management from exploiting the free cash flow. The presence of various takeover defenses may therefore prevent the existence of a market that allocates control in which the management could be forced to surrender the free cash flow to the shareholders.

The shareholder interest hypothesis on the other hand states that takeover defenses are required in order to align management's incentives with respect to time horizon with those of shareholders (see Stein (1988) for a formal model). Takeover defenses may enable management to extract a higher price from the bidder in a takeover situation (see DeAngelo and Rice 1983).

Shleifer and Vishny (1986a) argue that it is not always against the interests of existing shareholders to prevent takeover defenses. Based on a model they show that greenmail i.e. where the management buys out the raider in exchange of a standstill agreement, actually benefits existing shareholders. This is because excluding a bidder may be a way of inviting even better offers from other bidders later in the process, where it is assumed that management acts in the interest of shareholders. Shleifer and Vishny (1986b) show that takeovers sometimes may increase agency costs when the bidding management's pay too much in order to obtain private benefits of control. Less enthusiastic about the market for corporate control are also Franks and Mayer (1990), who recognize that there is a tradeoff. Takeovers may improve managerial incentives but only at the expense of long-term investment. The purpose of this article is to evaluate whether there are costs associated with takeover defenses that effectively block a market for corporate control formulating the following hypothesis.

Hypothesis: *Companies without effective takeover defenses outperform companies where the management is effectively protected against a hostile takeover*

The market for corporate control cannot be viewed independently of legal rules, since they to a very large extent determine the level of takeover activity. This is not only the case in Europe, but also in the U.S. where some states in order to attract companies have adopted takeover laws that could be of benefit for the existing management.

Several modifications have to be emphasized concerning the effectiveness of takeovers as a corporate governance mechanism. First of all, such a market requires a liquid capital market to give potential bidders the capital required and this condition is probably not satisfied in many European countries, including Denmark

The relationship between legal rules and the supply of external finance play a key role since countries with poor investor protection also have less developed capital markets (see La Porta, Lopez-De-Silanes and Shleifer (1997)).

In the article Danish data are used to test the above hypothesis. It will be shown that firms without effective takeover defenses do not significantly outperform protected firms. The empirical results therefore indirectly support the shareholder interest hypothesis.

The paper is organized as follows. Section 2 reviews the literature and section 3 describes Danish companies' use of takeover defenses. Section 4 describes the data and section 5 the applied model. Results are presented in section 6 while the robustness is examined in section 7. Section 8 gives some explanations and the article concludes in section 9.

2. Literature

Empirical studies using event study methodology find that value (market value of equity) is increased by mergers and acquisitions activity. But the gain, i.e. abnormal returns, of the acquiring firms is close to zero, whereas the positive gain to target firms is more substantial. (see Jensen and Ruback (1983) for a review of studies concerning takeovers and their impact).

Various studies have examined the reaction of the introduction of different takeover defenses on the share price, whereas literature is scarce concerning the relationship between takeover defenses and performance over time. The studies concerning the impact on share price of anti-takeover amendments have given mixed results. DeAngelo and Rice (1983) find negative, although insignificant, abnormal returns around anti-takeover amendments.

Linn and McConnell (1983) reach the opposite results finding a positive and significant positive effect on share prices. Jarrell and Poulsen (1987) find on average an insignificant effect on the value of announcing firms' shares. However, they show that different types of amendments have varying effects. Non-fair price amendments have an average significant negative effect of 2.95 % on share prices, while fair prices have an insignificant effect. Szewczyk and Tsetsekos (1992) examine the state intervention in the market for corporate control by the case of Pennsylvania Senate Bill 1310 of 1990. The law prohibits shareholders from exercising their basic rights as owners of the firm and thus eliminates the traditional fiduciary obligation of the board of directors to promote shareholders' interests. They find that the legislation significantly decreased share values, but firms with anti-takeover charter amendments already in place were less effected.

There are several problems associated with event studies. Especially caused by the fact that using the proxy date as the event day does not recognize that possible information about a forthcoming anti-takeover amendment very often already is disclosed. Few studies therefore conduct a post-announcement performance examination of the introduction of takeover defenses.

Using a two-factor model Langetieg (1978) finds that post merger excess return is insignificantly different from zero. Johnson and Rao (1997) find that anti-takeover amendments do not have negative effects in terms of their impact on various fundamental firm financial ratios.

3. Takeover defenses adopted by Danish firms

The organization of the management in Danish firms differs from the Anglo-American system, in particular by having two-tier boards like Germany. The supervisory board represents the shareholders and monitors the board of managing directors and has the power to decide in cases of extraordinary matters or of major importance (c.f. § 54 in the Company Act). The supervisory board must not be dominated by the managing directors (c.f. § 51). The members of the supervisory board typically meet once a month and the daily management of the firm is carried out through the board of managing directors.

Danish takeover defenses are characterized by being permanent. Contrary to the U.S. system they do not become active when a takeover is immediately forthcoming. Danish takeover defenses are stipulated in the corporate charter or articles of incorporation as shark repellents apart from golden parachutes. Golden parachutes only play a minor role as an instrument to prevent a takeover by Danish firms, although it is difficult to assess for certain, since golden parachutes are not reported to the public. Golden parachutes for the benefit of the management could constitute a violation of the Company Act on fair treatment and duty of loyalty, if the payment exceed what would be necessary to give the board a fair compensation in the event of a removal. It is also dubious how effective golden parachutes are as takeover defenses. One could argue that golden parachutes may actually promote takeovers since they reduce the existing management's resistance towards a takeover in which management is rewarded with golden parachutes.

Table I shows that Danish firms have adopted takeover defenses that are considerably different from both U.S. and British firms, although they are similar to takeover defenses adopted by other firms located in the EU (see Stonehill and Dullum (1990)).

Table I. Descriptive statistics of potential takeover defenses for the sample set of 102 Danish firms listed on the Copenhagen Stock Exchange.

<i>Category</i>	<i>Percentage</i>
<i>a) Ownership limitations</i>	<i>2,9</i>
<i>b) Voting rights limitations</i>	<i>4,9</i>
<i>c) Clause of interests</i>	<i>5,9</i>
<i>d) Temporarily suspension of voting rights</i>	<i>9,8</i>
<i>e) Dual class voting rights</i>	<i>51,0</i>
<i>f) Right of preemption concerning A-shares</i>	<i>9,8</i>
<i>g) Approval of transfer concerning A-shares</i>	<i>12,7</i>
<i>h) Trust dominants (> 50 % of the votes)</i>	<i>21,6</i>
<i>i) Statutory voting majority, different from 2/3</i>	<i>2,9</i>

(See appendix for a description of each firm's takeover defenses)

It should be mentioned that the presence of dual class voting rights does not necessarily constitute a takeover defense by itself (c.f. the definition of an effective takeover defense in the end of this section). Table I contains a description of the most common and applicable takeover defenses accessible to the management in the target firm (see Schans Christensen (1991) for a comparative description of specific defensive devices and strategies in Danish law and also Rose (2001) for detailed legal analysis of potential takeover defenses by Danish firms).

The first two categories of takeover defenses (a and b) consist of *limitations of ownership and voting rights* which are almost completely absent in the U.S. Even though they are not so widespread in the sample (nearly 8 percent)

they are very effective devices in order to insulate the existing management from hostile takeovers. Since the Danish Company Act requires that these arrangements have to be approved at the general meeting by statutory voting majority of 9/10 (c.f. § 79) such agreements would almost be practically impossible to implement now a days. They are a legacy from the past very often inspired from the co-operative movement where such provisions were common and ideas concerning corporate governance were almost non-existing.

The term *clause of interest* (c) stipulated in the corporate charter means that shareholders who have agreed to coordinate their votes on a specific matter are regarded as only one shareholder concerning the number of votes. Such a provision is often stipulated in order to avoid a loophole concerning ownership and voting limitations. Almost six percent have adopted such a clause and it serves the same purpose as voting and ownership limitations representing a serious restraint in achieving a functioning market for corporate control.

Temporarily suspension of voting rights (d) after the acquirer has bought the shares is another device to make a takeover difficult. Nearly ten percent of Danish firms have adopted such provisions where the suspension typically last one or three months. Since the acquirer has to report his holdings of shares to the company every time he obtains a change of five percent of the shares, this gives the management the necessary time to implement strategies to protect itself against the takeover. The management could for instance call for an extraordinary general meeting and present proposals that could prevent the acquirer from gaining full control of the firm.

Dual class voting rights (e) are adopted by more than half of the companies and represents a large deviation from the U.S. firms use of takeover defenses, although dual class voting rights are not absent in the U.S. (see the SEC Rule 19c-4). Very often a *foundation* or *trust* holds the majority of the A-shares with superior voting rights and blocks for a takeover, while the B-shares are freely traded.

The Danish Company Act provides that no shares may bear more than 10 times the voting value of any other share of the same category (c.f. § 67). Whether dual class voting rights should be allowed is still a controversial question (see e.g. Lando (1991) and Niels Chr. Nielsen and Ebbesen (1994)). The question cannot be viewed independently but must be seen in conjecture with the ownership structure, in particular the extension of trust or foundation ownership, which vary considerably within the EU (besides Denmark, foundation ownership is common in the Netherlands). In connection with dual class voting rights the corporate charter often states that when one of the existing A-shareholders wants to sell his holdings of A-shares, the other A-shareholders have a *right of preemption* (f) i.e. to buy the shares at a fair price. This is the case for almost ten percent of the companies. Another possibility is to stipulate in the corporate charter that a *transfer needs approval* (g) of the existing board of supervisors when an A-shareholder wants to sell which is stipulated in almost 13 percent of the firms.

While amendments of a corporation's charter in the U.S. (Delaware) can be conducted by the board of directors on its own, such an action requires the approval of the shareholders on a general meeting which requires 2/3 statutory voting majority (c.f. § 78) according to the Danish Company Act. Only very few companies use the possibility to deviate by increasing the majority fraction from the Companies Acts claim of *statutory voting majority* (i) of 2/3 (three percent). One reason might be that such a provision also could prevent the management from changing the corporate charter into other events than a hostile takeover, e.g. when it needs to change its purpose or place of incorporation.

Almost 65 percent of the firms have adopted *White knights* i.e. a delegation to issue shares at market price without the shareholders right of preemption. The reason for not showing the fraction of white knights in table 1 is that it is questionable whether an action to issue shares at market price without the stockholder's right of preemption would be in accordance with the Danish Company Act. Normally, such a decision would require a statutory

voting majority of 2/3 at the general meeting. The law permits that the shareholders can delegate the decision and the terms to the management (c.f. § 37). In principle, such an action is possible but as mentioned it could be in conflict with the Danish Company Act (c.f. § 63 and § 80). This is because this action would violate a principle of equality among the shareholders set forth in the Act and thus conflict with the general standard (duty of loyalty) also codified in the Company Act. The general standard states that the management may not pass any resolution which is obviously likely to result in undue advantage to certain shareholders or others at the expense of other shareholders or the company. Normally, a delegation to issue shares without the shareholder's right of preemption is not supposed to serve as a takeover defense due to the mentioned considerations. Instead, companies very often in connection with a "friendly" acquisition use the delegation to issue shares without the existing shareholder's right of preemption as a measure of payment instead of cash. Such a provision enables the management to obtain capital in a flexible manner.

Poison pills are adapted by 5 percent of the firms, but it is also questionable whether the use of a delegation to issue shares lower than market price without *all* the shareholders' right of preemption is possible under Danish law due to the same problems as mentioned above (see Gomard (1989) p.129). Thus, it is doubtful whether Poison puts or Green mail can be applied under Danish law in a takeover situation since a company can only acquire 10 percent of its own shares.

Only under very extreme circumstances i.e. in a limited period if necessary to avoid considerable and threatening damages (c.f. § 48a). Since the shareholders can sell the shares at a high premium this would require a decision at the general meeting that exclusively has the right to approve the dividend (c.f. § 69).

To test the formulated hypothesis empirically we need to define what we mean by effective takeover defenses. This article defines a company to have an efficient takeover defense, denoted by PROTEC if it satisfies the following characteristics; either the firm has

- A) ownership limitations, voting rights limitations or adopted a clause of interest
- B) the company is dominated via dual class voting rights by a *foundation (trust)* that holds the voting majority (over 50 percent).
- C) the company is also said to be efficiently protected if the A-shares with superior voting rights represent more than 50 percent in a company given that the corporate charter requires the board's approval of transference or the other A- shareholders have a preemptive right of the A-shares. 30 firms satisfy the above conditions (29 percent).

Table II. Correlation Matrix of Danish firms' takeover defenses (binary variables)

	<i>Owner/voting limit.</i>	<i>Appr. of transfer</i>	<i>Preempt. right</i>	<i>Trust ownersh.</i>	<i>Dual class</i>	<i>PROTEC</i>
Owner/voting limit.	1,00					
Appr. of transfer	0,04	1,00				
Preemption right	-0,08	-0,12	1,00			
Trust ownership	-0,16	-0,03	0,08	1,00		
Dual class	-0,25	0,30	0,26	0,31	1,00	
PROTEC	0,39	0,43	0,37	0,21	0,29	1,00

The correlation matrix shows that there is a relatively high positive correlation between dual class voting rights and trust ownership (correlation of 0,31), which illustrates that trust ownership is mainly based on the use of dual class voting rights. Table II further shows that there is a high positive correlation between dual class voting rights and preemption rights as well as approval of transfer. On the other hand, there is a negative correlation between the latter two (correlation of -0,12), indicating that they substitute each other as legal provisions to avoid contested takeovers in association with dual class voting rights.

Table II also shows that the use of ownership/voting rights limitations is negatively correlated with dual class voting rights, trust ownership and preemption rights, indicating that firms which have adopted ownership/voting rights limitations will tend not to use other types of takeover defenses, since they already are effectively protected against takeovers.

As expected, there is a high positive correlation between PROTEC and the other takeover defenses. It is interesting to note that a firm is not necessarily characterized as protected solely if it has dual class voting rights (correlation of 0.29). We notice that the EU proposal of one share-one vote will have serious effects on the Danish ownership structure, since the correlation between both trust ownership and dual class voting rights as well as PROTEC and trust ownership is relatively high.

4. Data Material

The data consists of all companies listed at the Copenhagen Stock Exchange in 1998. Banks, insurance companies and mutual funds are excluded since they possess industry specific features and are regulated by special laws. The few number of shipping companies are also excluded. The reason for excluding the shipping companies' is that it is very difficult to obtain reliable information of the company's financial status due to the non-transparent nature of the annual accounts and ownership structures. However, this means that the largest Danish company (Maersk or the A.P. Møller group which is dominated by two foundations) is excluded. A few computer and IT companies are also excluded because they differ from the rest of the sample and because their annual accounts do not constitute a reliable basis for any of the chosen performance measures.

The information sources consist of the companies' annual accounts concerning the five fiscal years 1995-1999 together with the articles of incorporation.

To uncover the presence of foundation ownership it has been necessary to use various public references since the Danish Accounting Act does not oblige the company to report the exact holdings of any foundations or other blockholders' number of stocks. Prices are adjusted in order to obtain a reliable data set. They concern stock splits and new share issues and incorporate the effect of fully dilution. The value of any stock warrant or stock right is incorporated into the return and added to the dividends. The adjustments are made accordingly to the guidelines formulated by the Danish Association of Financial Analysts (Den Danske Finansanalytikerforening).

5. The Model

The model conducts a cross-sectional analysis using variables based on average numbers within a period of five years from 1995-1999, since any individual year during the period could be biased.

Firstly, one has to decide which performance measure to apply. Financial literature is rich on different performance measures, especially associated with the evaluation of portfolio performance (see e.g. Elton and Gruber (1995) ch. 24) even though there is not general consensus about the appropriate measure to use. This is also the case when we deal with a measure of single firm performance, and as a consequence, the empirical part of corporate governance literature uses a whole basket of different firm performance measures. One way to assess a firm's performance is to compare the actual return with the expected return, where the latter is generated from a selected equilibrium model e.g. APT or CAPM. This is sometimes referred to as Jensen's Differential Performance Index (see Jensen (1969)). However, this approach has been criticized since it simultaneously involves a test of the selected equilibrium model (see e.g. Roll (1977) who argue that equilibrium theory is not testable unless the exact composition of the true market portfolio is known and used in the tests).

This article therefore uses four different performance measures; *Tobin's Q*, *stock return*, *Return on assets* (ROA), and *return on equity* (ROE). Actual stock return serves as a simple measure and does not incorporate the amount of capital invested or aspects concerning risk. Thus there is no theoretical basis for this performance measure although it is used in some of the literature of corporate governance.

Tobin's Q or the Q-ratio which is defined as the ratio of the market value of the firm's securities to the replacement costs of its assets. Tobin's Q serves as a general performance measure although it may be biased since the actual calculations use book value to measure the replacement value. This article calculates the Q-ratio as the market value of equity and book value of debt divided by the book value of assets. A high value for Q is usually a strong indication for valuable growth opportunities due to a strong competitive advantage (brand name or know-how). In spite of the fact that the Q-ratio may be difficult to interpret it plays an important role within the empirical part of corporate governance. An example is the theory of merger activity where Golbe & White (1987) use Tobin's Q as a proxy for the bargains hypothesis, i.e. mergers rise when a firm's assets price is low relative to the replacement value of assets.

In addition, the article uses the most common performance measure of accounting profits. A firm's ROA is usually a reasonable surrogate for its economic rate of return if the firm does not experience substantial positive or negative growth. Several factors may influence ROA such as risk, cycles in sales, product life cycles of the firm, capital intensity etc., although it is frequently applied to assess the profitability of the total invested capital. This article defines ROA as net income plus positive interests before tax divided by total assets.

ROE is another measure of accounting profits which is closely related to ROA and financial leverage. Contrary to ROA, ROE explicitly measures performance from the viewpoint of the owners i.e. the shareholders. This article calculates ROE as annual income after tax divided by book equity at

the end of the year. Appendix A shows that all performance measures are relatively high positively correlated.

To capture the cross-sectional variation in stock return two controls have been added. Fama and French (1992) find that size and the ratio, book equity to market equity both have a significant influence on average share return. They find that size is negatively related to stock return indicating that small firms perform relatively superior to large firms because of the risk represented by size. The ratio book-to-market equity is positively related to the stock return and they argue that one possible explanation could be that the ratio is equal to the relative distress factor. Firms which the market judges to have poor prospects, signaled by a low stock price and high ratios of book to market equity, have higher expected returns due to higher costs of capital than firms with strong prospects. However, Fama and French (1992) also noticed that it could simply reflect irrational market whims about the future prospects of firms (p. 429). To avoid problems associated with multicollinearity this model does not use the Fama and French's measure of size (the natural log of market equity) but instead uses another although very frequently used measure for size, namely annual sales or turnover.

Table III: *Descriptive Statistics*

	Mean	Std. Error	Minimum	Maximum
TOBIN'S Q	4,354	3,748	0,745	26,056
RETURN	8,780	21,902	-36,750	104,500
ROA	8,798	9,178	-5,250	78,250
ROE	10,223	25,097	-26,222	42,740
SALES	2624,492	4749,093	17,800	24813,600
BOOKMEQ	0,208	0,217	0,022	1,86

In order to test the formulated hypothesis one could simply estimate a linear regression equation with the performance measures as dependent variables. The explanatory variables could consist of a dummy variable denoted PROTEC that equals one if the firm is defined as effectively protected against takeovers or otherwise zero, in combination with the two control variables.

However, this approach would be bias since it assumes that the causation or causality runs from whether a firm is effectively protected or not to performance. But one could also argue that the causation runs in the opposite direction i.e. a firm's performance influences whether it is protected or not. The problem of causation in empirical studies of corporate governance has within the last years received more attention. In particular, within empirical literature that examines the relation between managerial ownership and corporate financial performance.

Simultaneous structural equation models have been increasingly applied because of the ability to model the causality between ownership and performance (this question should not be confound with exogeneity and the familiar concept of Granger causality in time-series analysis). To address the problem of causality researchers normally use simultaneous equation estimation, hereby constructing more that one equation. The system of equations may be estimated e.g. using instrumental variables and two stage least squares conditioned on the equations being identified.

However, this approach only works well if there are no dummy variables serving as dependent variables. If this is the case, as in this article, Heckmann (1978) shows that the results are biased since the residuals of the equations are correlated with some of the independent variables. Heckmann constructs a model which allows consistent estimation and formulates some alternative estimators. Following Heckmann the model can be formulated as a system of two equations.

$$PERFORM_i = a_{11i} + \mathbf{a}_{12}SALES_i + \mathbf{a}_{13}BOOKMEQ_i + \mathbf{b}_1D_i + \gamma_1PROTEC^*_i + \mathbf{e}_{1i} \quad (1)$$

$$PROTEC^*_i = a_{21i} + \mathbf{a}_{22}DUALCL_i + \mathbf{a}_{23}FOUND_i + \mathbf{b}_2D_i + \gamma_2PERFORM_i + \mathbf{e}_{2i} \quad (2)$$

The two endogenous variables, $PERFORM_i$ and $PROTEC_i$ are supplemented by a set of predetermined variables which in this case solely consist of exogenous variables where the crucial characteristic of the predetermined variables is that they are independent of current and future disturbances. $DUALCL_i$ is a dummy that equals one if firms have shares with dual class voting rights. Otherwise it equals zero.

$FOUND_i$ is a dummy variable that equals one if a foundation or trust dominates the firm, otherwise it equals zero. $PERFORM_i$ represents performance of company i . $PROTEC^*_i$ is a latent non-dummy variable that measures the protectiveness of the management against a contested takeover. D_i is defined as a dummy variable that equals one if protectiveness exceeds a certain threshold, otherwise zero, according to the categorization in section 4. $BOOKMEQ_i$ is identical to book equity divided with market equity for firm i . $SALES_i$ equals the annual sales of firm i .

We see that the system is identified through exclusions since it obeys the so-called order condition (see Johnston and Dinardo p. 312 (1997)). The errors \mathbf{e}_i are assumed to satisfy the standard assumptions. Finally, to secure that equations (1) and (2) define a statistic model the principal assumption of Heckmann that $\gamma_2\beta_1 + \beta_2 = 0$ must be made. Appendix B describes how the parameters are estimated using an approach formulated by Heckmann (p. 944). The following tables all show the results of the estimations of the first equation in the system, which is the equation of primary interests. In order to estimate the first equation, it must be transformed into expression (3) in the appendix.

The results in table IV show that both variables, D and PROTEC* are not significantly different from zero, suggesting that protected firms do not outperform unprotected firms. The ratio BOOKMEQ is indeed significantly different from zero which is due to the definition of the ratio that makes it correlated with the dependent variable. Larger firms, measured by sales, do not have significantly higher Tobin's Q, neither do they outperform smaller firms.

Table IV: Regression estimates of **TOBIN'S Q** as the dependent variable and performance measure. 102 observations. The numbers in the parentheses are significance level.

<i>Independent variables:</i>	1.	2.	3.
<i>CONSTANT</i>	5.866 (0.000)	5.564. (0.000)	5.302 (0.000)
<i>SALES</i>	0,001 (0.878)	0,001 (0.117)	
<i>BOOKMEQ</i>	-6,734 (0.002)		
<i>D</i>	5.183 (0.751)	8.168 (0,632)	18.036 (0,261)
<i>PROTEC*</i>	-1.969 (0,707)	-4.694 (0.386)	-7,375 (0,156)
<i>Adj. R²</i>	0.18	0.10	0.07
<i>F-statistic (p-value)</i>	0,00	0,02	0.02

Table V reports the results of the estimations when stock return serves as the dependent variable. Both D and PROTEC* are not significantly different from zero showing that it does not matter whether a firm is effectively protected against takeovers or not when the performance measure is share return.

Table V: Regression estimates of **RETURN** as the dependent variable and performance measure with 102 observations. The numbers in the parentheses are significance level.

<i>Independent variables:</i>	1.	2.	3.
<i>CONSTANT</i>	15.139 (0,001)	15.089 (0,001)	12.596 (0,005)
<i>SALES</i>	0,001 (0,027)	0,001 (0,027)	
<i>BOOKMEQ</i>	-1,116 (0,933)		
<i>D</i>	-128,519 (0.208)	-128,024 (0,209)	-34,331 (0,722)
<i>PROTEC*</i>	33,365 (0,301)	32.914 (0.308)	7,451 (0,811)
<i>Adj. R²</i>	0.07	0.07	0.02
<i>F-statistic (p-value)</i>	0.12	0.06	0.59

BOOKMEQ is not significantly different from zero either, but this is the case with SALES which has a positive sign and is significantly different from zero. Larger firms tend to have superior returns on average over the five-year period.

Table VI displays the results when the dependent variable is ROA. Again, the results show that unprotected firms do not outperform protected firms since the variables D and PROTEC* are not significantly different from zero even though both variables are negative. None of the control variables are significant.

Table VI: Regression estimates of **ROA** as the dependent variable and performance measure. 102 observations. The numbers in the parentheses are significance level.

<i>Independent variables:</i>	1.	2.	3.
<i>CONSTANT</i>	11.947 (0.000)	11.564 (0.000)	11.292 (0.000)
<i>SALES</i>	0,002 (0,954)	0,002 (0,517)	
<i>BOOKMEQ</i>	-8.540 (0.126)		
<i>D</i>	-4.405 (0.918)	-6.618 (0.988)	-9,606 (0,809)
<i>PROTEC*</i>	-0.029 (0,998)	-3.483 (0.797)	-6.262 (0,623)
<i>Adj. R²</i>	0.07	0.05	0.04
<i>F-statistic (p-value)</i>	0.13	0.19	0.12

When we look at table VII which shows the results of the estimations when the dependent variable is ROE, we see the same tendency, namely that unprotected firms do not outperform protected firms since both variables D and PROTEC* are not significantly different from zero. Both SALES and BOOKMEQ are negative but not significant.

In all situations the selected explanatory variables did not have a high explanatory power measured by the determination coefficient and the F statistics. This is not unusual in cross-sectional studies concerning individual firm performance. If one variable had a high explanatory power this will in an efficient market be exploited by market participants forcing the system back into equilibrium.

Table VII: Regression estimates of **ROE** as the dependent variable and performance measure with 102 observations. The numbers in the parentheses are significance level.

<i>Independent variables:</i>	1.	2.	3.
<i>CONSTANT</i>	9.684 (0.007)	9.797 (0.006)	8.865 (0.008)
<i>SALES</i>	-0,001 (0,883)		
<i>BOOKMEQ</i>	-12.653 (0.126)	-11.677 (0,409)	
<i>D</i>	-30.317 (0.801)	-35.795 (0.753)	-15.267 (0,891)
<i>PROTEC*</i>	14.578 (0.706)	15.789 (0.674)	6.895 (0,847)
<i>Adj. R²</i>	0.04	0.04	0.03
<i>F-statistic (p-value)</i>	0.23	0.25	0.25

Summing up, we notice that all the performance measures do not depend on whether a firm is effectively protected against takeovers or not. This could be due to the selection of inappropriate performance measures. A more plausible explanation could be that other forces discipline managers in order to serve the interests of the shareholders and thereby boosting performance. In this light the results do not provide any evidence that management in effectively protected firms impose agency costs on shareholders. The results indicate that a market for corporate control is not a credible threat for the management in Danish listed firms, but the results do not show that protected firms' performance is superior to unprotected firms, either.

7. Robustness

Adding dummies for industry effects only has a very small effect on the results since they have no significant impact on performance. This is probably because the Copenhagen Stock Exchange is dominated by a few very large companies that are dominating within their own industry, e.g. Carlsberg within the brewery industry. Concentrated share holdings is another mechanism of reducing the agency costs associated with the free rider problem, since a substantial minority shareholder has the incentive to collect information and monitor the management (see Schleifer and Vishny (1986)).

Several studies investigate the influence of ownership structure upon a firm's financial structure and its performance (see Short (1994) for a critical review). To control for the effects caused by large shareholders all regression equations have been re-estimated adding two new explanatory variables. The first variable is equal to the sum in percentage of the voting rights held by all shareholders who have more than 5 percent of the votes. To capture the interaction effect between the dummy variables (PROTEC*, D) and ownership by large shareholders, two new variable have been added that equals the ownership variable multiplied by the dummies. The ownership variable is negative in all cases except when the performance measure is stock return and thus far from being significantly different from zero. This is also the case with the two new variables that model the interaction effect. But, more importantly, adding new variables to control for ownership effects does not change the significance of the variables in any of the cases. The interpretation is that ownership structure does not significantly influence corporate financial performance and, even more importantly, does not significantly change the previous obtained results (See Voetmann and Neumann (1999) who find that ownership concentration does not influence share price movements on the Danish stock market).

Since Danish law does not oblige managers to report their holdings of equity in the firm, it is difficult to control for insider ownership. Reformulating the definition of an effectively protected firm by expanding the definition to include firms where the corporate charter requires a temporarily suspension of the voting rights do not alter the results significantly either. Financial performance measures are sensitive to the selected accounting standards which to some degree is up to the management's discretion. Danish accounting regulation allows that goodwill for acquisitions may be depreciated directly of the equity. To evaluate this impact on performance both the balance sheet and the income statement have been adjusted. This is because such a method could change a company's profitability and financial leverage extensively without this change is due to any changes in the company's economic conditions. The method can only be justified if the buyer afterwards recognizes that the price was too high. For companies that have depreciated the goodwill for acquisitions directly of the equity, the annual accounts have therefore been adjusted in the following way. Any amount of goodwill is added back to the equity and instead placed under the assets. However, conduction of these adjustments and re-estimating the equations do not change the results significantly.

The results in this section do not show that corporate financial performance significantly depends on whether firms are effectively protected or not. This is also confirmed if one ignores the mentioned problems of causality and conducts single regression estimations of equation (1) and thus allowing for heteroscedastic standard errors (see White (1980)) i.e. PROTEC is not significantly from zero in any of the cases. Estimating the second equation (2) individually using a probit model does not either show that the probability of being effectively protected significantly depends on firm performance.

8. Discussion of the results

All the results show that unprotected firms do not outperform protected firms. One plausible reason could be that protected firms are subject to other corporate governance mechanisms than a market for corporate control. Protected firms could instead be monitored by large blockholders including institutional investors or holders of debt. This is especially the case for bank oriented economics that relies less on equity finance.

Another reason why unprotected firms do not outperform protected firms could be that the unprotected firms are more shortsighted, e.g. by having lower R & D costs or making less investments that negatively affects performance in the long run (see Stein (1988) for a formal model of this view). Takeover defenses could also give management incentives to invest more in firm specific human capital, thereby boosting performance.

However, even if companies were not protected by various takeover defenses a market for corporate control would not easily arise on the Danish stock market, thereby making the threat of a contested takeover almost illusory. This could explain why unprotected companies do not outperform protected companies, because the threat of a hostile takeover is almost non-existing. There are several reasons. A market for corporate control requires a very liquid capital market and it is rather doubtful if this condition is fully satisfied in Denmark and other small European countries.

The rules concerning mandatory tender offer in the Danish Securities Act, which is based on EU-directives, could also constrain the functioning of such a market for control. According to the Danish Securities Act (c.f. § 31) the price a bidder has to pay to the rest of the shareholders when he both obtains control and has one third of the shares, is equal to the highest price he paid to obtain one third of the shares. This will eventually make it more expensive for a potential bidder to get control of the whole company, which could deter him from such an action in the first place.

Thus, since managing directors very often are members of the board in other listed companies it is likely that a bidder would not be tempted to make a hostile takeover in the first place. Making an attempt of a contested takeover could violate an unwritten collegiate agreement. Hence, refraining from a takeover would be a rational act since all board members are better off without a market for corporate control which is not even pursued by powerful groups of shareholders. A higher degree of orientation towards stakeholder mentality of board members could also constitute an impediment of successful bids (on third of the board members are selected by employees). Board members in Danish firms may not only take possible benefits of shareholders into consideration in a takeover situation but probably also other stakeholders, including the protection of their own personal interests.

9. Conclusion

Takeover defenses adopted by Danish firms mainly consist of dual-class voting rights combined with foundation ownership. Almost one third of the management in Danish firms is effectively protected against contested takeovers, hereby insulating management from the market for corporate control. Thus, the article illustrates that the EU proposal set forth in the 5th Directive of one share-one vote will, if implemented, have serious consequences for ownership structures in which trust dominants are conducted through the use of dual class voting rights.

The article tests the hypothesis that unprotected firms outperform firms that have adopted effective takeover defenses. The article uses four common corporate financial performance measures; Tobin's Q, share return, return on asset and return on equity. To deal with the problem of causation between the dependent and independent variables the article uses simultaneous equation estimation as proposed by Heckmann (1978), but does not find that unprotected firms outperform protected firms.

Possible explanations have been suggested, including that other factors could discipline management in protected firms, e.g. a high degree of debt finance or legal protection of shareholders. However, even without the existence of any takeover defenses, small stock exchanges like the Copenhagen Stock Exchange does not satisfy the preconditions for such a market for corporate control, making the threat of a takeover non-credible. It is also possible that the use of takeover defenses might give management incentives to invest more in human capital or be more oriented towards long-term investments.

A highly relevant question is whether or not the results obtained from Denmark can be generalized to other European stock exchanges is which needs to be solved in order to get a better understanding of the U.S. inspired proposal of one share- one vote principle set forth by the European Union.

Appendix A: Table VIII, Correlation Matrix

	TOBIN'S Q	ROA	ROE	RETURN	PROTEC	FOUND	DUALCL	SALES	BOOKMEQ
TOBIN'S Q	1,00								
ROA	0,66	1,00							
ROE	0,11	0,31	1,00						
RETURN	0,15	0,19	0,08	1,00					
PROTEC	-0,01	0,04	0,04	-0,01	1,00				
FOUND	-0,05	0,01	0,03	-0,18	0,21	1,00			
DUALCL	-0,12	-0,15	0,08	-0,10	0,29	0,31	1,00		
SALES	0,06	-0,02	0,03	0,15	0,19	0,00	0,00	1,00	
BOOKMEQ	-0,42	-0,25	-0,04	-0,14	0,21	0,08	0,20	-0,13	1,00

Appendix B: Calculations of estimations

In order to estimate equation (1) we start by generating instruments from a probit model with D as the dependent variable with all four predetermined variables as independent variables. Let y_{1i} denote PERFORM and y_{2i}^* PROTEC*. Next step is to calculate the following expression;

$$\frac{y_{2i}^*}{w_{22}^{1/2}} = X_{1i}\hat{\boldsymbol{p}}_{21} + X_{2i}\hat{\boldsymbol{p}}_{22} \quad (3)$$

X_{1i} is a 102×2 matrix consisting of observations from the variables SALES and BOOKMEQ for each firm. X_{2i} is a 102×2 matrix consisting of observations of the variables DUALCL and FOUND. The vectors $\hat{\boldsymbol{p}}_{1i}$ and $\hat{\boldsymbol{p}}_{2i}$ are equal to the estimates obtained from the probit model of the four variables yielding (0.0006, 1.25266) and (0.62706, 0.40028) respectively. The denominator in expression (3), $w_{22}^{1/2}$ comes from the reduced form variance and serves to normalize the estimate. To get the fitted values of the probit model, the values in expression (3) is transformed by the standard normal cumulative density function Equation (1) is then estimated by the following expression:

$$y_{li} = X_{li} \mathbf{a}_1 + \hat{P}_i \mathbf{b}_1 + (\hat{y}_{2i}^* \mathbf{w}_{22}^{-1/2}) \mathbf{g}_1^* + \mathbf{e}_{li} + (D_i - \hat{P}_i) \mathbf{b}_1 + \mathbf{g}_1^* (y_{2i}^* \mathbf{w}_{22}^{-1/2} - \hat{y}_{2i}^* \mathbf{w}_{22}^{-1/2}), \quad (4)$$

where \hat{P}_i is the fitted values from the probit. Expression (4) yields unique consistent estimates of the parameters and where the last three terms are residuals. To get the estimates of equation (2) we use expression (1b') in Heckmann (1978) page 944 which is equal to:

$$(y_{li} - \hat{P}_i \mathbf{b}_1^*) = -\frac{1}{\mathbf{g}_2^*} (X_{2i} \mathbf{a}_2^* - (\hat{y}_{2i}^* \mathbf{w}_{22}^{-1/2})) - \frac{1}{\mathbf{g}_2^*} (\mathbf{e}_{2i} \mathbf{w}_{22}^{-1/2} + (D_i - \hat{P}_i) \mathbf{b}_2^* - (y_{2i}^* \mathbf{w}_{22}^{-1/2} - \hat{y}_{2i}^* \mathbf{w}_{22}^{-1/2})) \quad (5)$$

The left hand of equation (5) is denoted δ PERFORM and the coefficients below is obtained by dividing the regression coefficients by $-\mathbf{g}_2^*$. The matrix X_{2i} contains a constant and the variables DUALCL and FOUND.

Appendix C: table IX, Estimations of Equation (5)

	δ Return	δ Tobin's Q	δ ROA	δ ROE
Constant	0.089 (0.004)	0.174 (0.000)	0.086 (0.000)	0.115 (0.005)
DUALCL	-5.967 (0.598)	-3.081 (0.322)	1.557 (0.904)	-6.779 (0.531)
FOUND	-16.320 (0.106)	-2.778 (0.314)	15.657 (0.175)	-0.951 (0.921)
γ^{*2}	-0.559 (0.765)	0.341 (0.004)	0.202 (0.048)	0.684 (0.833)
F sig. Level	0.27	0.01	0.07	0.09
Adj. R ²	0.04	0.10	0.07	0.04

(significance level in parentheses)

Even though y^*_{2i} (PROTEC*) is significantly different from zero in two situations one can not make a clear interpretation of equation (5) since the estimated coefficients depend on each other. The sole purpose in the article is the first equation and the second equation serves more as an auxiliary equation to estimate the first one.

Notation: F(trust ownership in %), VL(voting limitation in %), OL(ownership limitation in %), CL(clause of interests), AP(approval of transfer of A shares), PR(Preemptive rights of A shares), SU(suspension of voting rights), AS(votes of A shares in %), $\frac{3}{4}$ (supermajority voting rights):

COMPANY

AARHUS OLIEFABRIK A
 AALBORG PORTLAND H B
 AARSLEFF PER(98/99): F(45%)
 ALBANI BRYGGERI B: F(22,7%)
 AMBU INTERNATIONAL B(98/99)
 BANG & OLUFSEN H B(98/99)
 BHJ INDUSTRI:F(25%)
 BORDING F.E.
BRYGGERIGRUPPEN: VL(10%),CI
 CARLI GRY
CARLSBERG B(98/99): F(55%), $\frac{3}{4}$
CHEMETALIC B(98/99): AP(A),AS(70,6%)
 CHEMINOVA Holding: F(47%)
 COLOPLAST B(98/99): AP(A),AS(45%)
 COLOR PRINT(98/99)
CUBIC MODULSYSTEM B(98/99): AP(A),AS(55%)
DANISCO(98/99): SL(7,5%),CI
DENKA HOLDING: PR(A).AS(51%)
DANSK DATA ELEKTRONIK B: AP(A), AS(64%)
 DANSKE TRÆLASTKOMPAGNI
 DANTAX RADIOINDUSTRI B: AP(A), AS(34%)
 DSV B: VL(1,8% A),AS(35%)
EGETÆPPER B: F(52%),PR(A),SU
 EUROCOM
FALCK: OL(15%),CI,AP(A)
 FLS INDUSTRIES B
 FLUGGER B(98/99)
 FREDGAARD RADIO(98/99)
 G. FALBE-HANSEN: F(16%),SU
 GLUNZ & JENSEN B(98/99): F(17%),AP(A),AS(5,7%)
GN STORE NORD: VL(7,5%),CI
 GVP INDUSTRI B(98/99)
 GYLDENDALS BOGHANDEL: F(32,2%)
HANSEN CHR. HOLDING B(98/99): F(59%)
HARBROES BRYGGERI B(98/99): AP(A),SU,AS(61%)
HARTMANN BRDR. B: F(58%),AP(A),AS(57%)
 HEDEGAARD P. PEDER
 HLJ INDUSTRI: F(29,3%)
HØJGAARD H. B: F(53%)
 HYGÆA-FARVER OG LAKKER
 HOFFMANN & SØNNER B: F(30,8)
 ICOPAL
 INCENTIVE: $\frac{3}{4}$
 IN WEAR GROUP
 ISS INT. SERVICE SYSTEM B
 ITH
 JACOB HOLM & SØNNER
 JAMO(98/99)

JULIUS KOCH(98/99): F(92,7%)
 JUNCKERS INDUSTRIER
 KLEE BRDR. B: PR(A),AS(24%)
 KORN OG FODERSTOF KOMPAGNIET
KOMPAN: PR(A),SU,AS(72%)
KØBENHAVNS LUFTHAVNE: OL(10%),CI
 LIC ENERGY
 LINAB
LOUIS POULSEN: PR(A),SU,AS(54%)
 MARTINGRUPPEN (98/99)
MIRCO MATIC B(98/99): AP(A),AS(55%)
 MIGATRONIC
MONBERG & THORSEN H. B: F(21%),PR(A),AS(61%)
 NEG MICON
 NKT HOLDING
NORDISK SOLAR: F(50,1%) via Solar Hold.
NOVO NORDISK B: F(68,4%), PR(A),AS(63%)
 NTR HOLDING B: F(31,4%)
NØRHAVEN: PR(A),AS(64%)
OBEL C.W. B: F(70%)
 OBJECTIVE B
 OBTEC
OVE ARKILD B: F(6,5%),AP(A),SU,AS(59%)
RADIOMETER B(98/99): AP(A),SU,AS(61%)
 RANDERS REB: F(24,2%)
 RIMAS - HEDEN HOLDING(98/99): F(46%)
ROBLON(98/99): PR(A),SU,AS(65%)
 ROCKWOOL INTERNATIONAL: F(27,2%)
 ROYAL SCANDINAVIA(98/99)
 SAMSON TANGE MASKINFABRIK(98/99)
 SANISTÅL
 SATAIR(98/99)
 SCHOUW & CO B: F(16%)
 SCANBOX(98/99)
 SDC DANDISC
 SIS INTERNTIONAL(98/99)
 SJÆLSØ GRUPPEN
 SKAKO
 SOPHUS BERENDSEN B
 SPÆNCOM(98/99: SU
 SUPERFOS
 SØNDAGSAVISEN
TELE DANMARK: OL(9,5%), CI, AP(A)
THRIGE-TITAN B: F(80,2%)
 TIVOLI(98/99)
 TOPSIL
 VEJEN TRÆLAST: F(9%)
 VESTAS WIND SYSTEMS
 VEST WOOD MØBLER(98/99)
 VT HOLDING B
 WESSEL & VETT(98/99): ¾
 WEWERS TEGLVÆRKER: F(22,9%),SU
WILLIAM DEMANT HOLDING: F(66%)
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