Master in Finance
BUSP70 Degree Project in Finance

LUND UNIVERSITY
School of Economics and Management

Do Women in Top Management Teams Have an Effect on Company Performance - Evidence from Scandinavia -

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June 2015

Abstract

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Course BUSP70 Degree Project in Finance, 30 ECTS

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Keywords TMT, Women, Gender Diversity, Scandinavia, Company Performance

Summary This paper investigates if a relationship exists between women in TMTs and firm performance for 187 Large- and Mid-Cap firms in Scandinavia for the period 2009-2013. Thereby adding to the scarce international evidence within the gender diversity in TMTs literature. The theoretical simultaneous relationship between performance and gender diversity in TMTs is taken into account and a 2SLS approach is applied. In general, the results from the 2SLS indicate that the inclusion of women in TMTs, as measured by four diversity measures, has a significant impact on firm performance as measured by Tobin's Q - while having no impact on performance as measured by ROA. Considering the weakness of the instruments employed, panel techniques are also estimated and find no significant effects.

Table of Contents

1. Introduction

Past decades has experienced considerable progress in regard to gender equality, and women have made advancements into domains historically dominated by men. However, despite becoming more common in the upper levels of regulatory, political and corporate settings – women are still underrepresented in leadership positions. In 2015, a mere 22% of senior leadership roles were held by women globally, a proportion that has barely changed over the past decade (Grant Thornton, 2015). Research on different characteristics and dynamics of the "upper echelon" teams and its connection toward the organizational output has also made progress since its inception over 30 years ago (Hambrick and Mason, 1984). Generally, the research has focused on demographic and heterogeneity aspects of teams in leadership positions, but the research into gender diversity is relatively scarce as noted by amongst others Francoeur et. al. (2008) and Dezö and Ross (2012). Additionally, most of the available evidence in regard to gender diversity in the "upper echelon theory" framework relates to Non-Executive Directors (NED), and are dominated by research into the U.S. market (ex. Campbell and Minguez-Vera, 2008; Adams and Ferreira, 2009; Erhardt et. al., 2003), although some international evidence exist: UK (Haslam et. al., 2010; McCann and Wheeler, 2011), Romania (Vintila et. al., 2008), Scandinavia (Randøy et. al., 2006) and Denmark (Rose, 2007; Smith et. al., 2006). NEDs are an organization's principal control device, since they seek to monitor and deter management from enhancing their own interests (Fama and Jensen 1983). It is however, the executive managers, the top management team (TMT) who run the day-to-day business.

Carpenter et. al. (2004) note that a firm's behavior and performance to a large extent is the product of the TMT, which after all are in charge of strategic and organizational decisions. Research into TMTs is a younger phenomenon in the "upper echelon" framework, yet again dominated by North American studies (ex. Krishnan and Park (2005); Lee and James (2007) with scarce international evidence. Moreover, TMT related papers are often concerned with more general TMT diversity (ex. Carpenter (2002); Bär et. al. (2009); Nielsen and Nielsen (2013); Zhang (2007)). The rarer inclusion of gender diversity in TMTs has provided mixed results. Some find a positive relationship towards female members of the TMT (Catalyst (2004); Krishnan and Park (2005); Dezö and Ross (2012); Francoeur et. al (2008)) whilst others find negative (Lee and James (2007); Bär et. al. (2009); Darmadi (2013)). Although mixed, four out of the seven papers indicate that gender diversity has a positive effect on performance, which makes us question the male dominance in TMTs. Obviously, multiple factors regarding the context and dynamics of how the TMT functions will vary across countries (Glunk et al., 2001). We will therefore add the Scandinavian context to the lacking international evidence.

Scandinavian culture is seemingly characterized by egalitarian values. From a corporate view, the inclusion of women in boardrooms enhances the belief that women are most welcome to address top positions. After all, Norway was the first country in the world to implement gender quotation for boards in 2003. The Swedish government encourages gender diversity via guidelines (Svensk Kod för Bolagsstyrning) and Denmark followed through with a similar regulation two years ago. Further, compared to the European region, Scandinavia find itself well above average for many areas concerning gender diversity. Considering the Glass Ceiling Index (Econonomist, 2015), scoring the best countries to be "a working woman" based on factors like wage, education, employment etc., we find further support the notion of Scandinavia as a progressive region in regards to gender equality. However, Scandinavian TMTs have not yet entered into the “gender balance zone”, the case where women constitute between 40-60% of the team (European Commission, 2013).

This study investigates whether the inclusion of women in TMTs has any implications on Scandinavian firm performance, and contributes to the literature in four ways. First of all, to the authors knowledge this study is the first of its kind for the Scandinavian region; Secondly, multiple gender diversity variables are employed to determine if there is a relationship between women in TMTs and firm performance; Thirdly we evaluate whether the markets seem to undervalue firms with women in their TMT in line with the findings of Haslam et. al (2010); and Finally the theoretically likely simultaneous relationship between women in TMT’s and performance is taken into account.

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The remainder of this paper is organized as follows. Section two presents existing literature and theories on TMT diversity and women in leadership positions. Section three describes the data and methods. Section four reports the results and analysis. Section five discusses implications of the employed methods while conclusion and suggestions for further research are presented in section six.

2. Theoretical Framework and Literature Review

The following section summarizes the relevant literature (Appendix A.1 gives a brief overview) and theories. Firstly, theories on women in leadership is presented. Secondly, TMT diversity literature is reviewed. Thirdly, some evidence from NED studies are presented. Lastly, our hypothesis' are introduced.

2.1 Women in Leadership Positions

Drawing from the situation described in the introduction, the fact that women are underrepresented in TMTs is prevalent. In general, there is a broad consensus that there is an existing barrier, an invisible glass ceiling, preventing women to break through to become members of this elite group (Cotter et. al., 2001). Token status theory suggests that women may be included in TMTs only to fulfill expectations of diversity. As a result the best individual is not necessarily chosen which would support a negative evaluation bias towards female leaders (Kanter, 1977).

Gender stereotyping is an issue affecting our perceptions of female performance in top positions. Lee and James (2007) finds evidence that investors in the U.S reacts negatively towards the appointment of women to CEO positions. This, they note, has a strong relation towards gender stereotyping. Kanter (1977) explains that people tend to use their perception of femininity to distort their expectation when evaluating female members of a TMT, which is a problem since it is not consistent with leadership roles. Some typical feminine characteristics are for example being emotional, sensitive or whiny (Catalyst, 2005). However, research aiming to describe female leadership styles do not support the notion that these characteristics influence leadership attributes. For example, Johansen (2007) found women to employ a different set of strategies than men, basically by paying more attention to the process than the outcome, and in turn found to have a positive relationship towards performance. Reviewing psychological literature Barber and Odean (2001) conclude that men are more likely to be overconfident than women. Drawing on this, Rau (2014) investigate whether women are more risk averse traders and finds that women realize less capital losses. Further, women are perceived as better managers during periods of crises since they possess better interpersonal skills, and more willingly accept the blame for failures, compared to men (Ryan et. al., 2011).

The glass cliff theorem, a phenomenon observed by Ryan and Haslam (2005), indicates that women are appointed to top positions directly following a crisis and thus becomes overrepresented in poorly performing firms. A contradictory study of women promoted to CEOs in Fortune 500 companies, finds no evidence of women being more likely to be appointed to top positions in struggling firms (Cook and Glass, 2014). However, they see a relationship between overcoming the barrier of female appointments to TMTs as a product of diversity in decision making mechanisms. In an all-male or male dominated decision making mechanism it is harder for women to break through, since male individuals are more likely to appoint members that are similar to themselves (Daily and Dalton, 1995), a phenomenon Kanter (1977) named homosocial reproduction. Since male decision makers generally are dominant in companies - men will be chosen to top positions. Supporting this view is both; Bruckmüller and Branscombe (2010) who suggest that the class cliff is more prevalent in companies with few women in the upper echelons, and; Cook and Glass (2014) who support that the proportion of women in the decision making bodies, have a larger impact on female appointments than firm performance. In their sample of Danish listed firms, Smith et. al (2006) find that there are more women in TMTs of companies with a more feminine character, for example the retail sector. Arbitidi et. al. (2003) compare competency of female managers in the "masculine" industry sector in Sweden, and conclude that there does not seem to exist any overall significant differences in regards to competency.

2.2 TMT diversity

Since the 1980's a growing issue of interest among researchers within the corporate strategy field has been the "upper echelon" theory (Hambrick and Mason, 1984), which suggest that managers view situations through their own personalized lenses. Unique experiences in life will affect how they are coping with managerial decision making, and performance outcome is determined by the groups - not the individual's - overall knowledge and efforts. Theoretically, there exist a common trade-off for the implications of a diversified TMT. Amongst others, Homberg and Bui (2013) emphasize two perspectives; (i) the *information-decision-making-perspective*, which imply better decision making through a broader scope of information due to the demographic diversity of a heterogeneous TMT, and (ii) *similarity-attraction-perspective*, which enhance the benefits of homogeneous TMTs, since the uncertainty of the unfamiliar personal bonds are mitigated and eliminate fear and stress related towards such feelings.

Existing TMT literature has been predominantly focused on the more general diversity aspect of TMTs (ex. Glunk et. al., 2001; Zhang, 2007; Nielsen and Nielsen, 2013). These diversity measures are typically some or many demographical features, such as age, education, tenure, nationality etc. Carpenter (2002), for example, finds a positive relationship between TMTs educational, functional and tenure heterogeneity on performance, assuming that organizational complexity is taken into account. Bär et. al. (2009) finds informational diversity (*industry tenure and education*) to have a positive impact on mutual fund team performance while social diversity *(gender and age)* influences performance negatively by increasing conflicts. They make no distinction in favour of any gender, but argue that, *ceteris paribus,* gender heterogenous teams perform worse than homogenous ones.

The few studies focusing solely on gender diversity in TMTs present contradictory conclusions. Investigating reactions to CEO appointments in the U.S, Lee and James (2007) notice more negative reactions towards female appointees compared to those of men. However, the reactions are smaller if it concerns women joining the TMT through another top position, and even less noticeable if she is hired from within the company. Contradictory findings are presented by Catalyst (2004) which assert that, using a sample of 353 Fortune 500 companies, the upper quartile regarding gender ratios in TMTs outperform the lower quartiles, using ROE and raw stock returns as their performance measures. Also Krishnan and Park (2005) see a positive relationship towards the proportion of women and organizational performance on Fortune 1000 firms. Additionally, they stress the fact that the inclusion of women in TMTs not necessarily result in better performance. Instead, they argue that firms who appoint women to their TMTs are more successful following the fact that they promote based on merit. Looking into whether women in TMTs improve task performance, Dezö and Ross (2012) argue that there are informational and social diversity benefits related to having female members. However, they are only able to show that this is improving task performance in companies with a strong focus on innovation in their strategy. International evidence is provided by Darmadi (2013) who finds that women affect performance negatively in Indonesia.

2.3 Literature regarding NEDs

The literature on gender diversity among NEDs finds contradictory results as well. On the one hand, Haslam et. al. (2010) found that companies with all male boards on the FTSE 100 enjoy a 37% subjective valuation premium. As measure by comparing the accounting based measures ROA and ROE towards Tobin's Q. A less extreme case is McCann and Wheeler (2011), who also explores the business case of having women on boards in FTSE 100 firms, but find no significant difference in board characteristics. Thereby, they find no evidence for women resulting in changed performance, one way or another. Lastly, some find positive effects of female members. Vintila et. al. (2008) examined the percentage of women on boards on the Bucharest stock exchange, aiming to see whether it positively influence performance. They find that the percentage of women need to be at least 22,5% to positively influences the industry adjusted Tobin's Q. Campbell and Minguez-Vera (2008) found board gender diversity, as measured by two heterogeneity indexes, to have a positive effect on firm value and the opposite causal relationship to be insignificant. In their research into U.S firms Adams and Ferreira (2009) see an average negative effect of gender diversity on the board in relation to company performance, and suggest that mandating female quotations can destroy value for well-governed firms. Erhardt et. al. (2008) however, enhances the positive effects of having a diverse board, suggesting that this is a way to improve financial performance. The study of Francoeur et. al (2008) focus more on the risk profiles of the companies, and suggest that gender diversity, both regarding TMTs and NEDs, will improve performance when the company operates in a complex environment.

For the Scandinavian region, Rose (2007) and Smith et. al. (2006) provides Danish evidence. Rose (2007) find no relationship between the proportion of women on boards and performance, while Smith et. al. (2006) finds that the women appearing on boards are extremely qualified individuals, and that this is strongly correlated to an observed improved performance. Including a larger spectrum of diversity measures, Randøy et. al. (2006) find no significant effect of age, gender and national diversity on boards of the 500 largest Scandinavian companies.

2.4 Hypothesis

In line with existing research, constituting mixed findings on the relationship between women in TMTs and performance, we postulate our first hypothesis:

H1: *Women in Top Management Teams in Scandinavia have a significant effect on firm performance.*

Furthermore, following the interesting distinction made by Haslam. et. al. (2010), we consider the possibility of a similar investor bias for the Scandinavian region and postulate our second hypothesis;

H2: *There exists an investor bias in Scandinavia which affects the subjective performance, as measured by Tobin's Q.*

3. Data and Methodology

The following section describes the data, variables and methods employed to analyze the relationship between gender diversity and firm performance in Scandinavia. Measures of TMT diversity are gathered manually from annual reports and the internet, while financial data is gathered from Thomson Reuters Datastream. Tests and regressions are run in EViews.8.

3.1 Sample Data

The data consists of Mid and Large Cap firms from Sweden, Norway and Denmark (Scandinavia) for the period 2009 – 2013. The firms were selected via the built in "criteria search" in Thomson Reuters Database so that only firms defined as belonging to one of the Scandinavian countries and having at least one equity on its national market were included in the sample. Financial and firm specific variables as well as industry classification (ICB) codes were collected from the database for the selected firms. The remainder of the data, TMT specific variables, was gathered by hand from annual reports. When necessary, and possible, information was complemented via web searches. Excluding firms with broken fiscal year (*fiscal year not congruent with calendar year*) and those with essential missing variables. For example, a number of firms hold no information regarding their TMT except the CEO. Our final sample consists of 187 firms, a total of 935 observations, and is summarized in Table 1.

Table 1: Distribution of Companies in the Sample

	Total	Large-Cap	Mid-Cap
Sweden	98	56	42
Denmark	32	14	18
Norway	57	20	37
Total	187	90	97

Source: Compiled by authors. The table summarizes the amount of companies in the sample distinguishing between country and size (Large-/Mid-Cap)

Removing Small Cap firms can have several implications on the final results and it is possible that the relationship we are searching for between women in TMT and firm performance is more prevalent in smaller firms. However, we expect the information portrayed in the annual reports regarding the TMTs characteristics to be richer for larger firms. This suggestion seems to be supported considering the results of our data gathering process, where the finally included Mid-Cap firms generally contain less observations regarding informational diversity compared to their Large-Cap counterparts (Appendix A.2). Also, we believed it to be more likely to find additional and complementing information on the web for managers of larger firms. Finally, similar studies from the U.S. apply data from the S&P500, Fortune 1000 and similar, for comparative purposes we thereby need the larger firms from Scandinavia.

3.2 Dependent Variables

We employ two different performance measures in our study. Firstly, we employ the accounting-based performance measure Return on Assets (ROA), defined as the ratio between the firm's net income in relation to the book value of assets (Erhardt et. al., 2003). Secondly, we employ the market based performance measure Tobin’s Q (TQ). As of late, accounting based measures are not viewed all too favorably in the literature. Albeit being considered measures of current year’s performance, it has been criticized for being backward looking and subject to biased calculations (ex. earnings management) and the interpretation of accounting regulations (Dezö and Ross, 2012). In contrast, Tobin’s Q takes the markets future expectations of the firm’s performance into account by comparing the firm’s market value with the replacement value of its assets. However, Tobin’s Q is not without criticism. Most obvious is the fact that Tobin’s Q is an approximation and thereby highly dependent on how it is defined. It should also be mentioned that, since it in the end is dependent on stock-based performance, Tobin’s Q will be influenced by market perceptions and sentiment, which in turn may be well-beyond the actual control of the firm (Haslam et al, 2010). There are multiple approaches used to approximate Tobin’s Q in the literature, for example Vintila et.al. (2014) employ an industry adjusted estimate, while Adams et. al. (2009) defines it as the ratio of the firm's market value over its book value of assets. In this study we employ the definition used by Rose (2007) and Campbell and Minguez-Vera (2008), where Tobin’s Q is the sum of the market value of equity and the book value of debt divided by the book value of total assets. In the eye of an investor, a firm with *TQ* larger than one is seen as efficiently employing available resources and subsequently creating value while the opposite holds for those with Q below one. To reduce skewness, *TQ* is included in its natural logarithmic form.

For the reasons mentioned above, Tobin's Q has become the predominant performance measure in more recent literature, however employing both measures is not uncommon, as exemplified by amongst others Dezö and Ross (2012), Adams and Ferreira (2009) and Darmadi (2013). Haslam et. al. (2010) makes a distinction between the measures, categorizing ROA as an "objective" measure of firm performance while Tobin's Q is considered "subjective". This distinction comes from their review into the differences in results presented in the glass cliff literature. Despite agreeing with the literature that parts of the differences in results comes from the fact that the studies are performed in different countries, as well as affected by different other factors. They withhold that one important distinction that the literature misses, is the fact that the glass cliff phenomenon arises from prejudice *(socio-psychological factors*) rather than economic factors. Thereby, if the glass cliff phenomenon holds, an investor would take the hiring of a woman into top positions in the firm as an indication of "bad times" and believe the firm to be in financial trouble, and hence adjust their market expectations. Interested in whether any prejudice exists in the Scandinavian market, we make the same general distinction and consider TQ as a subjective measure that account for possible investor bias.

3.3 Explanatory Variables

Our explanatory variables measures gender diversity in the TMT and constitutes of three different categories – a dummy variable, the ratio of women in TMTs and two gender diversity indexes. Women were identified via the combination of name and picture in the annual reports, and internet searches were employed if necessary. The authors believe themselves to be well-versed in Scandinavian and Anglo-Saxon names, which constitute the overwhelming majority of TMT members in the sample, and thereby believe the number of women in the sample to be correctly specified. However, the risk of having incorrectly specified individuals exists, since gender is never explicitly specified in annual reports, which will always be a potential problem for this kind of studies.

Generally the TMTs in the literature seem to be defined as the top two tiers of executive officers within a firm, and thereby captures all officers at the vice-president level and above (Carpenter, 2002; Zhang, 2007) while Catalyst (2004) define it as those corporate officers who have day-to-day responsibility for corporate operations, power to legally bind the firm and represent the firm on major decisions. However, since titles change, may be firm specific and at times difficult to place in a hierarchal sense, we employ the definition used in Nielsen and Nielsen (2013), who define the TMT as the executive team presented in the annual report. This is a readily available and straightforward categorization which holds the added benefit that the firm themselves define who constitute the executive management team. The average TMT size in our sample consists of 7,2 persons, which probably indicate a somewhat more inclusive definition than the U.S. literature with an average around 5,9 (Dezö and Ross, 2012), Indonesia with average 4,5 (Darmadi, 2013) and China 5,8 (Zhang, 2007). However, lacking comparable Scandinavian evidence, we cannot exclude that the difference is purely due to cultural factors.

Firstly, we employ a simple dichotomous variable (WTMT) which takes the value one if there are one or more women in the TMT and zero otherwise. This variable makes it possible to suggest whether the mere presence of women seem to have any significant effect on performance. Secondly, we employ the ratio of women in the TMT in relation to team size (PWTMT) enabling tests on whether a higher (lower) percentage of women in TMT results in better (worse) performance. Finally, we employ two different estimates for gender diversity which takes into account the social groups in the TMT (female/male) as well as the distribution of members between them;

i) Blau index (BLAU) as employed by Campbell and Minguez-Vera (2008), where gender diversity is given by;

$$Blau\ Index = 1 - \sum_{i=1}^{n} P_i^2$$

Where $i = 2$ represents the two categories; female and male. Pi represent the proportion of team members belonging to category i. The Blau index thereby ranges between zero representing no diversity and a maximum value of 0,5 when there is an equal number in each category.

ii) Teachman entropy-based index (TEACH) employed by Bär et al. (2007) where gender diversity is given by;

$$Teachman\ Index = \sum_{i=1}^{n} -P_i * \ln(P_i)$$

Denotations are interpreted as in Blau and cases of no diversity results in the value of zero, while the maximum value (equal numbers in each category) has increased to 0,69. Essentially, the only difference between the variables is that Teachman is more sensitive toward small changes in diversity (Baumgärtner, 2006)

3.4 Control Variables

Following the upper echelons theory a firm's behavior and performance should be linked toward how well the TMT functions. Bär et al. (2007) found informational diversity to have a positive impact, while social diversity (*gender)* had a negative impact, on team performance in the mutual funds industry. Dezö and Ross (2012) argue that more heterogeneous groups should result in higher quality decisions due to different knowledge and points of view within the team. Social diversity is to an extent already covered by the explanatory variable, but we add the proportion of foreigners (*non-nationals*) in TMT (*PFOR*) as an additional measure (Rose, 2007). We include informational diversity by including a measure for TMT tenure (*VAR_TEN*) as well as formal education (*VAR_EDU*). Tenure diversity is captured by the variation in TMT tenure among members of the team, where we consider a low variation in TMT tenure as an indication of shared experiences and knowledge regarding the firm and how to efficiently communicate within the TMT. This facilitates decision making and subsequently firm performance (Zhang, 2007). Educational background heterogeneity is captured by the variation in formal education within the TMT where the highest academic degree achieved by an individual manager within the TMT is transformed into years of formal education. A master's degree is thereby transformed into five years, a Bachelor degree three years and so forth (Bär et al., 2007).

Additionally we employ a broad set of firm specific control variables used in the TMT literature; (i) a dummy variable for firms with all male boards (*MBOARD*) are included to control for the potential of a positive "subjective" valuation premium as found by Haslam et.al. (2010); (ii) leverage (*LEV*) as measured by the ratio between total debt and total assets and (iii) firm size as measured by the total assets (*SIZE)* - probably the two most common control variables from the literature (ex. Dezö and Ross, 2012; Darmadi, 2013; Campbell and Minguez-Vera, 2008); (iv) Growth in sales (*SALESG*) as measured by the relative increase in sales compared to previous year (Vintila et. al., 2014); and additionally two variables employed by Dezö and Ross (2012) - (v) a measure for the age of capital stock (*AGECAP*) which, since the remaining useful life of an asset should be larger in relation to depreciation expense, can be indirectly defined as the depreciation expense in relation to net property, plant and equipment and (vi) the intensity of capital expenditure (*CAPEX_INT*) defined as the previous year's capital expenditures in relation to assets.

Subsequently, the employed control variables can be divided into three categories; social diversity, informational diversity and firm characteristic variables. However, there are some clear restrictions in the data employed which forces us to adapt. Generally, the financial data gathered from Thomson Reuters Datastream, and employed as firm specific control variables (*except age of capital stocks*), covers the majority of the observations included in our sample. This is however not the case for the manually gathered variables for social and informational diversity, where around 64% of VAR_EDU and 67% VAR_TEN for the included observations could be calculated using the information from annual reports and the internet. If all CV included, in a multivariate context, we would have to base our regression on 422 observations. We therefore split the estimations into two models; Model 1 which include all firm specific variables (*except age of capital stock*) and Model 2 which includes all control variables. To reduce skewness; sales growth, capital expenditure intensity, size and age of capital stock are used in their natural logarithm form.

3.5 Endogeneity and Reverse Causal Effects

Endogeneity is pervasive and essentially an unavoidable problem in corporate finance research. It arises when the error terms is correlated with the explanatory variable, thereby violating the fourth OLS assumption (e.g. $cov(x_j, u) = 0$), and is the primary cause of inference problems (Roberts and Whited, 2013). There are three sources of endogeneity; (i) Omitted variables (OV), referring to the fact that explanatory variables are excluded from the regression model due to various reasons; (ii) Measurement Error (ME) following the fact that most variables in corporate finance literature is difficult to quantify, or unobservable, creating the need for approximations; and (iii) Simultaneity, following the fact that in some cases dependent variable and explanatory variable(s) are determined in equilibrium, so that it can be argued that y causes x and vice versa - consequently raising concerns of reverse causality (Roberts and Whited, 2013). Concerning the literature on gender diversity in relation to firm performance, both Campbell and Minguez-Vera (2008) and Dezö and Ross (2012) note that a reverse causal relationship could exist between gender diversity in TMTs and firm performance, and that such a relationship is rarely articulated in the literature. This relationship arises from the fact that successful firms, having the necessary excess resources, are more likely to strive towards the aspirational norm of gender diversity (Dezö and Ross, 2012). Hence, the positive relationship found between women in TMTs and performance, in for example Catalyst (2004) and Krishnan and Park (2005), could possibly be driven by this reverse causality and subsequently the result of biased inference.

Considering the potential existence of simultaneity bias for the relationship in question, we rely on exogenous variation from an instrumental variable (IV) to account for the problem, and apply the two-stage least squares (2SLS) approach. However, being aware that such a relationship might not exist[1] we will also apply panel techniques. It is however likely that we have OV bias, since for example the ability of the executive managers in question is unobservable and thereby omitted from our models. This type of endogeneity can be controlled for using fixed and random effects.

3.6 Model Specification

To control for the effect of women in TMTs on performance we estimate multivariate regression models for unbalanced panel data. As mentioned in section 3.2 we split the control variables into two categories based on the number of observations available, resulting in two model specifications. Each model will thereby be run eight times (2x4) specifying the model once for each performance measure in combination with each one of the explanatory variables.

Model 1: $\mathrm{PERF}_{i,t} = \beta_0 + \sum \beta_j \, WOMAN_{j,i,t} + \sum \beta_j \, CV1_{jit} + \varepsilon_{it}$

Model 2: $\mathrm{PERF}_{i,t} = \beta_0 + \sum \beta_j \, WOMAN_{j,i,t} + \sum \beta_j \, CV1_{jit} + \sum \beta_j \, CV2_{jit} + \varepsilon_{it}$

Where PERF denominates the two measures of performance employed, ROA and Tobin's Q; *WOMAN* denotes each of the four different measures for gender diversity in the TMT (*DWOM, PWOM, BLAU and TEACH*); CV1 are firm specific control variables (*SIZE, LEV, LN_SALESG, LN_CAPEX_INT* and *MBOARD*); CV2 are control variables for TMT diversity and one firm specific variable (*LN_AGECAP, PFOR, VAR_TEN* and *VAR_EDU*); and finally ε_{it} denotes the error term.

[1] Exogeneity is not rejected in 30/64 cases (Appendix A.10)

Panel data has the added benefit of being able to allow us to correct for unobservable heterogeneity which, if left unchecked, could lead to biased coefficients (Roberts and Whited, 2013). However, controlling for heterogeneity is not the main reason for employing panel data but rather the fact that we obtain more observations, variation, degrees of freedom and so forth, resulting in higher efficiency (Brooks, 2008). Additionally, we test for multicollinearity and conclude this is not an issue. The manual Breusch-Pagan Godfrey test for heteroskedasticity is employed in EViews, and found to be a concern; we thereby consistently apply White Robust Standard Errors (diagonal) to control for the problem of non-constant variations in the residuals (Brooks, 2008).

3.6.1 Two-Stage Least Squares (2SLS) and Selection of Instrumental Variable (IV)

As mentioned in section 3.5 there are strong theoretical arguments that our performance measures and women in TMTs are determined simultaneously. A potential solution to this problem of endogeneity is to rely on exogenous variation, retrieved from an IV, and estimated using the two-stage least squares approach (2SLS). Reconsidering Model 1 from section 3.6 the following two steps are estimated:

Step 1: $WOMAN_{i,t} = \beta_0 + \sum \beta_j \, CV1_{jit} + IV_{jit} + v_{it}$

Step 2: $\mathrm{PERF}_{i,t} = \beta_0 + \sum \beta_j \widehat{WOMAN}_{it} + \sum \beta_j \, CV1_{jit} + \varepsilon_{it}$

In the first step we estimate the predicted values of the endogenous variable $\widehat{WOMAN}_{it}$ as a function of all exogenous variables (*control variables*) and instruments. The predicted values from the reduced form equation then replace the endogenous variable in the structural equation and are regressed as a function of the dependent variable. This process is performed automatically by the software (EViews), but is intuitively important: In the first step, the variation in the endogenous variable that is correlated with the error term ε_{it} ("the bad part") is removed, making it possible to regress the endogenous variable with only the part of its variation that is uncorrelated with the error term ("the good variation") (Roberts and Whited, 2013). It is thereby the IV's job to isolate the "good" variation of the endogenous variable while ignoring the "bad". To be able to fulfill this function, the IV must be considered valid, and fulfill the relevance and exclusion criterion (Angrist and Pischke, 2009). The relevance criterion states that the partial correlation between the endogenous variable and the IV may not be zero, and can be controlled for by testing if the coefficients in the first stage equation are different from zero using the Wald test. The exclusion criterion on the other hand cannot be tested for since it requires that the Cov(IV_{it}, ε_{it}) and the error terms are unobservable. This is consequently bridged theoretically, by making sure that the IV only has an effect on the dependent variable via its effect on the exogenous variable.

Considering the scarcity of women in TMT's and the multiple hurdles such as the "glass cliff" as well as other prejudices faced by women trying to make a career, it should be more likely for a woman to reach the top if the number of available positions is larger. In other words, we argue that, ceteris paribus, it is more likely that women are appointed to larger TMTs than smaller ones, and include TMT size as an instrument. To our knowledge there should be no relationship between TMT size and firm performance. It is rather that the size of a firm's TMT is determined by a firm specific considerations in regards to the organizational structure. Having a large TMT for certain firms should lead to inefficiencies and vice versa. Adding industry dummies to the IV is however more questionable - and the discussion of its validity is made further in 4.2 and the weakness of our IV and the implications entailed are discussed in section 5.

3.6.2 Panel methods – Fixed or Random effects

As mentioned in section 3.5 the simultaneous relationship between our dependent and explanatory variable might not exist, considering the results of the Hausman tests (Appendix A. employed. We thereby test for standard panel methods. Standard panel methods can broadly be categorized into two classes; fixed (FE) and random effects (RE). If the unobserved variable(s) causing endogeneity can be assumed as constant over time, panel methods can help alleviate concerns of endogeneity and Angrist and Pischke (2009) notes that fixed effects should reduce the problem of OV. The fixed effects model is easiest described as adding dummies for each cross-section and/or time period. For the cross-sectional case, each firm would thereby be given its own time-constant intercept. Or in other words, each firm will essentially be compared to itself in relation to women in TMTs and performance. Similarly to the FE model, cross-sectional random effects also imply that each firm is given its own time-constant intercept, however this intercept now originates from a common sample intercept plus an additional random variable, which determines each cross-sectional units random deviation from the sample intercept. RE models are more efficient, since fewer parameters need to be estimated, however it is only valid when the composite error termω_{it} (or both ε_{it}

and v_{it}) is uncorrelated with all explanatory variables. FE is tested for using the redundant fixed effects test in EViews, while RE is tested for using the Hausman test.

3.6.3 Robustness of the sample

To test the robustness of our results we re-specify our sample data into three different samples, to make sure that any potential effects persists and/or explain our results; Firstly, we exclude financial firms from the sample which is how the literature generally treats the industry since they follow different regulations, which in turn might bias the estimates of the performance measures employed; Secondly, we exclude Denmark from the sample following the fact that the country consistently scores lower on gender diversity measures in comparison to the other two Scandinavian countries. Congruent with these reports, they also have the lowest percentage of firms with women in TMTs (37%) and an average of 8,5% of women TMTs, which can be seen in Table 2.

Table 2: Distribution of Women in TMTs by Country

	n	WTMT	%	TMT Size	%WTMT
Sweden	485	360	74%	8,0	16,8%
Denmark	158	59	37%	5,3	8,5%
Norway	280	160	57%	6,9	11,5%
Total	923	579	63%	7,2	14%

Source: Compiled by authors. The table provide an overview of the distribution of Women in TMTs by country

Finally, we reproduce the idea of the sample used in Catalyst (2004) and compare the worst quartile with the best quartile. The quartiles are thereby divided into (i) Percentage of women in TMT and if same value (ii) those with highest Tobin's Q is selected for each year. The distribution of the sample best vs. worst quartiles is summarized in Table 3.

Table 4: The Best vs. Worst Quartiles

	n	N	n/N
Large-Cap	209	450	46%
Mid-Cap	247	485	51%
Swe	260	490	53%
Den	66	160	41%
Nor	130	285	46%
Total	456	935	49%

Source: Authors' calculations. The table present the distribution of the Best vs. Worst quartiles sample

The previously mentioned tests are then employed for each of the samples to indicate if we reject exogeneity and 2SLS can be used, and whether any unobserved heterogeneity remains and there is need for fixed effects.

4. Results

This section presents the results of the study. Firstly we go through the descriptive statistics. Secondly, the results from 2SLS, and finally the panel estimation are presented.

4.1 Descriptive Statistics and correlation

From appendix A.3 we note that our initial hypotheses seem to be supported in regards to the Scandinavian region. Tobin’s Q is approximately 44% higher for firms with Women in TMTs, and we note that splitting the sample into Best vs. Worst Quartiles, the difference increases to approximately 70%. ROA, however, is approximately 1,4% lower, whereas once again the difference increases for the Best vs. Worst Quartiles where ROA becomes approximately 3% lower. Calculating the two-tailed t-test in Excel, we cannot reject the null at 1% level for either - and can thereby not conclude that the difference observed is the result of significantly different performance for firms with or without women. In other words the difference may indicate that women in TMTs lead to difference in performance. Still, in line with Hypothesis 2, we notice that this difference is percentually smaller and negative for the accounting based measure ROA. This plausibly indicates that women have less impact on objective performance compared to market performance. As noted by Dezö and Ross (2012), Tobin’s Q is ultimately determined by investor’s perception and the market, and there has been an increasing focus on diversity from an investor perspective in later years. However, we need to interpret the ROA with care. In line with the findings of Krishnan and Parsons (2008), increasing gender diversity in TMTs results in higher earnings quality. That is, the reported accounting earnings will be closer to economic reality. The fact that ROA is lower for firms with women in their TMTs could thereby be a function of higher earnings quality as well.

Descriptive statistics of the variables employed are reported in Appendix A.4. We note that all variables are non-normally distributed following the fact that skewness is different from zero and kurtosis different from 3. Our sample indicates that 63% of Scandinavian firms have women in TMTs, a number considerably higher than for Indonesia's 38% (Darmadi, 2013), and for the U.S. S&P 1500 of 23,6% (Dezö and Ross. 2012). At the same time, the average percentage of women in TMTs of 14% is also higher compared to Indonesia with 12% (Darmadi, 2013) and the U.S. (353 firms from the Fortune 500) of 10,2% (Catalyst, 2004). What is interesting to note, in relation to Catalyst (2004), is the difference in the percentage of women in TMTs for the Best vs. Worst Quartiles. Thir worst quartile has an average of 1,9% compared to our 0%, and their best quartile has an average of 20,3% compared to our 32%. The differences in Best vs. Worst Quartiles for our sample is summarized in Appendix A.5

The mean values of Tobin's Q and ROA are 1,28 and 4,3% respectively. Our Tobin's Q are below what Darmadi (2010) finds in Indonesia with 1,85 and 3,6% respectively as well as Campbell and Minguez-Vera (2008) for Spain with 1,64 and 5,5%. On the other hand, the mean are larger than in the US sample of Dezö and Ross (2012), which find the mean of Tobin's Q to be 1,04. The distribution of women in TMTs are presented in Appendix A.6. We note that 0% is generally the most common observation. Existing in the "gender balance zone" between 40-60%, are only about 8% of the observations for 2009-2011, 11% in 2012 and 13% in 2013. This indicates an increase in gender diversity in TMTs for recent years, but more importantly stresses the fact that there is still a long road ahead. Correlations for Model 2 (N=422) are shown in Table 4 below, while correlations for Model 1 (N=881) are presented in Appendix A.7.

Table 4: Correlation Matrix Model 2

	Mean	St.d	1	2	3	4	5	6	7	8
1. SIZE	16,46	1,81								
2. LEV	0,26	0,19	0.263740**							
3. LN_SALESG	0,04	0,36	-0.078065	-0.001449						
4. MBOARD	0,07	0,25	-0.187405**	-0.131326**	0.081531					
5. LN_CAPEX_INT	0,05	0,06	-0.025808	0.135961**	-0.011687	0.021317				
6. LN_AGECAP	-2,53	1,98	-0.129835**	-0.489797**	0.015582	0.073670	-0.168809**			
7. VAR_TEN	14,10	15,32	-0.085422	-0.040916	0.022992	-0.131030**	0.012277	-0.072311		
8. VAR_EDU	1,62	1,50	-0.131231**	-0.047560	-0.002362	0.027236	-0.034451	-0.004615	0.026668	
9. PFOR	0,18	0,24	-0.046569	-0.156842**	0.057073	0.143680**	0.011838	0.235968**	-0.049536	-0.012580

The table show the correlation between the independent variables in Model 2

We note that the highest correlation observed for both models is -0,49 between LN_AGECAP and LEV. Generally the correlation are below 0,2, hence well below the rule of thumb for multicollinearity of 0,8 and we conclude that our sample does not suffer from multicollinearity.

4.2 2SLS – First Stage Regressions and IV Correlations

All IV specifications are tested using Wald-tests on the first stage regressions and are found to be significantly different from zero for all specifications - thereby satisfying the relevance condition. The exclusion condition, on the other hand, in regards to TMTSIZE as discussed in section 3.6.2 and as shown by the low correlation toward LN_TQ (0,086) and ROA (0,048) should also be satisfied (Appendix A.8). However, concerns of weak IV, and the bias this entails, are raised when we consider the R^2 in the first stage equation. Only including TMTSIZE indicates that the model explains between 7-22% of the variation in WOMAN. It would thereby seem that albeit valid, TMTSIZE is weak, and not sufficient compared to the example of a strong IV put forth by Roberts and Whited (2013) where R^2 of the first stage equation between the endogenous variables on IV was 0,4. In an attempt to strengthen our IV, industry dummies are added. We have already noted that the relevance condition is satisfied and we further note that the R^2 increases for all first stage equations, and that the regression of endogenous variable on IV explains between 21-41% of the variation in WOMAN, and 6-7 industry dummies out of 9 are found significant (Appendix A.9a and A.9b). However, the exclusion condition comes into question. Firstly, we note that the correlations for Healthcare (0,33) and Financials (-0,4) in relation to LN_TQ are significant and quite high. Secondly, from a theoretical perspective it is harder to defend the idea that industry dummies only affect firm performance through its effect on the endogenous variable. Nevertheless, (i) the high number of significant industries in the first stage equations, (ii) the fact that we can reject exogeneity in 34/64 cases (Appendix A.10) compared to 23/64 cases for when only using

TMT Size, and (iii) the fact that R^2 increases with 0,12 on average when industry dummies are added - results in the inclusion of industry dummies in the IV framework. Implications of this and the potentially weak IV employed are further discussed in section 5.

4.3 2SLS

The results from the 2SLS specifications for the original full sample are shown in the following sub-chapters through Tables 6a-6d for Model 1 and 2, with LN_TQ and ROA as dependent variables respectively. We previously noted that exogeneity was rejected for 34/64 specifications (Appendix A.10). Despite being unable to reject exogeneity for all specifications, if we assume existence simultaneity, the 2SLS should be the appropriate estimation technique and is subsequently run for each specification.

4.3.1 2SLS - Full sample

In summary, exogeneity was rejected for all model specification except ROA Model 2 and one specification for ROA Model 1(PWTMT) at the 5% level.

Table 6a: 2SLS (Full Sample) Model 1

Dependent: LN_TQ								
Independent:	WTMT **Model 1 (N= 881)**		PWTMT **Model 1 (N= 881)**		BLAU **Model 1 (N= 881)**		TEACH **Model 1 (N= 881)**	
	Coefficient	Std	Coefficient	Std	Coefficient	Std	Coefficient	Std
C	2.498638**	0.223671	2.482248**	0.222389	1.804790**	0.370521	2.492002**	0.221987
WTMT	0.344466**	0.087543	1.127511**	0.349161	0.475764	0.290047	0.645124**	0.169149
SIZE	-0.162680**	0.014041	-0.157071**	0.013611	-0.113190**	0.024198	-0.160790**	0.013815
LEV	-0.292330	0.138968	-0.327605*	0.140966	-0.022282	0.225633	-0.319452*	0.140211
LN_SALESG	0.114874	0.074026	0.107829	0.074627	0.191107**	0.067925	0.110491	0.073372
LN_CAPEX_INT	0.806244*	0.389026	0.803567*	0.383537	0.159490	0.482350	0.833663*	0.386107
MBOARD	0.022751	0.077202	-0.013825	0.080616	0.075232	0.116759	0.004623	0.078750
R-squared	0.188034		0.195945		0.080047		0.192593	
Adjusted R-squared	0.182460		0.190425		0.066746		0.187050	
S.E. of regression	0.600072		0.597142		0.583953		0.598385	
F-statistic	39.53195**		37.91866**		7.066579**		39.01092**	
Hausman	*		-		*		*	

The table shows the 2SLS regression results for the Model 1 specification on the Full Sample with LN_TQ as dependent variable. An indicator of the result of the Hausman test is included in the last row. **p≤0,01 and *0,01<p≤0,05

We note that WOMEN has a significant positive relationship toward LN_TQ at the 5% significance level for all specification except BLAU, where the effect is insignificant (*p-value of 0,1*). This could potentially follow from the fact that Teachman (TEACH) by design is better at capturing small changes in diversity compared to BLAU. Regarding the control variables we note that SIZE has consistently significant negative effect, that LN_CAPEX_INT has a significant positive effect except for BLAU, and that leverage is significantly negative in the PWTMT and TEACH models. In regards to economic significance, log-level[2] implies that the coefficient measures the percentage change in the dependent variable following a unit increase in WOMAN variable. WTMT coefficient of 0,345 would thereby indicate an 34,5% increase in TQ which in turn results in an indicated increase in firm value, approximately at the midpoint of the data, of 54,8 million SEK[3]. While increasing percentage of women by adding one woman to the average TMT (7 people) would indicate a 15,8% increase in TQ (0,14*1,128) and result in an implied increase in firm value of approximately 24,9 million SEK. However, we should interpret these numbers with care since following the fact that most firms already have women in their TMTs and since most observations consist of 0-20% women. Nevertheless, compared to the results of Dezö and Ross (2010) where WTMT increased firm value by $42 million, these effects are rather small.

Table 6b: 2SLS (Full Sample) Model 1

Dependent: ROA								
Independent:	WTMT **Model 1 (N= 881)**		PWTMT **Model 1 (N= 881)**		BLAU **Model 1 (N= 881)**		TEACH **Model 1 (N= 881)**	
	Coefficient	Std	Coefficient	Std	Coefficient	Std	Coefficient	Std
C	1.008316**	0.048651	1.007411**	0.048539	1.007954**	0.048662	1.007889**	0.0000
WOMAN	0.018839*	0.013200	0.053009	0.057067	0.043639	0.041416	0.031467	0.2414
SIZE	0.003310**	0.002927	0.003691	0.002919	0.003554	0.002943	0.003492	0.2350
LEV	-0.138712**	0.025773	-0.140515**	0.026014	-0.140106**	0.025918	-0.140146**	0.0000
LN_SALESG	0.056715*	0.022527	0.056338*	0.022524	0.056439*	0.022546	0.056466*	0.0124
LN_CAPEX_INT	0.132944	0.074045	0.131337	0.073786	0.131671	0.073812	0.133141	0.0729
MBOARD	-0.048973*	0.025053	-0.050966*	0.024680	-0.050399*	0.024851	-0.050068*	0.0448
R-squared	0.066595		0.073523		0.071117		0.069540	
Adjusted R-squared	0.060187		0.067163		0.064740		0.063152	
S.E. of regression	0.114861		0.114434		0.114582		0.114679	
F-statistic	13.19301**		13.03657**		13.07390**		13.10672**	
Hausman	**		-		*		*	

The table shows the 2SLS regression results for the Model 1 Specification on the Full Sample with ROA as dependent variable. An indicator of the result of the Hausman test is included in the last row. **p≤0,01 and *0,01<p≤0,05

[2] $100 * \beta_i = \frac{\%\Delta PERF_i}{unit\ \Delta\ WOMAN_i}$

[3] Average firm size 124,3 m (*replacement value*) multiplied by average TQ of 1,28 would thereby imply firm value of around 159,1 million (124,3*1,28) at the midpoint in the data.

WTMT is the only specification found to have a significant positive impact on firm performance. The positive effect is quite surprising considering the comparative statistics shown in Appendix A.3 which indicated that WTMT had an ROA approximately 1,4 % lower than those without women.

Regarding the control variables, leverage now has a significant negative effect, LN_SALESG has a significant positive impact and more interestingly MBOARD (only male boards) has a significant negative impact for all specifications. Size has a small significant positive impact, but only for the WTMT specification. In regards to economic significance, level-level[4] is calculated somewhat differently than previously, the interpretation also change. The coefficient of 0,0188 indicate an increase in ROA to 0,064 (from average 0,047) which in turn would indicate that the inclusion of women in TMT increases net income by 2,34 million SEK, for the average midpoint firm, who has an implied net income of 5,6 million SEK.

Table 6c: 2SLS (Full Sample) Model 2

Dependent: LN_TQ								
Independent:	WTMT **Model 2 (N=422)**		PWTMT **Model 2 (N=422)**		BLAU **Model 2 (N=422)**		TEACH **Model 2 (N=422)**	
	Coefficient	Std	Coefficient	Std	Coefficient	Std	Coefficient	Std
C	1.521907**	0.414053	1.464331**	0.403724	1.496966**	0.406835	1.496146*	0.407800
WTMT	0.260275**	0.099343	1.421661**	0.485288	0.967464**	0.327920	0.587284*	0.212633
SIZE	-0.111659**	0.026741	-0.109743**	0.024995	-0.111830**	0.025591	-0.110908*	0.025969
LEV	0.298975	0.279456	0.322218	0.269246	0.330885	0.271531	0.309216	0.274887
LN_SALESG	0.182471**	0.065732	0.172631**	0.065743	0.176732**	0.065089	0.177406*	0.064990
LN_CAPEX_INT	0.311480	0.447104	0.444145	0.469487	0.408166	0.463169	0.402051	0.461757
MBOARD	0.107134	0.126369	0.107277	0.121744	0.110560	0.122393	0.107845	0.123615
LN_AGECAP	0.036118**	0.013081	0.040350**	0.013656	0.041661**	0.013766	0.039866*	0.013704
PFOR	0.251234	0.116254	0.305182**	0.115225	0.290285*	0.115907	0.276825**	0.116271
VAR_TEN	0.004576*	0.001956	0.004609*	0.001842	0.004631*	0.001887	0.004560**	0.001907
VAR_EDU	0.035950*	0.016955	0.037634*	0.017033	0.036802*	0.017065	0.036747**	0.016994
R-squared	0.110387		0.087156		0.090314		0.095904	
Adjusted R-squared	0.088742		0.064946		0.068181		0.073906	
S.E. of regression	0.577030		0.584516		0.583504		0.581708	
F-statistic	6.406810**		6.583525**		6.565944**		6.459771**	
Hausman	-		**		**		*	

The table shows the 2SLS regression results for the Model 2 specification on the Full Sample with LN_TQ as dependent variable. An indicator of the result of the Hausman test is included in the last row. **p≤0,01 and *0,01<p≤0,05

[4] $\beta_i = \frac{\Delta PERF_i}{\Delta WOMAN_i}$

We note that all WOMAN variables have a positive significant impact. The Coefficients have decreased for WTMT and TEACH, while they have increased for PWTMT and BLAU. In regards to the control variables, just as in the case with Model 1, size is found to have a negative significant impact for all specifications. However, LN_SALESG, LN_AGECAP as well as the informational diversity variables VAR_TEN and VAR_EDU show significant positive impact for all four specifications. While the social diversity variable PFOR has a significant positive effect on all models except WTMT where it is insignificant. Positive impact from informational diversity was to be expected considering the results of Bär et. al. (2009) while PFOR potentially could indicate more efficient activity on international markets, as well as taking part of a larger selection pool of potential management candidates and having a corporation that compete for these candidates. In other words, this result also falls under what could be expected.

Table 6d: 2SLS (Full Sample) Model 2

Dependent: ROA								
Independent:	WTMT **Model 2 (N=422)**		PWTMT **Model 2 (N=422)**		BLAU **Model 2 (N=422)**		TEACH **Model 2 (N=422)**	
	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error
C	0.987339**	0.081253	0.990247**	0.079116	0.988328**	0.079962	0.988449**	0.080050
WOMAN	-0.011896	0.019852	-0.086001	0.107781	-0.054708	0.071648	-0.029871	0.045900
SIZE	0.007190	0.005275	0.007274	0.005094	0.007346	0.005183	0.007221	0.005198
LEV	-0.081967	0.041743	-0.085959*	0.040803	-0.085668*	0.041339	-0.083390*	0.041360
LN_SALESG	0.017310	0.021917	0.017750	0.021924	0.017521	0.021906	0.017513	0.021888
LN_CAPEX_INT	0.127785	0.092982	0.116470	0.095770	0.119906	0.094703	0.122031	0.095069
MBOARD	-0.112563**	0.039314	-0.113564**	0.038883	-0.113484**	0.039046	-0.112945**	0.039193
LN_AGECAP	0.001917	0.002658	0.001404	0.002817	0.001415	0.002879	0.001637	0.002866
PFOR	-0.040134	0.025091	-0.042789	0.024091	-0.041896	0.024285	-0.041223	0.024552
VAR_TEN	-0.000146	0.000330	-0.000156	0.000336	-0.000155	0.000334	-0.000148	0.000332
VAR_EDU	-0.007162*	0.003356	-0.007248*	0.003333	-0.007199**	0.003337	-0.007197**	0.003339
R-squared	0.121566		0.124296		0.125887		0.124826	
Adjusted R-squared	0.100193		0.102989		0.104619		0.103532	
S.E. of regression	0.104965		0.104802		0.104707		0.104770	
F-statistic	5.293798**		5.341849**		5.329199**		5.307104**	
Hausman	-		-		-		-	

The table shows the 2SLS regression results for Model 2 specification on the Full Sample with ROA as dependent variable. An indicator of the result of the Hausman test is included in the last row. **p≤0,01 and *0,01<p≤0,05

None of the WOMAN variables are found significant for ROA Model 2. VAR_EDU and MBOARD are consistently significantly negative while LEV significantly negative for all except WTMT. We thereby note that fewer CV are significant compared to the Model 1 specification, but that the negative effects of MBOARD and LEV persist.

4.3.2 2SLS - Other specifications

The 2SLS models are re-specified for each of the three samples and presented in Appendix A.11a-A.11d for best vs worst quartiles, A.12a-A12d for sample excluding financials and A.13a-A.13d for sample excluding Denmark. We note that BLAU is significant at the 5% level for all other specifications of model 1 LN_TQ and that the coefficient of PWTMT is approximately twice as large for PWTMT for the sample excluding financials, however since mean of TA is lower - the effect on firm value is smaller compared to the full sample - indicating that adding a woman to a TMT of 7 would result in a 14 million SEK increase in implied firm value. Financial firms thereby effect the numerical interpretation of the economic significance, but largely the statistical implications are the same. However, for ROA Model 1, the only other specification where WOMAN is found significant is the sample excluding financials, where the coefficient is now negative. In regards to Model 2 LN_TQ the general implications are the same, fewer CV are significant compared to the full sample and most surprisingly, WOMAN is found insignificant for the best vs worst quartiles sample (where we would expect the strongest effects). None of the ROA Model 2's specified finds any significance between WOMAN and ROA.

4.4 Panel Models

The pooled regression is presented in Appendix A.14a and A.14b where WOMAN indicated as significant in all Model 1 with LN_TQ as dependent variable. The coefficient indicates a positive relationship, however no such significant relationship seems to exist in Model 2. The opposite hold for the models with ROA as dependent, here three of the Model 2 specifications (except PWTMT) finds significant relationships between WOMAN and the dependent variable. However, we note that the coefficients are now negative which can be explained by the observations from Appendix A.3. We also take note of the quite low R^2 in ROA models between 0,08-0,12 and for LN_TQ models 0,12-0,2. All tests for cross-sectional fixed effects are found significant, and 30 out of the 64 (Appendix A.15) of the specified models do not reject the Hausman test for RE. In other words, implying that the composite error term is uncorrelated with the explanatory variables for almost half the models and that unobserved OV should be a non-issue for these 30 specifications.

4.4.1 Panel Models - Full sample

None, of the panel method estimations for the full sample finds any significant relationship between the dependent and explanatory variable. As with the 2SLS estimation, we go through the outputs for the panel method and full sample below (Table 7a-7d).

Table 7a: CS:FE (Full Sample) Model 1

Dependent: LN_TQ								
Independent:	WTMT **Model 1 (N=881)**		PWTMT **Model 1 (N=881)**		BLAU **Model 1 (N=881)**		TEACH **Model 1 (N=881)**	
	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error
C	-0.349051	1.549473	-0.390063	1.548019	-0.368093	1.548759	-0.348029	1.548869
WTMT	0.062086	0.048477	0.166597	0.163755	0.169458	0.137289	0.138911	0.094855
SIZE	0.015424	0.095350	0.018987	0.095195	0.016994	0.095292	0.015234	0.095311
LEV	0.245816	0.299873	0.244068	0.300183	0.241531	0.298916	0.238764	0.298314
LN_SALESG	0.032295	0.063608	0.031989	0.063444	0.033089	0.063330	0.033369	0.063252
LN_CAPEX_INT	0.014572	0.372175	-0.003251	0.370881	-0.001753	0.369629	0.010267	0.370002
MBOARD	0.001955	0.068647	0.005083	0.069643	0.005693	0.069359	0.005423	0.069126
R-squared	0.830044		0.829845		0.829997		0.830171	
Adjusted R-squared	0.783559		0.783305		0.783498		0.783720	
S.E. of regression	0.308758		0.308940		0.308802		0.308644	
F-statistic	17.85592**		17.83071**		17.84992**		17.87194**	

The Cross Sectional Fixed Effects regression results for the Model 1 specification and the Full Sample with LN_TQ as the dependent variable. **p≤0,01 and *0,01<p≤0,05

For dependent variable LN_TQ and Model 1 we note that the significant positive effects seen in the pooled regression dissipate and that none of the CVs are found significant.

Table 7b: CS:RE (Full Sample) Model 1

Dependent: ROA								
Independent:	WTMT **Model 1 (N=881)**		PWTMT **Model 1 (N=881)**		BLAU **Model 1 (N=881)**		TEACH **Model 1 (N=881)**	
	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error
C	0.975023**	0.073359	0.975834**	0.073600	0.975696**	0.073551	0.975655**	0.073486
WTMT	-0.006366	0.011052	-0.010207	0.048943	-0.008663	0.035941	-0.006886	0.023708
SIZE	0.006713	0.004411	0.006499	0.004429	0.006527	0.004440	0.006554	0.004434
LEV	-0.173636**	0.040871	-0.173655**	0.040766	-0.173579**	0.040677	-0.173479**	0.040620
LN_SALESG	0.059722**	0.017967	0.059780**	0.017955	0.059749**	0.017995	0.059746**	0.017984
LN_CAPEX_INT	0.163520*	0.066710	0.165394*	0.067201	0.165406*	0.067031	0.164889*	0.066917
MBOARD	-0.042426	0.025384	-0.042235	0.025403	-0.042283	0.025455	-0.042311	0.025439
R-squared	0.090876		0.090547		0.090548		0.090579	
Adjusted R-squared	0.084635		0.084304		0.084304		0.084336	
S.E. of regression	0.082848		0.082820		0.082844		0.082854	
F-statistic	14.56089**		14.50290**		14.50297**		14.50849**	

The Cross Sectional Random Effects regression results for Model 1 and the Full Sample with ROA as the dependent variable. **p≤0,01 and *0,01<p≤0,05

Similar effects are seen for ROA Model 1, where none of WOMAN variables are significant. In regards to CV, LEV is found significantly negative, while LN_SALESG and LN_CAPEX_INT are found significantly positive for all specifications.

Table 7c: CS:RE (Full Sample) Model 2

Dependent: LN_TQ								
Independent:	WTMT **Model 2 (N=442)**		PWTMT **Model 2 (N=442)**		BLAU **Model 2 (N=442)**		TEACH **Model 2 (N=442)**	
	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error
C	1.847342**	0.591570	1.800606**	0.592188	1.813603**	0.591062	1.822293*	0.590796
WOMAN	0.081091	0.060927	0.236388	0.235187	0.208843	0.183477	0.174151	0.123303
SIZE	-0.121317**	0.036059	-0.117742**	0.035824	-0.118981**	0.035802	-0.120135*	0.035742
LEV	-0.153276	0.252813	-0.163296	0.255468	-0.160270	0.254339	-0.157724	0.252920
LN_SALESG	0.128831**	0.047764	0.127415**	0.047718	0.128294**	0.047517	0.127890*	0.047321
LN_CAPEX_INT	0.020638	0.442332	0.041174	0.451353	0.035940	0.447460	0.052608	0.447017
MBOARD	-0.070869	0.102611	-0.063143	0.104791	-0.063427	0.104257	-0.061892	0.103707
LN_AGECAP	-0.004236	0.021995	-0.006376	0.021871	-0.005336	0.021839	-0.004478	0.021838
PFOR	0.384353*	0.156103	0.405134**	0.155345	0.399586	0.154996	0.392438**	0.155093
VAR_TEN	0.008772**	0.002507	0.008670**	0.002478	0.008681**	0.002489	0.008667*	0.002485
VAR_EDU	-0.013651	0.014720	-0.011715	0.014939	-0.011708	0.014861	-0.011558	0.014807
R-squared	0.102308		0.099932		0.100733		0.102490	
Adjusted R-squared	0.080467		0.078033		0.078853		0.080653	
S.E. of regression	0.283027		0.283442		0.283240		0.282844	
F-statistic	4.684090**		4.563237**		4.603910**		4.693379**	

The Cross Sectional Fixed Effects regression results for the Model 2 specificaton and the Full Sample with LN_TQ as the dependent variable. **p≤0,01 and *0,01<p≤0,05

LN_TQ Model 2 with RE once again finds no significant effects of WOMAN. In regards to CV, VAR_TEN and LN_SALESG have a significant positive effect while SIZE is negative. PFOR is negatively significant for all specifications except BLAU.

Table 7d: CE:FE (Full Sample) Model 2

Dependent: ROA								
Independent:	WTMT **Model 2 (N=422)**		PWTMT **Model 2 (N=422)**		BLAU **Model 2 (N=422)**		TEACH **Model 2 (N=422)**	
	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error
C	1.452745*	0.624596	1.487137*	0.624123	1.479992*	0.626852	1.479464*	0.624788
WOMAN	-0.008928	0.010540	-0.010422	0.090175	-0.012071	0.060109	-0.008086	0.034627
SIZE	-0.017854	0.039391	-0.020139	0.039456	-0.019645	0.039605	-0.019621	0.039442
LEV	-0.177211*	0.082778	-0.176015*	0.082143	-0.176133*	0.082272	-0.176120*	0.082293
LN_SALESG	0.053274**	0.020337	0.053558**	0.020305	0.053473**	0.020359	0.053477**	0.020348
LN_CAPEX_INT	0.209986	0.112385	0.211033	0.115229	0.210797	0.113815	0.210553	0.113264
MBOARD	-0.089954	0.049483	-0.089788	0.051842	-0.090009	0.051210	-0.089819	0.050606
LN_AGECAP	0.026626	0.018578	0.026929	0.018395	0.026925	0.018419	0.026866	0.018457
PFOR	0.072912	0.073042	0.068715	0.073611	0.069436	0.073624	0.069662	0.073609
VAR_TEN	-0.001001	0.001150	-0.000984	0.001146	-0.000985	0.001145	-0.000984	0.001145
VAR_EDU	0.001261	0.005022	0.001213	0.004615	0.001159	0.004689	0.001177	0.004777
R-squared	0.674583		0.674299		0.674329		0.674330	
Adjusted R-squared	0.555194		0.554804		0.554845		0.554848	
S.E. of regression	0.073800		0.073832		0.073829		0.073829	
F-statistic	5.650258**		5.642935**		5.643708**		5.643751**	

The Cross Sectional Fixed Effects regression results for the Model 2 specification and the Full Sample with ROA as the dependent variable. **p≤0,01 and *0,01<p≤0,05

In ROA Model 2 with FE, once again none of the WOMAN variables are found to be significant. In regards to CV leverage is consistently negatively significant, while LN_SALEG is significantly positive.

4.4.2 Other specifications

Generally the same conclusions can be drawn for the other specifications where all except one find no significant relationship between the dependent variable and the explanatory. Outputs from the three remaining samples are presented in Appendix A.16a-A.16d for best vs worst quartiles, A.17a-A17d for sample excluding financials and A.18a-A.18d for the sample excluding Denmark. The exception being the RE Model 1 (LN_TQ - WTMT) presented in specification for the sample excluding financials Appendix A.16aa, which indicates that including a women in the TMT would result in an increase in firm value at the midpoint in the data of approximately 4,5 million SEK. However, following the fact that only one of the specified panel methods models finds a significant relationship between performance and women in the TMT, we consider the general result of "no significant relationship" to be generally applicable.

5. Discussion

As became apparent in section 4.2, the instruments employed can be considered weak, which in turn might severely bias inference for all 2SLS models. Adding industry variables to the instrument list is from an asymptotic efficiency perspective a good thing, but for finite samples more does not necessarily mean better (Roberts and Whited, 2013). At the same time, the validity argument of using industry dummies comes into question. As noted by Angrist and Pischke (2009), the 2SLS method should be considered consistent, but biased, and contrary to the OLS it only promises to return results close to the causal effects in question for large samples. Making the 2SLS estimations of Model 2, specifically in regards to the other sample specifications employed, come into question. This bias is most severe if the instrument in question can be considered weak and many. The most common evidence for weak instruments is large standard errors (SE), but even in less extreme cases when SE remain small they could still cause bias (Roberts and Whited, 2013). We note that the SEs in the full sample 2SLS models in general approximately doubles in comparison to the pooled regression. The smallest changes are seen in general for WTMT, where the change in SE is hardly noticeable in most cases. The most extreme example is seen in ROA Model 1 for TEACH, where SE increase from 0,017 in the pooled regression to 0,24 in the 2SLS. Further indicating that our IV is weak. It should also be mentioned that the burden on IV in general is quite severe for corporate finance, following the fact that potentially more than one regressor is endogenous since few variables employed in the research field can be considered truly exogenous (Roberts and Whited, 2013). These considerations also make it impossible to apply both panel methods and 2SLS as done by for example Campbell and Minguez-Vera (2008), since we are uncertain which part of the endogeneity concerns are actually resolved by the IV. Including panel methods could thereby potentially result in controlling for the same problem twice, causing further biasing inference. The inference from the 2SLS models should thereby be interpreted with care.

6. Conclusion

Generally the results from our regressions can be described as quizzical, supporting the notion of the IV framework as a risky implementation for solving the endogeneity concerns in our data. The fact that we cannot reject exogeneity in 30 out of 64 specifications are further worrisome, making the existence of a simultaneity problem come into question. When simultaneity is taken into account, there seems to be some support for the notion that, *ceteris paribus,* gender diverse firms perform better than their counterparts. At least in relation to performance as measured by Tobin's Q. However, the significant relationships observed could be due to inference problems in relation to a weak IV, most importantly the size of the significant coefficients and subsequent economic interpretation comes under harsher scrutiny. The relationship becomes more unlikely in relation to accounting based performance, or viewed in light of Haslam et.al.(2010) our results seem to support the premonition that gender diversity in fact does not affect objective firm performance, but rather affects the market perceptions of the firm, thereby only increasing the subjective value.

At the same time we note that there seems to be a move toward more gender diverse TMTs during the sample period and that investors have become more interested in diversity issues in later years (Dezö and Ross, 2012). It would thereby not be all that surprising if gender diversity was viewed favourably in the egalitarian Scandinavia, and that this study finds similar evidence as those previously (Catalyst (2004); Krishnan and Park (2005); Dezö and Ross (2012); Francoeur et. al (2008)) However, if simultaneity is not taken into account, there seems to be no significant relationship between women in TMTs and performance, which from a liberal feminist point of view is exactly what would be expected i.e. that gender by itself does not have an effect on firm performance. However, no matter if the inference is too biased and there are no positive effect, or if no significant effects exist, there should be nothing from an economical perspective hindering the inclusion of more women in TMTs.

……………….

This paper adds to the scarce international evidence, however it only focuses on the largest firms in Scandinavia, covers a relatively short time period and diversity measures are computed solely on publicly available information. Future studies may need to consider these constraints, and most importantly further investigate the simultaneity relationship considered in this study.

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Appendix

A.1 Literature summary

A.1 Literature summary

Author(s)	Year	Country(ies)	Main concern	Data	Method	Dependent variable(s)	Effect on performance
Campbell and Minguez-Vera	2008	U.S	Women on Boards	Panel data	Panel method and 2SLS	Tobin's Q	Positive
Adams and Ferreira	2009	U.S	Gender diversity on Boards	Panel data	Panel method and 2SLS	ROA and Tobin's Q	Negative
Erhardt et. al.	2003	U.S	Board Diversity	Cross-sectional data	Hierarchical regression	ROA & ROI	Positive
Haslam et. al.	2010	UK	Women on Boards	Panel data	ANOVA	ROA & Tobin's Q	Negative on Tobin's Q but none on ROA
McCann and Wheeler	2011	UK	Women on Boards	Cross-sectional data	ANOVA & Ordered Logistic Regression	Odds Ratio (95%)	Positive
Vintila et. al.	2008	Romania	Women on Boards	Panel data	Panel method	Tobin's Q	Positive
Randøy et. al.	2006	Scandinavia	Board Diversity	Cross-sectional data	Correlation & Regression Analysis	ROA	None
Rose	2007	Denmark	Women on Boards	Panel data	Staged Cross-Sectional regression	Tobin's Q	None
Smith et. al.	2006	Denmark	Women on Boards	Panel data	Panel method and 2SLS	Various accounting measures	Positive
Lee and James	2007	U.S	TMT appointment reactions	Panel data	Standard Event Study	CAR (Cumulative Abnornal Returns)	Negative
Carpenter	2002	U.S	TMT diversity	Panel data	Panel method	ROA	Positive
Bär et. al.	2009	U.S	TMT diversity	Panel data	Panel method	Various performance measures	Negative
Nielsen et. al.	2013	Switzerland	TMT diversity	Panel data	Hierarchical regression	ROA	Positive
Zhang	2007	China	TMT diversity	Cross-sectional data	Hierarchical regression	EVA	Varying
Catalyst	2004	U.S	Gender diversity in TMTs	Panel data	Panel method	ROE & TRS	Positive
Krishnan and Park	2004	U.S	Gender diversity in TMTs	Cross-sectional data	Hierarchical regression	ROA	Positive
Dezö and Ross	2012	U.S	Gender diversity in TMTs	Panel data	Panel method	Tobin's Q	Positive
Darmadi	2010	Indonesia	Gender diversity in TMTs	Cross-sectional data	Cross-sectional regression Analysis	ROA & Tobin's Q	Negative
Francoeur et. al	2008	Canada	Gender diversity in TMTs	Panel data	Fama-French 3 factor context	ROE	Positive

This table summarizes and gives an overview of relavant literature

Source: Compiled by authors

A.2 Information Gathering

A.2 Distribution of Firms that Include Information

	N	TMT	Var_Ten	Var_Edu
Large-Cap	450	98,90%	71,10%	69,80%
Mid-Cap	485	98,60%	64,30%	59,80%

Source: Authors' calculations. The table depicts the % of reported information in regard to informational diversity variables.

A.3 Performance w/ or w.o/ Women

A.3 Average Performance w. Women and w/o Women

ROA					TQ				
Full Sample									
WTMT	Mean	Std. Dev.		Obs.	WTMT	Mean	Std. Dev.	Obs.	
0	1,054234	0,115945		343	0	1,169989	1,01132	343	
1	1,039597	0,12407	-1,39%	580	1	1,347508	1,455839	580	43,95%
All	1,045037	0,121258		923	All	1,281539	1,310624	923	
Best vs. Worst Quartiles									
WTMT	Mean	Std. Dev.		Obs.	WTMT	Mean	Std. Dev.	Obs.	
0	1,062844	0,128792		232	0	1,460034	1,111852	232	
1	1,030499	0,163557	-3,04%	232	1	1,577549	1,892646	232	70,22%
All	1,046671	0,147934		464	All	1,518791	1,551585	464	
Excluding Financials									
WTMT	Mean	Std. Dev.		Obs.	WTMT	Mean	Std. Dev.	Obs.	
0	1,054214	0,12011		290	0	1,258348	1,064751	290	
1	1,04078	0,136696	-1,27%	410	1	1,620862	1,647101	410	54,69%
All	1,046345	0,130161		700	All	1,470678	1,445012	700	
Excluding Denmark									
WTMT	Mean	Std. Dev.		Obs.	WTMT	Mean	Std. Dev.	Obs.	
0	1,066117	0,122946		245	0	1,222834	1,0411	245	
1	1,039459	0,121891	-2,50%	520	1	1,308165	1,386128	520	33,14%
All	1,047996	0,122782		765	All	1,280837	1,285676	765	

Source: Compiled and calculated by authors. The table present an overview over the average performance of companies with and without women in TMTs for each sample. The value in percnt describe how the TMTs with women performs with regards to those without.

A.4 Descriptive Statistics

A.4 Descriptive Statistics: Full Sample

	WTMT	PWTMT	BLAU	TECH	LN_TQ	ROA	SIZE	LEV	LN_SALESG	MBOARD	LN_CAPEX_INT	PFOR	LN_AGECAP	VAR_TEN	VAR_EDU
Mean	0,63	0,14	0,20	0,31	-0,02	1,04	16,46	0,26	0,04	0,07	0,05	0,18	-2,53	14,10	1,62
Median	1,00	0,13	0,22	0,38	-0,07	1,04	16,48	0,25	0,02	0,00	0,03	0,09	-2,07	9,00	0,92
Maximum	1,00	0,80	0,50	0,69	2,64	1,76	22,58	0,76	3,96	1,00	0,44	1,00	1,01	84,80	8,00
Minimum	0,00	0,00	0,00	0,00	-3,73	-0,82	10,31	0,00	-1,71	0,00	0,00	0,00	-10,29	0,00	0,00
Std. Dev.	0,48	0,14	0,17	0,26	0,68	0,14	1,81	0,19	0,36	0,25	0,06	0,24	1,98	15,32	1,50
Skewness	-0,53	0,84	0,03	-0,16	0,20	-4,24	0,38	0,45	3,88	3,43	2,44	1,50	-2,30	1,95	1,27
Kurtosis	1,28	3,67	1,52	1,39	5,86	54,05	3,93	2,38	43,77	12,77	11,30	4,78	7,88	6,83	4,37
Jarque-Bera	156,90	126,69	84,01	103,36	324,58	104325,70	56,15	45,97	66398,64	5500,68	3493,38	454,46	1398,35	785,93	209,53
Probability	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Sum	580,00	127,02	185,39	285,82	-21,01	975,48	15391,33	238,81	36,91	63,00	44,08	163,27	-1889,78	8908,45	976,52
Sum Sq. Dev	215,54	16,85	27,56	60,37	437,63	17,06	3054,96	32,60	117,66	58,71	2,78	52,80	2928,44	148065,50	1364,63
Obs.	923	923	923	923	935	935	935	934	925	926	904	896	747	632	604

The table shows the output of the descriptive statistics of the sample data for each individual variable

A.5 Best and Worst Companies

A.5 Comparison of Best and Worst Quartiles

	ROA	Tq	Mboard	WTMT	PWTMT	Blau	Tech	TMTSize	N
Best	1,030	1,58	0,095	1	0,32	0,42	0,61	8,0	232
Worst	1,063	1,46	0,086	0	0,00	0,00	0,00	5,7	232
Tot	1,047	1,519	0,091	0,500	0,160	0,209	0,304	6,869	464

Source: Authors' calculations. This table provide an overview over the best and worst quartiles of the sample in regards to the amount of women in TMTs and performance measures

A.6 Women in TMTs

A.6 Women in TMTs - Frequency of Distribution

	2009		2010		2011		2012		2013	
	N		N		N		N		N	
0%	78	43,3%	73	39,2%	70	37,4%	68	35,8%	39	23,9%
0 < x ≤ 10%	9	5,0%	12	6,5%	13	7,0%	10	5,3%	13	8,0%
10 < x ≤ 20%	44	24,4%	53	28,5%	54	28,9%	59	31,1%	53	32,5%
20 < x ≤ 30%	34	18,9%	32	17,2%	34	18,2%	32	16,8%	35	21,5%
30 < x ≤ 40%	13	7,2%	14	7,5%	13	7,0%	11	5,8%	11	6,7%
40 < x ≤ 50%	1	0,6%	1	0,5%	2	1,1%	8	4,2%	11	6,7%
50 < x ≤ 60%	1	0,6%	0	0,0%	0	0,0%	2	1,1%	0	0,0%
60 < x ≤ 70%	0	0,0%	1	0,5%	0	0,0%	0	0,0%	0	0,0%
70 < x ≤ 80%	0	0,0%	0	0,0%	1	0,5%	0	0,0%	1	0,6%

Source: Compiled by authors. This table shows the distribution of the number of observations and percentage of women in TMTs for the years 2009-2013

A.7 Correlation Matrix

A.7 Correlation Matrix Model 1

	1	2	3	4
1. SIZE				
2. LEV	0.311670**			
3. LN_SALESG	-0.110593*	-0.016741		
4. LN_CAPEX_INT	-0.025434	0.204233*	0.019554	
5. MBOARD	-0.127416*	-0.062209	7.90E-05	-0.028344

The table show the correlation between the independent variables in Model 1

A.8 Correlation Matrix Instrumental Variables

A.8 Correlation Matrix Instrumental Variables

	ROA	**LN_TQ**
TMTSIZE	0,048682	0,085698*
Utilities	-0,054009	-0,021183
Telecommunications	0,038713	0,018848
Technology	0,135273*	0,190889*
Oil and gas	-0,153658*	0,007945
Industrials	0,035434	0,001482
Healthcare	-0,136094*	0,328855*
Financials	-0,019135	-0,398547*
Consumer Services	0,093557*	0,178826*
Consumer Goods	0,056956	0,020825
Basic Materials	0,009687	-0,066227**

The table present the correlation between the instrumental variables and the dependent variables.
**p≤0,01 and *0,01<p≤0,05

A.9 First Stage Equation

A.9a First stage equation: WTMT and PWTMT

	WTMT				PWTMT			
	1	2	3	4	1	2	3	4
C	0.107535**	0.290098**	0.561620**	0.146145	0.051918**	0.115023**	0.199791**	0.074846
TMTSIZE	0.072227**	0.073283**	0.075597**	0.091232**	0.011884**	0.012710**	0.014227**	0.014192**
Basic Materials		-0.102663	-0.111434	-0.013191		-0.077410*	-0.076119*	-0.027262
Consumer Goods		-0.297571**	-0.318465**	-0.147528		-0.118047*	-0.119939*	-0.060454**
Consumer Services		-0.024316	-0.051245	0.104322		-0.004879	-0.011814	0.040763
Health Care		-0.191336**	-0.213017**	0.021833		-0.053869*	-0.059486*	0.033500
Industrials		-0.324565**	-0.348680**	-0.191041*		-0.112258*	-0.114564*	-0.061101**
Oil and gas		-0.259147**	-0.284816**	-0.204103*		-0.098826*	-0.100212*	-0.069127**
Technology		-0.296467**	-0.326156**	-0.205892		-0.114796*	-0.121826*	-0.071173**
Telecommunications		0.037420	0.047215	0.233003*		-0.002635	0.005267	0.084311*
Utilities		-0.451937**	-0.517442**	-0.069875		-0.095301*	-0.120667*	-0.007223
SIZE			-0.017719	-0.003277			-0.006073*	-0.000271
LEV			0.073008	-0.649071**			0.017446	-0.127315**
LN_SALESG			-0.044045	-0.015034			-0.006011	0.001262
LN_CAPEX_INT			0.123905	0.374621			0.020145	0.030266
MBOARD				-0.199049*			0.002651	-0.068741**
LN_AGECAP				-0.074898**				-0.014344**
PFOR				-0.031271				-0.036359
VAR_TEN				-0.002800				-0.000646
VAR_EDU				-0.005139				-0.002435
R-squared	0.217974	0.305123	0.310544	0.410426	0.075504	0.213882	0.230565	0.310652
Adjusted R-squared	0.217125	0.297504	0.298588	0.382561	0.074500	0.205262	0.217222	0.278070
N	923	923	881	422	923	923	881	442

The table shows the first stage regression results for WTMT and PWTMT stepwise adding explanatory variables; starting at the instruments and subsequently Model 1 and Model 2 specifications

A.9b First stage equation: BLAU and TEACH

	BLAU				TEACH			
	1	2	3	4	1	2	3	4
C	0.061822**	0.137737**	0.232948**	0.076979	0.085917**	0.197228**	0.348909**	0.123851
TMTSIZE	0.019280**	0.020025**	0.021251**	0.022760**	0.031028**	0.032007**	0.033777**	0.036942**
Basic Materials		-0.074436**	-0.076016**	-0.025093		-0.097186**	-0.099534**	-0.028118
Consumer Goods		-0.140505**	-0.145705**	-0.077679**		-0.199760**	-0.208523**	-0.110142**
Consumer Services		0.002923	-0.005903	0.050422		-0.002927	-0.016120	0.070606
Health Care		-0.061285*	-0.069357*	0.038134		-0.099169**	-0.111665**	0.031851
Industrials		-0.137008**	-0.143295**	-0.082971**		-0.199701**	-0.209846**	-0.121470**
Oil and gas		-0.115085**	-0.121531**	-0.092478**		-0.165205**	-0.174488**	-0.129027**
Technology		-0.136242**	-0.143826**	-0.091173*		-0.194187**	-0.206740**	-0.129349*
Telecommunications		0.016900	0.021847	0.110797*		0.026024	0.034456	0.160843**
Utilities		-0.137652*	-0.170155**	-0.013278		-0.217331**	-0.263938**	-0.027018
SIZE			-0.006556	0.000488			-0.010340	-0.000805
LEV			0.030029	-0.198756**			0.052394	-0.294763**
LN_SALESG			-0.011143	-0.001192			-0.016950	-0.001289
LN_CAPEX_INT			0.033042	0.076281			0.022901	0.067600
MBOARD			-0.002944	-0.091481**			-0.006218	-0.124856**
LN_AGECAP				-0.023373**				-0.036323**
PFOR				-0.042581				-0.045790
VAR_TEN				-0.000927				-0.001298
VAR_EDU				-0.002537				-0.003050
R-squared	0.121469	0.250871	0.261225	0.346681	0.143614	0.265496	0.276287	0.360350
Adjusted R-squared	0.120516	0.242656	0.248414	0.315803	0.142684	0.257442	0.263737	0.330118
N	923	923	881	422	923	923	881	442

The table shows the first stage regression results for BLAU and TEACH stepwise adding explanatory variables; starting at the instruments and subsequently Model 1 and Model 2 specifications

A.10 Summary Hausman Test

A.10 Hausman test

Model 1								
	Full Sample		Best vs. Worst Quartiles		Excluding Financials		Excluding Denmark	
	ROA	**LN_TQ**	**ROA**	**LN_TQ**	**ROA**	**LN_TQ**	**ROA**	**LN_TQ**
WTMT	**0,005**	**0,012**	**0,000**	**0,000**	**0,0194**	**0,007**	**0,0151**	**0,003**
PWTMT	0,085	**0,056**	**0,046**	**0,004**	0,326	**0,000**	0,472	**0,029**
BLAU	**0,036**	**0,015**	**0,021**	**0,000**	0,122	**0,000**	0,226	**0,006**
TECH	**0,019**	**0,019**	**0,018**	**0,000**	0,071	**0,001**	0,135	**0,005**
N	*881*	*881*	*446*	*446*	*688*	*688*	*734*	*734*

Model 2								
	Full Sample		Best vs. Worst Quartiles		Excluding Financials		Excluding Denmark	
	ROA	**LN_TQ**	**ROA**	**LN_TQ**	**ROA**	**LN_TQ**	**ROA**	**LN_TQ**
WTMT	0,371	**0,057**	0,267	**0,028**	0,6515	0,620	0,2845	**0,032**
PWTMT	0,810	**0,007**	0,462	**0,020**	0,996	0,782	0,338	0,532
BLAU	0,585	**0,007**	0,339	**0,018**	0,8116	0,134	0,8152	0,192
TECH	0,443	**0,014**	0,256	**0,020**	0,658	0,241	0,919	0,119
N	*422*	*422*	*188*	*188*	*342*	*342*	*347*	*347*

The table summarise the p-values of the Hausman test for 2SLS with each sample for Model 1 and Model 2. The numbers in grey show the significant p-values (0≤p≤0,05) , which is a total of 34 in this table.

A.11 Results 2SLS: Best vs. Worst Sample

A.11a 2SLS (Best vs. Worst Quartiles) Model 1

Dependent: LN_TQ								
Independent:	WTMT Model 1 (N=446)		PWTMT Model 1 (N=446)		BLAU Model 1 (N=446)		TEACH Model 1 (N=446)	
	Coefficient	Std	Coefficient	Std	Coefficient	Std	Coefficient	Std
C	3.307087*	0.401363	3.242224**	0.398107	3.287838**	0.400785	3.293405**	0.400898
WTMT	0.429081*	0.140131	1.045874**	0.386885	0.970617**	0.317627	0.678867**	0.221662
SIZE	-0.199439*	0.026488	-0.191740**	0.025812	-0.197220**	0.026274	-0.197859**	0.026330
LEV	-0.429245**	0.212800	-0.471207*	0.214000	-0.443282*	0.212520	-0.439574*	0.212576
LN_SALESG	0.176851**	0.084608	0.172051	0.092644	0.174519*	0.088577	0.175174*	0.087508
LN_CAPEX_INT	0.566984	0.644624	0.568245	0.610874	0.575262	0.632333	0.573475	0.635646
MBOARD	-0.046312	0.098286	-0.049511	0.098183	-0.052058	0.098856	-0.050667	0.098703
R-squared	0.120620		0.159599		0.132617		0.129423	
Adjusted R-squar	0.105882		0.145514		0.118080		0.114832	
S.E. of regression	0.582514		0.569457		0.578527		0.579591	
F-statistic	20.86917**		19.83472**		20.68796**		20.74536**	
Hausman	**		**		**		**	

The table shows the 2SLS regression results for the Model 1 specification on the Best vs. Worst Quartiles sample with LN_TQ as dependent variable. An indicator of the result of the Hausman test is included in the last row. **p≤0,01 and *0,01<p≤0,05

A.11b 2SLS (Best vs. Worst Quartiles) Model 1

Dependent: ROA								
Independent:	WTMT Model 1 (N=446)		PWTMT Model 1 (N=446)		BLAU Model 1 (N=446)		TEACH Model 1 (N=446)	
	Coefficient	Std	Coefficient	Std	Coefficient	Std	Coefficient	Std
C	0.966811*	0.082561	0.965932*	0.081315	0.966675*	0.082191	0.966715*	0.082296
WTMT	0.024737	0.019053	0.082447	0.055405	0.060061	0.043952	0.041122	0.030519
SIZE	0.006067	0.005145	0.006096	0.004996	0.006070	0.005099	0.006069	0.005112
LEV	-0.163693*	0.042546	-0.164596*	0.042463	-0.163994*	0.042474	-0.163916*	0.042492
LN_SALESG	0.058570	0.032167	0.058515	0.032082	0.058579	0.032132	0.058580	0.032142
LN_CAPEX_INT	0.316844**	0.142242	0.320774**	0.141944	0.318520**	0.142104	0.318052**	0.142139
MBOARD	-0.072618**	0.033428	-0.073346**	0.033339	-0.073124**	0.033352	-0.072987**	0.033371
R-squared	0.068726		0.071320		0.070441		0.069977	
Adjusted R-squar	0.055998		0.058627		0.057736		0.057266	
S.E. of regression	0.139411		0.139217		0.139283		0.139318	
F-statistic	7.963947**		8.014922**		7.979625**		7.974992**	
Hausman	**		*		*		*	

The table shows the 2SLS regression results for the Model 1 specification on the Best vs. Worst Quartiles Sample with ROA as dependent variable. An indicator of the result of the Hausman test is included in the last row. **p≤0,01 and *0,01<p≤0,05

A.11c 2SLS (Best vs Worst Quartiles) Model 2

Dependent: LN_TQ								
Independent:	WTMT		PWTMT		BLAU		TEACH	
	Model 2 (N= 188)		**Model 2 (N= 188)**		**Model 2 (N= 188)**		**Model 2 (N= 188)**	
	Coefficient	Std	Coefficient	Std	Coefficient	Std	Coefficient	Std
C	2.769484*	0.572918	2.727626*	0.559227	2.753802*	0.567428	2.758782*	0.568978
WTMT	0.116865	0.124222	0.490140	0.422106	0.327884	0.302856	0.216943	0.207204
SIZE	-0.170503*	0.034774	-0.169365*	0.033853	-0.170295*	0.034408	-0.170402*	0.034514
LEV	0.165635	0.411842	0.187013	0.411611	0.177843	0.411054	0.174938	0.411237
LN_SALESG	0.099637	0.057678	0.098210	0.055174	0.099176	0.056274	0.099392	0.056638
LN_CAPEX_INT	0.289746	0.806850	0.360517	0.825755	0.326974	0.817500	0.316524	0.814779
MBOARD	0.201121	0.190205	0.210589	0.190540	0.204521	0.190114	0.203504	0.190123
LN_AGECAP	0.039866	0.027851	0.041573	0.027652	0.041019	0.027677	0.040761	0.027726
PFOR	0.178901	0.186532	0.187900	0.186349	0.183970	0.186696	0.182551	0.186671
VAR_TEN	0.004788**	0.002315	0.004886**	0.002266	0.004844**	0.002296	0.004830**	0.002302
VAR_EDU	0.014077	0.024427	0.015099	0.024126	0.014319	0.024349	0.014223	0.024377
R-squared	0.276071		0.272667		0.273175		0.273853	
Adjusted R-squar	0.235171		0.231574		0.232111		0.232828	
S.E. of regression	0.525050		0.526283		0.526099		0.525853	
F-statistic	7.618240**		7.691835**		7.660091**		7.648754**	
Hausman	*		*		*		*	

The table shows the 2SLS regression results for the Model 2 specification on the Best vs. Worst Quartiles sample with LN_TQ as dependent variable. An indicator of the result of the Hausman test is included in the last row. **p≤0,01 and *0,01<p≤0,05

A.11d 2SLS (Best vs. Worst Quartiles) Model 2

Dependent: ROA								
Independent:	WTMT		PWTMT		BLAU		TEACH	
	Model 2 (N=188)		**Model 2 (N=188)**		**Model 2 (N=188)**		**Model 2 (N=188)**	
	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error
C	1.157644**	0.133756	1.166533**	0.130538	1.161492**	0.131931	1.160384**	0.132409
WOMAN	-0.025459	0.020683	-0.085192	0.073017	-0.064671	0.051284	-0.043842	0.034924
SIZE	-0.002247	0.008145	-0.002702	0.007946	-0.002408	0.008032	-0.002360	0.008062
LEV	-0.055341	0.064189	-0.054508	0.062529	-0.055620	0.063285	-0.055593	0.063521
LN_SALESG	0.009419	0.023694	0.010054	0.023891	0.009691	0.023803	0.009607	0.023774
LN_CAPEX_INT	0.468176*	0.189699	0.459743*	0.192283	0.462644*	0.190694	0.464149*	0.190396
MBOARD	-0.168044*	0.069502	-0.169315*	0.069906	-0.168539*	0.069576	-0.168392*	0.069549
LN_AGECAP	0.005839	0.004359	0.006038	0.004199	0.005843	0.004262	0.005835	0.004288
PFOR	-0.048471	0.055783	-0.049764	0.055515	-0.049344	0.055612	-0.049111	0.055656
VAR_TEN	-0.000569	0.000508	-0.000568	0.000510	-0.000571	0.000509	-0.000571	0.000509
VAR_EDU	-0.010928*	0.004683	-0.011217*	0.004668	-0.011028	0.004669	-0.010998*	
R-squared	0.209214		0.205196		0.208856		0.209055	
Adjusted R-squar	0.164537		0.160291		0.164159		0.164369	
S.E. of regression	0.122654		0.122965		0.122681		0.122666	
F-statistic	4.205095**		4.207805**		4.214321**		4.212040**	
Hausman	-		-		-		-	

The table shows the 2SLS regression results for the Model 2 specification and the Best vs. Worst Quartiles sample with ROA as dependent variable. An indicator of the result of the Hausman test is included in the last row. **p≤0,01 and *0,01<p≤0,05

A.12 Results 2SLS: Excluding Financials

A.12a 2SLS (Excluding Financials) Model 1

Dependent: LN_TQ								
Independent:	WTMT Model 2 (N=688)		PWTMT Model 2 (N=688)		BLAU Model 2 (N=688)		TEACH Model 2 (N=688)	
	Coefficient	Std	Coefficient	Std	Coefficient	Std	Coefficient	Std
C	2.050276*	0.290391	1.869255*	0.288711	1.950249*	0.286759	1.973119*	0.286985
WTMT	0.418522*	0.098018	2.287865*	0.388640	1.565165*	0.283823	0.971991*	0.188918
SIZE	-0.130005*	0.018710	-0.120775*	0.017883	-0.126602*	0.018047	-0.127234*	0.018206
LEV	-0.326040	0.183461	-0.287460	0.186134	-0.280711	0.184912	-0.302927	0.184178
LN_SALESG	0.104619	0.090504	0.082811	0.086309	0.087113	0.086241	0.090444	0.087082
LN_CAPEX_INT	-0.044524	0.415617	-0.107674	0.415759	-0.087943	0.416994	-0.046237	0.413427
MBOARD	0.101557	0.093325	0.121201	0.097588	0.122135	0.095648	0.116407	0.094632
R-squared	0.112149		0.088997		0.095438		0.104697	
Adjusted R-squared	0.104326		0.080970		0.087468		0.096809	
S.E. of regression	0.609637		0.617535		0.615348		0.612190	
F-statistic	20.18080**		22.78111**		22.29873**		21.60537**	
Hausman	**		**		**		**	

The table shows the 2SLS regression results for the Model 1 såecification on the Excluding Financials sample with LN_TQ as dependent variable. An indicator of the result of the Hausman test is included in the last row. **p≤0,01 and *0,01<p≤0,05

A.12b 2SLS (Excluding Financials) Model 1

Dependent: ROA								
Independent:	WTMT Model 2 (N=688)		PWTMT Model 2 (N=688)		BLAU Model 2 (N=688)		TEACH Model 2 (N=688)	
	Coefficient	Std	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error
C	0.956049*	0.061042	0.959309**	0.060335	0.958638**	0.060812	0.958510**	0.061018
WOMAN	-0.023071**	0.012147	-0.011986	0.075944	-0.000992	0.052762	0.002965	0.033906
SIZE	0.008874**	0.003960	0.007737*	0.003844	0.007682	0.003918	0.007612	0.003937
LEV	-0.185375*	0.038703	-0.175696**	0.038145	-0.174610**	0.038406	-0.173781**	0.038355
LN_SALESG	0.063361**	0.028496	0.062905*	0.028431	0.062750*	0.028432	0.062653*	0.028438
LN_CAPEX_INT	0.098247	0.080644	0.108214	0.082692	0.108800	0.082805	0.109479	0.082993
MBOARD	-0.066479**	0.031313	-0.063002*	0.031773	-0.062582*	0.031870	-0.062259	0.031871
R-squared	0.097128		0.089197		0.087983		0.086617	
Adjusted R-squared	0.089173		0.081172		0.079948		0.078570	
S.E. of regression	0.122542		0.123079		0.123161		0.123253	
F-statistic	11.76237**		10.92183**		10.91775**		10.91887**	
Hausman	*		-		-		-	

A.12c 2SLS (Excluding Financials) Model 2

Dependent: LN_TQ								
Independent:	WTMT		PWTMT		BLAU		TEACH	
	Model 2 (N=342)		**Model 2 (N=342)**		**Model 2 (N=342)**		**Model 2 (N=342)**	
	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error
C	1.236157**	0.445692	1.105020*	0.447198	1.183462**	0.442696	1.168806**	0.443949
WOMAN	0.189867	0.111263	1.416268**	0.525845	0.514359*	0.238580	0.899549*	0.365143
SIZE	-0.075886**	0.026726	-0.074792**	0.024044	-0.076423**	0.025461	-0.077675**	0.024868
LEV	-0.109348	0.330691	-0.074363	0.313874	-0.090144	0.321230	-0.063330	0.316323
LN_SALESG	0.208755*	0.085815	0.187876*	0.085134	0.197244*	0.084823	0.193302*	0.084552
LN_CAPEX_INT	-0.022538	0.567080	-0.094211	0.583762	-0.045164	0.572494	-0.086065	0.578668
MBOARD	0.070587	0.128014	0.085531	0.122622	0.079069	0.124931	0.084593	0.123495
LN_AGECAP	0.065828	0.063126	0.037973	0.068428	0.051853	0.065820	0.045596	0.067114
PFOR	0.102812	0.111685	0.139546	0.111007	0.116860	0.111428	0.127787	0.111299
VAR_TEN	0.006300*	0.002361	0.006477**	0.002165	0.006366**	0.002278	0.006462**	0.002241
VAR_EDU	0.025249	0.017777	0.023975	0.017850	0.024764	0.017762	0.024199	0.017815
R-squared	0.128815		0.114310		0.121618		0.118114	
Adjusted R-squared	0.102495		0.087552		0.095081		0.091471	
S.E. of regression	0.558159		0.562787		0.560460		0.561577	
F-statistic	4.741914**		5.136440**		4.893684**		5.025385**	
Hausman	-		-		-		-	

The table shows the 2SLS regression results for the Model 2 specification on the Excluding Financials sample with LN_TQ as dependent variable. An indicator of the result of the Hausman test is included in the last row. **p≤0,01 and *0,01<p≤0,05

A.12d 2SLS (Excluding Financials) Model 2

Dependent: ROA								
Independent:	WTMT		PWTMT		BLAU		TEACH	
	Model 2 (N=342)		**Model 2 (N=342)**		**Model 2 (N=342)**		**Model 2 (N=342)**	
	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error
C	0.981601**	0.088800	0.995092**	0.085671	0.988872**	0.086408	0.987437**	0.086588
WOMAN	-0.023915	0.021585	-0.145419	0.116028	-0.096842	0.077438	-0.056796	0.049429
SIZE	0.009146	0.005741	0.008761	0.005367	0.009124	0.005525	0.009023	0.005565
LEV	-0.079204	0.053833	-0.079660	0.051423	-0.081692	0.052502	-0.079231	0.052631
LN_SALESG	0.026175	0.028671	0.028238	0.028740	0.027775	0.028655	0.027392	0.028615
LN_CAPEX_INT	0.151833	0.123311	0.158626	0.123886	0.158227	0.123661	0.153953	0.123285
MBOARD	-0.112872**	0.039046	-0.113312**	0.038103	-0.113519**	0.038326	-0.113078**	0.038579
LN_AGECAP	0.010102	0.014021	0.012477	0.014508	0.011899	0.014309	0.011322	0.014183
PFOR	-0.049917	0.026412	-0.054273	0.025539	-0.053065**	0.025643	-0.051858*	0.025876
VAR_TEN	-3.61E-05	0.000383	-4.10E-05	0.000400	-4.31E-05	0.000394	-3.45E-05	0.000389
VAR_EDU	-0.009093*	0.003705	-0.008995	0.003695	-0.009006*	0.003691	-0.009061*	0.003690
R-squared	0.137408		0.139793		0.142830		0.142607	
Adjusted R-squared	0.111348		0.113805		0.116934		0.116704	
S.E. of regression	0.111835		0.111680		0.111483		0.111498	
F-statistic	4.763877**		4.826224**		4.812811**		4.782213**	
Hausman	-		-		-		-	

The table shows the 2SLS regression results for the Model 2 specification on the Excluding Financials sample with ROA as dependent variable. An indicator of the result of the Hausman test is included in the last row. **p≤0,01 and *0,01<p≤0,05

A.13 Results 2SLS: Excluding Denmark

A.13a 2SLS (Excluding Denmark) Model 1

Dependent: LN_TQ								
Independent:	WTMT		PWTMT		BLAU		TEACH	
	Model 1 (N=734)		**Model 1 (N=734)**		**Model 1 (N=734)**		**Model 1 (N=734)**	
	Coefficient	Std	Coefficient	Std	Coefficient	Std	Coefficient	Std
C	2.603223*	0.244684	2.562058*	0.243341	2.607051*	0.242464	2.608980*	0.242512
WTMT	0.428247*	0.117073	1.356324*	0.453796	1.201795*	0.338361	0.806507*	0.225256
SIZE	-0.177612*	0.015733	-0.168456*	0.015366	-0.175319*	0.015627	-0.176154*	0.015657
LEV	-0.074364	0.145649	-0.110910	0.145212	-0.095179	0.145957	-0.092544	0.145865
LN_SALESG	0.095969	0.075319	0.084424	0.075956	0.087900	0.074065	0.089775	0.074131
LN_CAPEX_INT	0.877009**	0.441016	0.808975**	0.426395	0.839041**	0.436211	0.847224**	0.437055
MBOARD	0.240434	0.182572	0.155476	0.188128	0.165600	0.190442	0.182702	0.188489
R-squared	0.162128		0.181833		0.168905		0.169858	
Adjusted R-squared	0.155213		0.175080		0.162046		0.163006	
S.E. of regression	0.594746		0.587711		0.592336		0.591997	
F-statistic	33.86653**		32.38146**		33.41470**		33.48972**	
Hausman	**		*		**		**	

The table shows the 2SLS regression results for the Model 1 specification on the Excluding Denmark sample with LN_TQ as dependent variable. An indicator of the result of the Hausman test is included in the last row. **p≤0,01 and *0,01<p≤0,05

A.13b 2SLS (Excluding Denmark) Model 1

Dependent: ROA								
Independent:	WTMT		PWTMT		BLAU		TEACH	
	Model 1 (N=734)		**Model 1 (N=734)**		**Model 1 (N=734)**		**Model 1 (N=734)**	
	Coefficient	Std	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error
C	1.007775*	0.054035	1.003360**	0.054264	1.004503**	0.054619	1.005361**	0.054528
WTMT	0.011622	0.018691	-0.007833	0.085391	0.004669	0.062378	0.007796	0.040264
SIZE	0.003565	0.003444	0.004448	0.003494	0.004235	0.003566	0.004076	0.003549
LEV	-0.143173*	0.029689	-0.145375**	0.029230	-0.144959**	0.029390	-0.144630**	0.029452
LN_SALESG	0.057270**	0.023725	0.057071*	0.023538	0.057051*	0.023600	0.057069*	0.023636
LN_CAPEX_INT	0.163971	0.089572	0.155744	0.088084	0.157733	0.088206	0.159107	0.088477
MBOARD	0.009646	0.065347	0.009100	0.063509	0.008623	0.063993	0.008538	0.064375
R-squared	0.068658		0.080623		0.078557		0.076632	
Adjusted R-squared	0.060971		0.073036		0.070953		0.069011	
S.E. of regression	0.115013		0.114271		0.114400		0.114519	
F-statistic	10.54679**		10.48669**		10.48608**		10.49205**	
Hausman	*		-		-		-	

The table shows the 2SLS regression results for the Model 1 specification and the Excluding Denmark sample with ROA as dependent variable. An indicator of the result of the Hausman test is included in the last row. **p≤0,01 and *0,01<p≤0,05

A.13c 2SLS (Excluding Denmark) Model 2

Dependent: LN_TQ								
Independent:	WTMT Model 2 (N=347)		PWTMT Model 2 (N=347)		BLAU Model 2 (N=347)		TEACH Model 2 (N=347)	
	Coefficient	Std	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error
C	1.582481*	0.424937	1.561484**	0.423588	1.577069**	0.424053	1.579566**	0.423585
WTMT	0.278558**	0.137654	0.323020	0.687826	0.457541	0.472773	0.375439	0.304977
SIZE	-0.126944*	0.027191	-0.115931**	0.026545	-0.120357**	0.027063	-0.122340**	0.027131
LEV	0.794512**	0.274277	0.656630*	0.261739	0.711288**	0.269532	0.738601**	0.272745
LN_SALESG	0.134445**	0.068596	0.126401	0.068138	0.127844	0.065775	0.129135*	0.065616
LN_CAPEX_INT	0.538585	0.504824	0.346717	0.494089	0.401628	0.496482	0.433388	0.499086
MBOARD	1.464317*	0.420565	1.437067**	0.387703	1.431594**	0.406768	1.435794**	0.413760
LN_AGECAP	0.046509*	0.013425	0.033477	0.014239	0.039141**	0.014748	0.041823**	0.014688
PFOR	0.393860*	0.116494	0.422408**	0.121734	0.430708**	0.120908	0.428062**	0.119645
VAR_TEN	0.006416*	0.001996	0.005616**	0.001908	0.005894**	0.001914	0.006043**	0.001927
VAR_EDU	0.024183	0.019037	0.031568	0.018745	0.029098	0.018989	0.027927	0.019022
R-squared	0.206850		0.239269		0.226241		0.219985	
Adjusted R-squared	0.183244		0.216628		0.203213		0.196771	
S.E. of regression	0.539282		0.528146		0.532649		0.534798	
F-statistic	11.31976**		10.82567**		10.92217**		10.99742**	
Hausman	*		-		-		-	

The table shows the 2SLS regression results for the Model 2 specification on the Excluding Denmark sample with LN_TQ as dependent variable. An indicator of the result of the Hausman test is included in the last row. **p≤0,01 and *0,01<p≤0,05

A.13d 2SLS (Excluding Denmark) Model 2

Dependent:ROA								
Independent:	WTMT Model 2 (N=347)		PWTMT Model 2 (N=347)		BLAU Model 2 (N=347)		TEACH Model 2 (N=347)	
	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error
C	1.033541**	0.069828	1.032802**	0.072059	1.029256**	0.070377	1.030609**	0.069941
WOMAN	-0.011235	0.024932	-0.255753	0.145622	-0.134888	0.095444	-0.071841	0.060126
SIZE	0.003420	0.004594	0.005461	0.004808	0.005122	0.004731	0.004702	0.004696
LEV	-0.076531	0.044859	-0.107883*	0.046254	-0.099584*	0.046031	-0.094074*	0.045796
LN_SALESG	0.002986	0.019400	0.003907	0.020579	0.003087	0.019659	0.002907	0.019431
LN_CAPEX_INT	0.158660	0.135747	0.118623	0.133965	0.134030	0.132859	0.140212	0.133219
MBOARD	0.019871	0.236825	0.026832	0.226556	0.024569	0.229874	0.022392	0.231861
LN_AGECAP	0.000777	0.002745	-0.002282	0.003102	-0.001581	0.003127	-0.001015	0.003076
PFOR	-0.015889	0.025351	-0.028117	0.024483	-0.023239	0.024241	-0.020349	0.024279
VAR_TEN	5.20E-05	0.000337	-9.57E-05	0.000376	-5.88E-05	0.000358	-3.36E-05	0.000351
VAR_EDU	-0.005944	0.004199	-0.004898	0.004087	-0.005058	0.004082	-0.005275	0.004098
R-squared	0.043041		0.029145		0.054732		0.057412	
Adjusted R-squared	0.014560		0.000251		0.026599		0.029359	
S.E. of regression	0.100345		0.101071		0.099730		0.099588	
F-statistic	1.050240		1.469084		1.270962		1.190862	
Hausman	-		-		-		-	

The table shows the 2SLS regression results for the Model 2 specification on the Excluding Denmark sample with ROA as dependent variable. An indicator of the result of the Hausman test is included in the last row. **p≤0,01 and *0,01<p≤0,05

A.14 Results Pooled Regression: Full Sample

A.13a Pooled Regression (Full Sample) Model 1 and 2

Dependent: LN_TQ																
Independent variable	WTMT				PWTMT				BLAU				TEACH			
	Model 1 (N=881)		**Model 2 (N=422)**		**Model 1 (N=881)**		**Model 2 (N=422)**		**Model 1 (N=881)**		**Model 2 (N=422)**		**Model 1 (N=881)**		**Model 2 (N=422)**	
	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error
C	2.488706*	0.224522	1.495940*	0.408375	2.481676*	0.223740	1.478765*	0.406905	2.487308*	0.223194	1.486046*	0.407912	2.486231*	0.223460	1.485878*	0.408404
WOMAN	0.149294*	0.040816	0.086611	0.056339	0.561610*	0.157191	0.321850	0.271236	0.453100*	0.119529	0.211566	0.183128	0.303368*	0.080088	0.128928	0.120561
SIZE	-0.154033*	0.013788	-0.102644*	0.024441	-0.152227*	0.013709	-0.100774*	0.024654	-0.153554*	0.013685	-0.101141*	0.024526	-0.153707*	0.013714	-0.100950*	0.024555
LEV	-0.302975**	0.139336	0.182270	0.267481	-0.319330**	0.139680	0.168925	0.267033	-0.314925**	0.139364	0.169293	0.266350	-0.315037**	0.139442	0.164712	0.266935
LN_SALESG	0.111539	0.077253	0.175473**	0.068627	0.108411	0.077035	0.172129**	0.067720	0.109471	0.076573	0.173021**	0.068143	0.109695	0.076603	0.173173**	0.068493
LN_CAPEX_INT	0.696898**	0.364789	0.163079	0.410705	0.708050**	0.365507	0.169453	0.417192	0.709620**	0.365326	0.158848	0.413754	0.716902**	0.364487	0.157777	0.413032
MBOARD	0.002596	0.078365	0.062361	0.118172	-0.013322	0.079828	0.055255	0.117600	-0.007426	0.079078	0.055454	0.117891	-0.004618	0.078796	0.054918	0.118200
LN_AGECAP			0.024537**	0.012336			0.023649**	0.012260			0.023769**	0.012489			0.023395	0.012554
PFOR			0.278717**	0.117669			0.295312**	0.116504			0.291956**	0.116592			0.288999**	0.116901
VAR_TEN			0.004203**	0.001944			0.004152**	0.001917			0.004152**	0.001929			0.004137**	0.001935
VAR_EDU			0.036663**	0.016681			0.037158**	0.016614			0.036972**	0.016642			0.036959**	0.016652
R-squared	0.207547		0.126875		0.208173		0.126110		0.209502		0.125533		0.209272		0.125083	
Adjusted R-squared	0.202107		0.105632		0.202737		0.104848		0.204076		0.104257		0.203844		0.103795	
S.E. of regression	0.592818		0.571658		0.592584		0.571908		0.592086		0.572097		0.592172		0.572244	
F-statistic	38.15072**		5.972321**		38.29596**		5.931102**		38.60543**		5.900066**		38.55175**		5.875877**	

The Pooled regression output for the Full Sample and both Model 1 and Model 2 with LN_TQ as the dependent variable. **p≤0,01 and *0,01<p≤0,05

A.13b Pooled Regression (Full Sample) Model 1 and 2

	Dependent: ROA															
Independent variable	WTMT				PWTMT				BLAU				TEACH			
	Model 1 (N=881)		**Model 2 (N=422)**		**Model 1 (N=881)**		**Model 2 (N=422)**		**Model 1 (N=881)**		**Model 2 (N=422)**		**Model 1 (N=881)**		**Model 2 (N=422)**	
	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error
C	1.006591*	0.048036	0.985064*	0.079915	1.007321*	0.048041	0.990551*	0.079504	1.006865*	0.048035	0.987823*	0.079525	1.006911*	0.047996	0.987745*	0.079534
WOMAN	-0.015064	0.008453	-0.027110**	0.012718	-0.035684	0.035742	-0.109204	0.058918	-0.035953	0.025792	-0.089637**	0.041048	-0.026403	0.017081	-0.061273**	0.026790
SIZE	0.004812	0.002931	0.007979	0.004826	0.004450	0.002938	0.007463	0.004850	0.004631	0.002950	0.007840	0.004848	0.004692	0.002947	0.007903	0.004836
LEV	-0.140561*	0.025746	-0.092191**	0.040667	-0.139218*	0.025644	-0.089194**	0.039347	-0.139437*	0.025610	-0.093134**	0.039848	-0.139399*	0.025597	-0.093290**	0.039870
LN_SALESG	0.056135**	0.022428	0.016697	0.022067	0.056430**	0.022386	0.017739	0.021989	0.056355**	0.022374	0.017349	0.022017	0.056331**	0.022381	0.017223	0.022025
LN_CAPEX_INT	0.113950	0.070343	0.114784	0.089065	0.116367	0.070928	0.110675	0.089718	0.114743	0.070521	0.108385	0.089546	0.113369	0.070301	0.105296	0.089479
MBOARD	-0.052474**	0.024706	-0.116486*	0.037837	-0.050887**	0.024520	-0.114662*	0.037551	-0.051347**	0.024543	-0.116031*	0.037610	-0.051632**	0.024575	-0.116571*	0.037664
LN_AGECAP			0.000902	0.002243			0.001052	0.002141			0.000588	0.002193			0.000508	0.002208
PFOR			-0.037727	0.024344			-0.042997	0.024240			-0.041819	0.024097			-0.040389	0.024061
VAR_TEN			-0.000178	0.000334			-0.000166	0.000342			-0.000177	0.000342			-0.000177	0.000340
VAR_EDU			-0.007100**	0.003361			-0.007258**	0.003342			-0.007191**	0.003344			-0.007183**	0.003348
R-squared	0.085069		0.125343		0.082948		0.124813		0.084064		0.128131		0.084545		0.128913	
Adjusted R-squared	0.078788		0.104062		0.076652		0.103519		0.077776		0.106918		0.078261		0.107718	
S.E. of regression	0.113718		0.104739		0.113850		0.104771		0.113781		0.104572		0.113751		0.104525	
F-statistic	13.54392**		5.889834**		13.17557**		5.861396**		13.36916**		6.040108**		13.45284**		6.082416**	

The Pooled regression output for the Full Sample Specification and both Model 1 and Model 2 with ROA as the dependent variable. **p≤0,01 and *0,01<p≤0,05

A.15 RE/FE test

A.15 FE/RE -test

Model 1								
	Full Sample		Best vs. Worst Quartiles		Excluding Financials		Excluding Denmark	
	ROA	**LN_TQ**	**ROA**	**LN_TQ**	**ROA**	**LN_TQ**	**ROA**	**LN_TQ**
WTMT	RE	X	RE	X	RE	RE	RE	X
PWTMT	RE	X	RE	X	RE	X	X	X
BLAU	RE	X	RE	X	RE	X	X	X
TECH	RE	X	RE	X	RE	X	X	X

Model 2								
	Full Sample		Best vs. Worst Quartiles		Excluding Financials		Excluding Denmark	
	ROA	**LN_TQ**	**ROA**	**LN_TQ**	**ROA**	**LN_TQ**	**ROA**	**LN_TQ**
WTMT	X	RE	X	RE	X	RE	X	RE
PWTMT	X	RE	X	RE	X	RE	X	RE
BLAU	X	RE	X	RE	X	RE	X	RE
TECH	X	RE	X	RE	X	RE	X	RE

The table shows the results of the Hausman test for Random Effects in Model 1 and Model 2, with RE indicating that the test pass at a 5% significance level.

A.16 Results Panel Method: Best vs. Worst Sample

A.16a CS:FE (Best vs. Worst Quartiles) Model 1

Dependent: LN_TQ								
Independent:	WTMT		PWTMT		BLAU		TEACH	
	Model 1 (N=446)		**Model 1 (N=446)**		**Model 1 (N=446)**		**Model 1 (N=446)**	
	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error
C	0.379073	1.273481	0.343596	1.291320	0.351383	1.282808	0.358329	1.280183
WTMT	-0.026157	0.071238	-0.134070	0.196544	-0.114153	0.177329	-0.071502	0.122572
SIZE	-0.007610	0.080636	-0.005013	0.081965	-0.005385	0.081393	-0.005910	0.081196
LEV	-0.116683	0.263751	-0.108347	0.261391	-0.106200	0.264535	-0.108619	0.264539
LN_SALESG	0.019418	0.064859	0.019775	0.065340	0.019266	0.065132	0.019270	0.065050
LN_CAPEX_INT	-0.729864	0.385467	-0.742371	0.385923	-0.734486	0.383577	-0.733612	0.383891
MBOARD	-0.014607	0.101776	-0.019487	0.101146	-0.019420	0.101360	-0.018281	0.101476
R-squared	0.900523		0.900605		0.900599		0.900578	
Adjusted R-squared	0.849941		0.850065		0.850057		0.850025	
S.E. of regression	0.248858		0.248756		0.248762		0.248789	
F-statistic	17.80339**		17.81967**		17.81861**		17.81443**	

The Cross Sectional Fixed Effects regression results for the Model 1 specification and the Best vs. Worst Quartiles sample with LN_TQ as the dependent variable. **p≤0,01 and *0,01<p≤0,05

A.16b CS:RE (Best vs. Worst Quartiles) Model 1

Dependent: ROA								
Independent:	WTMT **Model 1 (N=446)**		PWTMT **Model 1 (N=446)**		BLAU **Model 1 (N=446)**		TEACH **Model 1 (N=446)**	
	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error
C	0.974387**	0.095630	0.980455**	0.095470	0.977107**	0.095504	0.974387**	0.095630
WTMT	-0.026654	0.020890	-0.063838	0.062196	-0.056480	0.049256	-0.026654	0.020890
SIZE	0.007446	0.006077	0.006858	0.005968	0.007173	0.006029	0.007446	0.006077
LEV	-0.157772**	0.059365	-0.157364**	0.059605	-0.157423**	0.059385	-0.157772**	0.059365
LN_SALESG	0.068718**	0.026743	0.069105**	0.026683	0.068864**	0.026735	0.068718**	0.026743
LN_CAPEX_INT	0.176963	0.109109	0.177248	0.110657	0.177672	0.109770	0.176963	0.109109
MBOARD	-0.062267	0.036443	-0.062199	0.036692	-0.062108	0.036552	-0.062267	0.036443
R-squared	0.096111		0.094401		0.095083		0.096111	
Adjusted R-squared	0.083758		0.082024		0.082715		0.083758	
S.E. of regression	0.104932		0.104792		0.104878		0.104932	
F-statistic	7.779895**		7.627020**		7.687900**		7.779895**	

The Cross Sectional Random Effects regression results for the Model 1 specification and the Best vs. Worst Quartiles sample with ROA as the dependent variable. **p≤0,01 and *0,01<p≤0,05

A.16c CS:FE (Best vs. Worst Quartiles) Model 2

Dependent: ROA								
Independent:	WTMT **Model 2 (N=188)**		PWTMT **Model 2 (N=188)**		BLAU **Model 2 (N=188)**		TEACH **Model 2 (N=188)**	
	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error
C	1.282309**	0.315195	1.289221**	0.313629	1.288565**	0.314705	1.282309**	0.315195
WTMT	-0.100918	0.078812	-0.233728	0.200570	-0.224271	0.186998	-0.100918	0.078812
SIZE	0.001515	0.017347	0.001222	0.016665	0.001648	0.017034	0.001515	0.017347
LEV	-0.212871	0.138472	-0.226897	0.140217	-0.218660	0.139134	-0.212871	0.138472
LN_SALESG	0.058690*	0.024442	0.060625*	0.025408	0.059716*	0.024912	0.058690*	0.024442
LN_CAPEX_INT	0.220515	0.192690	0.156581	0.201026	0.193997	0.194698	0.220515	0.192690
MBOARD	-0.189671	0.142524	-0.203574	0.146827	-0.197333	0.144797	-0.189671	0.142524
LN_AGECAP	0.051023	0.041801	0.050724	0.041634	0.052834	0.042894	0.051023	0.041801
PFOR	-0.016992	0.132168	-0.026244	0.127171	-0.020724	0.132374	-0.016992	0.132168
VAR_TEN	-0.003344	0.002063	-0.003461	0.002045	-0.003425	0.002054	-0.003344	0.002063
VAR_EDU	0.012568	0.010825	0.009932	0.011427	0.011024	0.011185	0.012568	0.010825
R-squared	0.828388		0.827251		0.827662		0.828388	
Adjusted R-squared	0.688432		0.686368		0.687115		0.688432	
S.E. of regression	0.074902		0.075150		0.075060		0.074902	
F-statistic	5.918937**		5.871909**		5.888848**		5.918937**	

The Cross Sectional Fixed Effects regression results for the Model 2 specification and the Best vs. Worst Quartiles sample with ROA as the dependent variable. **p≤0,01 and *0,01<p≤0,05

A.16d CS:RE (Best vs. Worst Quartiles) Model 2

Dependent: LN_TQ								
Independent:	WTMT		PWTMT		BLAU		TEACH	
	Model 2 (N=188)		**Model 2 (N=188)**		**Model 2 (N=188)**		**Model 2 (N=188)**	
	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error
C	2.314575**	0.811974	2.334615**	0.822776	2.327616**	0.816860	2.324290**	0.815405
WOMAN	-0.077506	0.116205	-0.162495	0.330877	-0.177980	0.278782	-0.125829	0.193069
SIZE	-0.137470**	0.049629	-0.139079**	0.050308	-0.138145**	0.049937	-0.137938**	0.049847
LEV	-0.156898	0.398402	-0.149921	0.398130	-0.155836	0.397893	-0.156468	0.397985
LN_SALESG	0.079764	0.049404	0.081630	0.048963	0.080555	0.049548	0.080307	0.049541
LN_CAPEX_INT	-0.902062	0.610210	-0.917939	0.621535	-0.918988	0.611529	-0.915506	0.610566
MBOARD	0.010944	0.193470	0.005066	0.193476	0.005791	0.193358	0.006947	0.193392
LN_AGECAP	2.98E-05	0.031968	0.001872	0.031738	0.000710	0.031878	0.000481	0.031908
PFOR	0.387958	0.252361	0.391572	0.250476	0.389456	0.251781	0.389038	0.251938
VAR_TEN	0.005795*	0.002375	0.005777*	0.002403	0.005776*	0.002394	0.005780*	0.002389
VAR_EDU	-0.004223	0.024376	-0.005917	0.024596	-0.005180	0.024355	-0.004927	0.024343
R-squared	0.155545		0.153368		0.154937		0.155172	
Adjusted R-squared	0.107836		0.105536		0.107194		0.107441	
S.E. of regression	0.249101		0.248678		0.248837		0.248908	
F-statistic	3.260271**		3.206369**		3.245191**		3.251000**	

The Cross Sectional Random Effects regression results for the Model 2 specification and the Best vs. Worst Quartiles sample with LN_TQ as the dependent variable. **p≤0,01 and *0,01<p≤0,05

A.17 Results Panel Method: Excluding Financials

A.17a CS:FE (Excluding Financials) Model 1

Dependent: LN_TQ						
Independent:	PWTMT		BLAU		TEACH	
	Model 1 (N=688)		**Model 1 (N=688)**		**Model 1 (N=688)**	
	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error
C	-0.281315	1.672740	-0.260493	1.674179	-0.239031	1.674751
WTMT	0.088874	0.195740	0.115276	0.155542	0.108317	0.106345
SIZE	0.025028	0.105045	0.023115	0.105212	0.021191	0.105269
LEV	0.025275	0.292552	0.023889	0.291407	0.021291	0.290266
LN_SALESG	0.059396	0.078966	0.059454	0.078957	0.059257	0.078973
LN_CAPEX_INT	-0.013264	0.438002	-0.012757	0.436724	-0.003127	0.436932
MBOARD	-0.028856	0.078258	-0.028015	0.078234	-0.027948	0.078244
R-squared	0.788710		0.788841		0.789033	
Adjusted R-squared	0.731192		0.731359		0.731603	
S.E. of regression	0.333978		0.333874		0.333723	
F-statistic	13.71245**		13.72322**		13.73903**	

The Cross Sectional Fixed Effects regression results for the Model 1 specification and the Excluding Financials sample with LN_TQ as the dependent variable. **p≤0,01 and *0,01<p≤0,05

A.17aa CS:RE (Excluding Financials) Model 1

Dependent: LN_TQ		
Independent:	WTMT **Model 1 (N=688)**	
	Coefficient	Std. Error
C	1.635297**	0.599619
WTMT	0.106689*	0.046802
SIZE	-0.096136**	0.035956
LEV	-0.112801	0.203049
LN_SALESG	0.092753	0.065704
LN_CAPEX_INT	0.108548	0.386663
MBOARD	-0.015386	0.077363
R-squared	0.032968	
Adjusted R-squared	0.024448	
S.E. of regression	0.334925	
F-statistic	3.869462**	

The Cross Sectional Random Effects results for the Model 1 specification and the Excluding Financials sample with LN_TQ as the dependent variable. **p≤0,01 and *0,01<p≤0,05

A.17b CS:RE (Full Sample) Model 1

Dependent: ROA								
Independent:	WTMT **Model 1 (N=688)**		PWTMT **Model 1 (N=688)**		BLAU **Model 1 (N=688)**		TEACH **Model 1 (N=688)**	
	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error
C	0.928090*	0.095644	0.975834*	0.073600	0.928201*	0.095154	0.927863*	0.095087
WTMT	-0.000366	0.058951	-0.010207	0.048943	-0.017869	0.042218	-0.014144	0.027476
SIZE	0.009845	0.005939	0.006499	0.004429	0.010053	0.005940	0.010125	0.005938
LEV	-0.217844*	0.054852	-0.173655*	0.040766	-0.218689*	0.055128	-0.218764*	0.055002
LN_SALESG	0.069058*	0.022444	0.059780*	0.017955	0.069199*	0.022504	0.069252*	0.022516
LN_CAPEX_INT	0.194203**	0.078153	0.165394**	0.067201	0.193342	0.078263	0.192212**	0.078051
MBOARD	-0.048597	0.030499	-0.042235	0.025403	-0.049371	0.030400	-0.049411	0.030315
R-squared	0.103857		0.090547		0.104150		0.104277	
Adjusted R-squared	0.095961		0.084304		0.096257		0.096385	
S.E. of regression	0.087998		0.082820		0.088060		0.088074	
F-statistic	13.15389**		14.50290**		13.19527**		13.21326**	

The Cross Sectional Random Effects regression results for the Model 1 specification and the Excluding Financials sample with ROA as the dependent variable. **p≤0,01 and *0,01<p≤0,05

A.17c CS:RE (Excluding Financials) Model 2

Dependent: LN_TQ								
Independent:	WTMT Model 2 (N=342)		PWTMT Model 2 (N=342)		BLAU Model 2 (N=342)		TEACH Model 2 (N=342)	
	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error
C	1.649619*	0.608904	1.565217**	0.615861	1.590923*	0.612703	1.601866*	0.611857
WTMT	0.107126	0.067659	0.429442	0.286457	0.342775	0.210975	0.255074	0.138951
SIZE	-0.108253*	0.036478	-0.102759*	0.036192	-0.105052*	0.036196	-0.106425*	0.036110
LEV	-0.302623	0.281721	-0.316698	0.284289	-0.309098	0.283037	-0.305546	0.280955
LN_SALESG	0.153626**	0.063821	0.153672**	0.064036	0.153854**	0.063711	0.152577**	0.063448
LN_CAPEX_INT	-0.280847	0.524825	-0.234794	0.526814	-0.259215	0.524092	-0.246762	0.523392
MBOARD	-0.078485	0.105141	-0.059362	0.107696	-0.063323	0.106690	-0.064537	0.106184
LN_AGECAP	-0.051967	0.084254	-0.052169	0.083736	-0.053140	0.083488	-0.054141	0.083333
PFOR	0.318229**	0.163810	0.341593**	0.161521	0.334002**	0.161212	0.326112**	0.161750
VAR_TEN	0.008673*	0.003026	0.008596*	0.002995	0.008602*	0.003015	0.008568*	0.003004
VAR_EDU	-0.011564	0.016185	-0.008370	0.016529	-0.008450	0.016434	-0.008518	0.016346
R-squared	0.107490		0.106252		0.107482		0.109748	
Adjusted R-squared	0.080526		0.079250		0.080518		0.082852	
S.E. of regression	0.302591		0.302955		0.302583		0.301981	
F-statistic	3.986418**		3.935040**		3.986083**		4.080480**	

The Cross Sectional Random Effects regression results for the Model 2 specification and the Excluding Financials sample with LN_TQ as the dependent variable. **p≤0,01 and *0,01<p≤0,05

A.17d CS:FE (Excluding Financials) Model 2

Dependent: ROA								
Independent:	WTMT Model 2 (N=342)		PWTMT Model 2 (N=342)		BLAU Model 2 (N=342)		TEACH Model 2 (N=342)	
	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error
C	1.788795*	0.719228	1.880432*	0.725661	1.850060*	0.725900	1.839920*	0.721622
WTMT	-0.011985	0.011921	0.019952	0.108958	-0.005072	0.068868	-0.007285	0.039008
SIZE	-0.037329	0.045353	-0.043506	0.045830	-0.041398	0.045816	-0.040706	0.045521
LEV	-0.184388*	0.084556	-0.178802*	0.083218	-0.180159*	0.083534	-0.180671*	0.083608
LN_SALESG	0.071731**	0.022907	0.072422**	0.022923	0.072151**	0.022977	0.072088**	0.022934
LN_CAPEX_INT	0.331818*	0.137306	0.340155*	0.138947	0.334649*	0.138297	0.333287*	0.137922
MBOARD	-0.086697	0.050457	-0.083453	0.054224	-0.085763	0.052845	-0.086143	0.051940
LN_AGECAP	0.053046*	0.021119	0.053302*	0.021147	0.053337	0.021106	0.053332*	0.021090
PFOR	0.083764	0.075441	0.073307	0.076781	0.075707	0.076618	0.076823	0.076549
VAR_TEN	-0.000228	0.001087	-0.000181	0.001093	-0.000197	0.001088	-0.000199	0.001085
VAR_EDU	-0.000790	0.005451	-0.000442	0.004928	-0.000762	0.005021	-0.000838	0.005137
R-squared	0.707907		0.707459		0.707394		0.707427	
Adjusted R-squared	0.595107		0.594486		0.594395		0.594442	
S.E. of regression	0.075489		0.075547		0.075555		0.075551	
F-statistic	6.275769**		6.262186**		6.260211**		6.261232**	

The Cross Sectional Fixed Effects regression results for the Model 1 specification and the Excluding Financials sample with LN_TQ as the dependent variable. **p≤0,01 and *0,01<p≤0,05

A.18 Results Panel Method: Excluding Denmark

A.18a CS:FE (Excluding Denmark) Model 1

Dependent: LN_TQ								
Independent:	WTMT		PWTMT		BLAU		TEACH	
	Model 1 (N=734)		**Model 1 (N=734)**		**Model 1 (N=734)**		**Model 1 (N=734)**	
	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error
C	-0.585998	1.623432	-0.639175	1.627247	-0.603987	1.628074	-0.592125	1.627912
WTMT	0.077249	0.053385	0.182190	0.177413	0.190355	0.147929	0.140482	0.102338
SIZE	0.028943	0.100375	0.033873	0.100569	0.030857	0.100701	0.029766	0.100717
LEV	0.234226	0.327618	0.232860	0.328560	0.231199	0.326930	0.230376	0.326640
LN_SALESG	0.019147	0.068468	0.018328	0.068367	0.019814	0.068229	0.019988	0.068217
LN_CAPEX_INT	0.263590	0.432224	0.240817	0.430383	0.242555	0.428360	0.249488	0.429034
MBOARD	0.063993	0.115800	0.058958	0.118070	0.059415	0.117359	0.060681	0.116959
R-squared	0.818200		0.817814		0.818028		0.818108	
Adjusted R-squared	0.767841		0.767348		0.767621		0.767723	
S.E. of regression	0.311782		0.312113		0.311930		0.311861	
F-statistic	16.24731**		16.20517**		16.22851**		16.23723**	

The Cross Sectional Fixed Effects regression results for the Model 1 specification and the Excluding Denmark sample with LN_TQ as the dependent variable. **p≤0,01 and *0,01<p≤0,05

A.18b CS:FE (Excluding Denmark) Model 1

Dependent: ROA						
Independent:	PWTMT		BLAU		TEACH	
	Model 1 (N=734)		**Model 1 (N=734)**		**Model 1 (N=734)**	
NO DEN	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error
C	0.832541*	0.391009	0.831160*	0.391993	0.827966*	0.392019
WTMT	0.047235	0.074890	0.033950	0.058906	0.019789	0.039085
SIZE	0.016599	0.024181	0.016656	0.024287	0.016891	0.024296
LEV	-0.292666**	0.098018	-0.292343**	0.097837	-0.292109**	0.097828
LN_SALESG	0.059733**	0.018781	0.059822**	0.018858	0.059710**	0.018809
LN_CAPEX_INT	0.259065*	0.100941	0.257541*	0.100745	0.257603*	0.101210
MBOARD	-0.062452	0.054908	-0.062410	0.054894	-0.062267	0.054845
R-squared	0.598511		0.598405		0.598272	
Adjusted R-squared	0.487297		0.487162		0.486992	
S.E. of regression	0.084984		0.084996		0.085010	
F-statistic	5.381619**		5.379260**		5.376281**	

The Cross Sectional Fixed Effects regression results for the Model 1 Specification and the Excluding Denmark sample with ROA as the dependent variable. **p≤0,01 and *0,01<p≤0,05

A.18bb CS:RE (Excluding Denmark) Model 1

Dependent: ROA		
Independent:	WTMT **Model 1 (N=734)**	
	Coefficient	Std. Error
C	0.980312**	0.077035
WTMT	-0.014920	0.013714
SIZE	0.006950	0.004761
LEV	-0.186133**	0.045815
LN_SALESG	0.059357**	0.019187
LN_CAPEX_INT	0.212490**	0.076209
MBOARD	-0.042826	0.062018
R-squared	0.095993	
Adjusted R-squared	0.088532	
S.E. of regression	0.085871	
F-statistic	12.86622**	

The Cross Sectional Random Effects regression results for the Model 1 specification and the Excluding Denmark sample with ROA as the dependent variable. **p≤0,01 and *0,01<p≤0,05

A.18c CS:RE (Excluding Denmark) Model 2

Dependent: LN_TQ								
Independent:	WTMT **Model 2 (N=347)**		PWTMT **Model 2 (N=347)**		BLAU **Model 2 (N=347)**		TEACH **Model 2 (N=347)**	
	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error
C	2.058852**	0.614373	2.015419**	0.607182	2.034978**	0.609006	2.041291**	0.609628
WOMAN	0.081493	0.065656	0.312546	0.247625	0.220876	0.189293	0.155428	0.129353
SIZE	-0.136300**	0.037674	-0.133507	0.037041	-0.134666**	0.037170	-0.135246**	0.037248
LEV	0.086722	0.256296	0.079314	0.259503	0.081003	0.258382	0.083580	0.257591
LN_SALESG	0.102775*	0.048184	0.100949*	0.047276	0.102642*	0.047416	0.102728*	0.047490
LN_CAPEX_INT	0.399240	0.531129	0.437693	0.543590	0.412467	0.538370	0.411005	0.536283
MBOARD	0.363439	0.262607	0.396189	0.250208	0.375862	0.258205	0.373615	0.259496
LN_AGECAP	0.009711	0.018077	0.008331	0.017926	0.008936	0.017924	0.009371	0.017942
PFOR	0.358844	0.184522	0.382590*	0.183180	0.378928*	0.183085	0.373978*	0.183100
VAR_TEN	0.008378*	0.002469	0.008260**	0.002412	0.008283**	0.002431	0.008304**	0.002442
VAR_EDU	-0.023365	0.015670	-0.020384	0.015754	-0.021127	0.015726	-0.021439	0.015681
R-squared	0.117618		0.117330		0.116807		0.117127	
Adjusted R-squared	0.091357		0.091060		0.090521		0.090851	
S.E. of regression	0.278402		0.278907		0.278991		0.278837	
F-statistic	4.478762**		4.466311**		4.443760**		4.457580**	

The Cross Sectional Random Effects regression results for the Model 2 specification and the Excluding Denmark sample with LN_TQ as the dependent variable. **p≤0,01 and *0,01<p≤0,05

A.18d CS:FE (Excluding Denmark) Model 2

Dependent: ROA								
Independent	WTMT		PWTMT		BLAU		TEACH	
	Model 2 (N=347)		**Model 2 (N=347)**		**Model 2 (N=347)**		**Model 2 (N=347)**	
	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error
C	1.851936**	0.676528	1.913776**	0.678410	1.931579**	0.680970	1.916852**	0.680179
WTMT	-0.004645	0.010389	0.025938	0.098762	0.026537	0.061589	0.012153	0.035637
SIZE	-0.045268	0.043790	-0.049534	0.043933	-0.050715	0.044069	-0.049668	0.044006
LEV	-0.201151*	0.092295	-0.200813*	0.091815	-0.200613*	0.091735	-0.200418	0.091811
LN_SALESG	0.049140*	0.019746	0.049169*	0.019800	0.049387*	0.019900	0.049370*	0.019876
LN_CAPEX_INT	0.177732	0.126417	0.188566	0.126606	0.188532	0.125379	0.185687	0.125630
MBOARD	-0.265237	0.179868	-0.260909	0.183789	-0.262058	0.183172	-0.263238	0.182185
LN_AGECAP	0.001649	0.014552	0.001043	0.014152	0.001071	0.014246	0.001371	0.014327
PFOR	0.085949	0.122519	0.080258	0.122318	0.078395	0.122308	0.079055	0.122289
VAR_TEN	-0.000716	0.001323	-0.000709	0.001322	-0.000709	0.001323	-0.000708	0.001323
VAR_EDU	-0.001697	0.004999	-0.001310	0.004368	-0.001267	0.004557	-0.001430	0.004688
R-squared	0.661797		0.661875		0.662030		0.661848	
Adjusted R-squared	0.531927		0.532035		0.532249		0.531998	
S.E. of regression	0.069157		0.069149		0.069133		0.069152	
F-statistic	5.095841**		5.097622**		5.101141**		5.097015**	

The Cross Sectional Random Effects regression results for the Model 2 specification and the Excluding Denmark sample with ROA as the dependent variable. **p≤0,01 and *0,01<p≤0,05