

Master Thesis

# Social Capital Effect on Private SMEs Tax Avoidance

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**Magnus Arnseth**

MSc in Business, Major in Accounting & Business Control

Master Thesis

Supervisor: Ignacio Garcia de Olalla Lopez

BI Norwegian Business School

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This thesis is a part of the MSc programme at BI Norwegian Business School. The school takes no responsibility for the methods used, results found, or conclusions drawn.

## **1.0 Abstract**

This paper presents the first study of the social capital effect on Norwegian private SMEs' tax avoidance behavior and finds that social capital has an impact. Trust is the social capital with the most impact. To identify the social capital effect, I use a data set with all Norwegian private companies from 2000 to 2017. This study utilizes several different measures of tax avoidance, namely GAAP ETR, CASH ETR, and Long-Run CASH ETR as there is no universally accepted definition for tax avoidance. I find results that firms in municipalities which scores high in positive social capital are less prone to be involved with tax avoidance. My findings are consistent using a variety of robustness checks. The presented results are in line with previous research conducted in other countries.

## **2.0 Acknowledgements**

This master thesis is written as the final assignment in my master's programme MSc in Business, with a major in Accounting & Business Control at BI Norwegian Business School.

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### **3.0 Introduction, Motivation and Theory**

Since the Panama Papers in 2016 and Paradise Papers in 2017, tax avoidance along with tax evasion have been gaining the public's attention. The papers discovered that individuals, as well as enterprises, across the world, have been reducing their taxation through tax evasion and tax avoidance systematically. One could argue that even over the last 35 years, tax avoidance in corporate settings has had considerable attention. In 1986 there was a tax reform in the U.S. tax code as a result of confirmation of tax avoidance. It was the most comprehensive reconstruction in U.S. history (Dyrenge, Hanlon, and Maydew, 2008).

Within the corporate world, there is an enormous amount of information and factors that can affect tax avoidance in a firm as well as for individuals (Hanlon & Heitzman, 2010). Additionally, Hanlon and Heitzman (2010) suggest that there should be further investigation and research on privately held companies, as there is a difference in the ownership as well as the incentives, in comparison to public companies. In 2004, Slemrod suggested that one definition of tax aggressiveness is actions that corporate steered to reduce tax without a real change to the firm. Consequently, the boundaries in the law of taxation will be stretched through tax aggressiveness. The challenge for tax avoidance research is that there is not one firm definition or measure of tax avoidance. Tax avoidance can mean vastly different things, depending on who you ask.

#### ***3.1 Tax avoidance and tax evasion***

However, since tax avoidance is often associated with grey-area accounting or straight illegal activities, it is crucial to clarify that tax avoidant behaviour does not automatically involve firms in ill-advised actions. Within the frames of IFRS, there are several ways to reduce taxes, some of which are even encouraged legally. Moreover, taxation and accounting as a practice are complicated, and

small private firms may interpret ambiguous laws and frameworks differently, as most of them do not have an accounting department. As I will touch upon later, in this paper, tax avoidance will be defined broadly as an activity that will reduce a firm's tax rate. This definition shares a lot of similarities, as in Dyreng et al. (2008), since it is an adequate descriptive definition. However, this definition does not differentiate between day-to-day operations that are allegedly good for taxation.

Lowering taxes, and activities that could give tax benefits are a byproduct of those performances. In the scenario that tax avoidance is a string of events, then a legal action to gain lower explicit tax is at one end of the spectrum, while evasion and sheltering would be at the other side. At the same time, beauty is in the eyes of gazer, and generally speaking, individuals will behave differently when it comes down to tax aggressiveness (Hanlon and Heitzman, 2010). Tax avoidance could also be vastly distinctive and driven by a wide variety of factors and synergies, where all of these can not be measured.

### ***3.2 Social capital***

Ever since Putnam (1993) studied the government in Italy, social capital and the concept of functioning in social groups have become more involved in economic research. There are many definitions of social capital. However, it can be explained as “norms and networks that enable people to act collectively” (Woolcock & Narayan, 2000, p 1). Knack and Keefer (1997) proved a strong correlation between trust and the rate of growth in firms. Multiple studies have later suggested that social capital, such as trust, have an important impact on financial development.

Measurements of social capital, and how it is measured, is disputed. Guiso, Sapienza, and Zingales (2004) explain that the level of trust within a municipality can be obscured by several other factors, such as how reliable the police are. Furthermore, social capital varies within a country and even an area, such as municipalities. The social capital within such regions is, however, very stable,



even on lower scales. It is essential to keep in mind that social capital is in the society, and not to be confused with human capital.

Using social capital as a tool for measuring tax avoidance will contribute to the literature, but also shed light on how the social capital effect is in a developed country versus a more fragile country in terms of economics. I will use the social capital effects within Norway to identify the impact on tax avoidant behaviour in private SMEs within Norway.

### **3.3 Motivation**

The predominant motivation for researching a topic such as tax avoidance is to add value in terms of knowledge to this field. By answering questions from, for example, Hanlon and Heitzman from their 2010 paper, such knowledge can be added to the research. By adding a continuation to their research, I fill a gap in the literature thus far. Furthermore, a personal requirement for my thesis is to add value to my knowledge, which will be advantageous in my future career. Like every firm, person, company, business, or organization with income pay taxes, it is highly useful to be aware of what aspects of the society that affects this. Moreover, this thesis focuses on small and medium enterprises (SMEs).

According to The World Bank, SMEs make up for around 90% of all businesses worldwide (WorldBank, 2019). As a consequence, the results in this thesis will be highly valid in the vast majority of cases I will meet in my career. The last point is that there is a scarcity of academic research that affects the private SME sector. As you will discover later in this paper, the reason for this is that there is a notoriously difficult task to acquire useful and statistically significant information about privately held companies. Private companies do not have the same rules and laws for disclosing firm data, such as financial data, as public companies. One could say that private firms do not have as strict accounting constraints as public firms.

My research adds to the literature in three ways. Firstly, since no other paper has examined the social capital effect on Norwegian SMEs tax avoidance, my findings present new knowledge to the Norwegian sector.

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Secondly, where previous research has focused on the public sector, I have focused on the private sector and unlisted firms. Third, and lastly, I take Hanlon and Heitzman (2010) call for long-run tax avoidance research on, by using both short-term and long-term calculations for tax avoidance measurements.

The rest of the paper is designed as such: Section 4 summarizes some of the critical literature on tax avoidance and social capital. Section 5 presents and specifies my research question and my objective with this paper. Section 6 I explain the method for sample selection and my choice of variables. I also include descriptive statistics, the regression, and comments on reverse causality and multicollinearity. Section 7 presents empirical results from my regression. In section 8, I show a variety of robustness tests to ensure robustness from section 7. Lastly, in section 9, I conclude and suggest further research.

#### **4.0 Literature review**

In the matter of calculating tax avoidance, there are several ways. As tax avoidance is not something firms are required to list, I, as a researcher, along with previous researchers on this topic, need to calculate this. However, Lanis and Richardson (2014) extended their work regarding CSR's association with tax avoidance. In this study, they ended up using tax disputes, as this "likely a strong sign of tax avoidance" (Graham and Tucker, 2006; Lanis and Richardson, 2011). The results were that firms with a high level of CSR performance were less likely to be conducting tax avoidant behaviour.

Further, Mihir & Dharmapala (2006) have studied the prior literature creating a link between the incentives of the management of a company with their probability regarding tax avoidance. Multiple studies suggest that already provided high incentives to keep the upper management or the directors of the company satisfied (Mihir & Dharmapala, 2006). Their satisfaction is to be negatively related to actions regarding tax avoidance, as tax avoidance may result in the directors themselves keeping the excess profits through manipulation of records, or through holding

shares within the company. Mihir & Dharmapala (2006) have used prior studies to examine the relationship existing between terminologies.

After multiple calculations and models are implemented, such as the simple theoretical models and assessing tax sheltering activities between 1993-2001, it is suggested that there exist a relation between the number of interests managers have in the firm's value and their related actions regarding tax avoidance (Mihir & Dharmapala, 2006). The incentive compensations are a significant factor in determining the weight of interest in the company's value, as identified by Mihir & Dharmapala (2006).

In a talk at the American Tax Association Midyear Meeting, Shevlin (2007) made suggestions for the future of research in empirical accounting tax based on 20 years of expertise in the area. The Scholes-Wolfson (SW) framework is purported to be a stalwart in empirical accounting research for the last 15-20 years. The research previous to its development fits within the central themes. A lot of work regarding all taxes (both explicit and implicit). However, the author still considers it worthy of a study and urges a move beyond documentation to attempt to calibrate the projected scale of predicted price effects. Costs are researched, and it is embedded in the accounting field, but there is room for extensive research. The author suggests the researchers model and estimates non-tax costs. Providing proxies for the costs into research design to avoid generic conclusions on if the tax variable is insignificant, then the non-tax costs must be high, as there is not much to learn from that.

Explicit research suggestions include identifying book-tax differences between earnings management and aggressive tax planning; how can we recognize tax-aggressive taxpayers? What factors explain such behaviour? Another focus could be corporate tax shelters, mainly empirical tax accounting, which firms entered into them, and why not others? An essential methodological and policy contribution would be to design measures that focus on implicit taxes and estimate them in large samples. The author's final suggestion is to contribute to the tax policy debate in a more "normative manner", based on theory and

scientific reasoning, as opposed to the researcher's own opinion and beliefs.

#### ***4.1 Tax Avoidance and Social Capital***

The paper from Alm and Gomez (2008) uses a unique data set from Spain's Survey of Fiscal Policy to provide an in-depth exploration of 'tax morale'. The authors analysed new measures of 'social capital' provided by their data, including the organisations, norms, and systems that encourage cooperation and provide a basis for collective action. They stipulate that tax morale is influenced by social capital elements, including the perception of fairness, trust in government and its institutions, the nature of exchanges between taxpayers and government, and a variety of socioeconomic characteristics. This research examined micro-level data from one country, which surveyed 2483 Spanish citizens above the age of 18 (m=46.6 years old, 49.9 per cent male). The profile of the mean respondent was politically liberal, reasonably well off, and an average socioeconomic status of 3.2. They purport that the benefit of CIS as compared to WVS or EVS is the rich set of variables to measure social capital. Measures were Tax Morale, Social Capital Variables, and Socioeconomic Variables.

Their main hypotheses were that tax morale is positively affected by perceptions of efficiency in public service delivery, negatively affected by perceptions of fiscal fraud, and positively influenced by the individual's perception of the tax system's fairness. They included socioeconomic variables such as control. They concluded that, in Spain, individual tax morale is significantly and positively associated with perceptions of societal benefits from public goods and service delivery. The perception of fiscal fraud is a direct intrinsic motivation to pay taxes. They find a robust positive relationship between tax morale and perceived benefits of public services. The result encourages improved service delivery. Considering the negative relationship between tax morale and perception of fiscal fraud, they suggest that positive actions to reduce corruption may also improve tax compliance. The authors stipulate that their data

is from a survey administered in 1990, with substantial institutional changes taken place since then. While localised data will allow a deeper understanding of tax morale, more recent datasets are required.

#### ***4.2 The development of CASH ETR***

Like mentioned earlier, several ways are used and developed to capture tax avoidance in firms. Dyreng, Hanlon, and Maydew (2008) found that using a formula to calculate total cash effective tax rate (ETR) is more effective than the previously used Generally Accepted Accounting Principles (GAAP) ETR. There are various problems with using GAAP ETR, one of which is the use of annual data only. The yearly variations in tax paid by firms can be noteworthy, which will restrict the receptiveness of tax avoidance in the entity. One remarkable find in this study is that there's substantial variation in the effective tax rate across industries. The petroleum and natural gas sector had the lowest effective tax rate, while printing and publishing had the highest. It goes to show that firms can circumvent corporate taxation over a long period, which is what they conclude in the paper.

There is a direct relationship between the firm's value and tax avoidance of companies (Desai & Dharmapala, 2009). The difference between actual tax payable and the altered tax payable through tax avoidance is provided as profits to shareholders of the company through dividends. However, studies supporting such facts are deficient. This relationship is studied and analysed by Desai & Dharmapala (2009) in their studies. Through analysis, they found that such presumption does not exist. Instead, other discoveries have been made, including the role of governance as a factor impacting tax avoidance. Desai & Dharmapala (2009) established that high corporate governance leads to a more significant impact of tax avoidance on the firm's value.

Hilary and Hui (2009) went on to explore if religion affects decision making within a firm. Earlier research points to a relationship between risk aversion and religiosity. Miller and Hoffman (1995) also found that persons with a lower score in religiosity are more prone to take risks. In areas where the larger part is Protestants, the effect is even more compatible. However, they also find that Catholics also have the same effect. Overall, there is less growth in firms with high religiosity levels as they invest less in research and development and generally expect a higher internal rate of return (IRR). Lastly, they also found that when CEOs switch jobs, they are prone to join workplaces with similarities in the culture.

Dyrenge, Mayew, and Williams (2012) examines the role of religion within financial reporting by using a degree of religious adherence as a proxy. As, for example, honesty and modesty are preached in religion, which would suggest a high level of religiousness is corresponding with lower probability of grey-area accounting and faulty valuation. They focused on "accrual choices, honesty, and risk aversion" (Dyrenge et al., 2012), as honesty and risk aversion will impact accrual choices (Weaver and Agle, 2002). Moreover, risk aversion is more common in religious than non-religious persons (Miller, 2000; Diaz, 2000; and Miller and Hoffman, 1995). Adding to this discussion, Hilary and Hui (2009) found that firms in the U.S. located in higher religious districts make less risky investments.

Their study concludes with honesty is a more prominent factor than risk aversion, and tax sheltering is not occurring as often in highly religious locations.

According to Jeff et al. (2013), there exists a relation between the level of faith of individuals and the probability of performing tax avoidance activities. Through previous studies, they found that people following a specific religion tend to avoid any types of risks, therefore being risk avoidant. Multiple studies, including the one already mentioned, support the existence of a positive relationship between religious people and risk avoidance. Jeff et al. (2013) created a relation between tax avoidance and religiosity by linking it with avoiding risks.

Fraudulent tax avoidance is perceived as risky since tax authorities charge multiple fines if such activities reveal themselves. Thus, the link to the fact that religious people would avoid high-risk actions, and as tax avoidance is also of high risk, religious people may not opt for avoiding tax (Jeff et al., 2013). Prior studies present a negative relationship between tax avoidance and the religiosity of a country or state for corporate taxpayers. Similar associations are discovered for individual taxpayers. The negative relationship between these two terms is justified through a correlation matrix, empirical models, and other analyses.

Lanis and Richardson (2015) explored if there is any connection between CSR and tax avoidance within corporations. For measuring tax avoidance, they used information about tax disputes from the Kinder, Lydenberg, and Domini (KLD) database. The reason for this was because there was some variation in the outcomes of previous research. Therefore they decided to use tax disputes instead of proxy measures that are more on the indirect side. By using the KLD database, Lanis and Richardson limit themselves to U.S. companies only, as the KLD database has exposure to the socially responsible U.S. companies.

The study found that the probability of tax avoidance is lower with a higher degree of CSR fulfillment from a firm. Two of the CSR categories stood out as essential components for reducing tax avoidance. Those were community relations and diversity represented in the community (Lanis and Richardson, 2015).

Law and Mills (2016) investigated how military experience affects tax avoidance. The study probes into Chief Executive Officers (CEOs) with a military background and if there is any link with less tax avoidant behaviour in their firm. They mention that Dyreng et al. (2010) have already proved that tax avoidance varies dependent on who the CEO is but are not able to explain where the variation lies. One integrated value across most persons with military experience is ethics. As most of them see tax-aggressiveness for paying less tax as unethical, it is rarer to occur.

Their study shows that firms lead by executives with military experience have

higher effective tax rates, even when executives share no other attributes. The leadership with military experience is also less likely to exploit tax havens.

### ***4.3 Civil norms and tax avoidance***

An investigation of how levels of social capital in the U.S. are systematically related to tax avoidance of corporations. Tax avoidance is captured by the strength of civic norms and the density of social networks in the counties where the corporations are located. Corporate tax avoidance was measured using the firm's ETR and CETR (Care, Educational and Treatment Reviews), plus DTAX (Domestic Tax), to capture methods used in tax expense reduction. Social capital was measured using data from NRCRD (Northeast Regional Center for Rural Development), including voter turnouts in the presidential election, response to U.S. census surveys, total non-profit organisations, and ten types of social organisations in 1990, 1997, 2005 and 2009.

Samples were taken from the Standard & Poor's Compustat database, 10-K filings from SEC (Securities and Exchange Commission) database, plus country-level social capital data from NRCRD and county-level demographics from the Bureau of Economic Analysis and U.S. Census Bureau. Their findings captured several incidents of tax avoidance to reduce firm taxes relative to pre-tax accounting income. They indicated that firms located in counties with higher social capital levels have higher tax rates and lower discretionary permanent book-tax differences. They propose that this evidence explains that social capital helps promote a social environment surrounding the headquarters that deter tax avoidance practices within the said corporation. They claim insight into civic norms and social networks in society to cultivate an environment that enforces business practices within prescribed values and standards. Implications are broad because tax avoidance practices evidenced in the analysis do not directly imply illegal or improper practice, as tax laws are open to interpretation, and it is down to the individuals to take advantage of these.



## 5.0 Research question and objective

As per prior literature, several factors affect tax avoidance behaviour in a firm. Some of these factors are the background of the CEO, such as military or not, geographic location, incentives, industry, and a wide range of financial data, for example, leverage, debt, and firm age. It is interesting to see firms with a CEO with a military background have a higher average GAAP ETR and are less likely to use tax havens (Law & Mills, 2016). Thus, my interest amplifies in whether social capital in the area surrounding a firm can have some effect on a firm's tax avoidance behaviour. As a result, I discovered that there is minimal research on the relationship between tax avoidance and social capital.

My research helps to assess whether social capital aspects have a significant impact on the effective tax rate, and therefore tax avoidance, for a business. As Hanlon and Heitzman (2010) correctly point out, more research is needed on tax avoidance, especially on which factors that affect a firm's tax avoidance behaviour.

Dyreng, Hanlon, and Maydew (2010) discovered that managers have an influence on tax decisions, and are influenced by social capital surrounding the company. Individuals in the United States believe that they have to pay taxes, which also affects firms in the surrounding area where this belief is vital, as shown by Alm and Torgler in 2006. The research I am conducting will contribute to prior research as well as aiding incoming research of tax avoidance by helping to settle which social capital factors that affect tax avoidance behaviour in firms.

In the case that social capital factors affect tax avoidance, I expect factors that one could consider good qualities to act the firms' sufficient tax positively as well. A positive quality could be the trust level in an area. There is an assumption that positive qualities in an area affect tax avoidant behaviour in a likewise positive manner, as shown by Hilary and Hui in 2009. Furthermore, a social factor is church attendance, where prior research by McGuire, Omer, and Sharp (2012) show that firms in religious areas are less likely to undergo unethical business

actions.

Derived from the findings in previous research, I want to investigate the links, because to my knowledge, similar studies have not been performed on Norwegian SMEs, and the connection between social capital and tax avoidance remains underdeveloped.

## **6.0 Methodology**

### ***6.1 Sample Selection***

My collection of samples starts with all the Norwegian firms listed in the Centre for Corporate Governance Research (CCGR-database) for the year 2000 to 2017, and I endeavour to put minimal requirements on the sample to maximise the scope of firms and their attributes. Since all the firms are from one single country (Norway), I conclude that the enterprises in my sample selection are located in the same circumstances, both legally and economically. The CCGR database consists of exceptionally high-quality information regarding Norwegian private companies. By law, Norwegian firms must submit accounting data that have been verified by an auditor, even if they are not a listed firm. Therefore the data holds useful quality data.

Firstly, I removed every firm that was listed on OSEBX (Oslo Stock Exchange), as I wanted private firms in my sample.

In 2006 there was a tax reform implemented in Norway, and some drastic changes were integrated into the Norwegian taxation code. The sole focus of this reform is equal taxation theory based on the same principles, across the board, for all firms. To counteract the effect this had on companies and certified parallelism, the period is excluded from the year 2004 to 2006.

In the selected period, I required a variety of variables to be able to measure tax avoidance. Hence, I put a requirement for non-missing data on the affected variables.

Previous literature from Richardson, Lanis, and Taylor (2015), Dobbins and Jacob (2016), and Hanlon (2005), as well as most other tax research, have excluded firms in financial, utility and petroleum sectors. As a response to that, I removed companies with Standard Industrial Classification code (SIC): 4900-4999, which is the utility business, 6000-6999, which is the financial sector and lastly 1311-1389 which is the crude oil and gas industry. As these sectors have vastly different accounting measures and are exposed to diverse regulations in taxation, it is common practice to omit them from the sample list.

Furthermore, I want to exclude large companies. The written definition of micro, small, and medium-sized enterprises are in the EU commission recommendation. To quickly summarize, SMEs are companies with staff headcount under 250 and turnover less than € 50 000 000 or balance sheet total under € 43 000 000 (Commission Recommendation of 6 May 2003 concerning the definitions of micro, small and medium-sized enterprises, 2003).

In my sample collection, I used both a pre-determined factor that allowed to filter out small or large companies, to be certain that only small-medium enterprises were in my sample, I also incorporated the conditions mentioned above.

Further, I remove firms with inconsistent accounting data and generally varying numbers. Firms that change location are also removed since it will be affected by different social factors in various areas. Negative tax rates and the negative effective tax rate are also removed, as this is commonly done in previous research. During the years I collect data from, there have been some changes to the division of municipalities in Norway. As a consequence, it causes some data to be missing or misplaced. However, in the majority of the dataset, this was not a problem.

The implementation of these criteria results in a sample with 323.122 firm-years spread out over 127.031 distinct firms, across the period.

## **6.2 Variables**

### *6.2.1 Dependent variables*

Firstly, the dependent variable must be clarified, as it is a widely used word within tax research. Thus, a clarification of how it will be defined and measured, within this paper is necessary. Deducting results from previous literature; tax avoidance is a measure of the firm's ability to have a lower effective tax rate concerning earnings before tax. Equally important, the definition of tax avoidance is broad, hereunder anything that scales down the effective tax rate of a firm over a substantial amount of time (Dyreng et al., 2008).

#### *6.2.1.1 GAAP ETR*

As a result of limitations in my dataset, I do not have an explicit measure of tax avoidance. Thus, the implementation of a substitute measure is necessary.

As Hanlon and Heitzman (2011) mentioned in their study, there are several ways to measure tax avoidance. However, the two most used measurements are GAAP ETR (Generally Accepted Accounting Principles) and CASH ETR.

GAAP ETR is computed as such:

$$GAAP\ ETR_{it} = \frac{Total\ Tax\ Expense_{it}}{Pretax\ Income_{it}} \quad Eq. (1)$$

As mentioned by Dyreng et al. (2008).

Hanlon and Heitzman (2011) wrote a short but suitable description as an explanation for GAAP ETR, which follows: "Total tax expense per dollar of pre-tax book income" (Hanlon and Heitzman, 2011, p 140).

To gather a thorough understanding of how tax avoidance will be calculated in this paper, it is useful to establish how GAAP works, or rather, its limitations. As GAAP tax rate is published in a firm's financial statements, it is convenient to use for publicly listed firms. However, as this paper focuses on private SMEs, it is a limitation and would not be as accurate.

Another problem with GAAP ETR as a measure of tax avoidance is that it is built exclusively upon annual data. As a consequence, the year-to-year deviations or discrepancies in the yearly tax rates can shroud tampering in a firm's tax avoidance (Dyreng et al., 2008).

Moving on, measuring tax avoidance with GAAP ETR have another problem, which is that the total amount of taxes owed by the firm is a product of the sum of current and deferred tax expense. Deferred taxes serve as taxes that are to be refunded or paid in the upcoming time as a consequence of the transitory book-tax discrepancies. To expedite deductions and delay income for tax motive corresponding to book motives is an extensive part of tax avoidance, for the reason that it scales down current taxes, but scale up deferred taxes. As seen earlier, GAAP ETR incorporates both deferred and present taxes, and therefore it will not indicate these forms of tax avoidance (Dyreng et al., 2008).

With so many complications and issues, Dyreng et al. (2008) decided to make some alterations on the GAAP ETR. The alteration is done to solve the constraints mentioned earlier, as well as improve upon the computation. The first adjustment is to measure effective tax rates over several years, usually three to ten years. This is backed by Hanlon and Heitzman (2010), which suggest that ten years or more may be optimal, even though they realize that this might lead to fewer observations. The initial interest with the long-run tax rate is the reduction of yearly variations in effective tax rates.

Moreover, they used cash taxes paid, also known as CASH ETR, instead of GAAP tax expense. The reason being that cash effective tax rates are not influenced by, for example, tax cushion.

### 6.2.1.2 CASH ETR

This brings me to my first dependent variable, CASH ETR (*CashETR*).

The CASH ETR formula, as shown by Hanlon and Heitzman (2010) is as such:

$$CASH\ ETR_{i,t} = \frac{Cash\ Tax\ Paid_{i,t}}{(Pretax\ Income_{i,t} - Special\ Items_{i,t})} \quad Eq. (2)$$

Hanlon (2003) mentions that the difference between CASH ETR and GAAP ETR can potentially be significantly different over long periods, especially for three to ten years. Dyreng et al. (2008), therefore, presented an updated version with Long-Run CASH ETR, which essentially is CASH ETR across several years. As a consequence of the similarities between CASH ETR and Long-Run CASH ETR, the arguments mentioned above affect both. However, cash taxes paid over short periods are displaying an incomplete picture of tax avoidance because of refunds and payments to the IRS. These payments could be earlier tax disputes from years in advance, which will interfere with the financial statement.

### 6.2.1.3 Long-Run CASH ETR

My second dependent variable is Long-Run CASH ETR (*LRCashETR*).

As for the formula presented by Dyreng et al., (2008) the Long-Run CASH ETR looks like this:

$$Long - Run\ CASH\ ETR_i = \frac{\sum_{t=1}^N Cash\ Tax\ Paid_{it}}{\sum_{t=1}^N (Pretax\ Income_{it} - Special\ Items_{it})} \quad Eq. (3)$$

Where N is the period measured, i is the firm, and t is the period that goes from 1 to N.

As a benchmark noted by Dyreng et al. (2008), a high level of tax avoidance will be characterized by lower values of CASH ETR.

Hanlon and Heitzman (2010) explain that a firm that does not have a strict accounting restriction, such as a private firm, can steer clear of most direct taxes by only disclosing lower taxable income as well as earnings, which will not be

caught with this method. CASH ETR is not affected by changes in estimations such as valuation, allowance, or tax cushion. Commonly, cash taxes paid are found in the financial statements of a firm, as a supplemental disclosure.

However, differences in GAAP and CASH can be hugely different numbers, even over long periods (Hanlon, 2003; McGill and Outslay, 2004). Based on this, I will also conduct control measures for both GAAP ETR and CASH ETR. In light of this, I must mention that IFRS does not recognize extraordinary items, just nonrecurring items. GAAP does make a distinction; however, the tax advantage of extraordinary items has vanished slightly. This could mean that some extraordinary items are misplaced under nonrecurring items. Nevertheless, the occurrence of this would be completely random amongst firms.

As a consequence and result of limitations in my dataset, with some financial data missing, I must do some further alterations to the CASH ETR and Long-Run CASH ETR formula. The numerator, cash tax paid, will be replaced by taxes payable in year  $t-1$ , as they have similarities, and it is the closest I can get. An accountant or auditor should also have gone over the financial statements, which should ensure a good, close approximation. Nevertheless, I recognize the difference, and changes could have been made in later stages, even though they are likely minimal.

## *6.2.2 Independent variables*

### *6.2.2.1 Trust*

The independent variable of interest is trust (*Trust*), more precisely, the measured level of trust in the same county as the firm is positioned. Generally speaking, trust is very stable throughout time. One statement towards this, made by Katz and Rotter (1969), where they explain that 75% of young individuals' trust level can be explained by looking at the parents' level of trust. In other words, it is learned behaviour. Bjørnskov (2006) also confirmed, in his studies, that trust scores are "remarkably stable across time". Trust is argued to be extremely stable

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through time by Uslaner (2002). The level of trust is also correlated to religion, where we see that, for example, in Austria, which is a wealthy country, have a relatively low level of trust, compared to countries within the same financial state, such as Norway or Sweden.

There are two leading ways to measure trust that I will be using in this paper. One being the 1990 World Value Surveys, and the other being crime rate, which I will comment further under the control variables section.

World Value Surveys (WVS) have measured trust and have available data for 1990. As I already mentioned, trust is extremely stable across extensive durations of time. On the background of this knowledge, I conclude that trust is not anticipated to have changed drastically over the last couple of years. Moreover, Norway has only slight differences in its population, and changes in trust are usually related to economic inequality (Uslaner, 2002). According to the World Inequality Database (2018), Norway is amongst the top 10% in the world when it comes to economic equality, and have been there in the last 30 years.

#### *6.2.2.2 Sociability*

Now I introduce the next independent variable, sociability. Church attendance data is collected from NSD. This is measured as the number of religious events that are attended by the inhabitants of a municipality over a year (*ChurchAttendance*). The definition of social is: "activities which you spend time with other people" (Cambridge Dictionary, 2020), and that is precisely what church attendance is about. Church attendance is used as a substitute for sociability in multiple other studies such as Hong et al. (2004) and Health and Retirement Study (HRS). Church attendance is also incredibly stable across years, which is represented in appendix 11.4. It is widely considered an accurate and representative variable, which also makes it a fitting variable for my study.

#### *6.2.2.3 Altruism*

Lastly, the independent variable for altruism (*TVaksjonen*), yearly donations to "TV-aksjonen" within each municipality. The data is collected from NSD. The goal of this activity is to gather donations to different objectives, which vary each



year. This has been going on since 1974 and is the world's most immense voluntary work in terms of collected resources across the population. Since this is a Norwegian phenomenon and is well documented on the municipality level, it makes for a good substitute for altruism. Several studies, such as Sobel (2002) and Uslaner and Brown (2005), bring up donations as a good representation for altruism on a social capital degree. Carter and Castillo (2002) also found the economic impacts of altruism and trust. Also, trust and altruism are distinguishable, which makes both independent variables useful in this research.

### 6.2.3 Control variables

As an addition to my dependent and independent variables, I have a control variable for each of the independent variables, that are expected to affect the following experiments. This allows for better interpretations of other variables. With previous research in mind, I chose to cover a wide variety of control variables. I included both financial and social capital control variables, as per prior research on this subject (Mills et al. 1998; Rego, 2003).

1. **Crime:** Criminality as an index for trust is a valid option, as shown by Messner et al. (2004). In short, the study shows that an area with a high level of crime has a lower level of trust, which implies that the crime rate is somewhat the opposite to trust. The crime rates from Statistisk Sentralbyrå (SSB) have available data both for the whole sample period as well as data on a municipality level, I also compliment with crime rate (*CrimeRate*) data from WVS, the same document that obtained trust score.

2. **Sociability:** The control variable for sociability ought to be the total number of visitors from the municipal and non-municipal cinemas (*Cinema*), across each municipal. This control variable is collected from NSD. There were some mismatches as this dataset is a merge between NSD and SSB (collaboration). Cinema attendance at the county level is in the appendix, 11.3, to visualize how stable it is within each county across several years. However, it was

only occurring in a few places. The definition of social that I mention earlier still applies and is a perfect representation of going to the cinema.

3. **Altruism:** As altruism is not easily measured, and most common measures for this is self-reporting, which notoriously is known for wrong or false results (Filkowski, Cochran and Haas, 2016). However, there are also ways to measure altruism through other, quantifiable options. Edlin, Gelman, and Kaplan (2007) proposed the altruism theory of voting. To summarize, an altruistic resident will vote (*VoteParticipation*), to help others. Vote participation is also used by Guiso, Sapienza, and Zingales in their 2004 studies, as it is an outcome-based measurement. Vote participation data is collected from NSD and SSB. SSB and NSD are collaborating, and therefore ensure reliable data. This is also linked to the act of obtaining a lottery ticket. However, I will stick to participation in voting on a municipal level. To ensure a fair comparison across differently populated municipalities, this is calculated by summing the total votes registered for each municipality, divided by the total number of legal individuals that can vote in the same municipality.

4. **Revenue Growth:** Revenue growth is a measure for company sales from one year to another (*RevenueGrowth*). There is a clear association between revenue growth and taxation. It is calculated as the change in revenues from one year to the next, divided by the previous year's revenues.

5. **Profits:** Profits are the financial gain for the firm (*Profits*). Rego (2003) shows that more profitable firms avoid more tax than other, less profitable firms. Therefore, profit is a valuable control variable to add. This was already calculated in the CCGR dataset, which was labelled "Net Profits".

6. **Marginal Impact:** I include margin impact (*MarginImpact*) as a part of an extended Du Pont model. Margin impact is calculated by dividing EBIT (earnings before interest and tax) over sales.

7. **Leverage:** Leverage controls for profitability in the firm (*Leverage*). It is also linked with other expenses that are open for deduction as taxable income. Leverage is also used by prior literature, for example, Mills et al. from 1998, and it can affect ETR. I measured leverage by summing short- and long term debt and divide it on total assets.

8. **ROA:** Return on assets is an indication of the effectiveness and profitability of a firm. Gupta and Newberry (1997) have shown that ROA (*ROA*) and ETR are associated. ROA is calculated by EBITAE (Earnings Before Interest, Tax, Amortization, and Exception Items) divided by total assets.

9. **Company Age:** The firms are already sized down to small- and medium-sized, as explained in the Sample Selection section (4.1). Company age (*CompanyAge*) is a natural variable to include, and several other tax research papers have it included, such as the one from Bhattacharya et al. (2004). Younger firms tend to be more prone to failure as a result of poor financial results, which could lead them to exploit opportunities for tax avoidance (Dickinson, 2011). Firm age is already calculated from the CCGR dataset.

10. **Extraordinary items:** Since extraordinary items have a direct influence on both dependent variables, it is interesting to include them to control variables. Extraordinary items (*ExtraItems*) are one-time payments or incomes that are substantial in size and do not occur several times. It is calculated in the CCGR dataset and is therefore easy to obtain.

## **6.3 Descriptive statistics**

### **6.3.1 Dependent variables, Cash ETR, and Long-Run Cash ETR**

Table 1 summarizes the dependent variables *CashETR* and *LRCashETR*. The values are as a per-cent, so 0,25 would refer to 25%. As shown, there are some

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extreme values in the dataset, and the highest ETR is almost 70%. As expected, the long run ETR is lower. To limit extreme values in the dataset, I winsorized both ETR computations at a 1% and 99% level, which is the most used in previous tax research. Furthermore, it is winsorized at 1% and 99% instead of 2,5% and 97,5%, which is also used in tax research, due to the size of the dataset. The table shows average winsorized Cash ETR of 29,2%, and winsorized Long Run Cash ETR of 25,8%, which is relatively close to the 2010 tax rate in Norway, at 28% for companies.

Worth mentioning is the fact that taxes in the northern part of Norway are slightly lower than in the southern region. This difference is accounted for. The difference in taxation is a result of government influence to attract and persuade people to move to the northern parts of Norway. However, this will not influence the final results and conclusion.

**Table 1:** Summary statistics, dependent variables.

<b>Dependent variables</b>							
<b>Variable</b>	Mean	Std. Dev.	min	max	p25	Median	p75
CashETR	0.292	0.187	0.019	0.693	0.194	0.279	0.326
CashETR*	0.269	0.035	0.194	0.32	0.154	0.279	0.286
LRCashETR	0.268	0.137	0.037	0.405	0.234	0.289	0.314
LRCashETR*	0.258	0.046	0.069	0.328	0.214	0.269	0.284

\*winsorized at 1% and 99%

### 6.3.2 Independent variables, Trust, TVAksjonen & Church attendance

Table 2 displays summary statistics for the three independent variables for the social capital effects, namely trust, sociability, and altruism. As with Table 1, this summary will show the mean, standard deviation, maximum and minimum observations, as well as interquartile range. Norway shows clear signs of high trust levels, which is also confirmed in other studies (Ostergaard et al., 2009). The highest trust scores are located in Rogaland, which is on the south-west coast of Norway. On the contrary, Hedmark, on the east side of Norway, had the lowest

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trust scores. These are not winsorized, as the minimum and maximum value does not differ to a great extent, so the dataset does not have any extreme outliers.

When winsorizing, one should be aware that it is a modification of data. Some outliers, within certain boundaries, are a normal phenomenon and should be treated as such. This claim is also backed by Tukey (1960), which focuses on the importance of not having over-vigorous use of rejecting outliers.

**Table 2:** Summary statistics, independent variables.

<b>Independent variables</b>							
<b>Variable</b>	Mean	Std. Dev.	min	max	p25	Median	p75
<b>Trust</b>	0.66	0.077	0.467	0.777	0.649	0.679	0.694
<b>TVaksjonen</b>	48.326	21.368	0	367.208	37.465	43.959	51.662
<b>Church Attendance</b>	1.538	0.099	0.503	0.842	0.672	1.542	0.785

### 6.3.3 Control variables

I include several control variables since ETR will be influenced by a variety of other factors, as mentioned earlier. The control variables are also used in other tax research from various researchers such as Law and Mills (2016), Dyreng, Hanlon, and Maydew (2010) and Hope, Ma, and Wayne (2013), to mention some. There are both financial and social control variables. As mentioned earlier in the paper, social capital measures are stable throughout several years, and the vote participation only varies by 9,8 per-cent points. The crime rate is also relatively low compared to several other European countries. The appliance of winsorizing also shows apparent effects when looking at profits, for example. All the social control variables are not winsorized for the same reasons I mentioned under the independent variables (see above). All of the financial data is winsorized at a 1% and 99% level, except for extraordinary items. They are not winsorized mainly because of two reasons, one being that extraordinary items have a significant effect on a firm's financial statement and are therefore of substantial size. The

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other reason is that extraordinary items are unlikely to happen several times, which means there are few observations of them in the dataset.

**Table 3:** Summary statistics, control variables.

Variables	Mean	Std. Dev.	min	max	p25	Median	p75
CrimeRate	0.086	0.031	0.045	0.153	0.07	0.074	0.095
VoteParticipatio	0.777	0.02	0.713	0.811	0.763	0.778	0.792
Cinema	2.64	.636	1.584	3.773	2.193	2.482	2.905
RevenueGrowth	27.703	3360.47	-43726	1793352	.833	.982	1.186
RevenueGrow*	1.801	2.681	.192	11.725	.833	.982	1.186
Profits	2073407	56980405	0	1.373e+10	109000	273000	1100000
Profits*	767495	983657	14000	3566000	109000	273000	1100000
MarginImpact	5.59	1051.01	-6738.571	576685	0.048	0.106	0.257
MarginImpact*	0.232	0.306	0.009	1.195	0.048	0.106	0.257
Leverage	0.592	6.427	-171	2499	0.358	0.57	0.76
Leverage*	0.55	0.246	0.101	0.918	0.358	0.57	0.76
ROA	0.163	0.552	-103	110.5	0.049	0.117	0.217
ROA*	0.149	0.124	0.009	0.449	0.049	0.117	0.217
CompanyAge	11.838	12.155	0	341	3	9	17
CompanyAge*	11.612	10.856	0	58	3	9	17
Extrairtems	-2255.408	786841.2	-	40975000	0	0	0
			3.190e+08				

\*winsorized at 1% and 99%

(Some of the text have been reduced in size to fit correctly and a better viewing experience).

### 6.3.4 Correlation Matrix

The correlation between all the dependent, independent, and control variables is displayed in the correlation matrix. It is presented as a pairwise correlation, and values are winsorized, as explained previously (see above). This matrix measures the correlation between two variables, where a correlation of 0 equals zero correlation, where 1 or -1 represents an entirely positive or entirely negative correlation.

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Not surprisingly, the correlation between Cash ETR and Long Run Cash ETR is very high compared to other variables as they have a basis in the same numbers. Extraordinary items have a relatively low correlation to everything. The low correlation could be a result of very few observations. The general and relatively low level of correlation on tax avoidant measures is in line with previous research. Finding adequate measures for tax avoidance is noticeably difficult, which is also explained by multiple researchers (Hanlon & Heitzman, 2010; Dyreng et al., 2010).

Trust and crime rates also show an expected result, having the most significant impact on tax avoidant behaviour, which is similar to previous research. The other correlation results are all within reasonable values, which is also expected.

**Table 4:** Correlation matrix, dependent, and independent variables.

The correlation matrix is in the appendix, as a consequence of the size.

#### **6.4 Regression**

My research is based on whether social capital affects tax avoidance. As discussed by Bertrand and Schoar (2003), social capital affects executives in a firm, which leads me to believe social capital can affect tax avoidance as well.

As the first step in my analysis, I will be running the following OLS regression.

With regards to my empirical question, my regression model looks like this:

$$ETR_{i,t} = \alpha_i + \beta_1 Trust_{i,t} + \beta_2 Church_{i,t} + \beta_3 TVA_{i,t} + \theta_4 Social_{i,t} + \theta_5 Fiancial_{i,t} + \varepsilon_{i,t} \quad \text{Eq. (4)}$$

Where  $ETR_{i,t}$  is CASH ETR, or Long-Run CASH ETR tested in separate regression, of firm  $i$  in year  $t$ , and is the measure for tax avoidance.  $Trust_{i,t}$  is measured variable for the level of trust per municipality,  $Church_{i,t}$  is the average

church attendances per capita per municipality,  $TVA_{i,t}$  is averaged donated to TV-Aksjonen per capita per municipality in NOK (Norwegian Krone).  $Social_{i,t}$  and  $Fiancial_{i,t}$  are control variables for namely social capital and financial data, and reflects characteristics that can change over time and be linked to tax avoidance, which is discussed under control variables (see above). Lastly,  $\varepsilon_{i,t}$  is the error term.

My dataset consists of panel data, which is data with both time-series and cross-section dimensions. By using panel data, it is achievable to explore how relations between variables change over time (Brooks, 2008). By using panel data, I can control for unobserved heterogeneity across municipalities, which are static across several years (Gould & Hijzen, 2016). Lastly, to handle various likely biases, the regressions are predicted with robust standard errors that are altered for autocorrelation and heteroscedasticity.

### ***6.5 Reverse causality***

Reverse causality refers to cause-and-effect relationships, but in the opposite direction than one would think. Reverse causality could play a part, and there can be reverse causality in the association between tax avoidance and financial data, there could occur problems with my OLS regression (Stock and Watson, 2012). To address the problem with reverse causality, theory advocates the use of two-stage least square analysis in conjunction with the help of an instrumental variable. By using an instrumental variable, one account for unexpected behaviour between variables and allows for visualization of the actual correlation between variables. Without the use of an instrumental variable, OLS can give biased results. Instrumental variables are widely used in economic studies to deal with unforeseen effects (Cingolani and Crombrughe, 2012).

Yet, in tax avoidance research and social capital effects on business decisions, the use of instrumental variables is rarely used, and there are noticeably poor use and availability of indicator variables that are satisfactory. Having this in mind, I concluded to opt against the use of instrument variables.



Another way of dealing with reverse causality is the use of lagged variables. As discussed by Benito (2018) and Vaisey and Miles (2014), the use of lagged variables when dealing with simultaneity or reverse causality is highly inconsistent. There are serious estimation difficulties when dealing with panel data and lagged variables. In econometric literature, using lagged variables together is the leading way to operate, however, without a thorough knowledge about actual causes, this can lead to highly inconsistent results (Leszczensky and Wolbring, 2019). Previous research that tried using lagged variables in conjunction with tax has reported change in the sign for taxation, which goes to show how inconsistent the results can be (Coglianese et al., 2016). With this knowledge, I chose not to use lagged variables, but keep in mind the possible problems reverse causality can cause in my OLS regression.

### **6.6 Multicollinearity**

In my regression, I want to create an arithmetical relationship between the dependent and independent variables. I do this by introducing several different independent variables. Still, by doing so, the independent variables can exhibit multicollinear links between each other, and the correlation between the dependent and independent variables could be disrupted. Various degrees of correlation amongst variables are expected, but as shown in the correlation matrix above, there are no unexpected results that could detect multicollinearity. The high level of collinearity between CASH ETR and Long-Run CASH ETR is natural because they are essentially built upon the same financial numbers, and therefore does not falsely interact with a regression coefficient. Farrar and Glauber (1967) emphasize the importance of acknowledging the difference between nature and effects in multicollinearity. Furthermore, it is essential to show understanding of the chosen independent variables, as the nature of some is to be highly correlated, such as *CrimeRate* and *Trust*.

## 7.0 Empirical results

### 7.1 Empirical results – Trust, Altruism, and Sociability

Table 5 is a visual representation of the regression results of the equation mentioned in section 4.4. It shows the result of running three regressions, for the social capital trust (*TCashETR*), altruism (*ACashETR*), and sociability (*SCashETR*), on *CashETR*. *TCashETR* represents where the social capital effect trust is the primary variable. *ACashETR* represents where the social capital effect altruism is the primary variable, and lastly, *SCashETR* represents where sociability is the primary social capital variable. It is worth noting that the three control variables for social capital are highly significant, and their effects are relatively even across all three regressions. The results imply that an increase in trust, altruism, and sociability in the society will increase the effective tax rate, and they are highly significant with  $p\text{-value} < 0,01$ . However, a higher crime rate leads to a lower effective tax rate, which, after analysing the correlation matrix, is expected. The results also show that trust is the most impactful variable on the effective tax rate, which is in line with previous research.

Since extreme values can considerably influence correlation estimates at either end of the tail, I use winsorized variables where that is common practice. Furthermore, most of the independent and control variables are highly statistically significant. In comparison to other social capital effects on tax avoidance studies, the R-squared is within the expected range, which varies between 2% (0,02) and 10% (0,1), albeit seldom over 13% with any significance.

The regression results indicate that social capital factors which one could classify as good (generally accepted as a positive trait in society) are positively related to the effective cash rate. Georgarakos and Pasini (2011) documented that both trust

and sociability affect the stock market, which leads me to believe these social variables are, in fact affecting financial results, such as tax, and therefore also effective tax rate. Implicitly, this will also affect tax avoidance. The results are also in line with Knack and Keefer (1997) results, even though they focused on developing countries, they found that trust has a significant impact on economic activity. Based on this knowledge, I believe that a change in the general level of trust around a firm will affect the firm's effective tax rate and the view on tax avoidance.

A natural continuation is figuring out why tax avoidance is affected by social factors, such as trust. Ostergaard, Schindele, and Vale (2016) found that high levels of social capital decreased bank's probability to disappear quite substantially. Further, they argue that since savings banks have stakeholders from the local area, the banks are indirectly affected by social capital in said area. This relationship is intriguing. The study is also conducted in Norway, which is highly relevant to my results. Putnam (1993) also backs this statement by explaining the powerful influence social context has on institutional success. He also advocates that social traditions are exceptionally stable over long periods, as well that his results reach beyond Italy.

From the descriptive statistics, I found that Rogaland had the highest trust score. Furthermore, Oslo had the highest crime rate, lowest church attendance, and the lowest contribution per capita to TV-Aksjonen. Interestingly, Oslo also had among the lowest effective tax rate found in this research. One observation is not enough to conclude; however, as the regression in Table 5 shows, there is evidence that social capital affects tax avoidance. One could also argue that Oslo is a much bigger town than most other places in Norway, and the relationship between the inhabitants are not as close. Competition within Oslo is also relatively higher, as there are more firms. Cutting prices may be the only way to stay competitive in this environment. Nevertheless, there is a trend among

municipalities with a worse social capital overall score, that the tax avoidance measures are higher. That is an interesting result, and it is peculiar how social capital can affect the financial state of a firm.

In prior research, it is proven that trust is very stable across time. The statement is also true for Norway, where the general trust level is very stable, even across decades. In egalitarian societies, trust tends to be higher as well. Trust is extremely stable as it will take an extremely long time to change that, as with all social capital factors. Social capital is developed over many years, and it is difficult to change this rapidly. It is interesting to see the effect of trust on tax avoidance, and I would argue that private SMEs are more affected by society around the firm than big corporations. Since Norway is such a small country, and private SMEs is relatively small, which allows me to argue that the stakeholders in the firm originate from the same area as the firm. The firm, therefore, is a byproduct and reflection of the neighborhood (in this case, municipality) surrounding the firm since the employees are likely from that area.

Developing this thought further, as tax avoidant behaviour is frowned upon, the employees do not want to be associated with this type of activity. The stakeholders would be recognised, and since they live in the area they are working, it is safe to assume they also have friends in the area. So, the breach of trust in the firm with tax avoidant behaviour will reflect poorly upon the employees as well. This explanation is also in line with previous research that areas with prominent social norms will punish fluctuations to a higher degree. Thus, the previous research and my results lead me to believe that social capital, most noticeably trust, does have a relation with effective tax rates in a firm, and therefore tax avoidant behaviour.

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**Table 5:** Regression results each social capital on its own

VARIABLES	TCashETR	ACashETR	SCashETR
Trust	0.207***		
TVaksjonen		0.046***	
ChurchAttendance			0.033***
CrimeRate	-0.195***	-0.155***	-0.154***
VoteParticipation	0.020***	0.016***	0.006**
Cinema	0.010***	0.003***	0.005***
RevenueGrowth	-0.031***	-0.033***	-0.027***
Profits	-0.019***	-0.027***	-0.023***
MarginImpact	-0.027**	-0.022**	-0.024***
Leverage	-0.009***	0.009***	0.009***
ROA	0.230***	-0.241***	-0.219***
CompanyAge	0.019***	0.018**	0.0025**
ExtraItems	0.002**	0.003***	0.003**
Cons	0.256***	0.258***	0.280***
Observations	323,122	323,122	323,122
R-squared	0.073	0.083	0.082

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

## 7.2 Empirical results – Trust, Altruism, and Sociability – Long-Run

Table 6 will show similar results, as in table 5. Thus, the same arguments hold for Long-Run CASH ETR. The difference between CASH ETR and Long-Run CASH ETR is explained under 6.2.1. One noticeable difference is the R-squared, which is slightly lower in Long-Run CASH ETR. The resemblance is expected and is also the most common result in previous research that touches upon both measurements of tax avoidant behaviour. On a general basis, the likeness in results increases robustness in my findings, as they do not deviate from each other, even when variables that are based on the same numbers are changed.

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**Table 6:** Regression results each social capital on its own – Long Run

VARIABLES	TLCashETR	ALCashETR	SLCashETR
Trust	0.215***		
TVAksjonen		0.042***	
ChurchAttendance			0.027***
CrimeRate	-0.201***	-0.149***	-0.172***
VoteParticipation	0.022***	0.018**	0.005***
Cinema	0.014***	0.004***	0.009***
RevenueGrowth	-0.029***	-0.035***	-0.019***
Profits	-0.022***	-0.023***	-0.026***
MarginImpact	-0.029***	-0.024***	-0.021***
Leverage	-0.010***	0.008***	0.011***
ROA	0.239***	-0.252***	-0.211***
CompanyAge	0.013***	0.016**	0.029***
ExtraItems	0.003**	0.004***	0.002**
Cons	0.242***	0.239***	0.271***
Observations	323,122	323,122	323,122
R-squared	0.058	0.065	0.048

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

### 7.3 – Empirical results - Merged

Table 7 shows every social capital variable merged in the same regression, on both CASH ETR and Long-Run CASH ETR. It is worth noticing that trust (*Trust* and *CrimeRate*) are affecting other variables negatively. Altruism (*TVAksjonen*) in Long-Run CASH ETR and sociability (*Cinema*) in both ETRs are not statistically significant anymore. However, a reasonable number of variables are significant at p<0,01, even though a merged regression is heavily affecting the independent variables compared to table 6 and table 5, where social capital was measured each on their own. The result of my OLS regression with merged social capitals is expected, as it is common in previous literature where several social factors are tested together, which is discussed in a summary of social capital by Ponthieux (2004).

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**Table 7:** Regression – The effect of social capital on tax avoidance.

Variables	Dependent	
	CashETR	LRCashETR
Trust	0.211***	0.235***
TVAksjonen	0.039**	0.031
ChurchAttendance	0.035*	0.032**
CrimeRate	-0.145***	-0.158***
VoteParticipation	0.028**	0.035**
Cinema	0.002	0.003
RevenueGrowth	-0.031**	-0.028***
Profits	-0.017	-0.019**
MarginImpact	-0.023***	-0.023
Leverage	-0.089**	-0.093***
ROA	0.210**	0.213**
CompanyAge	0.016***	0.023**
ExtraItems	0.001*	0.002**
Cons	0.287***	0.295***
Observations	323,122	323,122
R-squared	0.053	0.042

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

In other research (Guiso, Sapienza, and Zingales), trust has been found to have less importance where legal systems, such as the court system, are efficient and where the general population is educated. Another research from Ostergaard et al. (2009) finds a correlation where savings banks located in high trust areas is more likely to survive. The result could mean that social capital aligns with the interest of stakeholders and banks. Contrary, the effectiveness of trust as social capital is worse in countries with relatively high trust, such as the Nordic countries. As a result, I can speculate that trust has more effect in worse developed countries than Norway. However, studies on social capital are conducted to greater depth in poor or developing countries, which makes sense because the impact could be more significant in those areas.

## **8.0 Robustness results**

To ensure reliable results in this thesis, I will perform several robustness tests. These tests are also run to assess the level of robustness of my results in my analysis, as well as support and complement findings. Lu and White (2014) explain that if not performed correctly, robustness checks can give ambiguous or even inaccurate representation of data. To ensure illuminating and correct robustness results, I will specify the correct variables. Interaction between financial covariates is expected since financial results often depend on each other. With a robustness regression, the interaction will be monitored. The OLS robustness check regression estimators can be found in the appendix. I will use my OLS regression model as a baseline for the tests and make necessary alterations to get a thorough conclusion with relevant value.

### ***8.1 Robustness regression – county level***

In the first robust regression, I use alternative variables to check for social capital. All variables are scaled to the county level, which covers an area much more prominent than on the municipality level. However, it is not comparable to a country level, as Norway is divided into 19 counties at the time when the data was collected. When applying these variables, it becomes clearer that trust affects tax avoidance, even on the county level. This also shows that my results are robust to dropping firms with negative ROA as well as using ETR equal to or above zero ( $ETR \geq 0$ ). However, the other social factors are a little less significant, which therefore supports my previous conclusion that social capital and especially trust, affect tax avoidance.



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**Table 8:** Robustness regression – county level

Variables	Dependent	
	CashETR	LRCashETR
Trust	0.193***	0.204***
TV Aksjonen	0.040**	0.037**
ChurchAttendance	0.023*	0.021**
CrimeRate	-0.016***	-0.055***
VoteParticipation	0.006**	-0.031**
Cinema	0.001**	0.003**
RevenueGrowth	-0.021***	-0.019***
Profits	-0.009***	-0.011***
MarginImpact	-0.026***	-0.028**
Leverage	0.051***	0.081***
ROA	-0.031***	-0.017***
CompanyAge	0.018***	0.021***
ExtraItems	0.001**	0.003***
Cons	0.278***	0.296***
Observations	323,122	323,122
R-squared	0.039	0.048

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

## ***8.2 Robustness regression – the financial crisis and tax code***

In my sample selection (4.1), I opted out on the year 2004 to 2006, to remove some of the effects of changes in the Norwegian tax code. However, I did not remove the financial crisis during the years 2007-2008. In this regression, I will test the robustness with a sample from the pre-financial crisis, but including the Norwegian tax code changes. Prior literature found that tax avoidance increased noticeably before and during the financial crisis. Firms needed to gather capital to meet the typical loan terms, retain credit rating and survive the recession, somewhat similar to what we witness now, during COVID-19. It is also argued that the risk of being exposed to tax avoidance is lower than the expected financial gain (Richardson, Taylor, and Lanis, 2015).

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Further, I check the effect of the change in tax code, by including the missing years. The original regression model is used as a baseline for this regressing, except that it now has the years 2004, 2005, and 2006. In table 9, I display robust regression.

**Table 9:** Robustness regression – including tax code change

Variables	Dependent	
	CashETR	LRCashETR
Trust	0.197***	0.199***
TVAKsjonen	0.036***	0.041***
ChurchAttendance	0.022**	0.020***
CrimeRate	-0.018***	-0.049***
VoteParticipation	0.008*	-0.020**
Cinema	0.006**	0.003**
RevenueGrowth	-0.019**	-0.022***
Profits	-0.011***	-0.011***
MarginImpact	-0.022***	-0.028**
Leverage	0.049***	0.081***
ROA	-0.040*	-0.055*
CompanyAge	0.017	0.023
ExtraItems	0.002	0.002
Cons	0.249***	0.275***
Observations	346,231	346,231
R-squared	0.081	0.048

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

There is a slight change in ROA. Company age and extraordinary items are also rendered insignificant. There are more observations, as I include more years, and therefore firm-observations. R-squared is lowered, which suggests a worse fit. There is also an overall reduction in significance for some of the variables.

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### **8.3 Robustness regression – pre-financial crisis**

To continue the robustness test of results, I will investigate further the discussed subjects from section 6.2. I will do a slight alteration to the robust regression, and only include firm-years after the financial crisis. Chodorow-Reich (2014) shows apparent effects of the financial crisis on firm-level, up until 2009. Consequently, I will be using time spanning from 2010 to 2017 in the following robustness test. As I touched upon earlier, firms were observed to adjust the financial side of the business as the financial crisis set in. The adjustments were made before and during the crisis, and after several years, the sudden adjustments should level off. By testing the years 2010-2017, any abnormal changes in tax avoidant behaviour as a consequence of tax code change and the financial crisis will be reduced.

**Table 10:** Robustness regression – 2010 to 2017

Variables	Dependent	
	CashETR	LRCashETR
Trust	0.210***	0.189***
TV Aksjonen	0.038***	0.055***
ChurchAttendance	0.026**	0.028***
CrimeRate	-0.014***	-0.040***
VoteParticipation	0.006**	-0.019**
Cinema	0.011**	0.011**
RevenueGrowth	-0.019**	-0.022***
Profits	-0.020***	-0.018***
MarginImpact	-0.026***	-0.031**
Leverage	0.053***	0.072***
ROA	-0.051*	-0.058**
CompanyAge	0.009*	0.006*
ExtraItems	0.002	0.002
Cons	0.251***	0.250***
Observations	127,542	127,542
R-squared	0.065	0.054

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

In comparison to the previous robustness test, there are more significant variables. However, extraordinary items are rendered insignificant once again. This leads me

to believe there were some relatively substantial impacts financially during the implementation of new tax code and financial crisis, which is expected. Company age has also been reduced, presumably since fewer firms are starting up during turbulent times. The overall levels are as expected, and there are no significant changes. The results in 6.2 and 6.3 further supports my main findings, and the social capitals are still impactful and significant, both before, during, and after periods with uncertainty.

#### ***8.4 Balanced vs. unbalanced dataset***

Since my dataset includes companies without consecutive data for the whole period, problems with unbalanced panel data can occur. Missing data at random points is generally not a problem; however, if missing data is not arbitrary and related to errors, biased estimates in sample selection can occur (Baltagi, 2005).

In the very nature of my research, I can not put the requirement for companies to have a full data sample across all years, since this will exclude the vast majority of the firms. The firms are expected to have similarities in the reported financial data (Hovakimian, 2009). By using a balanced dataset, my estimates could be biased, since firms will be removed on the wrong basis, and not because of standard random missing information.

Hence, I run the regression with a balanced dataset. The results are somewhat different, with differences in the significance level of several control variables. Since this research paper focuses on SMEs, the results of the balanced dataset should not be interpreted with bearing weight. Most SMEs, and especially private ones, are in an early phase, which means they do not have consecutive data, yet. By introducing this requirement, the more significant part of firms is removed, which could affect the results to a high degree.

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**Table 11:** Robustness regression – Balanced dataset

Variables	Dependent	
	CashETR	LRCashETR
Trust	0.411**	0.330***
TV Aksjonen	0.068***	0.041***
ChurchAttendance	0.078***	0.088***
CrimeRate	-0.022***	-0.049***
VoteParticipation	0.009	-0.021*
Cinema	0.020**	0.008***
RevenueGrowth	-0.021	-0.019
Profits	-0.009*	-0.011*
MarginImpact	-0.019	-0.073
Leverage	0.006	0.001*
ROA	-0.062*	-0.021**
CompanyAge	0.018***	0.056***
ExtraItems	0.003	0.002
Cons	0.135	0.114**
Observations	21,231	21,231
R-squared	0.061	0.052

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

### 8.5 Alternative measures of tax avoidance

To check the robustness of my results, I run the original regression with an alternative measure of tax avoidance. The measure is used in most tax avoidance research and is, therefore, a good measure for robustness. This alternative measure is also mentioned previously in this research paper, in the variable section, under dependent variables, namely GAAP ETR. GAAP ETR is used in a variety of tax avoidance research and is an accepted calculation for tax avoidance (Dyreng, Hanlon, and Maydew, 2008; Hanlon and Heitzman, 2010).

The robustness results show apparent similarities to the original OLS regression, which supports my earlier arguments, that social capital, especially trust, do affect corporate tax avoidance.

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**Table 12:** Robust regression - GAAP ETR

<b>Variables</b>	<b>Dependent GAAP-ETR</b>
Trust	0.227***
TV Aksjonen	0.041***
Church Attendance	0.107***
Crime Rate	-0.139***
Vote Participation	0.038**
Cinema	0.011***
Revenue Growth	-0.027**
Profits	-0.018***
Margin Impact	-0.022***
Leverage	-0.079**
ROA	0.212**
Company Age	0.012***
Extra Items	0.08*
<hr/>	
Cons	0.292***
Observations	323,122
R-squared	0.087

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

## 9.0 Conclusion

I use social capital and a dataset from CCGR over Norwegian private firms to study the effect of social capital on tax avoidance behaviour through different measures of tax avoidance. By using several different variables for social capital and financial data, I show that Norwegian private SMEs in areas with higher levels of trust tend to pay more tax, and therefore are less likely to undergo tax

avoidance behaviour.

The first test is a regression for each of my three chosen social capitals, trust, sociability, and altruism. This regression finds evidence that suggests a social capital effect on tax avoidant behaviour, especially in times where there are no extraordinary changes in tax law or the financial market. Firms in municipalities with what one could consider “good” social capital scores are less likely to participate in tax avoidant behaviour.

By using several different measures of tax avoidance, I ensure robust results and evidence that social capital affects the effective tax rate in firms located in other municipalities. I contribute to the growing literature within tax avoidance and the pursuit to understand how tax avoidance can be measured and estimated.

My evidence extends prior studies on similar topics. Social capital effect on tax avoidance has been studied earlier; however, to my knowledge, not in Norwegian private SMEs. Specifically, trust has been proven to affect a variety of financial numbers on firms, including effective tax rates.

Tax avoidance is, by its very nature, extremely difficult to measure (Slemrod & Yitzhaki, 2002). This leads to limited research on this area; however, I would advocate that with more good research on the topic, the more likely the right measurement will develop.

Overall, this paper highlights the necessity for useful measurements of social capital and tax avoidance. My results suggest that social capital, scaled to the municipality level, do have an impact on the tax avoidant behaviour in private Norwegian small- and medium-sized enterprises.

Although I have conducted thorough sample selection and robustness tests, I acknowledge that my results can have some limitations. The tax avoidance measurements are somewhat modified due to the nature of my sample. Social capital is notoriously difficult to measure, which could affect my results. However, the data is provided by a reliable source and cleaned beforehand.

***9.1 Suggestion for future research***

My research and results open up for future research. The available quantity of research on private firms and tax avoidance is relatively low compared to publicly listed firms. One of the main reasons for this is that tax avoidance is difficult to measure, and with a private firm, it becomes even more difficult as a result of private firms are not obliged to release financial statements. As I touched upon earlier in this paper, it would be interesting to see how stakeholders affect tax avoidance. In publicly traded firms, stakeholders, more often than not, have incentives to push for lower tax rates to get more profits and better ROI. Another interesting research would be to see the differences in firms from the same area, but with stakeholders from different regions. I.e., firm 1 and 2 are located in area X, but stakeholders in 1 are from area Y, and stakeholders in 2 are from area X. This would see how stakeholders influence the firms' tax avoidance behaviour, and if social capital can move across unseen borders with the population.

Finally, one interesting topic to research is the outcome of being involved in tax avoidance. Hanlon and Slemrod (2009) found that listed firms associated with tax avoidance lost an average value of 1,04% on a press release. If this is the case, are there any benefits of conducting tax avoidance and if it is worth it in the short and long run.



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## **11.0 Appendices**

### ***11.1 Acronyms***

CASH ETR – Cash Income Taxes

CCGR – Centre for Corporate Governance Research

CEO – Chief Executive Officer

CETR – Care Educational and Treatment Review

CIS – Centre for Sociological Research

CRS – Common Reporting Standard

CSR – Corporate Social Responsibility

DTAX – Domestic Tax

ETR – Effective Tax Rate

EVS – European Values Survey

GAAP – Generally Accepted Accounting Principles

IFRS – International Finance Reporting Standards

IRR – Internal Rate of Return

IRS – Internal Revenue Service

IRS – Internal Revenue Service

KLD – Kinder, Lydenberg and Domini (database)

NRCRD – Northeast Regional Center for Rural Development

OLS – Ordinary Least Squares

OSEBX – The Oslo Børs Benchmark Index

ROA – Return on Assets

ROI – Return on Investment

SEC – Securities and Exchange Commission

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SIC – Standard Industrial Classification

SME - Small and Medium-Sized Enterprise

SSB – Statistisk Sentralbyrå

SW – Scholes Wolfson

WVS – World Values Survey

### ***11.2 – Data collection and disclaimer***

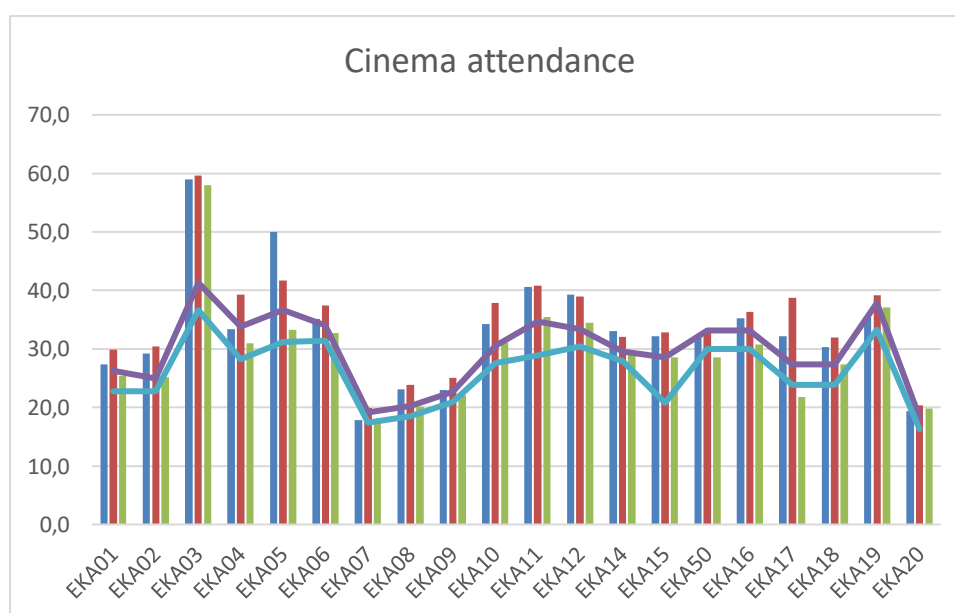
Disclaimer: A part of the data used in this publication is collected from NSD – Norsk senter for forskningsdata Kommunedatabase. NSD is not responsible for the analysis of the data, nor the interpretation that is done.

Ansvarsfraskrivelse: (En del av) de data som er benyttet i denne publikasjonen er hentet fra NSD – Norsk senter for forskningsdata Kommunedatabase. NSD er ikke ansvarlig for analyse av dataene eller for de tolkninger som er gjort her.

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### ***11.3 – Cinema attendance***

**Table 13:** Cinema attendance





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Visual representation of how stable cinema attendance is on the county level. This graph represents the years 2000-2015.

#### 11.4 – Church attendance

**Table 14:** Church attendance

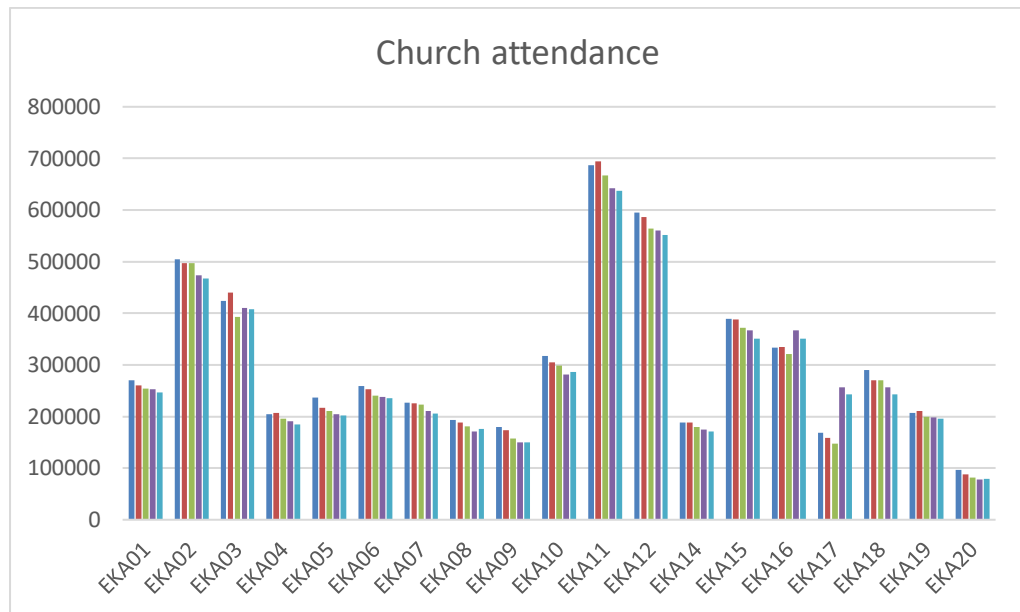


Table 14 is a visual representation of how stable church attendance is on the county level. However, there is a slight downtrend across every county except 17, which is Nord-Trøndelag.

#### 11.5 OLS robustness regression estimators

$$\hat{\delta}_{jn} \equiv \left( \frac{\hat{\beta}_{jn}}{\hat{\gamma}_{jn}} \right) \equiv \begin{bmatrix} D'D & D'X_j \\ X_j'D & X_j'X_j \end{bmatrix}^{-1} \begin{pmatrix} D' \\ X_j' \end{pmatrix} Y, j = 1, \dots, J,$$

(From Lu and White, 2014)

#### 11.6 – Correlation Matrix – Table 4

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Variables	Cash ETR	LRCash ETR	Trust	Crime Rate	TV Ak.	Vote Partic	Chur. Attended	Cinema	Comp Age	Rev. Growth	ROA	Lev.	Mar. Imp.	Profits	Extra Items
CashETR*	1.000														
LRCashETR*	0.712	1.000													
Trust	0.055	0.051	1.000												
CrimeRate	-0.084	-0.071	-0.488	1.000											
TVaksjonen	0.003	0.004	0.279	-0.186	1.000										
VoteParticipation	-0.001	-0.013	0.378	-0.174	0.216	1.000									
ChurchAttendance	0.031	0.034	0.210	-0.536	0.247	0.125	1.000								
Cinema	0.004	-0.005	0.246	-0.089	-0.343	0.321	-0.796	1.000							
CompanyAge*	0.021	0.027	-0.033	0.054	0.003	0.012	-0.005	0.004	1.000						
RevenueGrowth*	-0.046	-0.069	0.000	0.004	-0.003	0.007	-0.006	0.004	0.179	1.000					
ROA*	-0.183	-0.090	0.044	0.081	-0.024	0.086	-0.099	0.087	-0.156	0.123	1.000				
Leverage*	0.127	0.091	0.007	0.043	-0.010	0.029	-0.048	0.042	-0.120	0.031	0.036	1.000			
MarginImpact*	-0.265	-0.181	0.050	0.051	-0.004	0.069	-0.066	0.070	-0.040	-0.017	0.301	-0.328	1.000		
Profits*	0.271	0.267	0.066	0.069	-0.009	0.076	-0.086	0.092	0.206	0.338	0.267	0.007	0.210	1.000	
ExtraItems	0.007	0.007	-0.000	-0.005	0.001	-0.001	0.004	-0.004	0.002	0.001	0.003	0.002	0.002	0.001	1.000

\*winsorised at 1% and 99%