Master Thesis

Voluntary audit in Norway:
Income-, wealth- and educational characteristics of key decision makers in small private limited companies refraining from non-mandatory audit

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Professor John Christian Langli

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_____________________________  _____________________________
Håkon Gjengstø    Tom-Erik Hovda

Oslo, August 2014
Abstract

The purpose of this thesis is to establish personal characteristics of key decision makers in companies opting out of non-mandatory audit as determinants for the audit decision. The recent change in regulatory setting and our access to extensive personal information on CEOs, chairmen and dominant owners in small Norwegian private limited companies provide an unique opportunity to assess the decisions made with regards to opting out of voluntary audit.

Using logistic regression we found that level of education along with personal income and wealth of key decision makers have a strong impact on the audit decision in small Norwegian private limited companies eligible for audit exemption. Our data suggests that individuals with high level of education and income tend to keep the auditor, along with individuals who rely on the company eligible for audit exemption for a major share of their total personal income. Limitations of this thesis as well as directions for future research are provided.
1. Introduction

1.1 – Introduction

This thesis investigates the income-, wealth-, and educational characteristics of CEOs, chairmen and dominant owners (hereafter referred to as key decision makers defined in section 5.3) in eligible companies opting out of non-mandatory audit. Small private limited companies in EU member states are permitted exemption from statutory audit under certain guidelines established by the EU Fourth Directive. The Directive dictates a maximum threshold for turnover, total assets and number of employees allowing for substantial threshold variations among member states that have implemented the option (Collis 2010). In Norway, audits by registered or state authorized auditors in accordance with the Norwegian Audit Act were mandatory for all private limited companies obliged to file accounts until the amendment of the Private Limited Liability Companies Act § 7-6 became effective as of May 1st 2011. The new legislation allows small private limited companies with specific characteristics to qualify for audit exemption. These characteristics are described in section 2.3.

1.2 – Motivation and contribution

There is emerging literature regarding demand for audit in small limited private companies in Europe. However, similar studies of the Norwegian audit market and the demand for audit are limited in English language publications. Collis (2010) remarked a similar gap for Denmark in her comparative study of demand for voluntary audits in the UK and Denmark. Norway is neither a member of the European Union (EU) nor has adopted thresholds for audit exemption until recently, and is often neglected in many publications regarding voluntary audit in EU member states (i.e. Collis, Jarvis and Skerratt 2004; Collis 2010; Lennox and Pittman 2011; Dedman, Kausar and Lennox 2014).

Collis, Jarvis and Skerratt (2004) contributed to the field of study in their research on drivers of voluntary audit in the UK. They found that education, perceived benefits, company size (measured as turnover), agency relationships between owners, as well as agency relationships between the company and credit providers explained 35 % of the variance in the demand for a non-mandatory
audit. In their study, education was a binary variable which took the value 1 if the principal director had a first or post-graduate degree, a professional qualification, studied business or management subjects, and/or received training in related subject in the company. The education variable was associated with higher demand for voluntary audit.

We seek to elaborate more on the education part by including variables on educational level and the relevance of education relative to the audit choice. Education improves one’s ability to receive, interpret and understand new information (Welch 1970), making educated individuals more capable to make qualified decisions. Theory also predicts a significant and direct correlation between educational level, income and wealth (Becker 1975). Hence, education promotes personal income and wealth. To our knowledge, there is limited research on the connection between educational level, income and wealth and the audit decision. This is our master thesis’ contribution to the existing literature. The timing represents a unique opportunity as the recent legislation change provides an ideal environment for understanding the effects education, income and wealth have on audit decisions in small private limited companies eligible for audit exemption.

The remainder of the master thesis is organized as follows. The next section provides a discussion of the international and Norwegian regulatory setting. Section 3 reviews the relevant literature regarding drivers of voluntary audit in private companies and an overview of education and personal economy as tools for decision making. The hypotheses are presented in section 4. Section 5 covers the methodology used, while section 6 provides the results. Limitations and directions for further research are discussed in section 7, followed by the conclusion in section 8.
2. Regulatory setting

2.1 – Background

There has been an increasing focus on simplification and facilitation of regulations and public services as means to increase the companies’ competitiveness both nationally and internationally. This is evident in Sweden and Denmark where the governments aim to reduce the administrative burdens with 25 % (Prop. 51L 2010-2011). The Norwegian government has signaled similar simplifications for Norwegian companies. Allowing statutory audit for small companies to become non-mandatory is part of this strategy. Audit fees for small companies in Norway are estimated to range between 10 000 and 30 000 NOK (Prop. 51L 2010-2011; NOU 2008: 12), but the cost benefit of omitting voluntary audit depends on the potential need for additional accounting services and/or increase in own effort. A substantial amount of these companies are characterized by having zero employees, turnover, account payables and debt to credit institutions and tax authorities. In such circumstances, audited financial statements often provide limited or no value for otherwise relevant stakeholders (Langli 2009).

2.2 – International regulatory setting

By introducing the new legislation, the government takes into account the importance of small and medium-sized enterprises (SMEs). The EU defines small (medium) SMEs as enterprises employing less than 50 (250) people with a turnover not exceeding € 10 (50) millions, and/or with a total balance not exceeding € 10 (43) millions (European Commission 2005). In the EU, there are 23 million SMEs (99 % of all enterprises), which provide more than 100 million jobs (Collis 2010). It is not without reason SMEs have been called the backbone of Europe’s economy (European Commission n.d). According to the European Commission (2011), SMEs in Norway account for 99.8 % of the total enterprises, 68.6 % of employment and almost 80 % of value added activities. During 2003-2009 the number of Norwegian SMEs increased by 21.7 %, creating more than 100 000 new jobs (European Commission 2011).
The EU Fourth Company Law Directive (78/660/EEC) allows member states to grant qualifying small companies within their jurisdictions exemption from the statutory audit. The qualification tests are based on turnover, balance sheet total and number of employees (Collis 2010).

Table 1. EU maxima for audit exemption. Adapted from Collis (2010).

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<td>Turnover (in millions)</td>
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<td>€ 6.25</td>
<td>€ 7.30</td>
<td>€ 8.80</td>
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<td>Balance sheet total (in millions)</td>
<td>€ 2.50</td>
<td>€ 3.125</td>
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<td>Average number of employees</td>
<td>50</td>
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Table 1 shows the EU maxima for audit exemption (Collis 2010). It is evident that the increases in turnover and balance sheet total have been exceeding the general inflation\(^1\) in the EU area, implying a desire amongst legislators that more companies should be eligible for audit exemption. However, differences in national legal systems that arise from cultural differences also affect the auditing setting (Margerison and Moizer 1996) since the international audit standard allows for variations at the national level (Knechel, Niemi and Sundgren 2008). The EU thresholds have remained unchanged since 2008.

2.3 – National regulatory setting

The Norwegian legislation change was a proposal from the Ministry of Finance based on the EU Fourth Company Law Directive (78/660/EEC). The law is expressed in the Norwegian Audit Act § 2-1 cf. the Norwegian Private Limited Liability Companies Act § 7-6, effective as of May 1\(^{st}\) 2011:

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\(^1\) The yearly inflation rate in the EU area was between 0.7 % and 4 % during 1998-2008. [http://www.tradingeconomics.com/euro-area/inflation-cpi](http://www.tradingeconomics.com/euro-area/inflation-cpi)
Act of 13 June 1997 No. 44 Norwegian Private Limited Liability Companies

Act: § 7-6. Proxy to omit auditing

(1) The general meeting may, with the majority required for amendments of the articles of association, issue a proxy giving the board of directors authorization to adopt a resolution to the effect that the company's annual accounts shall not be audited in accordance with the Auditors Act provided that
1. the operating revenues of the total business do not exceed five million kroner,
2. the balance sheet amount does not exceed 20 million kroner, and
3. the average number of employees does not exceed ten man-years.

The three listed conditions in the act are cumulative, meaning that all conditions must be met before the general meeting may issue the proxy. Companies remaining passive still have to perform a statutory audit. To issue the proxy, a two-thirds majority of the votes and the share capital represented at the general meeting is required, similar to amendments of the articles of association. The management of small private limited companies tend to have substantial influence over the decisions made by the general meeting, as the degree of separation between ownership and control is highly correlated with the size of the company (Fama 1980). In addition, family ties between CEOs and shareholders and CEOs and board members are considerably more common in small private limited companies (Hope, Langli and Thomas 2012), further diminishing the separation between ownership and control.

Both the Norwegian law and the EU Fourth Company Law Directive specify explicit exemptions from the access to voluntary audit. For instance, parent companies are required to submit audited financial statements. As a consequence, a majority of subsidiary companies are audited as well regardless of the flexibility the legislation provides. In addition, banks, insurance companies, law firms, auditors, providers of financial services and other entities under scrutiny of financial regulators (SIC2007: 64-66 and 69) are obligated to submit audited financial statements.

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2 The translation of the Norwegian Liability Act is made by the law firm Schjødt AS. Schjødt AS holds the copyright to the translation.
The Norwegian thresholds appear to be conservative compared to the EU maxima. However, when the act was introduced in Denmark in 2006 and Sweden in 2010 the thresholds were relatively similar to the Norwegian thresholds. The late implementation in Scandinavia serves as a possible explanation of the limited number of relevant studies in these countries.

Approximately 119 000 Norwegian companies were eligible for audit exemption when the law was introduced May 1st 2011 (Innst. 235 L 2010-2011). During 2011, approximately 48 000 small limited companies decided to not have their financial statements audited (Revisorforeningen 2012), out of which 44 319 were already established and the remaining 4000 were new establishments. In 2012, additional 28 000 companies (of which 66.6 % were new establishments) decided to exempt from audit (Revisorforeningen 2013). This gives a total of approximately 76 000 companies that decided to opt out of audit, as of 31st of December 2012.

3. Literature review

The following review of literature summarizes the current state of knowledge with regards to drivers of voluntary audit and introduces education as a potential driver in this context. Further, we introduce personal income and wealth as possible drivers of voluntary audit. This section starts by looking at audit in a broad perspective, and then makes a distinct separation between private and public companies.

3.1 – The importance of auditing

Auditing is a phenomenon that has existed for a very long time. Anthropologists have found traces of audit activity already among the Sumerians in Mesopotamia around 6000 BC and in Babylonia about 3000 BC (Brown 1905). Through time, auditing has been defined in various terms by numerous authors. It is used as a means to communicate private information to relevant decision makers (Christensen 2010) and serves two main purposes; quality control assurance and to increase the credibility of the financial statements. While the first point can easily be done internal, the second calls for the external credibility an independent
auditor represents (Antle 1984). Owen and Law (2005) define audit as “an independent examination of, and the subsequent expression of opinion on the financial statements”, which is designed to demonstrate “the completeness, accuracy and validity of transactions which, when aggregated, make up the financial statements” (Power 1997). Audit increases the reliability for external stakeholders as well as enable better performing companies to differentiate themselves from weaker companies and hence facilitate efficient resource allocation for the stakeholders and foster investments and growth (Healy and Wahlen 1999; Langli and Svanström 2013).

The quality of the audit can be assessed in terms of the probability that the auditor discovers misstatements of a material art in a company’s reporting system and the probability that these misstatements are reported (DeAngelo 1981). Lennox (1999) found that the Big 6 auditors\(^3\) gave significantly more accurate reports compared to smaller auditors, suggesting that these reports were of higher value and quality. Knechel et al. (2013) find similar results when assessing audit quality in public companies.

3.2 – Audit in private and public companies

The majority of literature to date in the field of audit research has emphasized public companies, despite the substantial contribution from private companies to the global economy (Wymenga et al. 2012; Langli and Svanström 2013). Private and public companies differ in numerous aspects. Public companies are characterized by separated ownership and control (Fama 1980), which makes them subject to agency problems such as information asymmetries and conflicts of interest between principals and agents (Jensen and Meckling 1976; Watts and Zimmerman 1986). There is a broad consensus among regulators around the world that public companies must disclose audited financial statements, with regards to interests of numerous external stakeholders.

In contrast, private companies are subject to substantially less regulation, litigation and publicity. Langli and Svanström (2013) states that “the greater

\(^3\) As of 1994: Arthur Andersen, Coopers & Lybrand, Ernst & Young, KPMG Peat Marwick, Price Waterhouse and Touche Ross.
heterogeneity among private companies makes the role of auditing less obvious, which is reflected by auditing being made statutory in some countries and voluntary in others”. The separation of ownership and control is on average lower compared to public companies (Fama 1980). Fama (1980) finds a strong correlation between company size and the separation of ownership and control. Hence, the agency problems are of a different nature in private companies, and thus likely to be a driver of voluntary audit.

3.3 – Company specific drivers of voluntary audit

There is a wide range of drivers of voluntary audit among private companies, and the existing literature provides a comprehensive insight to this subject. This section covers company specific drivers divided into economic, agency and management factors, which is largely consistent with the structure in existing literature.

3.3.1 – Economic factors

It is evident that small companies have an increasing potential of purely economic savings when audits are made mandatory. Langli (2009) revealed that the average audit fee for small Norwegian private limited companies was 10 550 NOK in 2006, representing 1.04 % of average turnover. In contrast, companies with a turnover between 200 and 700 MNOK paid merely 0.05 % of their turnover in audit fees. Similar coherence is found in the UK where the modal savings for small companies opting out of non-mandatory audit with a turnover up to £1 million was £1000 (Collis 2003). Hence, due to economies of scale, turnover is inversely related to the relative cash cost of audit (Collis 2012). Collis, Jarvis and Skerratt (2004) found that small companies with relatively large turnover were more likely to choose voluntary auditing, while companies with lower turnover opted out more frequently.

Collis, Jarvis and Skerratt (2004) found no significance when testing total assets and employees as determinants of company size. However, it is important to bear in mind that the thresholds in most of the EU Member States are generally higher compared to Norway (Collis 2010). The relatively low thresholds in Norway may
affect the significance of the turnover, total assets and employee indicators in the Norwegian setting. For instance, Vestrum and Gjerding-Smith (2012) revealed total assets to have a significant explanatory effect in their research regarding characteristics of Norwegian small private limited companies opting out of audit. Svanström (2008) also found that total assets had a significant effect in explaining audit decisions among Swedish companies eligible for audit exemption. However, both studies conclude that total assets have less explanatory effect compared to turnover.

External financing, in the form of equity or debt, is essential for virtually all companies. However, private companies’ ability to raise equity may be limited by the inability of the existing owners to inject new capital or reluctance to initiate new shareholders (Langli and Svanström 2013). Under these circumstances, gaining access to credit is of vital importance. Prior research find evidence that suggests debt pricing is cheaper for private companies that disclose audited financial statements compared to those who remain unaudited (Blackwell, Noland and Winters 1998; Minnis 2011). Lennox and Pittman (2011) find “that these companies attract upgrades to their credit ratings because they send a positive signal by submitting to an audit when this is no longer legally required”. Higher credit rating is associated with improved access to credit, combined with decreased cost of credit. A series of recent studies examining audits of private companies have stated that the cost of debt is in fact a major driver of voluntary audits (Willekens 2008; Allee and Yohn 2009; Kim et al. 2011; Minnis 2011).

3.3.2 – Agency factors

There are multiple drivers of voluntary audit among private companies beyond what is to be regarded as purely economic factors, some of which are rooted in information asymmetries and conflict of interest (Jensen and Meckling 1976; Niemi et al. 2012). It is evident that the nature and extent of information asymmetries and conflict of interest between principal and agents in private companies differ from those of listed companies (Niemi et al. 2012). The private companies are to a larger extent characterized by more concentrated ownership, often by managers and/or other key decision makers. In these circumstances, the principal is anyone who is unable to verify the actions of management (the agent),
typically external shareholders, providers of credit, tax authorities or simply stakeholders that lack the necessary skills to interpret financial information (Power 1997). Thus, the relationship between providers of credit and management is likely to be a more important driver of voluntary audit compared to the relationship between shareholders and management in smaller companies (Collis 2010). This is further substantiated by a comprehensive study of private companies in Norway by Hope, Langli and Thomas (2012). They concluded that family ties between CEOs and shareholders and CEOs and board members are more common in private companies, implying weaker incentives to produce high quality financial statements.

Another potential driver of voluntary audit in private companies is the auditor’s direct or indirect contribution to reduce the internal agency problems by improving internal controls and providing a disciplinary effect on employees (Abdel-Khalik 1993), in addition to enhance process efficiency and ease regulatory compliance (Knechel, Niemi and Sundgren 2008). As stated by Langli and Svanström (2013) “the potential internal benefits [of an audit] are likely to be highly individual and have not been given much attention in empirical audit research”. Abdel-Khalik (1993) argues that an audit can partly compensate for organizational loss of control in hierarchical organizations, as this becomes relevant when a company increases in size. However, the companies eligible for audit exemption in Norway are so small that the threat of moral hazard by employees is negligible, as it is reasonable to assume that the manager would be able to monitor the employees him/herself or that there simply are no employees.

3.3.3 – Management factors

The management of a company is responsible to weigh the costs and benefits of available financial reporting options. As a consequence, access to external knowledge and competences may serve as a potential driver of voluntary audits. As mentioned, an auditor contributes in several aspects to improve internal efficiency (Abdel-Khalik 1993; Knechel, Niemi and Sundgren 2008; Langli and Svanström 2013). However, the need for assurance may be dependent on the existing internal competences of the company and its key decision makers. Collis,
Jarvis and Skerratt (2004) find that the education relevance of the principal
director is correlated with demand for voluntary audit.

3.4 – Education, a driver of voluntary audit?

To our knowledge there is currently limited research on the relationship between
the educational components of relevant key decision makers and the demand for
voluntary audit. To assess this topic, there is need for a thorough review of the
existing literature regarding education and its effects on human rationality,
behavior and choices in general.

One of the primary values of education is to increase cognitive abilities, enabling
individuals to navigate through more complex challenges (Cawley, Heckman and
Vylacil 2001; Hanushek and Wossmann 2008). However, cognitive abilities are
also affected by innate abilities, i.e. transfer of human capital from parents to child
(Plomin and Petrill 1997). When cognitive abilities are decomposed into innate
and acquired abilities, there is still substantial evidence for the significance of
acquired abilities (in which education is a major part) as a determinant of behavior
(Cole, Paulson and Shastry 2012). Plomin and Petrill (1997), Chevalier and
Ellison (1999) and Grinblatt, Keloharju and Linnainmaa (2012) find evidence that
favor the hypothesis that cognitive abilities affect (financial) decision making,
suggesting that high cognitive abilities lead to higher participation and better
find that level of education has a positive effect on participation and performance
in financial markets, suggesting that acquired abilities are highly relevant as a
determinant of economic behavior.

The classical model of rationality was introduced with the comprehensive work by
Weber (1968) and further developed by others such as Herbert A. Simon (1976).
The model is widely used as a tool to assess human behavior in the light of
economic rationality. Weber’s model is based on formal rationality which refers
to “the extent of which quantitative calculations” can be used to interpret actions
(Weber 1968), in our case the decision of whether or not to audit financial
statements. In its purest form, formal rationality is an economic cost and benefit
assessment. However, formal rationality is influenced by substantive rationality (a
person’s goals, principles or values) which is comprised of traditional actions
arising from habit or custom, and affective actions arising from emotions (Jarvis et al. 1996). The combination of formal and substantive rationality provides a basic tool for understanding human decision making.

The existing literature provides few insights on the direct effects of education on (economic) rationality. However, it is evident that there is a negative correlation between risk aversion and education (Halek and Eisenhauer 2001). This is consistent with the evidence that suggests higher cognitive abilities in general enhance the ability of individuals to perform better rational assessments (Stanovich and West 1998, 2000; Frederick 2005; Peters et al. 2006). Numerous research suggest that individuals with higher education have attributes that reduce inclination to typical irrational behaviors such as smoking (de Walque 2007; Sohn 2014), alcohol abuse (Crum, Helzer and Anthony 1993; Grossman and Sloan 2011) and drug abuse (Gfroerer, Greenblatt and Wright 1997). However, the direct effects of education on these actions are highly arguable. Nevertheless, Olshansky et al. (2012) and Yakovlev and Leguizamon (2012) find evidence of improvements in respectively longevity and subjective well-being in higher educated individuals compared to those with less education.

Education affects society by socializing individuals, restructuring whole populations, creating and expanding elites (Meyer 1977). In relation to this, Lochner and Moretti (2004) find that years of education and probability of arrest and incarceration are negatively correlated in the US. Much of the correlation between education and crime participation is caused by differences in ability, which is a major determinant of (future) income (Ehrlich 1975; Hanushek and Wossmann 2008). An individual with low-class income has relatively lower opportunity cost of engaging in illegal activities, i.e. the cost of giving up their legal income is negligible thus strengthening the incentives to engage in criminal activities (Grogger 1998; Gould, Weinberg and Mustard 2002; Eide, Rubin and Shepherd 2006). For example, research show that lack of education sizably and significantly enhances the probability of systematically working off the books (Cappariello and Zizza 2010; Williams 2010). On the other hand, individuals with high level of education and abilities are likely to engage in more sophisticated criminal activities, which is evident in typical white-collar crimes (Usher 1997; Lochner 2004). However, highly educated workers generally have higher aversion
to crime as they potentially experience greater losses in earnings while imprisoned (Usher 1997).

The literature provides support for a positive relationship between education and income (Cawley, Heckman and Vyltacil 2001; Heckman, Stixrud and Urzua 2006; OECD 2010), and the effect of cognitive abilities with regards to level of education (Hanushek and Wossman 2008; Cole, Paulson and Shastry 2012). Heckman, Stixrud and Urzua (2006) presents evidence that both cognitive and non-cognitive abilities determine social and economic success. Non-cognitive abilities are typically recognized as personality traits such as persistence and motivation. Their findings suggest that both cognitive and non-cognitive abilities are important determinants in several dimensions of behavior. This challenges the pervasive view in economic and psychology literature that cognitive ability plays a dominant role in explaining personal achievement (Cawley, Heckman and Vyltacil 2001; Hanushek and Wossman 2008; OECD 2010; Grinblatt, Keloharju and Linnainmaa 2012).

### 3.5 – Impact of personal income and wealth

It is widely acknowledged that the level of education is associated with better labor market outcomes (Cawley, Heckman and Vyltacil 2001; Heckman, Stixrud and Urzua 2006; OECD 2010), and is both affected and determined by cognitive abilities (Hanushek and Wossman 2008; Cole, Paulson and Shastry 2012). The literature struggles to establish level of income and wealth as sole determinants of economic behavior. Cawley, Heckman and Vyltacil (2001) and Heckman, Stixrud and Urzua (2006) acknowledge a link between level of income and economic decision making, but elaborate several causality issues. They suggest that level of income and economic decision making share many of the same determinants, such as overall cognitive ability and thus level of education.

To our knowledge there is no prior research on the direct relationship education, income and wealth have on demand for audit. Cognitive abilities obtained through education will most likely enhance the key decision makers’ ability to undertake the assurance work themselves. However, business owners with high cognitive ability might also have incentives to outsource the audit if the time spent on
assurance yield less income than their primary working task, which is in accordance with economic rationality theory introduced by Weber (1968). This might be relevant in cases where individuals have their primary source of income from other activities not related to the company eligible for audit exemption.

4. Development of hypotheses

Based on the literature review, a reasonable assumption is that high cognitive ability provides the necessary qualifications that enable key decision makers to do more assurance work themselves and hence reduce the need for audit. This provides the foundation for the first hypothesis.

\[ H1: \text{Ceteris paribus, opting out of audit is positively associated with the level of education of key decision makers in small private limited companies eligible for audit exemption.}\]

The second hypothesis is a natural extension of the first hypothesis. The relevance of qualifications of key decision makers may arguably depend on the educational characteristics.

\[ H2: \text{Ceteris paribus, opting out of audit is positively associated with the educational relevance of key decision makers in small private limited companies eligible for audit exemption.}\]

The third hypothesis assesses the impact of key decision makers' personal income and wealth has on the audit decision. The literature has established a strong positive correlation between cognitive abilities and personal economic status. This might suggest that individuals with high personal income and/or wealth are more capable to perform the assurance work themselves. We expect educational level, personal income and wealth to have the same effect (H1 and H3 to have the same sign), given the assessments in section 3.5.

\[ H3: \text{Ceteris paribus, opting out of audit is positively associated with the level of personal income and wealth of the key decision makers in small private limited companies eligible for audit exemption.}\]
The fourth hypothesis seeks to examine how the key decision makers’ economic dependency on the eligible company affects the audit decision. In cases where the company eligible for audit exemption provides limited contributions to the overall personal income of key decision makers, time spent on assurance work may yield less economic value compared to their primary working task.

\[ H4: \text{Ceteris paribus, opting out of audit is positively associated with the degree of which the key decision makers have their primary source of income related to the company eligible for audit exemption.} \]

5. Methodology

5.1 – Sample selection criteria

The dataset used in this thesis originally included 922,256 company-years observations of 279,622 private limited companies. Data on all companies eligible for audit exemption has been collected for 2009 – 2012, and constructed with data from Statistics Norway (NUDB\(^4\)), Center for Corporate Governance Research\(^5\) and the Norwegian Tax Administration. For privacy reasons, the provided data of companies and individuals was made anonymous.

The sample consists of companies that meet the size criteria in 2010, 2011 and 2012. Specifically, small private limited companies with turnover < 5 MNOK, total assets < 20 MNOK \textit{and} man-years < 10 are selected. All Norwegian parent companies are required to have their financial statements audited, and will hence be excluded in the study. Qualifying subsidiaries are excluded, due to the practical need of audited financial statements of subsidiaries when the parent company is audited. Further, companies in the financial and insurance industry (SIC2007\(^6\); industry classification 64-66) are excluded as these companies must be licensed by the Financial Supervisory Authority of Norway. Licensed companies are

\(^{4}\) No.: Norsk Utdanningsdatabase. En.: Norwegian Education Database. 
\(^{5}\) Centre for Corporate Governance Research database at BI Norwegian Business School. 
subject to mandatory audit. The same applies for accounting-, law- and audit firms (SIC2007: industry classification 69).

Companies with a turnover close to the threshold have also been excluded. It seems reasonable that a company with relatively high turnover would exceed the threshold(s) assuming an ordinary growth rate. To further increase the quality of the data, companies with a negligible turnover are excluded from the sample. These companies are typically passive or holding companies. Data records with inconsistent financial statements are excluded. Table 2 shows the sample selection criteria. The final sample includes 120 755 company-years observations, with 39 207 different companies.

**Table 2. Sample selection criteria.**

The table shows the sample selection criteria. Private limited companies exceeding the thresholds are excluded from the sample. The same applies to companies that are required to be audited, such as parent companies and companies under scrutiny of financial authorities. Data records with inconsistent financial statements are excluded.

<table>
<thead>
<tr>
<th>Company-years</th>
<th># of companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private liability companies (2009-2012)</td>
<td>922 556</td>
</tr>
<tr>
<td><strong>Exclusion criteria:</strong></td>
<td></td>
</tr>
<tr>
<td>Turnover &gt; 5 000 000</td>
<td>364 930</td>
</tr>
<tr>
<td>Total assets &gt; 20 000 000</td>
<td>55 848</td>
</tr>
<tr>
<td>Employees &gt; 10</td>
<td>7 179</td>
</tr>
<tr>
<td>Parent companies</td>
<td>76 896</td>
</tr>
<tr>
<td>Subsidiaries</td>
<td>106 953</td>
</tr>
<tr>
<td>SIC2007: 64-66 &amp; 69</td>
<td>50 853</td>
</tr>
<tr>
<td>Growth companies*</td>
<td>1 038</td>
</tr>
<tr>
<td>Inactive or holding companies**</td>
<td>93 715</td>
</tr>
<tr>
<td>Excluded due to missing values</td>
<td>44 389</td>
</tr>
<tr>
<td><strong># of observations in final sample</strong></td>
<td>120 755</td>
</tr>
</tbody>
</table>

*) Companies with a turnover exceeding 4 950 000 NOK are excluded, as they are expected to grow beyond the threshold within a short period of time assuming an ordinary growth rate.

**) Companies with a turnover not exceeding 50 000 NOK are excluded, as they are assumed to be inactive or holding companies.
Table 3. Audited and unaudited companies per industry in final sample.

The average opt out rate is just below 59 % in the sample. The highest opt out rate is found in other service activities (74.6 %), which includes activities of membership organizations, repair of household goods and personal service such as dry-cleaning and hairdressing. Human health, social work follows with approximately 67 % opt out rate.

<table>
<thead>
<tr>
<th>SIC</th>
<th>Industry classification</th>
<th>Audited</th>
<th>Unaudited</th>
<th>%</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Uncategorized industry</td>
<td>8</td>
<td>1</td>
<td>14.29</td>
<td>9</td>
</tr>
<tr>
<td>1-3</td>
<td>Agriculture, forestry and fishing</td>
<td>225</td>
<td>369</td>
<td>62.14</td>
<td>594</td>
</tr>
<tr>
<td>5-9</td>
<td>Mining and quarrying</td>
<td>38</td>
<td>73</td>
<td>65.98</td>
<td>111</td>
</tr>
<tr>
<td>10-33</td>
<td>Manufacturing</td>
<td>794</td>
<td>1 254</td>
<td>61.24</td>
<td>2 047</td>
</tr>
<tr>
<td>35</td>
<td>Electricity and gas supply</td>
<td>109</td>
<td>114</td>
<td>51.24</td>
<td>223</td>
</tr>
<tr>
<td>36-39</td>
<td>WWS</td>
<td>32</td>
<td>44</td>
<td>57.45</td>
<td>76</td>
</tr>
<tr>
<td>41-43</td>
<td>Construction</td>
<td>1 760</td>
<td>2 901</td>
<td>62.24</td>
<td>4 660</td>
</tr>
<tr>
<td>45-47</td>
<td>Wholesale and retail trade</td>
<td>2 195</td>
<td>3 932</td>
<td>64.17</td>
<td>6 127</td>
</tr>
<tr>
<td>49-53</td>
<td>Transportation and storage</td>
<td>526</td>
<td>860</td>
<td>62.08</td>
<td>1 386</td>
</tr>
<tr>
<td>55-56</td>
<td>Accommodation, food service</td>
<td>444</td>
<td>734</td>
<td>62.28</td>
<td>1 178</td>
</tr>
<tr>
<td>58-63</td>
<td>Information and communication</td>
<td>856</td>
<td>1 076</td>
<td>55.70</td>
<td>1 933</td>
</tr>
<tr>
<td>68</td>
<td>Real estate activities</td>
<td>5 033</td>
<td>4 630</td>
<td>47.91</td>
<td>9 663</td>
</tr>
<tr>
<td>69-75</td>
<td>Profess., scientific and tech. act.</td>
<td>2 091</td>
<td>3 207</td>
<td>60.54</td>
<td>5 298</td>
</tr>
<tr>
<td>77-82</td>
<td>Administrative, support service</td>
<td>691</td>
<td>902</td>
<td>56.62</td>
<td>1 593</td>
</tr>
<tr>
<td>85</td>
<td>Education</td>
<td>227</td>
<td>364</td>
<td>61.59</td>
<td>591</td>
</tr>
<tr>
<td>86-88</td>
<td>Health and social activities</td>
<td>611</td>
<td>1 265</td>
<td>67.43</td>
<td>1 875</td>
</tr>
<tr>
<td>90-93</td>
<td>Arts, entertain. and recreation</td>
<td>250</td>
<td>444</td>
<td>63.99</td>
<td>694</td>
</tr>
<tr>
<td>94-96</td>
<td>Other service activities</td>
<td>292</td>
<td>857</td>
<td>74.60</td>
<td>1 149</td>
</tr>
<tr>
<td>N</td>
<td></td>
<td>16 181</td>
<td>23 026</td>
<td>58.73</td>
<td>39 207</td>
</tr>
</tbody>
</table>

The industry classifications are based on SIC2007 (Statistics Norway 2008).
5.2 – Model

The dependent variable is binary, as the only possible outcomes per company \( k \) over time \( t \) are audited (0) or unaudited (1). Several issues become evident if an OLS regression was to be used. Most critical of these is the possibility of a result outside the desired range of the audit decision (0,1) (Johnson and Wichern 2014). A logistic regression with an S-shaped graph asymptotically bound to the (0,1)-boundaries of the regression solves this problem. Brooks (2008) argues that the similarities between probit and logit models, and the power of today’s computers make the choice between the two models negligible. The logistic function \( F \) of any random variable \( z_i \) is:

\[
F(z_i) = \frac{e^{z_i}}{1 + e^{z_i}} = \frac{1}{1 + e^{-z_i}}
\]

where \( e \) is the exponential, and the \( F \) is the cumulative logistic distribution. Our regression model has been divided into three different categories; company, personal education and personal economy, following the division in section 3.3 – 3.5. The regression model \((z_i)\) takes the following form:

\[
OptOut_{k,t+1} = \alpha_0 + \sum \alpha_m \text{Company}_{k,t} + \sum \alpha_n \text{Personal Educ}_{k,j} + \sum \alpha_i \text{Personal Econ}_{k,j,t} + e_{k,t}
\]

where \( k \) is company, \( t \) is year, \( j \) is individuals described as key decision makers, and \( OptOut_{k,t+1} \) is the probability that company \( k \) opts out of audit in \( t+1 \). The dependent variable, \( OptOut_{k,t+1} \), will capture whether the companies have opted out of mandatory audit. The data will be coded one for companies opting out of audit in year \( t+1 \) and zero otherwise. For companies opting out of audit in 2011, \( t+1 \) is 2011 and \( t \) 2010. For companies opting out of audit in 2012, \( t+1 \) is 2012 and \( t \) 2011, etc. By lagging the explanatory variables, the audit choice is correctly
compared to the data since the opportunity to opt out of audit depends on the financial statements from last fiscal year.

5.3 – Variable selection

We wish to test the relationship between audit choice and education, income level and wealth of key decision makers in eligible companies. The variables tested have been grouped as company specific (control variables), education specific (H1 & H2) and income specific (H3 & H4). Table 4 gives an overview of our variables as well as their predicted sign in the regression models. Appendix 1 gives a description of all the variables included in the regression.

The companies in the sample are largely characterized by concentrated ownership and limited separation between ownership and control. A substantial amount of owners possess key positions in their respective companies. Approximately 78% of the sample companies have only one dominant owner that controls at least 51% of the company. In 73% of the companies, the CEO and dominant owner is the same individual. The same is to be said about the chairman and dominant owner in almost 80% of the companies. 61% of the companies have the same individual operating as CEO and chairman. For these reasons, both educational and income related variables are connected to what we define as key decision makers. Individuals classifying as a key decision maker are the CEO, chairman and/or dominant owners. In cases where these positions are held by two or more individuals the income related data have been averaged. The individual with the highest or most relevant education among the key decision makers is included in the educational variables.
Table 4. Variable overview.

Overview of all independent variables used grouped into company, educational and income related factors. Hypothesis tested, predicted influences on the dependent variable and variable descriptions are included.

<table>
<thead>
<tr>
<th>Variable name</th>
<th>Hypothesis tested</th>
<th>Pred. sign</th>
<th>Variable description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>COMPANY</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TURNOVER</td>
<td>-</td>
<td></td>
<td>See appendix 1 for description of the company variables.</td>
</tr>
<tr>
<td>TA</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EMPLOYEES</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CITY</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AGE</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIG5</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AUDITFEE</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NAS</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EXTACC</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CEO_EQ_OW</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CEO_EQ_CHAIR</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>EDUCATION</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EDUC_LEVEL</td>
<td>H1</td>
<td>+</td>
<td>Categorical variable with the following educational levels: 0 = No education above mandatory level 1 = Completed high school 2 = Completed bachelor’s degree 3 = Completed master’s degree 4 = Completed PhD Takes the value of the highest educated key decision maker.</td>
</tr>
<tr>
<td>EDUC_REL</td>
<td>H2</td>
<td>+</td>
<td>Dummy variable with the value one if one of the key decision makers’ educations is classified as relevant, zero otherwise. See appendix 2 for classification of educations.</td>
</tr>
<tr>
<td><strong>INCOME</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GROSS_INC</td>
<td>H3</td>
<td>+</td>
<td>The natural logarithm of 1 + the key decision makers’ gross income. This is an averaged number.</td>
</tr>
<tr>
<td>NET_WALLET</td>
<td>H3</td>
<td>+</td>
<td>Continuous variable indicating the dominant owner’s net wealth (in thousand NOK). This is an averaged number.</td>
</tr>
<tr>
<td>SAL_RATIO</td>
<td>H4</td>
<td>+</td>
<td>Continuous variable defined as the dominant owner(s)’ salary from firm divided by his/her/their gross income. In cases where there are owners with equal dominant positions (e.g. 50/50 or 33/33/33), this is an averaged number.</td>
</tr>
</tbody>
</table>
5.3.1 – Company$_{k,t}$

The explanatory variables generally used in audit choice studies are included in Company$_{k,t}$ (i.e. Collis, Jarvis and Skerratt 2004; Knechel, Niemi and Sundgren 2008; Hope and Langli 2010; Niemi et al. 2012) and serves as control variables. TURNOVER, TA and EMPLOYEES are prudent company size indicators. CITY$^7$ measures the company’s proximity to their auditor, while AGE takes into account the effect of the company’s age. BIG5$^8$, AUDITFEE, NAS and EXT_ACC are all indicators of the companies’ relationship with and dependency of the audit company. CEO_EQ_OW and CHAIR_EQ_OW seek to capture potential agency problems in the company. If the CEO, chairman and/or dominant owner(s) are the same person the agency problem will be of less importance, and thus reduce the need for external audit.

5.3.2 – Personal_educ$_{k,j,t}$

The educational characteristics are measured with two variables. The educational level (EDUC_LEVEL) is measured categorically with values indicating the highest level of completed education, and is used to test H1. The relevance of the education (EDUC_REL) with regards to the audit decision is included to test H2. Appendix 2 provides a list of relevant educations.

5.3.3 – Personal_econ$_{k,j,t}$

GROSS_INC and NET_WEALTH measure level of income and wealth, and test H3. SAL_RATIO is the key decision maker(s)’ salary from the company relative to gross income and is designed to test H4. The ratio serves as an indicator of the key decision makers’ economic dependency of the company.

$^7$ Cities are defined according to the Norwegian municipality law (koml.) § 3-5.
$^8$ Big 4 (Deloitte, Ernst & Young, KPMG & PricewaterhouseCoopers) and BDO International. BDO International is included due to their solid position in the Norwegian audit market.
6. Empirical Results

6.1 – Descriptive statistics

Figure 1. Number of companies opting out of audit in sample.
The figure displays number of companies opting out of audit distributed per month from May 2011 to December 2013.

23 026 companies (approximately 59 %) in the sample chose to opt out of audit during the years from 2011 to 2013. This is consistent with studies in other audit markets where audit exemption has become possible, such as UK and Denmark (Collis 2010). However, figure 1 displays that a decreasing share of eligible Norwegian private limited companies is choosing to opt out of audit. A plausible reason for this could be that companies wanting to opt out of audit simply did so as soon as they had the opportunity. Companies opting out before December 31st will be exempted from the annual audit of financial statements, which might explain the within-year variation trend.

Table 5. Educational level of final sample and the Norwegian population.
The table shows the distribution of the final sample’s and the Norwegian population’s educational level. In Statistics Norway’s official data, completed master’s degree and completed PhD are combined. See appendix 3 for more details.

<table>
<thead>
<tr>
<th></th>
<th>Sample</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>0: No education above mandatory/unknown</td>
<td>8.48 %</td>
<td>30.53 %</td>
</tr>
<tr>
<td>1: Completed high school</td>
<td>47.53 %</td>
<td>40.60 %</td>
</tr>
<tr>
<td>2: Completed bachelor’s degree</td>
<td>26.83 %</td>
<td>21.30 %</td>
</tr>
<tr>
<td>3: Completed master’s degree</td>
<td>15.76 %</td>
<td>7.5 %</td>
</tr>
<tr>
<td>4: Completed PhD</td>
<td>1.39 %</td>
<td></td>
</tr>
</tbody>
</table>
Table 5 displays the distribution of educational level in our sample compared to the Norwegian population as of October 1\textsuperscript{st} 2012 (see appendix 3 for more details). Compared to our sample of key decision makers, the Norwegian population is remarkably less educated. This must be seen in context with the age of the sample individuals compared to the population. The population data covers all individuals over 16 years of age, while it is reasonable to assume that key decision makers in our sample have a significantly higher age. 16 % of the key decision makers in our sample have a master’s or PhD degree, while merely 7.5 % of the population holds similar qualifications. Similarly, 10.1 % of the sample has no education above mandatory level, compared to 27.3 % of the population.

**Figure 2. Educational level and proportion of relevant educations.**

Educational level 0 is no education above mandatory level, 1 is completed high school, 2 is bachelor’s degree, 3 is master’s degree and 4 is PhD. Relevant educations are described in appendix 2. \( N = 120\,755 \)

The proportion of educations at each level classified as relevant is shown in figure 2. Overall, 12 % of the sample, 45.7 % of the bachelor’s degrees, 17 % of the master’s degrees, and 13.6 % of the PhDs are classified as relevant educations.
Table 6. Descriptive statistics.

The mean, standard deviation, minimum and maximum value of the independent variables used in the multiple regression models are displayed in this table.

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>S.D.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>COMPANY</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TURNOVER</td>
<td>6.95</td>
<td>1.00</td>
<td>4.09</td>
<td>8.51</td>
</tr>
<tr>
<td>TA</td>
<td>7.13</td>
<td>1.18</td>
<td>0.00</td>
<td>9.90</td>
</tr>
<tr>
<td>EMPLOYEES</td>
<td>1.48</td>
<td>1.79</td>
<td>0.00</td>
<td>10.00</td>
</tr>
<tr>
<td>CITY</td>
<td>0.64</td>
<td>0.48</td>
<td>0.00</td>
<td>1.00</td>
</tr>
<tr>
<td>AGE*</td>
<td>2.35</td>
<td>0.76</td>
<td>-2.30</td>
<td>5.08</td>
</tr>
<tr>
<td>BIG5</td>
<td>0.24</td>
<td>0.43</td>
<td>0.00</td>
<td>1.00</td>
</tr>
<tr>
<td>AUDITFEE</td>
<td>2.59</td>
<td>0.53</td>
<td>0.00</td>
<td>8.29</td>
</tr>
<tr>
<td>NAS</td>
<td>1.00</td>
<td>1.08</td>
<td>0.00</td>
<td>9.11</td>
</tr>
<tr>
<td>EXTACC</td>
<td>0.74</td>
<td>0.44</td>
<td>0.00</td>
<td>1.00</td>
</tr>
<tr>
<td>CEO_EQ_OW</td>
<td>0.73</td>
<td>0.45</td>
<td>0.00</td>
<td>1.00</td>
</tr>
<tr>
<td>CEO_EQ_CHAIR</td>
<td>0.79</td>
<td>0.40</td>
<td>0.00</td>
<td>1.00</td>
</tr>
<tr>
<td><strong>EDU</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EDUC_LEVEL</td>
<td>1.54</td>
<td>0.90</td>
<td>0.00</td>
<td>4.00</td>
</tr>
<tr>
<td>EDUC_REL</td>
<td>0.11</td>
<td>0.31</td>
<td>0.00</td>
<td>1.00</td>
</tr>
<tr>
<td><strong>INCOME</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GROSS_INC</td>
<td>10.27</td>
<td>5.30</td>
<td>0.00</td>
<td>14.89</td>
</tr>
<tr>
<td>NET_WEALTH</td>
<td>7.09</td>
<td>7.09</td>
<td>0.00</td>
<td>18.12</td>
</tr>
<tr>
<td>SAL_RATIO</td>
<td>0.30</td>
<td>0.39</td>
<td>0.00</td>
<td>1.00</td>
</tr>
<tr>
<td><strong>N</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>120 755</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*AGE is defined as the natural logarithm of the company’s age. A company established during 2013 will have an age above 0 but below 1. The natural logarithm of any number between 0 and 1 is negative; hence the minimum AGE in the descriptive statistics is negative.

6.2 – Regression results

The regression results are presented in three models displayed in table 7. Model (1) contains the firm-specific control variables which are frequently used in audit choice research (i.e. Collis, Jarvis and Skerratt 2004; Dedman, Kausar and Lennox 2014). Model (2) and Model (3) adds the personal education and personal economy variables respectively. All variables are included in Model (3) and specified in section 5.3 and appendix 1. Model (3) is used to test our hypotheses.
Table 7. Regression results.
Model (1) – (3) are presented with coefficient values, standard deviation in parentheses and stars indicating significance level.

<table>
<thead>
<tr>
<th>Coefficients / Std.dev.</th>
<th>Model (1)</th>
<th>Model (2)</th>
<th>Model (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>COMPANY</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TURNOVER</strong></td>
<td>-0.072***</td>
<td>-0.074***</td>
<td>-0.082***</td>
</tr>
<tr>
<td></td>
<td>(0.01)</td>
<td>(0.01)</td>
<td>(0.01)</td>
</tr>
<tr>
<td><strong>TA</strong></td>
<td>-0.223***</td>
<td>-0.222***</td>
<td>-0.234***</td>
</tr>
<tr>
<td></td>
<td>(0.01)</td>
<td>(0.01)</td>
<td>(0.01)</td>
</tr>
<tr>
<td><strong>EMPLOYEES</strong></td>
<td>-0.005</td>
<td>-0.005</td>
<td>-0.006</td>
</tr>
<tr>
<td></td>
<td>(0.01)</td>
<td>(0.01)</td>
<td>(0.01)</td>
</tr>
<tr>
<td><strong>CITY</strong></td>
<td>-0.055***</td>
<td>-0.048**</td>
<td>-0.043**</td>
</tr>
<tr>
<td></td>
<td>(0.02)</td>
<td>(0.02)</td>
<td>(0.02)</td>
</tr>
<tr>
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<td>-1.062***</td>
<td>-1.064***</td>
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<td>0.169***</td>
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<td>8.81 %</td>
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*, **, *** indicates statistical significance at 10 percent, 5 percent and 1 percent level.
6.2.1 – Company specific

The firm specific control variables remain stable across all three models and consistent with the majority of existing literature (Collis, Jarvis and Skerratt 2004; Hope and Langli 2010; Collis 2010; Niemi et al. 2012). Collis, Jarvis and Skerratt (2004) found that only turnover was significant in explaining the company’s size in the UK, not assets or number of employees. \( \text{TURNOVER, TA} \) and \( \text{EMPLOYEES} \) represent the threshold values as included in the Norwegian Private Limited Liability Companies Act in addition to being important explanatory variables for company size and thus the audit decision. Our regression confirms that \( \text{TURNOVER} \) and \( \text{TA} \) have a significant negative effect on \( \text{OPTOUT} \), despite the fact that the Norwegian thresholds are quite small compared to other countries where audit is not mandatory. The effect of \( \text{EMPLOYEES} \) remains insignificant, indicating that \( \text{TURNOVER} \) and \( \text{TA} \) sufficiently capture all relevant effects of company size.

Norway has a geography characterized by vast distances and low population density. Our data reveals that proximity to the auditor is an important factor in explaining why companies chose to keep their auditor. Companies located in or close to cities are less likely to opt out of audit, reflected by the significant negative effect \( \text{CITY} \) has on \( \text{OPTOUT} \). A limited amount of research has been performed on the relationship between geographical factors and auditing choice. British researchers studied the relationship between external advisory services and the companies’ location and found that companies in more rural areas demanded less advisory services than companies in more populated areas (Keeble et al. 1992; Keeble 1998). A questionnaire sent to Swedish companies when auditing was still statutory revealed that companies in Stockholm was more positive to remain audited after the mandatory audit regime switch compared to companies in Småland (Svanström 2008). Blekastad and Johannesen (2011) revealed in their thesis that proximity and contact with the auditor was an important factor in explaining why companies chose to keep their auditor in Norway. This is consistent with our findings.

\( \text{AGE} \) is included as a measurement of the age of the firm. The regression analysis reveals that newly established companies are more inclined to opt out of audit.
The variable serves as a good indicator of the company’s life cycle and sustainability that are not fully reflected in the financial statements.

It is evident from the regression analysis that companies that employ a Big 5 auditor are more likely to keep the auditor in a non-mandatory audit regime. This is largely consistent with existing literature. In IPOs, high reputation investment banks prefer their clients to have a Big 4 auditor, and companies with a Big 4 auditor are charged a smaller banking fee (Menon and Williams 1991). Lennox (1999) found that large auditors issue reports that are more accurate and more informative, which could be a consequence of arguments suggesting that large auditors suffer a greater loss as a result of inaccurate reporting (DeAngelo 1981). Lennox (1999) also revealed that companies with a Big 4 auditor chose to remain audited more often than companies with a smaller auditor, consistent with Svanström’s (2008) findings. This could be seen in context with research indicating that companies using a Big 4 auditor want to signal financial statements of high quality to their surroundings (Beattie and Fearnly 1998). Much empirical evidence indicates that large audit firms are associated with higher quality, which substantiates the findings of Big 4 audit fee premiums in several countries (Lennox 1999) including the Norwegian audit market (Hope and Langli 2010; Hope, Langli and Thomas 2012). However, the emphasis on audit quality and challenges regarding complexity may be less substantial in private limited companies compared to larger and public firms, given their limited exposure to public scrutiny.

The size of the audit fee is undoubtedly an important factor in audit choice (Lennox and Pittman 2011), which is reflected in the included variable AUDITFEE. Our data suggests that companies paying high audit fees are more likely to opt out of audit. However, the companies using additional non-audit services (NAS) are more inclined to keep the auditor. NAS serves as a good predicator of the company’s dependency on the auditor. In addition, the company potentially has incentives to opt out of voluntary audit if there is an external accountant performing their general trading statements and/or accounting. EXT_ACC has a strong positive effect on OPTOUT. In smaller companies, the assurance and access to potentially necessary competences given by an external
accountant may outweigh the need for a voluntary audit and the assurance provided by an auditor.

The effect of CEO or chairman also being the dominating owner is controlled for by including CEO_EQ_OW and CHAIR_EQ_OW respectively. Both variables have significant positive effect on OPTOUT, suggesting that fewer key decision makers may reduce the agency conflicts and thus the need for external auditing. Research has revealed that voluntary audit plays a controlling role in any conflict of interest between the CEO, shareholders and outside creditors (Tauringana and Clarke 2000). Hence, they suggest that the demand for voluntary audit increases if the company has numerous influential stakeholders. This is consistent with our findings. Collis, Jarvis and Skerratt (2004) finds that the agency relationships have an impact on the demand for voluntary auditing in companies that are not wholly family-owned.

6.2.2 – Personal education

The variables in this section test H1 and H2.

The regression analysis suggests that the level of education (EDUC_LEVEL) of key decision makers is relevant for predicting audit demand in companies eligible for audit exemption. It is evident that key decision makers with high education are significantly (z-value of -1.93) more likely to keep the auditor. This is not in accordance with H1, which stated that the established link between cognitive abilities and education (section 3.4) may provide the necessary qualifications that enable key decision makers to do more assurance work themselves hence reducing the need for audit. However, our data has provided a plausible explanation for our findings. It is evident that with increasing level of education comes an increasing degree of specialization. In cases where specialization implies highly specific working tasks that yield high income, the income from those activities are likely to outweigh the assurance costs and hence create incentives to outsource the audit. This might be relevant for professions such as doctors, engineers and higher academics. The regression analysis display a clear trend that higher degree of education (and thus specialization) of the key decision makers imply higher demand for voluntary audit services.
H2 states that the need for audit is reduced in cases where one or more of the key decision makers possess a business or business-related education that provides relevant qualifications to do the assurance work. \textit{EDUC\_REL} provide a z-value close to significant (-1.63), indicating that key decision makers with relevant education are more likely to keep the auditor compared to other types of education given the same education level. This is not consistent with our initial hypothesis. However, a plausible cause may rely on the reasoning that higher education level and thus higher degree of specialization in general provides sufficient determinants of audit decision, regardless of type of education. In addition, Collis, Jarvis and Skerratt (2004) found that CEOs in small private firms in the UK with relevant education were more able to recognize the value and advantages of an audit, hence enhancing the demand for voluntary audit. This provides some support for our findings.

6.2.3 – Personal economy

The variables in this section test H3 and H4.

The variables \textit{GROSS\_INC} and \textit{NET\_WEALTH} are designed to test H3. The regression analysis reveals that \textit{GROSS\_INC} has a significant negative effect on \textit{OPTOUT}, suggesting that key decision makers with high personal income tend to keep the auditor. This is in accordance with our findings in H1, but in conflict with the initial hypothesis (H3). Opposite, the data show that \textit{NET\_WEALTH} has a significant positive effect on \textit{OPTOUT}, implying that key decision makers with high personal wealth more often opt out of audit. This is in accordance with H3, but contradicts our expectations that both \textit{GROSS\_INC} and \textit{NET\_WEALTH} (H3) should have the same effect as \textit{EDUC\_LEVEL} (H1) on the dependent variable, given the established link between educational level, income and wealth (Becker 1975; Cawley, Heckman and Vytlačil 2001; Heckman, Stixrud and Urzua 2006).

The rejection of H1 due to the negative relationship \textit{EDUC\_LEVEL} has on \textit{OPTOUT} underpins the same negative relationship \textit{GROSS\_INC} has on \textit{OPTOUT} (H3). The extensive link between education and labor market outcome established in literature (section 3.5) may serve as a prudent explanation as to why
$GROSS\_INC$ is not behaving as expected. High level of education is widely associated with higher income, and both variables should by logic have the same effect on the dependent variable. This is also the case in our regression. However, the isolated effect of $GROSS\_INC$ indicates rejection of H3.

$NET\_WEALTH$ has the expected effect according to H3, indicating that personal wealth has a significant positive effect on $OPTOUT$. This is in accordance with our initial arguments that connect high personal wealth with high cognitive abilities that enables the key decision maker to perform the assurance themselves. However, we expected $NET\_WEALTH$ to have a similar effect as $EDUC\_LEVEL$ and $GROSS\_INC$ given their established link in literature (Becker 1975; Cawley, Heckman and Vytlacil 2001; Heckman, Stixrud and Urzua 2006). This is not the case in our sample, and we struggle to find any empirical evidence that support these findings. Still, the isolated effect $NET\_WEALTH$ has on $OPTOUT$ supports H3.

$SALARY\_RATIO$ is designed to test H4. Our data reveals that $SALARY\_RATIO$ has a significant positive effect on $OPTOUT$ with a z-value of 3.01, suggesting that personal income received from the company relative to total personal income has significant positive effects on the audit decision. This indicates that key decision makers who get the majority of their income from the company eligible for audit show a strong tendency to more frequently opt out. In such cases, the key decision maker is thought to have a high degree of involvement in the daily operations/management of the company, providing a solid foundation to perform the assurance themselves. In addition, it is evident that a substantial portion of the companies in our sample are managed by only one individual who holds more than one key position in the company, which might have a reducing effect on potential agency conflicts that tend to create demand for external audit.
6.3 – Assessment of multicollinearity

The Person correlation matrix for all variables included in this study is presented in table 8, and has been assessed for evidences of collinearity. Multicollinearity occurs when two or more independent variables have a high correlation. This can provide unreliable estimates of the standard error, which will make it hard to separate effects of the independent variables (Judge et al. 1985). In cases where the correlation coefficient is between -0.5 and +0.5 multicollinearity will most probably be unproblematic (Gripsrud, Olsson and Silkoset 2004).

The correlation coefficient between TURNOVER and EMPLOYEES is 0.514. This is not alarming, as higher turnover (indicating a bigger scale of operation) requires more employees. Similar results were found in the literature (Collis, Jarvis and Skerratt 2004), indicating that TURNOVER and TA alone capture the effect of company size. Regressions of all three models were run without the variable EMPLOYEES\textsuperscript{9} and provided similar results. The results are otherwise satisfactory since none of the other correlation coefficients indicate high levels that would increase the probability of a good predictor of the opt out rate being found non-significant.

Further, multicollinearity was checked by investigating the variance inflation factor\textsuperscript{10} (VIF) (Field 2013). Cohen et al. (2003) recommend that VIF-values should be below 6 (or similarly a tolerance value (1/VIF) below 0.167). Higher values require further investigation as this indicates a potential multicollinearity problem. The results are provided in appendix 5, and found to be satisfactory with a mean VIF of 1.31.

\textsuperscript{9} Note that EMPLOYEES was found to be insignificant in all three regression models.

\textsuperscript{10} The STATA command –vif– only works after –regress–. The variance inflation factor of the logistic regression was checked with the user written program –collin–.
Table 8. Pearson's correlation matrix.

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* p < 0.05, ** p < 0.01, *** p < 0.001
7. Limitations and directions for further research

7.1 – Limitations of the master thesis

This thesis does not take into account the qualitative characteristics of the financial statement – such as reliability, comparability, comprehensibility and relevance – depending on whether or not the financial statements are audited. It solely focuses on income-, wealth-, and education characteristics of key decision makers in small private limited companies and to what extent these affect the voluntary audit decision. By removing the statutory audit, the eligible small companies may potentially create consequences for numerous stakeholders such as customers, financial institutions, insurance companies and tax authorities. Additionally, consequences for the society may arise in terms of financial crime and tax evasions. The direct effects of the change in legislation on these issues are undoubtedly highly debatable, but nevertheless beyond the scope of this thesis.

We caution that our findings can be difficult to generalize to countries outside of Scandinavia due to the considerable differences in thresholds for audit exemptions. The current thresholds are considerably lower in Norway compared to other European countries (apart from Scandinavia) leading to a different composition of companies eligible for audit exemption in our sample, and thus potential differences in company specific characteristics.

7.2 – Further research

Future researchers may wish to analyze the consequences of companies opting out of mandatory audit. Consequences may arise for the company in terms of access to external financing, increased agency problems or the quality of financial statements. Consequences may also affect the society. Non-audited companies might have changed incentives to engage in financial crime, tax evasions or other questionable behavior.

Others may wish to research other factors that influence the voluntary audit decision in line with our thesis, such as equity ownership, family ties, age, sex or nationality of key decision makers in companies opting out of audit. Another aspect of factors is more connected to the daily operations in the companies such
leverage, customer- and supply-network, or auditor remarks. Macro economic factors such as (future) financial crisis, interest level or currency fluctuations could potentially affect the voluntary audit decision. Some of these factors are too early to research, and might prove to be irrelevant in the Norwegian setting as long as the thresholds remain unchanged.

8. Conclusion

The purpose of this thesis was to establish personal characteristics of key decision makers in companies opting out of non-mandatory audit as determinants for the audit decision. Previous literature on audit decision among small private limited companies largely focuses on company specific explanatory variables, hence providing little or no insight into this topic (Collis, Jarvis and Skerratt 2004; Allee and Yohn 2009; Collis 2010; Lennox and Pittman 2011; Collis 2012; Niemi et al. 2012; Langli and Svanström 2013; Dedman, Kausar and Lennox 2014).

Our research indicates that level of education along with personal income and wealth of key decision makers have a significant impact on audit decision in small Norwegian private limited companies eligible for audit exemption. Our data reveals that individuals with high level of education and income show a significant tendency towards keeping the auditor. The same is to be said about individuals who possess a relevant education. Individuals who rely on the company eligible for audit exemption for a major share of their total personal income are significantly more likely to opt out of audit. Individuals with high wealth show the same tendency to opt out of audit more frequently.
9. References


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Vestrum, Jon and Håvard Gjerding-Smith. 2012. "Åtte måneder med frivillig revisjon i Norge; En totalundersøkelse av hva som kjennetegner selskapene som valgte bort revisor.;", BI Norwegian Business School


## 10. Appendices

### Appendix 1 – Variable names and descriptions

<table>
<thead>
<tr>
<th>Variable name</th>
<th>Variable description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>OPTOUT</code></td>
<td>Dummy variable which takes the value one if the company has opted out of audit in year t+1, zero otherwise.</td>
</tr>
<tr>
<td><code>TURNOVER</code></td>
<td>Company size indicator measured by the natural logarithm of turnover (in thousand NOK).</td>
</tr>
<tr>
<td><code>TA</code></td>
<td>Company size indicator measured by the natural logarithm of 1 + total assets (in thousand NOK).</td>
</tr>
<tr>
<td><code>EMPLOYEES</code></td>
<td>Company size indicator measured by the number of man-years.</td>
</tr>
<tr>
<td><code>CITY</code></td>
<td>Dummy variable with the value one if the company has its registered address in a city according to the Norwegian municipality law (kom.l.) § 3-5, zero otherwise.</td>
</tr>
<tr>
<td><code>BIG5</code></td>
<td>Dummy variable with the value one if the company is audited by one of the biggest 5 auditing firms in Norway, zero otherwise. These are BDO International, Deloitte, Ernst &amp; Young, KPMG, and PricewaterhouseCoopers.</td>
</tr>
<tr>
<td><code>AUDITFEE</code></td>
<td>Company size and complexity indicator measured by the natural logarithm of 1 + the audit fee (in thousand NOK).</td>
</tr>
<tr>
<td><code>NAS</code></td>
<td>Dependency and collaboration variable between the company and their auditor, measured by the natural logarithm of 1 + the price of non-audit services (NAS) from the auditor (in thousand NOK)</td>
</tr>
<tr>
<td><code>EXT_ACC</code></td>
<td>Dummy variable with the value one if the company’s accountant is externally hired, zero otherwise.</td>
</tr>
<tr>
<td><code>CEO_EQ_OW</code></td>
<td>Dummy variable with the value one if the company’s CEO is the same individual as the dominant owner, zero otherwise.</td>
</tr>
<tr>
<td><code>CHAIR_EQ_OW</code></td>
<td>Dummy variable with the value one if the company’s chairman is the same individual as the dominant owner, zero otherwise.</td>
</tr>
</tbody>
</table>
INDEP. VARS: EDUCATION

*EDUC_LEVEL*  
Categorical variable with the following educational levels:
- 0 = No education above mandatory level
- 1 = Completed high school
- 2 = Completed bachelor’s degree
- 3 = Completed master’s degree
- 4 = Completed PhD

Takes the value of the highest educated key decision maker.

*EDUC_REL*  
Dummy variable with the value one if one of the key decision makers’ educations are classified as relevant, zero otherwise. See appendix 2 for classification of educations.

INDEP. VARS: INCOME

*GROSS_INC*  
The natural logarithm of 1 + the key decision makers’ gross income. This is an averaged number.

*NETWEALTH*  
Continuous variable indicating the dominant owner’s net wealth (in thousand NOK). This is an averaged number.

*SALARY_RATIO*  
Continuous variable defined as the dominant owner(s)’ salary from firm divided by his/her/their gross income. In cases where there are owners with equal dominant positions (e.g. 50/50 or 33/33/33), this is an averaged number.

---

**Appendix 2 – Relevant educations included in educ_rel**

NUS2000 (*Norsk standard for utdanningsgruppering*) works as a classification norm for all education activities present in Norway, and all educations completed abroad. All NUS-codes have six digits, where

- Digit 1: Level
- Digit 2: Field
- Digit 2-3: Subject group
- Digit 2-4: Education group
- Digit 1-6: Individual education
The following educations have been coded one in \textit{EDUC\_REL}:

NUS = 6233* Bachelor i økonomi og administrasjon, lærerutdanning
\textit{Bachelor’s degree in business and administration, teacher educ.}

NUS = 634* Bachelor i samfunnsøkonomiske fag
\textit{Bachelor’s degree in economics}

NUS = 641* Bachelor i økonomiske og administrative fag
\textit{Bachelor’s degree in business and administration}

NUS = 642* Bachelor i handel
\textit{Bachelor’s degree in trade}

NUS = 649* Bachelor i økonomiske og administrative fag, andre
\textit{Bachelor’s degree in business and administration, others}

NUS = 7233* Master i økonomi og administrasjon, lærerutdanning
\textit{Master’s degree in business and administration, teacher educ.}

NUS = 734* Master i samfunnsøkonomiske fag
\textit{Master’s degree in economics}

NUS = 741* Master i økonomiske og administrative fag
\textit{Master’s degree in business and administration}

NUS = 742* Master i handel og markedsføring
\textit{Master’s degree in trade and marketing}

NUS = 749* Master i økonomiske og administrative fag, andre
\textit{Master’s degree in business and administration, others}

NUS = 8233* PhD i økonomi og administrasjon, lærerutdanning
\textit{PhD in business and administration, teacher educ.}

NUS = 834* PhD i samfunnsøkonomiske fag
\textit{PhD in economics}

NUS = 841* PhD i økonomiske og administrative fag
\textit{PhD in business and administration}

NUS = 842* PhD i handel og markedsføring
\textit{PhD in trade and marketing}

NUS = 849* PhD i økonomiske og administrative fag, andre
\textit{PhD in business and administration, other}

NUS-codes with a star (*) represent all educations starting with the digits before the star.
### Appendix 3 – Educational level of Norway, people over 16 years of age (2012)

<table>
<thead>
<tr>
<th></th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
<th>Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary School</td>
<td>546 197</td>
<td>561 701</td>
<td>1 107 898</td>
<td>27.3%</td>
</tr>
<tr>
<td>High school</td>
<td>875 896</td>
<td>772 311</td>
<td>1 648 207</td>
<td>40.6%</td>
</tr>
<tr>
<td>University, bachelor</td>
<td>353 006</td>
<td>513 342</td>
<td>866 348</td>
<td>21.3%</td>
</tr>
<tr>
<td>University, master or PhD</td>
<td>174 733</td>
<td>129 328</td>
<td>304 061</td>
<td>7.5%</td>
</tr>
<tr>
<td>Unknown/no education</td>
<td>78 987</td>
<td>56 483</td>
<td>135 470</td>
<td>3.3%</td>
</tr>
<tr>
<td></td>
<td><strong>2 028 819</strong></td>
<td><strong>2 033 165</strong></td>
<td><strong>4 061 984</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

![Educational Level Chart](image_url)


### Appendix 4 – Variance Inflation Factor (VIF)

<table>
<thead>
<tr>
<th>Variable</th>
<th>VIF</th>
<th>Tolerance (1/VIF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TURNOVER</td>
<td>1.94</td>
<td>0.515</td>
</tr>
<tr>
<td>TA</td>
<td>1.30</td>
<td>0.768</td>
</tr>
<tr>
<td>EMPLOYEES</td>
<td>1.51</td>
<td>0.660</td>
</tr>
<tr>
<td>CITY</td>
<td>1.02</td>
<td>0.978</td>
</tr>
<tr>
<td>AGE</td>
<td>1.10</td>
<td>0.909</td>
</tr>
<tr>
<td>BIG5</td>
<td>1.04</td>
<td>0.958</td>
</tr>
<tr>
<td>AUDITFEE</td>
<td>1.25</td>
<td>0.797</td>
</tr>
<tr>
<td>NAS</td>
<td>1.12</td>
<td>0.894</td>
</tr>
<tr>
<td>EXTACC</td>
<td>1.11</td>
<td>0.900</td>
</tr>
<tr>
<td>CEO_EQ_OW</td>
<td>1.25</td>
<td>0.798</td>
</tr>
<tr>
<td>CHAİR_EQ_OW</td>
<td>1.27</td>
<td>0.785</td>
</tr>
<tr>
<td>EDUC_LEVEL</td>
<td>1.12</td>
<td>0.893</td>
</tr>
<tr>
<td>EDUC_REL</td>
<td>1.12</td>
<td>0.893</td>
</tr>
<tr>
<td>GROSS_INC</td>
<td>1.72</td>
<td>0.582</td>
</tr>
<tr>
<td>NET_WEALTH</td>
<td>1.48</td>
<td>0.674</td>
</tr>
<tr>
<td>SAL_RATIO</td>
<td>1.73</td>
<td>0.576</td>
</tr>
<tr>
<td><strong>Mean VIF</strong></td>
<td>1.31</td>
<td></td>
</tr>
</tbody>
</table>

According to Cohen et al. (2003), a variable whose VIF value is higher than 6 (or similarly a tolerance value (1/VIF) below 0.167) require further investigation as this indicates a potential multicollinearity problem.
Appendix 5 – Preliminary Thesis Report

Preliminary Thesis Report

Voluntary audit in Norway:

Educational characteristics of managing director, board members and owners in small private limited companies refraining from non-mandatory audit

Hand-in date:
15.01.2014

Campus:
BI Norwegian Business School – Oslo

Examination code and name:
GRA 19003 – Preliminary Thesis Report

Programme:
Master of Science in Business and Economics
Major in Business Law, Tax and Accounting

Supervisor:
Professor John Christian Langli
Content

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Abstract

This paper provides a theoretical background for the concept and data material to be discussed and analysed in the final master thesis. The contribution to the literature will be the impact key decision makers’ educational characteristics have on the audit decision in Norwegian small private limited companies.

The literature review reveal that while there is a substantial amount of research on drivers of audit, none proves any link between the characteristics of education and the refrainment of mandatory audit. We believe there is reason to assume a link between cognitive abilities obtained through education and decisions made with regards to audit, when this is made non-mandatory.

Further, a model designed to estimate these potential differences is provided. Using data from several authorities and public databases, we plan to explain and analyse the natural experiment that emerged as the legislation change allowed small private limited companies to choose voluntary audit.
1. Introduction, contribution and regulatory setting

1.1 – Introduction

Our master thesis will be based on a change in the legislation for Norwegian private limited liability companies, allowing small limited companies with specific characteristics to qualify for audit exemption. These characteristics are described in section 1.3.2. Data from SSB\(^1\) (NUDB\(^2\)), CCGR\(^3\), the Norwegian Tax Administration, Experian AS\(^4\) and Proff Forvalt\(^5\) on all Norwegian companies permitted to exempt mandatory audits will be used. We want to investigate the educational characteristics of managing director, board members and owners (hereafter referred to as key decision makers) opting out of mandatory audit in Norwegian private limited companies eligible for audit exemption.

Audits by registered auditors or state authorized auditors in accordance with the Norwegian Audit Act were mandatory for all private limited liabilities companies obliged to file accounts until the amendment of the Private Limited Liability Companies Act § 7-6 became effective as of May 1\(^{st}\) 2011. By removing the statutory audit, the eligible small companies may potentially create consequences for numerous stakeholders, such as customers, financial institutions, insurance companies and the tax authorities. Additionally, consequences for the society may arise in terms of financial crime and tax evasions. The direct effects the legislation change has on these issues are debatable, and beyond the scope of our thesis.

1.2 – Motivation and contribution

There is an emerging literature regarding auditing in small limited private companies in Europe, however there is still a significant gap for Norway in English language publications. Collis (2010) remarked a similar gap for Denmark in his comparative study of demand for voluntary audits in the UK and Denmark. Since Norway is not a member of the European Union (EU), the country is not included in most publications regarding voluntary audit in EU member states (i.e. Collis, Jarvis and Skerratt 2004; Collis 2010; Lennox and Pittman 2011).

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\(^1\) Statistics Norway (The Central Bureau of Statistics).
\(^2\) Statistics Norway: National Education Database.
\(^3\) Centre for Corporate Governance Research database at BI Norwegian Business School.
\(^4\) Experian AS is a provider of credit information services.
\(^5\) Proff Forvalt is a provider of financial information regarding Norwegian companies.
Our motivation to do this research is threefold. First, we are both majoring in business law, tax and accounting. Our master thesis fits well with our interest and ambition to work in the audit industry. Second, we have both been in the Norwegian education system for nearly two decades. Education as a science is new to us as business students and will serve as a rich addition to our current knowledge. Third, the timing of the research represents a unique possibility, as the recent legislation change provides a climate ideal for understanding the effects education has on audit decisions in small private limited companies eligible for audit exemption.

Collis, Jarvis and Skerratt (2004) contributed to the field of study in their research of drivers for voluntary audit in the UK. They found that education, perceived benefits, company size (measured as turnover), agency relationships between owners, as well as agency relationships between the company and credit providers explained 35% of the variance in the demand for a non-mandatory audit. In the study, education was a binary variable which took the value 1 if the principal director had a first or post-graduate degree, a professional qualification, studied business or management subjects, and/or received training in related subject in the company.

We seek to elaborate more on the education variable in our study, including measures as years of education, field of study, year of graduation (from high school and college), and year of any bachelor, master, cand.mag., major and/or Ph.D. degree. To our knowledge, this has not been done before – which is our final master thesis' contribution to the existing literature.

The remainder of the preliminary master thesis is organized as follows. In the next section, we discuss the regulatory setting both internationally and in Norway. In section 3, we review relevant theory regarding drivers of voluntary audit in private firms and an overview of education as a tool for decision making. We also provide our hypotheses here. Section 4 introduces a model for data analysis. In section 5, we provide our plan for data collection as well as a brief progression plan for the remainder of the master thesis workload.
2. Regulatory setting

2.1 – Background

Both nationally and internationally there has been an increasing focus on simplification and facilitation of regulations and public services as means to increase the companies’ competitiveness. This is also evident in Sweden and Denmark where there is an ongoing goal to reduce the administrative burdens with 25% (Prop. 51L 2010-2011). Allowing statutory audit for smaller companies to be non-mandatory is one of the means introduced to reach this goal. Audit fees for small companies are estimated to be somewhere between 10 000 and 30 000 NOK (Prop. 51L 2010-2011; NOU 2008: 12), but the cost savings of omitting a voluntary audit will depend on the potential cost of additional accounting services and/or increases in own effort.

2.2 – International and national regulatory setting

By introducing the new legislation, the government takes into account the importance of small and medium-sized enterprises (SMEs). The EU defines medium (small) SMEs as enterprises employing less than 250 (50) people, and have a turnover not exceeding € 50 (10) millions, and/or with a total balance not exceeding € 43 (10) millions (European Commission 2005). In the EU, there are 23 million SMEs (99% of all enterprises), which provide more than 100 million jobs (Collis 2010). It is not without reason SMEs have been called the backbone of Europe’s economy (European Commission n.d). According to the European Commission (2011), SMEs in Norway account for 99.8% of the total enterprises, 68.6% of employment and almost 80% of value added activities. During 2003-2009 the number of Norwegian SMEs increased by 21.7%, creating more than 100 000 new jobs (European Commission 2011).

The EU Fourth Company Law Directive (78/660/EEC) allows member states to grant qualifying small companies within their jurisdictions exemption from the statutory audit. The qualification tests are based on turnover, balance sheet total and number of employees (Collis 2010).
The table above shows the EU maxima for audit exemption (Collis 2010). It is evident that the increases in turnover and balance sheet total have been exceeding the general inflation⁶ in the EU area, implying a desire amongst legislators that more companies should be eligible for audit exemption. However, differences in national legal systems that arise from cultural differences also affect the auditing setting (Margerison and Moizer 1996) since audit standards are issued at a national level (Knechel, Niemi and Sundgren 2008). The continuously increasing thresholds in the UK appears to be at the frontier in Europe, especially evident in 2004 when they reached the EU maxima (Collis 2010).

The Norwegian legislation change was a proposal from the Ministry of Finance, and is based on the EU Fourth Company Law Directive (78/660/EEC). The law is expressed in the Norwegian Audit Act § 2-1 cf. the Norwegian Private Limited Liability Companies Act § 7-6. The following is the wording of the changed legislation, effective May 1⁷ 2011:

"Act of 13 June 1997 No. 44 Norwegian Private Limited Liability Companies
Act: § 7-6. Proxy to omit auditing
(1) The general meeting may, with the majority required for amendments of the articles of association, issue a proxy giving the board of directors authorization to adopt a resolution to the effect that the company’s annual accounts shall not be audited in accordance with the Auditors Act provided that
1. the operating revenues of the total business do not exceed five million kroner,
2. the balance sheet amount does not exceed 20 million kroner, and
3. the average number of employees does not exceed ten man-years."

---

⁶ The inflation rate in the EU area was between 0.7% and 4% yearly during 1998-2008. [http://www.tradingeconomics.com/euro-area/inflation-cpi](http://www.tradingeconomics.com/euro-area/inflation-cpi)

⁷ The translation of the Norwegian Liability Act is made by the law company Schjødt AS. Schjødt AS holds the copyright to the translation.
The Norwegian thresholds appear to be conservative compared to the EU maxima. However, when the act was introduced in Denmark in 2006 and Sweden in 2010 the thresholds were relatively similar to the Norwegian thresholds. The late implementation in Scandinavia serves as a possible explanation of the limited number of relevant studies in these countries.

The three listed conditions in the act are cumulative, meaning that all conditions must be met before the general meeting may issue the proxy. Companies remaining passive still have to perform a statutory audit. A two-thirds majority of the votes and the share capital represented at the general meeting is required, similar to amendments of the articles of association. The management of small private limited companies tend to have substantial influence over the decisions made by the general meeting, as the degree of separation between ownership and control is correlated with the size of the company (Fama 1980). In addition, family ties between CEOs and shareholders and CEOs and board members are considerably more common in small private limited companies (Hope, Langli and Thomas 2012), further diminishing the separation between ownership and control. Thus, there is reason to assume that the education characteristics of key decision makers are more relevant in small companies compared to large companies.

In 2011, approximately 48,000 Norwegian small limited companies decided to not have their financial statements audited (Revisorforeningen 2012), out of which 44,319 were already established and the remaining 4,000 new establishments. In 2012, additional 28,000 companies (of which 66.6% were new establishments) decided to remove the audit (Revisorforeningen 2013). This gives a total of approximately 76,000 companies who have decided to not undergo an audit. This is a significant part of the approximately 137,000 companies that were eligible to remove the statutory audit when the law was introduced (Innst. 235 I. 2010-2011).

3. Literature review and development of hypotheses

The following review of literature summarizes the current state of knowledge with regards to drivers of voluntary audit and introduces education as a potential driver in this context. The section starts by looking at audit in a broad perspective, and then makes a distinct separation between private and public companies.
3.1 – The importance of auditing

Auditing has been defined in various terms by numerous authors. It is used as a means to communicate private information to the decision-makers (Christensen 2010) and serves two main purposes; quality control assurance and to increase the credibility of the financial statements. The first point can easily be done internal, while the second calls for the external credibility an independent auditor represents (Antle 1984). Owen and Law (2005) define audit as “an independent examination of, and the subsequent expression of opinion on the financial statements”, which is designed to demonstrate “the completeness, accuracy and validity of transactions which, when aggregated, make up the financial statements” (Power 1997). Audit increase the reliability for external stakeholders as well as enable better performing companies to differentiate themselves from weaker companies and hence facilitate efficient resource allocation for the stakeholders and foster investments and growth (Healy and Wahlen 1999; Langli and Svanström 2013).

The quality of the audit can be assessed in terms of the probability that the auditor discovers misstatements of a material art in a company’s reporting system and the probability that these misstatements are reported (DeAngelo 1981). Lennox (1999) finds that the Big N audit companies give significantly more accurate reports compared to smaller auditors, suggesting that these reports are of a higher value and quality. Knechel et al. (2013) find similar results for public companies.

3.2 – Private vs. public companies

The majority of research to date in the field of audit research has emphasized public companies, despite the substantial contribution of private companies to the global economy (Wymenga et al. 2012; Langli and Svanström 2013). Private and public companies differ in numerous aspects. Public companies are characterized by separated ownership and control (Fama 1980), which makes them subject to agency problems such as information asymmetries and conflicts of interest between principals and agents (Jensen and Meckling 1976; Watts and Zimmerman 1986). There is a broad consensus among regulators around the world that public companies must disclose audited financial statements, with regards to interests of external stakeholders.
In contrast, private companies are subject to substantially less regulation, litigation and publicity. Langli and Svanström (2013) states that “the greater heterogeneity among private companies makes the role of auditing less obvious, which is reflected by auditing being made statutory in some countries and voluntary in others”. The separation of ownership and control is on average lower compared to public companies (Fama 1980). Fama (1980) finds a strong correlation between company size and the separation of ownership and control. Hence, the agency problems are of a different nature in private companies, which is likely to be a driver of voluntary audit.

3.3 - Drivers of voluntary audit

There are multiple drivers of voluntary audit of private companies, some of which are rooted in information asymmetries and conflict of interest (Jensen and Meckling 1976; Niemi et al. 2012). It is evident that the nature and extent of information asymmetries and conflict of interest between principal and agents in private companies differ from those of listed companies (Niemi et al. 2012). The private companies are to a larger extent characterized by more concentrated ownership, often by managers. In these circumstances, the principal is anyone who is unable to verify the actions of management (the agent), typically external shareholders, providers of credit, tax authorities or simply stakeholders that lack the necessary skills to interpret financial information (Power 1997). Thus, the relationship between providers of credit and management is likely to be a more important driver of voluntary audit compared to the relationship between shareholders and management in smaller companies (Collis 2010). This is further substantiated by a comprehensive study of private companies in Norway by Hope et al. (2012). They concluded that family ties between CEOs and shareholders and CEOs and board members are more common in private companies, implying weaker incentives to produce high quality financial statements.

External financing, in the form of equity or debt, is essential for virtually all companies. However, private companies’ ability to raise equity may be limited by the inability of the existing owners to inject new capital or reluctance to initiate new shareholders (Langli and Svanström 2013). Under these circumstances,
Gaining access to credit is of vital importance. Prior research finds evidence that suggests debt pricing is cheaper for private companies that disclose audited financial statements compared to those who remain unaudited (Blackwell, Noland and Winters 1998; Minnis 2011). Lennox and Pittman (2011) find “that these companies attract upgrades to their credit ratings because they send a positive signal by submitting to an audit when this is no longer legally required”. Higher credit rating is associated with improved access to credit, combined with decreased cost of credit. A series of recent studies examining audits of private companies have stated that the cost of debt is in fact a major driver of voluntary audits (Willekens 2008; Allee and Yohn 2009; Kim et al. 2011; Minnis 2011).

A potential driver of voluntary audit in private companies is the auditor’s direct or indirect contribution to reduce the internal agency problems by improving internal controls and providing a disciplinary effect on employees (Abdel-Khalik 1993), in addition to enhance process efficiency and ease regulatory compliance (Knechel, Niemi and Sundgren 2008). As stated by Langli and Svanström (2013) “the potential internal benefits [of an audit] are likely to be highly individual and have not been given much attention in empirical audit research”. Abdel-Khalik (1993) argues that an audit can partly compensate for organizational loss of control in hierarchical organizations, as this becomes relevant when a company increases in size. However, the companies eligible for audit exemption in Norway are so small that the threat of moral hazard by employees is negligible, as it is reasonable to assume that the manager would be able to monitor the employees him/herself or that there simply are no employees.

Access to external knowledge and competences may serve as a potential driver of voluntary audits. As mentioned, an auditor contributes in several aspects to improve internal efficiency (Abdel-Khalik 1993; Knechel, Niemi and Sundgren 2008; Langli and Svanström 2013). However, the need for assurance may be dependent on the existing internal competences of the company. Collis, Jarvis and Skerratt (2004) finds that relevant education of the principal director is correlated with demand for voluntary audit.
3.4 – Education, a driver of voluntary audit?

To our knowledge there is currently little or no research on the relationship between the educational components of relevant key decision makers and the issue of audit exemption. To assess this topic, there is need for a thorough review of the existing literature regarding education and its effects on human rationality, behaviour and choices in general.

One of the primary values of education is to increase cognitive ability, enabling individuals to navigate through more complex challenges (Cawley, Heckman and Vytlacil 2001; Hanushek and Wossmann 2008). However, cognitive ability is also affected by innate abilities, i.e. transfer of human capital from parents to child (Plomin and Petrill 1997). When cognitive ability is decomposed into innate and acquired abilities, there is still substantial evidence for the significance of acquired abilities (in which education is a major part) as a determinant of behaviour (Cole, Paulson and Shastry 2012). Plomin and Petrill (1997), Chevalier and Ellison (1999) and Grinblatt, Keloharju and Linnainmaa (2012) find evidence that favour the hypothesis that cognitive ability affects (financial) decision making, suggesting that high cognitive abilities lead to higher participation and better performance in financial markets. Cole, Paulson and Shastry (2012) find a similar correlation between level of education and participation and performance in financial markets, suggesting that acquired abilities are highly relevant (together with innate abilities) as a determinant of behaviour.

The classical model of rationality was introduced with the comprehensive work by Weber (1968) and further developed by others such as Herbert A. Simon (1976). The model is widely used as a tool to assess human behaviour in the light of economic rationality. Weber’s model is based on formal rationality which refers to “the extent of which quantitative calculations” (Weber 1968) can be used to interpret actions, in our case the decision of whether or not to audit financial statements. In its purest form, formal rationality is an economic cost and benefit assessment. However, formal rationality is influenced by substantive rationality (a person’s goals, principles or values) which is comprised of traditional actions arising from habit/custom and affective actions arising from emotions (Jarvis et al. 1996). The combination of formal and substantive rationality provides a basic tool for understanding human decision-making.
The existing literature provides few insights on the direct effects of education on rationality. However, it is evident that there is a negative correlation between risk aversion and education (Halek and Eisenhauer 2001). This is consistent with the evidence that suggests higher cognitive abilities in general enhance the ability of individuals to perform better rational assessments (Stanovich and West 1998, 2000; Frederick 2005; Peters et al. 2006). Numerous research suggest that individuals with higher education have attributes that reduce inclination to typical irrational behaviours such as smoking (de Walque 2007; Sohn 2014), alcohol abuse (Crum, Helzer and Anthony 1993; Grossman and Sloan 2011) and drug abuse (Gfroerer, Greenblatt and Wright 1997). However, the direct effects of education on these actions are highly arguable. Nevertheless, Olshansky et al. (2012) and Yakovlev and Leguzamon (2012) find evidence of improvements in respectively longevity and subjective well-being in higher educated individuals compared to those with less education.

Education affects society by socializing individuals, restructuring whole populations, creating and expanding elites (Meyer 1977). In relation to this, Lochner and Moretti (2004) find that years of education and probability of arrest and incarceration are negatively correlated in the US. Much of the correlation between education and crime participation is caused by differences in ability, which is a major determinant of (future) income (Ehrlich 1975; Hanushek and Wossmann 2008). It is evident that the lower an individual’s level of income, the lower is his or her opportunity cost of engaging in illegal activities, i.e. the cost of giving up their legal income is negligible creating incentives to engage in criminal activities (Grogger 1998; Gould, Weinberg and Mustard 2002; Eide, Rubin and Shepherd 2006). For example, research show that lack of education sizably and significantly enhances the probability of systematically working off the books (Cappariello and Zizza 2010; Williams 2010). On the other hand, individuals with high level of education and abilities are likely to engage in more sophisticated criminal activities, which is evident in typical white-collar crimes (Usher 1997; Lochner 2004). However, highly educated workers generally have higher aversion to crime as they potentially experience greater losses in earnings while imprisoned (Usher 1997).
It is widely acknowledged that the level of education is associated with better labour market outcomes (Cawley, Heckman and Vytlacil 2001; Heckman, Stixrud and Urzua 2006; OECD 2010), and has an effect on cognitive abilities (Hanushek and Wossmann 2008; Cole, Paulson and Shastry 2012). Heckman, Stixrud and Urzua (2006) presents evidence that both cognitive and non-cognitive abilities determine social and economic success. Non-cognitive abilities are typically recognized as personality traits such as persistence and motivation. Their findings suggest that both cognitive and non-cognitive abilities are important determinants in several dimensions of behaviour. This challenges the pervasive view in economic and psychology literature that cognitive ability plays a dominant role in explaining personal achievement (Cawley, Heckman and Vytlacil 2001; Hanushek and Wossmann 2008; OECD 2010; Grinblatt, Keloharju and Linnainmaa 2012).

3.5 – Development of hypotheses

We find it reasonable to assume that high cognitive ability provide the necessary qualifications to enable key decision makers to do more assurance work themselves and hence reduce the need for audit. This provides the foundation for our first hypothesis.

\[ H1: \text{Ceteris paribus, opting out of audit is positively associated with the level of education of key decision makers in small private limited companies eligible for audit exemption.} \]

Our second hypothesis is a natural extension of the first hypothesis. The relevance of qualifications of key decision makers may arguably depend on the educational characteristics.

\[ H2: \text{Ceteris paribus, opting out of audit is positively associated with the educational relevance of key decision makers in small private limited companies eligible for audit exemption.} \]

The literature provides support for the relationship between education and income (Cawley, Heckman and Vytlacil 2001; Heckman, Stixrud and Urzua 2006; OECD 2010). However, to our knowledge there is no prior research on the direct
relationships income and education respectively have on preferences for voluntary audit. Business owners with high cognitive ability might have incentives to outsource the audit if the time spent on assurance yield less income than their primary working task. This might be relevant in cases where individuals have their primary source of income from other activities not related to the company eligible for audit exemption. The reasoning above provides a basis for our third hypothesis.

H3: Ceteris paribus, opting out of audit is negatively associated with the degree of which the key decision makers have their primary source of income not related to the company eligible for audit exemption.

4. Methodology and variables

4.1 – Methodology

The dataset will be processed in STATA, where the research will take form of a logistic regression in order to accomplish the analysis. The study will be based on data from all Norwegian private limited companies that meet the three size criteria in their most recently filed accounts. These criteria are:

- Operating revenues not exceeding five million kroner
- Balance sheet amounts not exceeding 20 million kroner
- Average number of employees not exceeding ten man-years

In addition, it is necessary to omit more companies in the sample selection. All Norwegian parent companies are required to have their financial statements audited, and will hence be excluded in the study. Qualifying subsidiaries will also be excluded, due to the practical need of audited financial statements of subsidiaries when the parent company is audited. Further, companies categorized in the industry of financial- and insurance companies (SIC2007\(^5\); industry classification 64-67) as these companies must be licensed by the Norwegian Financial Supervisory Authority. Licensed companies must be audited. The same

\(^5\) Statistics Norway: SIC2007
applies for accounting, lawyers and audit companies (SIC: industry classification 69). The model will be estimated using regression analysis and descriptive statistics.

Model (1):

\[ OptOut_{k,t+1} = a_0 + \sum a_m \text{Company}_{k,t} + \sum a_P \text{Personal_econ}_{k,t} + \sum a_i \text{Personal_educ}_{k,i} + \sum a_{i*} \text{Personal_econ} \cdot \text{Personal_educ}_{k,i,t} + \epsilon_{k,t} \]

Where \( k \) is company, \( t \) is year and \( j \) is individuals described earlier as key decision makers. The variables will be explained in the following section.

4.2 – Dependent and explanatory variables

The dependent variable, \( OptOut_{k,t+1} \), will capture whether the companies have their accounts voluntarily audited or not. The data will be coded 1 for companies opting out of mandatory audit in year \( t+1 \) and 0 otherwise. For companies opting out of audit in 2011, \( t+1 \) is 2011 and \( t \) 2010. For companies opting out of audit in 2012, \( t+1 \) is 2012 and \( t \) 2011.

The explanatory variables generally used in audit choice studies will be included in \( \text{Company}_{k,t} \) (i.e. Collis, Jarvis and Skerratt 2004; Knechel, Niemi and Sundgren 2008; Hope and Langli 2010; Niemi et al. 2012). These are company specific variables that describe the company's size, profitability, liquidity, growth and risk (i.e. turnover, total assets, number of employees, asset turnover, debt ratio, return on assets, growth in sales, inventories as percentage of sales, accounts receivables as percentage of sales, risk of bankruptcy and industry affiliation). Collis, Jarvis and Skerratt (2004) found that only turnover was significant in explaining the company's size in the UK, not assets or number of employees. This has to be investigated in our study of the Norwegian setting.
Personal_econ will contain information regarding the overall financial position of the individual $j$ at time $t$. Examples of this include gross income, income from company $k$ as a ratio of individual $j$'s gross income, dividends from company $k$ as a ratio to gross income, share of personal wealth invested in company $k$, and amount of personal wealth. Including this variable enables us to test hypothesis 3.

Personal_educ consists of information regarding individual $j$'s education, i.e. level of education, length of education and field of study, which enables us to test hypothesis 1 and hypothesis 2.

Personal_econ*Personal_educ is an interaction term capturing interactions between individual $j$'s economic interests in company $k$ at time $t$ and $j$'s education.

The scope of the study will be from 2004-2012. 2012 was the first full year where voluntary audit made it possible for companies that fulfil the requirements to disclose unaudited financial statements. Data from 2008 to 2011 will be included to explain the development, while data back to 2004 will be used to estimate some of the variables such as history of auditor notes and the engagement period of the auditor.

4.3 – Limitations of the master thesis

The master thesis will not take into account the qualitative characteristics of the financial statement – such as reliability, comparability, comprehensibility and relevance – depending on whether or not the financial statements are audited. It will solely focus on educational characteristics of key decision makers in small private limited companies and to what extent this affects the voluntary audit decision.

We caution that our findings can be difficult to generalize to countries outside of Scandinavia due to the considerable differences in thresholds for audit exemptions. The current thresholds are much lower in Norway compared to other European countries (apart from Scandinavia) leading to different composition of
5. Plan for data collection and thesis progression

5.1 Access to data and dataset development

We will be using data from NUDB (SSB), the CCGR database, the Norwegian Tax Administration, Experian AS and Proff Forvalt. The dataset needed will mainly consist of publicly available information. However, our ambition is to mount the dataset with anonymized data from NUDB (SSB) to study the education characteristics of key decision makers in companies eligible for audit exemption. We are dependent on permission from SSB to access the necessary data stored in NUDB.

<table>
<thead>
<tr>
<th>Authority (Databases)</th>
<th>Variables requested (needed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUDB (SSB)</td>
<td>Citizenship, NUS-code(^9) for highest achieved education, year of education from high school, year of education from high school (general or vocational education), year of obtaining any college, bachelor, master, cand.mag, major, and/or Ph.D.</td>
</tr>
<tr>
<td>CCGR</td>
<td>Ownership information in Norwegian limited liabilities companies based on family relations.</td>
</tr>
<tr>
<td>Norwegian Tax Administration</td>
<td>Salary and wealth, key decision makers, share of ownership, country of birth, age, sex, zip code, information regarding additional tax and late-filing penalty.</td>
</tr>
<tr>
<td>Experian AS</td>
<td>Payment defaults, pledges.</td>
</tr>
<tr>
<td>Proff Forvalt</td>
<td>Date of incorporation, name of accountant, name of potential auditor.</td>
</tr>
</tbody>
</table>

\(^9\) The Norwegian Standard Classification of Education (NUS2000) is used for grouping people's education activities and education background. The standard is used in Statistic Norway's education statistics and in other statistics where education is included as a variable.
5.2 – Progression plan

<table>
<thead>
<tr>
<th>When?</th>
<th>What?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>January 2014</strong></td>
<td>Write and hand in the preliminary thesis report by January 15th.</td>
</tr>
<tr>
<td><strong>February – March 2014</strong></td>
<td>Gain access to datasets (dependent on approval from different authorities). Process data input and analyse the results. Start writing the master thesis.</td>
</tr>
<tr>
<td><strong>April – June 2014</strong></td>
<td>Write the main part of the master thesis.</td>
</tr>
<tr>
<td><strong>July 2014</strong></td>
<td>Finalize the master thesis.</td>
</tr>
<tr>
<td><strong>August</strong></td>
<td>Do any necessary corrections or alterations.</td>
</tr>
<tr>
<td><strong>September</strong></td>
<td>Final deadline is September 1st.</td>
</tr>
</tbody>
</table>

*Table 3: Progress plan for the master thesis.*
6. References


