Was It Worth It?

A quantitative study on the abolishment of mandatory audit and its consequences on income tax payments from small limited firms

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Abstract
Economic crimes were highly discussed in Sweden during the 70’s. As an action to reduce and prevent the occurrence of economic crimes, the Swedish Riksdag decided in 1983 to implement a mandatory audit for all limited firms. The role of an audit was regarded as an essential function in preventing the economic crimes. One form of economic crime is income tax fraud which has been present among small firms in Sweden. Further, the purpose of an audit is to assure that firms’ financial information is correct and that the interests of stakeholders are taken into consideration when making decisions. Despite the important role of the auditor, it was decided to abolish the mandatory audit for small limited firms in 2010. The mandatory audit was partly abolished as a response to the EU directive 78/660/EEC which was put into force for all member states in 1978. It was also partly based on other arguments; to reduce the administrative cost for small limited firms and increase the competition on the market.

In this study, a quantitative research design has been applied in order to answer the research question: “Does the abolishment of the mandatory audit in Sweden lead to a change in income taxes from the restaurant industry?” Further, a hypothesis has been formulated based on previous research and theories such as the rational choice theory, stakeholder theory and agency theory. Firms’ annual reports have been studied, as well as if they had an auditor or not after the abolishment. The variables ‘tax payment’ and the ratio of ‘tax payment/purchase’ were used in order to capture the income tax payments of the firms. Data of these variables were gathered from the firms’ annual reports.

Statistical tests have been used in order to map out this relationship. The results showed that there is no difference in income tax payments between audited and unaudited small limited firms within the restaurant industry. This suggests that the firms who decided to quit voluntary audit do not pay less income tax than the firms who decided to keep the voluntary audit.

This study does not correlate with the findings of previous studies and theories. This study is not able to determine if income tax fraud is only caused by the abolishment of the mandatory audit. There are possibly other factors affecting the income tax payments that this study cannot map out. Therefore, future studies are encouraged within this field, as it seems to be an unexplored area.
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# Table of contents

1.0 Introduction ............................................................................................................. 1  
   1.1 Problem background ............................................................................................ 1  
   1.2 Consequences regarding the abolishment of the mandatory audit .................. 4  
   1.3 The restaurant industry ....................................................................................... 5  
   1.4 Cash in the society ............................................................................................. 8  
   1.5 Research purpose ............................................................................................... 8  
   1.6 Research question ............................................................................................. 9  
   1.7 Research limitations ......................................................................................... 9  

2.0 Methodology ......................................................................................................... 10  
   2.1 Pre-understandings ......................................................................................... 10  
   2.2 Ontology ........................................................................................................ 10  
   2.3 Epistemology .................................................................................................... 11  
   2.4 Research approach ......................................................................................... 13  
   2.5 Research design .............................................................................................. 14  
   2.6 Literature selection ......................................................................................... 15  

3.0 Theoretical framework .......................................................................................... 17  
   3.1 Theories relating to the study ........................................................................... 17  
      3.1.1 Agency theory ....................................................................................... 17  
      3.1.2 Stakeholder theory ............................................................................... 18  
      3.1.3 Rational choice theory ......................................................................... 19  
   3.2 Hypothesis formulation .................................................................................... 21  
   3.3 Previous studies .............................................................................................. 22  
      3.3.1 Consequences of the mandatory audit .................................................. 22  
      3.3.2 Economic crimes .................................................................................. 29  
      3.3.3 Earnings management ......................................................................... 32  
   3.4 Source criticism .............................................................................................. 34  

4.0 Empirical method ................................................................................................ 35  
   4.1 Data collection .................................................................................................. 35  
      4.1.1 Sample testing ....................................................................................... 36  
      4.1.2 Withdraws of outliers ......................................................................... 36  
   4.2 Statistical method ............................................................................................ 38  
      4.2.1 Wilcoxon Signed-Rank Test ................................................................ 39  
      4.2.2 Mann-Whitney U test .......................................................................... 40  
      4.2.3 Linear regression analyses ................................................................... 40  
   4.3 Method criticism .............................................................................................. 42  

5.0 Results .................................................................................................................. 43
List of tables

Table 1: Summary of the number of firms in the samples .................................................. 38
Table 2: Descriptive statistics of sample used in non-parametric tests .......................... 44
Table 3: Descriptive statistics of sample used in linear regression analysis ............... 45
Table 4: Correlation test of log tax payment ................................................................... 46
Table 5: Correlation test of tax payment/purchase ......................................................... 46
Table 6: Test statistics of Wilcoxon Signed-Rank Test (N=340) .................................. 47
Table 7: Descriptive statistics of Wilcoxon Signed-Rank Test (N=340) ....................... 48
Table 8: Test statistics for Wilcoxon Signed-Rank Test (N=77) ................................. 48
Table 9: Descriptive statistics for Wilcoxon Signed-Rank Test (N=77) ....................... 48
Table 10: Test statistics for Mann-Whitney U Test ...................................................... 49
Table 11: Median tax payment ....................................................................................... 49
Table 12: Median tax payment/purchase ....................................................................... 49
Table 13: Summary of the coefficients of the linear regression for dependent variable tax payment ................................................................. 50
Table 14: Summary of the coefficients of the linear regression for dependent variable tax payment/purchase ................................................................. 51
Table 15: Results of the hypothesis testing .................................................................... 52

List of figures

Figure 1: Linear regression model for tax payment as dependent variable ............... 41
Figure 2: Linear Regression model for tax payment/purchase as dependent variable .... 41
1.0 Introduction

The introduction chapter aims to provide background information regarding the area of study. The chapter ends with a formulation of the research question and purpose, followed by the limitations of this research.

1.1 Problem background

The purpose of auditing is to assure that firms financial information is correct (FAR, 2011, p. 1). An auditor can assure the financial information by auditing annual reports, administration reports and/or the bookkeeping (FAR, 2011, p. 1; SFS 1999:1079). The audits of the financial information, such as annual reports, must be reported according to ISA (International Standards on Auditing) (FAR, n.d). Audits or reviews of other historical information than financial information must be reported according to ISAE 3000 (International Standard on Assurance Engagements) (FAR, n.d). According to FAR (n.d), audits can improve the quality of the financial information and increase the credibility, which might be valued as important for stakeholders. The auditor is the connecting link between firms and their stakeholders. Usually, firms who are audited by independent auditors aim to follow the rules and regulations set up. Another advantage of audits is that it may increase business opportunities for firms.

During the 70’s there was a debate regarding the economic crimes that was present among firms in Sweden. To be able to prevent these economic crimes among firms in Sweden, it was determined by the Swedish Riksdag that from year 1983 and forward, newly founded limited firms would be required to use a certified public accountant (auditor) for their businesses (Prop. 1981/82:171; Swedish National Audit Office, 2017, p. 10). It was highly argued that the economic crimes, such as income tax frauds, could be prevented by using an auditor and thus, the mandatory use of an auditor was implemented as an action against the economic crimes (Swedish National Audit Office, 2017, p. 10). Additionally, proposition 1981/82:171 presented the major arguments that led to the implementation of the mandatory audit for all limited firms in Sweden. In this proposition it was argued that the mandatory audit could prevent economic crimes from occurring in limited firms. Further, it was also argued that the mandatory audit could be beneficial for the owners of the limited firms since an auditor could help them detect financial issues that may be present. These two arguments were particularly important for small limited firms, and not only the large limited firms (Prop. 1981/82:171; Thorell & Norberg, 2005, p. 16). Because of the mandatory audit, the auditors in Sweden were now automatically given a more active role in the work against economic crimes, such as earnings management and income tax fraud (Swedish National Audit Office, 2017, p. 10).

The implementation of the mandatory use of an auditor for all limited firms in Sweden is regulated in The Auditing Act (Sw.: Revisorslagen) (SFS 1999:1079). This law states that all limited firms in Sweden are required by law to use a certified public accountant (Swedish National Audit Office, 2017, p. 10). The Auditing Act (Sw.: Revisorslagen) regulates all decisions and judgements about auditing concerning physical and legal entities (SFS 1999:1079, 2 §, ch.1). The regulation of the mandatory audit is depicted in The Auditing Act (Sw.: Revisorslagen) (SFS 1999:1079) and demonstrates the exemptions when this obligation is binding. However, the auditors’ duties and the firms’ responsibilities are demonstrated in the Companies Act. As stated in 1 §, ch. 9 and 1 §, ch. 3 in the Companies Act (Sw.: Aktiebolagslagen) (SFS 2005:551), a firm shall obtain at least one auditor and the
number of auditors shall be announced. According to 3 §, ch. 9 in the Companies Act (Sw.: Aktiebolagslagen) (SFS 2005:551) an auditor has certain duties. The duties comprise of analyzing a firm’s annual report, accounts, board of directors as well as the managing director. The auditor shall follow the auditing standards by being as detailed as possible in his or her profession. In Swedish this is known as “god revisionssed” (Swedish Inspectorate of Auditors, n.d.). The auditor shall also comprehend and obey with the instructions presented and settled at the general meeting and comply with applicable laws and auditing standards (SFS 2005:551, 4 §, ch. 9). Moreover, as a part of the auditor’s duties, the auditor shall present critique towards the managing director and the board of directors. The critique must be aligned with the accounting standards (SFS 2005:551, 6 § ch. 9). In addition, the auditor shall produce an auditor report to the general meeting after each financial year (SFS 2005:551, 5 §, ch. 9). The auditor shall obtain a professional skepticism and be as detailed as possible in his or her work that is required by the auditing standards. The auditor shall obtain knowledge of finance and accounting that is needed when carrying out the engagement activities. (SFS 2005:551, 11 §, ch. 9). Lastly, the auditor shall not disclose any information to any individual shareholders or third party about the firm’s business affairs that could harm the firm (SFS 2005:551, 41 §, ch. 9).

However, during the 90’s there was a debate regarding the mandatory audit since it was recognized as being a significant cost for small limited firms. Despite this debate, the Swedish Riksdag concluded that this requirement was necessary in order to prevent economic crimes, and that the cost of having an auditor was not a significant cost for small limited firms (Swedish National Audit Office, 2017, p. 10). However, the Swedish Riksdag still decided to abolish the mandatory audit for all small limited firms on the 1st of November 2010 (Swedish National Audit Office, 2017, p. 11). The decision to abolish the mandatory audit for small limited firms originates from the EU-directive (78/660/EEC) that was put into force for all European Union member states 1978. The number of small limited enterprises within the whole EU region amounts up to 23 million enterprises which represents 99% of all SME’s in the EU (Collis, 2010, p. 212). This indicates that many SME’s will be affected if the EU member states implement the directive. The European Commission’s incentive for the directive was to reduce the financial burden through cutting the administrative cost for small firms. The aim was to cut the administrative costs with 25% before the year 2012. The abolishment was not only said to increase the competition between European firms, but it would also increase the market stimulation (SOU 2008:32).

As a response to the directive from the EU, the Government of Sweden wanted this to be further investigated to properly set the criteria for Swedish firms. Thus, the Official Government Report (SOU) issued a report in March 2008, presenting their findings from the investigation regarding the abolishment (SOU 2008:32). The Official Government (SOU 2008:32) reported in 2008 that 95 000 small limited firms would be affected by the abolishment, representing one third of all firms in Sweden (SOU 2008:32). To be classified as a small limited firm, and to be affected by the abolishment of the mandatory audit, the Government of Sweden decided that a firm is required to not exceed more than one of the following criteria during two financial years (Prop. 2009/10:204):

- Having 3 000 000 SEK in net sales
- Having 1 500 000 SEK in assets, and
- Having maximum 3 employees in the firm

However, in 2013, EU presented a new directive that would come to replace the old directive known as 78/660/EEC. This new directive, 2013/33/EU known as “The annual financial statements, consolidated financial statements and related reports of certain types of undertakings” presents the criteria for which firms are affected by the new law. In
distinction to the previous directive, the new EU directive organizes firms into groups depending on their sizes. Criteria for the abolishment is set based on the firms’ sizes (2013/33/EU). The criteria for micro undertakings is presented as not exceeding more than one of the following: having a balance sheet total of 350 000 Euros (3 631 717 SEK), having net sales of 700 000 Euros (7 263 347 SEK) and mean number of employees of 10 during the financial year (the currency used to calculate the Swedish Krona to Euros was 1 Euro= 10.3763 SEK). Further, the criteria for small firms is to not exceed more than one of the following: having a balance sheet total of 4 000 000 Euros (41 505 086 SEK), having net sales of 8 000 000 Euros (83 009 281 SEK) and having a mean number of 50 employees (2013/34/EU). Hence, a firm that does not exceed two of those criterions from the two latest financial years are exempted from the mandatory audit (2013/33/EU).

As can be noticed, the criteria set by Sweden is remarkably lower compared with the criteria presented by the EU. Sweden has low limits on the criteria which results in many affected firms. Comparing with other countries, it is evident that they also differ from the Swedish standards. The United Kingdom is one of the few countries that have applied the maximum level of the limits presented by the European Union (Collis, 2010, p. 212). The Netherlands, Austria and Germany were also in line with the United Kingdom (SOU 2008:32). In Germany the mandatory audit law is said to exempt 400 000 firms, constituting half of the firms in Germany. In contrast, Denmark has applied the limits lower than the EU directive, as Sweden (SOU 2008:32).

Today, the National Swedish Council for Crime Prevention (2018) reports that there has been a small decrease in the amount of reported taxation frauds in Sweden from the period 2008 ranging to 2017. In 2008 it amounted up to 15 813 reports while in 2017 it amounted up to 14 407 reports (National Swedish Council for Crime Prevention, 2018). On the other hand, the reported taxation frauds had been increasing steadily from the 1970’s up to 2007 (National Swedish Council for Crime Prevention, 2008, p. 315-317). However, it is claimed that the amount of reported suspicions on economic crimes are to a large extent dependent on how effective the agencies are in detecting economic crimes. (National Swedish Council for Crime Prevention, 2018).

One well known, and well discussed form of economic crime is income tax fraud (Ekobrott, n.d). The aim of income tax fraud is to avoid paying income taxes (Ekobrott, n.d). Income tax fraud is achieved either through manipulating the firm's bookkeeping and hence creating false numbers, or through failing to hand in declarations, verification data or any other documents that may lead to a smaller or no income tax payment (Ekobrott, n.d; SFS 1971:69). Manipulation of bookkeeping is known as ‘earnings management’. Schipper (1989) defines earnings management as “when managers use judgement in financial reporting and structuring transactions to alter financial reports to either mislead stakeholders about the economic performance of the company, or to influence contractual outcomes that depend on reported accounting numbers” (Healy & Wahlen, 1998, p. 6). One way to perform earnings management is to understate revenues in the bookkeeping in order to indicate that the future looks promising (Healy & Wahlen, 1998, p. 7). According to Scholes et al. (1992, p. 164), firms can also reduce their taxable incomes by reducing incomes noted in financial statements. Firms can also defer taxable incomes by increasing the research and development expenditures, delaying the bookkeeping of sales, increasing the advertising expenditures and increasing the pension contributions (Scholes et al., 1992, p. 162). Scholes et al. (1992, p. 162) suspects that the action of practicing earnings management to avoid income tax depends on certain time-of-year considerations such as, postponing sales revenues until the end of the year as it would lead to lower nontax costs.
1.2 Consequences regarding the abolishment of the mandatory audit

One of the reasons for the abolishment of the mandatory audit in Sweden was that small limited firms should be able to decide on their own if they need an auditor (and other financial services) or not (2009/10:CU28; Thorell & Norberg, 2005, p. 8). In turn, this would lead to a smaller administrative cost for the small firms and allow them to focus their resources on the core business of the firm. Based on this, it was believed that the obstacles for small firms would decrease, as the growth and development of the firms would be benefited (Prop. 2009/10:100). Another reason for abolishing the mandatory audit was that it would increase the competition among firms, as well as it would increase the possibility to hire more personnel (Swedish National Audit Office, 2017, p. 67). In line with this, Seow (2001, p. 75) also believed that a mandatory audit would create unnecessary financial burden for small firms. Further, it is argued that giving small firms the opportunity to choose if they want to be audited or not does not obstruct the interests of the stakeholders (Seow, 2001, p. 76).

Prior to the abolishment of the mandatory audit, the Government of Sweden investigated the potential consequences it could cause. It was found that the negative effects in terms economic crimes were partly hard to quantify (Swedish National Audit Office, 2017, p. 12). The Swedish Tax Agency and Swedish Economic Crime Authority were concerned that the abolishment would have a negative effect on the tax revenues and the economic crimes (Swedish National Audit Office, 2017, p. 13; Swedish Economic Crime Authority, 2016, p. 3). The Swedish Tax Agency warned that this new reform would cause a significant decrease in tax payments from limited firms and trading firms, amounting up to 1,3 billion SEK per year (Swedish National Audit Office, 2017, p. 13). Further on, it was also estimated that the taxation errors would increase with 15-20% among the limited firms who would stop being audited and who would also not buy any accounting services after the implementation of the new reform (Prop. 2009/10:204). However, the Government of Sweden were doubtful that the abolishment of mandatory audit would create any significant effects on the size of the income tax revenues (SOU 2008:32). On the other hand, it is known that the auditor can reduce errors in financial statements and detect fraud in the bookkeeping (Prop. 2009/10:204). Based on this, it was believed that many firms would retain the audit services because of the expectations from external stakeholders, such as customers and credit providers (Prop. 2009/10:204). Thus, when investigating the potential consequences of the abolishment from the auditors’ viewpoint, it was concluded that they faced concerns regarding potential losses of clients and a greater competition among the auditing- and accounting firms if the mandatory audit would be abolished (SOU 2008:32).

On the other hand, Allee & Yohn (2009) have expressed that audit is not necessary obligatory, but it can still result in several advantages for the small firms. For example, they found that firms with audited financial statements receives a greater access to credit compared to those firms without audited financial statements (Allee & Yohn, 2009, p. 3). There are also additional previous studies who have shown similar results on this matter. Previous studies conducted by Dedman & Kauser (2012) and Lennox & Pittman (2011) found that firms who retain voluntary audits receives higher credit ratings and hence get bank loans easier than the firms who quit audit.

According to Chow (1982, p. 277), a reason for hiring an external auditor may be because of operational efficiencies. Chow (1982, p. 277) argues that an external auditor may be able to conduct tasks more efficiently than an internal auditor, and that an external auditor is also able to provide more services, such as management consulting. Further, it is argued that an external auditor is preferred when conducting internal controls if the external auditor is less likely to collude with the manager’s subordinates. If all these stated benefits exceed the cost
of hiring an external auditor, then the firms should have incentives to hire an external auditor (Chow, 1982, p. 277).

Further, ECON (2007) expressed fears regarding the abolishment of mandatory audit. Many parties, such as the Swedish Tax Agency and National Swedish Council for Crime Prevention have feared that the abolishment of mandatory audit would lead to an increased number of economic crimes, such as tax fraud (ECON, 2007, p. 30). It is argued that the role of an auditor can be seen as a safety function regarding this issue, as the auditor reviews the financial statements and thus may detect errors and/or frauds (ECON, 2007, p. 31). However, ECON (2007, p. 31) argues that the abolishment of mandatory audit would result in losing the important control function of an audit, and this might lead to an increased number of economic crimes and errors. Therefore, it can be argued that the abolishment of the mandatory audit will increase the risk for more economic crimes (ECON, 2007, p. 31).

Further, Thorell & Norberg (2005, p. 6) believe that the abolishment of mandatory audit will lead to a development of other appropriate accounting/auditing services. This would also lead to a free competition on the market. It has been questioned whether other complementary services to audit would be necessary because of the abolishment. When the mandatory audit was abolished in the U.K, another service known as ‘compilation report’, was put into force. The same goes for Germany, where advisors now need a form of legitimation with no requirement of being an auditor when reviewing financial statements (Thorell & Norberg, 2005, p. 6). Additionally, it is said that the credit ratings increase when the firms are being audited, however it is suggested that banks can require the firm to be audited in terms for receiving loans (Thorell & Norberg, 2005, p. 6, 44). In this way, firms who does not need funding would cut costs by not having to pay for an auditor. They also found that it is uncertain whether auditing has an impact on economic crimes. This is due to the limited amount of research in the area. However, the auditors can help to detect crimes since they take another perspective than the firms. A third party has no intention of keeping information secret and to avoid reporting errors and economic crimes. The work on preventing economic crimes has been the biggest discussion when investigating whether the audit should be abolished or not (Thorell & Norberg, 2005, p. 43). The fact that not much research has been done in this field makes it difficult to map out the importance auditing has in relation to economic crimes. Thorell & Norberg (2005, p. 7) suggests that the mandatory audit should be abolished for small firms and let them instead use an economic guidance for controlling the bookkeeping. To carry out the abolishment, Thorell & Norberg (2005, p.7) also recommend setting the rules and regulations similarly to how the Government of England did when they applied the voluntary audit. Further, they believe that England has successfully carried out the abolishment and therefore, England can be regarded as an optimal guideline.

1.3 The restaurant industry

Since the 90’s many implementations have been made to prevent economic crimes and unfair competition within the restaurant industry in Sweden (Swedish Tax Agency, 2014, p. 7). However, the problem with economic crimes seems to remain today. Many of the economic crimes are practiced by small firms who let people work without having any employment (black work). This type of crime is most common within certain industries, such as the restaurant industry where up to 47% of all payments are made with cash (SOU 2005:35). In 2014, there were 25 611 firms within the restaurant, catering, bars and pubs industry in Sweden (Swedish Agency for Economic and Regional Growth, 2018). Höglund (2006, p. 705) argues that some industries are “more black” than others and that it is evident
that industries such as the restaurant industry and the hairdresser industry are known for practicing black work. In addition, a lot of time consuming resources are required to make controls in these types of industries due to the large amount of cash circulating on a daily basis (SOU 2005:35). However, the Swedish Tax Agency (2017, p. 90) states that black work is usually separated from the term taxation errors, as taxation errors usually covers declaration errors and non-registered incomes.

As a response to the tax frauds that were evident in some industries, the Swedish Riksdag introduced a new law that aimed at investing extra resources on controlling the income tax payments in particular industries (Höglund, 2006, p. 705). According to PwC (2017, p. 9), the aim of this implementation was to reduce the occurrence of black work and income tax fraud. This law came to be known as the Law of controlling certain industries (Sw.: Lag (2006:575) om särskild skattekontroll i vissa branscher) and was put into force on the 1st of January 2007. The industries who are affected by this law are the restaurant industry, such as pizzerias, cafes and catering, and the hairdresser industry (SFS 2006:575). According to 7 § (SFS 2006:575), it is stated that the industries in question must keep track of who is working and when. Name, phone number (if there is any), ID-number and what time the employee started and ended his/her shift must be documented. This document must be available in the firm’s facility in case if the Swedish Tax Agency would pay a visit (SFS 2006:575, 7 §). In addition, it is also regulated that the Swedish Tax Agency can visit firms within these industries unannounced. If it would be evident that a firm does not run a track of the employees, or does not run the track properly, or does not have the document available in their facility, then the Swedish Tax Agency have the right to charge them a fee of 10 000 SEK (SFS 2006:575, 12 §). Also, if the Swedish Tax Agency would detect that there are additional employees in the firm, beyond the ones registered in the document, they have the right to charge a fee of 2 000 SEK (SFS 2006:575, 13 §). Höglund (2006, p. 705) clarifies that the main goals of the implementation of this law was to make it difficult for firms to avoid taxation on incomes and to create an effective form of control on these industries.

The Swedish Tax Agency argues that the effects of this implementation have been very successful in both the restaurant- and hairdresser industry. In 2007, the Swedish Tax Agency made 31 108 controls in restaurants all over Sweden and already in the same year they could see an increased number of reported salaries and employment contributions (PwC, 2017, p. 22, 32). The increase was significantly larger in the restaurant industry compared to other industries (PwC, 2017, p. 32). It was noted that a large number of controls were made by the Swedish Tax Agency in the beginning of the implementation, and that these controls successfully decreased every year until 2014 (PwC, 2017, p. 23). In 2014, 5 792 control visits were made (PwC, 2017, p. 22). A total of 110 000 control visits have been made by the Swedish Tax Agency since this law was implemented in 2007 till 2014. Out of these visits, a number of 16 445 visits led to charges of fees. The total amount of fees amounted up to 130 MSEK (PwC, 2017, p. 23).

Many positive effects of the implementation of this law have been tracked, according to the Swedish Tax Agency. This law has led to a significant increase in the number of reported salaries in the restaurant industry, in December 2007 it was found that around 600-800 more salaries than normal was reported (PwC, 2017, p. 33). The overall effect on reported salaries was an increase of 6% in the affected industries (PwC, 2017, p. 26). A significant raise in the reported salaries was observed around the end of the year 2006 and beginning of 2007 (PwC, 2017, p. 33). In addition, the Swedish Tax Agency has also noted an effect on the net sales of the firms. It is evident that the firms reported around 10% higher net sales after they had been visited compared to the previous months when they had not been visited (PwC, 2017, p. 26). Further, the implementation also led to an increase in the number of registered
employers. In January and February 2007, a number of 899 restaurants was registered as employers, this was an increase of 92% compared to the previous year. The Swedish Tax Agency also note that around 4000 illegal employments became legal in 2007 (PwC, 2017, p. 33).

According to the Swedish Tax Agency, a frequent way of committing tax frauds in the restaurant industry is by manipulating the cash register. The most common method for the manipulation is to not register the transaction in the cash register. If it is not registered, the firm can report less revenue and, in that way, pay less tax (SOU 2005:35). The Swedish Tax Agency, the Swedish Economic Crime Authority and the County Administrative Boards have controlled the restaurant industry and mainly focused on unrecorded revenues. It has been declared that unrecorded revenues are a symbolic problem within this industry, all over the country (SOU 2005:35). A large amount of cash registers from the restaurant industry had been investigated as a part of a project to map out this issue. It was found that a large proportion of the investigated cash registers were manipulated, resulting in up to 50% less recorded revenues than what there should have been (SOU 2005:35). Other industries, such as the hairdresser industry and the taxi industry were also found to be problematic because of manipulation and tax frauds (SOU 2005:35). Based on this, it was judged that cash heavy industries should be obliged to use certified cash registers and that the Swedish Tax Agency should have the right to visit them in order to control the certified cash registers (SOU 2005:35; SFS 2007:592, 21§). On January 1st, 2010, this obligation was put into force (PwC, 2017, p. 13). This obligation affected all businesses where sales of goods or services were paid with cash or credit cards (PwC, 2017, p. 13; SKV M 2012:7; SFS 2007:592, 6§) This obligation was needed as the cash industries usually did not leave any tracks of their sales, such as invoices. Because of this problem, it has been difficult to track the sales in the cash industries, and even with the firms who have used cash registers it is evident that many of them have been manipulated (SOU 2005:35). These tax frauds are regarded as serious issues as it creates disloyal competition within industries, but also because it affects the income tax payments to the society (SOU 2005:35).

In 2013, the Swedish Tax Agency mapped out to what extent the implementation of the obligatory cash registers had resulted in any changes in tax frauds (PwC, 2017, p. 40). Statistical methods were used to analyze what effect the obligatory cash registers had on the reported sales. The Swedish Tax Agency were expecting a reduction in tax frauds, and that more sales would be reported as a result of the implementation of cash registers. The result of the obligatory cash registers was shown to be positive and the reported sales increased with around 5% after the firms had installed the cash registers (PwC, 2017, p. 40). An increase of 3 billion SEK per year in tax payments and fees was also observed (Swedish Tax Agency, 2014, p. 40). However, it is unknown if this increase is because of an increased number of reported sales in the cash registers, or if it is because of another possible explanation (Swedish Tax Agency, 2014, p. 40, 41).

Furthermore, the value-added tax (VAT) was reduced for the restaurant- and catering businesses in 2011 (Swedish Tax Agency, 2014, p. 7). The VAT was reduced from 25% to 12%. It was believed that a lower VAT would lead to lower tax frauds, but also because it would stimulate a higher growth rate and competition within the industry (Swedish Tax Agency, 2014, p. 7, 13). Uppermost, it was believed that the reduced VAT would lead to a higher employment rate and thus have a positive effect on the society (Swedish Tax Agency, 2014, p. 8). It was estimated that around 3500 unemployed persons would now be registered as employed because of this reform (Swedish Tax Agency, 2014, p. 8). However, the Swedish Tax Agency could not assert that the lowered VAT had an impact on the tax frauds (Swedish Tax Agency, 2014, p. 20). When investigating the firms experiences of the
lowered VAT, it was found that 59% of the respondents believed that the tax frauds had reduced because of this reform. 21% thought that the reforms did not have any effect, while 1% thought that the tax frauds had increased. The remaining 18% of the respondent did not know of the effects, or did not respond (Swedish Tax Agency, 2014, p. 30).

1.4 Cash in the society

Overall in Sweden, 71% of all payments are made with card, 18% in cash and ten percent are made with invoices (Arvidsson et al., 2018, p. 5, 16). Previous studies have found that the restaurant industry, among others, are classified as heavy cash industries (Alalehto, 1999, p. 21; National Swedish Council for Crime Prevention, 2008, p. 306; SOU 2005:3; Swedish National Audit Office, 2017, p. 7). The Official Government Report found that up to 47% of all transactions made in the restaurant industry were made in cash (SOU 2005:3).

It is interesting that the Swedish society is using less cash even though a lot of cash is present in the restaurant industry (Arvidsson, 2013, p. 3). Nowadays, cash is still used in Sweden - but in fewer transactions and smaller amounts. During the last decades, the usage of cash has decreased and Arvidsson (2013, p. 3-4) believes that Sweden will be free of cash year 2032. In line with Arvidsson (2013), Svensk Handel (2017) states that there is a possibility that in 2020, 90 % of all transactions in trading will be electronic and that Sweden can become a cashless society already in 2030.

Further, Arvidsson et al. (2018) released a report in 2018 with the aim of mapping out when the Swedish trade will go cashless. This study was conducted by sending questionnaires to traders all over Sweden (Arvidsson et al., 2018, p. 4-5). A sample size of 741 respondents were useful for the study (Arvidsson et al., 2018, p. 5, 14). The results showed that 97% of them accept cash payments, but only 18% of the actual payments are made in cash (Arvidsson et al., 2018, p. 5, 16). The usage of cash in the Swedish society is significantly declining and by year 2020 it is believed that one fourth of the traders will have stopped accepting cash payments (Arvidsson et al., 2018, p. 5). By year 2050 it is believed that 50% of the traders have stopped accepting cash payments.

However, there are signs that indicates a different turn. Firstly, the Swedish Riksbank has recently replaced the old paper notes and coins with new designs and additional values. Secondly, the older generation in the society are using cash to a large extent in Sweden, and they will most likely not promote a shift toward a cashless society. The older generation have more difficulties with adapting to new, electronic methods of paying (Arvidsson, 2013, p. 3). Therefore, these arguments could be reasons for keeping cash in the society.

Further, there is a possibility that a reduced amount of cash will lead to a decrease in the number of cash robberies (Arvidsson 2013, p. 48). Nonetheless, Arvidsson (2013, p. 48) indicates that new types of crimes would replace the old ones. These could include crimes such as thefts of commodities and electronic crimes. To deal with the new types of crimes, Arvidsson (2013, p. 48) suggest that banks and the trade industry needs to develop new types of controls that can grasp these new types of crimes.

1.5 Research purpose

It is evident that it seems to be a lack of studies done in this field. Therefore, the purpose of this study is to contribute with valuable knowledge on this unexplored area of study. The purpose is also to examine if there is any correlation between the abolishment of mandatory
audit and the income taxes paid by small limited firms in the restaurant industry Sweden. Lower income taxes paid arguably indicates more tax fraud. The study also intends to contribute with new knowledge within this area. Studying the relationship between the abolishment of the mandatory audit and the income tax revenues from the restaurant industry in Sweden seems to be an unexplored phenomenon. There has not been found a single study that have examined this combination, hence, this study is of peculiar interest. Increasing the knowledge within this area is also important as it could aid the work against economic crimes, as well as it could provide valuable information that new types of controls are necessary so that economic crimes within the restaurant industry in Sweden can be prevented.

In addition, this study aims to inform third parties, such as private persons and authorities, about a potential societal and economical problem. The study also intends to contribute with valuable information and discussions about potential effects arising from the abolishment of mandatory audit.

1.6 Research question

Based on the problem background and the purpose of this study, the research question follows:

“Does the abolishment of the mandatory audit in Sweden lead to a change in income tax payments from the restaurant industry?”

1.7 Research limitations

The restaurant industry is known for committing a large part of the economic crimes in Sweden, therefore, this study is particularly interested in how the abolishment has affected the industry in terms of income tax fraud. Due to this, the research is limited to the restaurant industry in Sweden. Further, as we are investigating some of the effects of the abolishment of mandatory audit, it comes naturally to study the firms who are affected by this regulation. This means that the research is limited to all small limited firms within the restaurant industry who are affected by the abolishment of mandatory audit.

In addition, the research is limited to Sweden since we find it as an interesting country to study. Sweden is known to be a highly developed and transparent country (Carlberg, 2008). In addition, it is one of the countries that has the lowest limits of the criteria regarding the abolishment of mandatory audit. This means that a large part of all limited firms in Sweden were affected by this regulation. Further, one major concern from Swedish Agencies and Authorities was that the abolishment would lead more economic crimes in terms of lower income tax payments. Based on these arguments, it is interesting to see if the amount of income tax payments has changed as a large number of firms were expected to quit audit in connection with the abolishment.

It is decided to study two years before the abolishment, and two years after the abolishment in order to increase the possibility of detecting a change in the income tax payments. Hence, the study is limited to four years, namely 2008, 2009, 2012 and 2013.
2.0 Methodology

This chapter reviews our pre-understandings to the subject and our methodological assumptions, namely the ontological and the epistemological standpoints. This is followed by an explanation of the research design applied and how the literature has been selected.

2.1 Pre-understandings

To be able to carry out this study and to properly analyze the results of the study, our pre-existing knowledge needs to be mapped out. As McManus Holroyd (2007, p. 4) describes, to understand and analyze the results of the study, one must begin with considering one’s pre-existing knowledge in the subject. It is important to keep an objective mind and distance from the previous existing knowledge when carrying out the study. Being aware of our existing knowledge and beliefs in the subject will be an advantage for us when interpreting the results. At the same time, this awareness will also help us realize when we need to be objective and not let our previous knowledge influence the analysis and interpretation of the results.

Johansson Lindfors (1993, p. 76) discusses the concept of primary-understandings and secondary-understandings. Primary-understanding refers to those understandings that have been formed based on our own personal experiences. While secondary-understandings refers to the knowledge that we have gained from non-personal experiences, for example by studying books (Johansson Lindfors, 1993, p. 76).

Considering our pre-existing knowledge, it can be confirmed that we have mostly secondary-understandings. The pre-understandings that the we have in the subject of matter is gained from our studies at Umeå School of Business and Economics (USBE) at Umeå University. Both of us have studied the International Business Programme at USBE and we both have chosen auditing and accounting as our main focus. During the years at USBE we have studied various courses within economy and business administration, but also courses in law, statistics and research methodology. Some courses, such as business administration and finance have been studied on bachelor level, while other courses, such as, accounting and auditing have been studied on master’s level. In addition to this, we share an interest in auditing and accounting and aim to keep ourselves updated in these areas. Grounded on these secondary-understandings, we consider ourselves having a broad knowledge in the business subjects.

Additionally, the choice of the topic originates from a report that the Swedish National Audit Office released in 2017. In this report they discussed the benefits and drawbacks of the abolishment of mandatory audit, such as economic crimes. Moreover, during our studies at USBE we have studied earnings management and the possible misuse of the accounting laws. Therefore, the choice of topic for this study was not only due to our personal interests but also because this subject is highly discussed today.

2.2 Ontology

Bryman & Bell (2015, p. 32) describes the social ontology, also known as ontology, as the practice of the nature of the social phenomenon, existence and social entities. According to Rawnsey (1998, p. 2) ontology refers to the nature and structure of being. Further, Rawnsey (1998, p. 2) explains that the definition of ontology can differ significantly dependent on which philosopher the definitions are obtained from, therefore it is necessary to know the
source. According to Bryman & Bell (2015, p. 32), an ontological belief is the perception on the social phenomenon, how it is constructed and how social actors choose to construct their beliefs. The ontological assumption is divided into two standpoints; objectivism and constructivism.

Objectivism is an ontological assumption that implies that there is only one reality and that reality exists independently or separately from social actors (Bryman & Bell, 2015, p. 32). It represents that the social entities exist in reality in connection to social actors. An example of a social entity can be an organization itself (Saunders et al., 2012, p. 131). According to Bryman & Bell (2015, p. 32) the ontological belief can be compared and illustrated with organizations and cultures. For example, it can be that some organizations are characterized with a clear hierarchy and structure of the labor in the organization. This structure depicts the reality and that the individuals in the organization are included without any opinions. It can be said that the individuals have no authority to change the hierarchy or adjust the structure. The individuals must obey the laws and morals of the organization, or otherwise actions against them might be taken (Bryman & Bell, 2015, p. 32).

Constructivism is an ontological assumption which assumes that social phenomena and its meanings are continually being revised and updated by social actors. It implies that the social phenomena are created through social interaction, and is constantly being changed (Bryman & Bell, 2015, p. 33). Individuals may perceive situations differently depending on their own view of the world, and as a result of this their actions and nature of their social interaction with others will be affected (Saunders et al., 2012, p. 132). Saunders et al. (2012, p. 132) clarifies that constructivism is often associated with subjectivism. Subjectivism asserts that social phenomena is created and constantly changed from the perceptions and the actions of the social actors. Further on, it is believed that subjectivists view the culture of the organization as something that the organization ‘is’ as an outcome of continuous change in the society. In contrast, the objectivists typically view the cultures of organizations as something the organizations possess or ‘has’ (Saunders et al., 2012, p. 132).

Since our study is applying a quantitative method, we naturally base our study on the objectivist assumption. We are not seeking to manipulate or change the collected data, instead we will observe and gather data as it appears. We will view and treat all the participants of the study as they exist, and no personal affiliation or considerations will be applied. We believe an objectivist view will be the most suitable belief for this study based on the purpose and research question. Thus, we will maintain an objectivist view throughout the study meaning that we will establish our beliefs on existing data. If a qualitative study would be made, a constructivist/subjectivist view would be more suitable as it would be natural to form our own perceptions and be subjective regarding the data collected. However, we believe that it is difficult and inappropriate to be subjective in a quantitative study.

2.3 Epistemology

Epistemological assumptions concern what we perceive as fair knowledge within a field of study (Saunders et al., 2012, p. 132). Bryman and Bell (2015, p. 19, 26) describes epistemology as the practice of what is true knowledge about the social world and whether the social world should be studied. Should the understanding and research be based on natural science models such as procedures and structures or is it rather originated from social sciences such as humans and institutions (Bryman & Bell, 2015, p. 19, 28). The epistemological beliefs are a relatively old phenomena and the research about the
development of the beliefs began initially in the 50’s. Psychologists believe that epistemology is an increasing area of interest that needs to be pursued more in future studies (Hofer & Pintrich, 1997, p. 88). Hofer and Pintrich (1997, p. 88) present interesting future studies relating to epistemology dealing with a more personal perspective than what have been studied before. The personal perspective focus on individuals and their perception of what knowledge is and how you know knowledge. The indication for future studies is also directed towards the understanding of how cognitive learning processes such as, thinking and reasoning can be correlated to epistemological aspects (Hofer & Pintrich, 1997, p. 88). However, Hofer and Pintrich (1997, p. 88) claim that the definition of epistemology can be explained as the origin argument of human knowledge.

According to Johansson Lindfors (1993, p. 37) it is suitable to base the study on one out of only two research philosophies - positivism or hermeneutic. She argues that some even believe that there should not be any additional research philosophies as all of them will be based on the positivism or hermeneutic philosophy. On the contrary, Saunders et al. (2012, p. 134-140) decides to define more research philosophies rather than just the positivism and hermeneutic. Instead, four different research philosophies are described. Those are:

- Positivism
- Realism
- Interpretivism, and
- Pragmatism

Even if Johansson Lindfors (1993) consider that all other philosophies are based on either positivism and hermeneutic, we still are going to study all the four philosophies described by Saunders et al. (2012, p. 134-140) as we believe it will broaden our understanding and facilitate the decision making regarding which research philosophy is suitable for this study. Further on, it can also be argued that the research philosophies obtained from Saunders et al. (2012) is chosen because their work is more recent than that from Johansson Lindfors (1993).

In positivism it is preferred to gather data about an observable reality and to look for casual relationships in the data (Saunders et al., 2009, p. 136). It relates to working with observable social reality to be able to produce law-like generalizations (Saunders et al., 2009, p. 135). Existing theories may be used in order to produce hypotheses and theory (Saunders et al., 2009, p. 137). These new productions can then be tested in further researches. Nonetheless, this does not imply that as a positivist the study has to be based on existing theory, it is possible to do it without using existing theory (Saunders et al., 2012, p. 134). Saunders et al. (2012, p. 134-135) further argues that another important component of the positivist approach is that the research is being conducted in an objective manner. The researcher does not possess any personal values, opinions or judgements about the data and is therefore value-free throughout the whole research.

In contrast to positivism is the concept and philosophy interpretivism. This belief originates from criticizing the positivist perspective for believing that the world is only based on natural science models. This new conspiration is more focused on understanding why human acts the way they do and distinguishes from the traditional positivist perspective (Bryman & Bell, 2015, p. 28). It is necessary that the researcher must be able to adopt an empathetic stance to be able to understand the world from another point of view (Saunders et al., 2012, p. 137). In an interpretivist research the distance between the participants and the subject being researched is diminished. The participants are said to be more involved and engaged in the research, that is why qualitative research designs are more suitable for this type of perspective. In an interpretivist philosophy it is believed that the world is
socially created, and it allows the researcher to involve its own experiences and backgrounds in the research.

Moreover, realism is another philosophical position. In realism it is believed that reality and objects have a presence that is independent from the human mind. It can be said that realism is the opposite to idealism, as idealism believes that only the mind and its contents exist. On the other hand, realism is compared to positivism since they are similar in the sense that both of them adopt the scientific approaches to be able to develop the knowledge (Saunders et al., 2012, p. 136).

There are two types of realism; direct realism and critical realism. According to direct realism the world is accurately portrayed as the way we experience and see it. Critical realism says that what we experience and see are sensations representing the reality, and not the world or the reality itself (Saunders et al., 2012, p. 136).

Lastly, pragmatism appoints that concepts are only of relevance when they support action. This asserts that the most important determinant for choosing a philosophical position is the research question. Usually the research question can be appointed to a specific philosophical position. But if there is not any specific position that fits the research question better than another, then the pragmatist’s view can be adopted. The pragmatist’s view recognizes that there are different ways of perceiving the world and conducting research, and that there is no single view that can give the full picture (Saunders et al. 2012, p. 130). Either, or both, subjective meanings and observable phenomena can be used to serve acceptable knowledge (Saunders et al., 2012, p. 140). In addition, pragmatism finds the practical consequence of a research finding or idea as being important and valuable (Saunders et al. 2012, p. 130).

This study will base its epistemology in positivism as we find it being the most suitable for our research type and method. We are going to collect observable data from a secondary source and will aim to find a causal relationship in order to answer our research question. We are not interested in collecting data from a primary source, and to be subjective in our analyzation. Also, prior theories will be used as guidelines when forming the hypotheses.

2.4 Research approach

In order to conduct research correctly, two approaches can be enforced. They are distinguished in the sense that the research is either testing existing theory or producing theory (Saunders et al. 2012, p. 48). The approach chosen for the research project will guide the outline and show the process needed to be taken in order to gather results and not only formulate but also to answer the research question (Saunders et al. 2012, p. 48-49). Saunders et al. (2012, p. 48) explains the first approach as deductive approach. The deductive approach is based on testing a theoretical standpoint through gathering your own data and then come to conclusion by either to justify existing theory or discover new findings. The inductive approach is explained through wanting to explain and support your finding with existing theories. The inductive approach is translated into developing new theories through allowing analyzation the results from the data. Further, the inductive approach assigns theories to the data in order to better understand the results (Saunders et al. 2012, p. 48).

Bryman and Bell (2015, p. 23) explains that the deductive theory design is used when connecting theory about what is known with theoretical speculations within the field. The speculations are then formulated into hypotheses that are tested against the existing theory. The hypotheses need to be suitable to the existing theory and knowledge, as it needs to be
specified how information can be collected to respond to the concepts that relates to the hypotheses. Moreover, Bryman and Bell (2015, p. 23) informs that in the deductive approach it is the theory and testing of theory that drives the data collection. One could define the deductive research design as theory testing. In contrast there is the inductive approach (Bryman & Bell, 2015, p. 23).

For our thesis, a deductive approach will be enforced. Starting off from the research question, it is formulated in a way that the purpose of the study is to give conclusion about our theoretical phenomena. As guidance in our research project, existing theories on auditing and income tax fraud has been to help, as well as previous research within this area. Hypotheses, which are in line with the quantitative research design, will be formulated to test the theory. It is important to keep a careful and critical mind when processing and working with the data in order to keep a high reliability and validity of the study (Holme et al., 1997, p. 163). If this is achieved, there is a higher chance that the quality will be higher. Since the quantitative design is applied and we have a positivist perception of knowledge, the deductive approach is the most suitable for this kind of study. If an inductive approach would have been used, the research question would have to be formulated differently where the aim then rather would be to discover and analyze the results. The aim would be to try to connect our results to theories and maybe even develop new theories. Also, the inductive approach would not be suitable to our perspective of knowledge since we believe that everyone has the same version of the social world, but also because we are not subjective and critical in our analysis of the data. With an inductive approach we would have to be subjective and the interviewees would present their perspectives and versions of the situations and reality.

2.5 Research design

Research design is built on two distinctive clusters; quantitative and qualitative research. A quantitative research design involves numeric data, and due to this, the word ‘quantitative’ have also become a synonym for data collection techniques and data analysis techniques that generates numeric data (Saunders et al., 2012, p. 161). A deductive approach is favored in a quantitative research design where the emphasis is to use numerical data to test theories (Bryman & Bell, 2015, p. 37). The main characteristic of a quantitative research is that a relationship between variables is investigated by using a range of statistical techniques (Saunders et al., 2012, p. 162). Probability sampling techniques are also used to assure the possibility of generalization (Saunders et al., 2012, p. 163). The researcher has an objective and external view of the social reality and the norms of positivism is integrated (Bryman & Bell, 2015, p. 38).

In contrast, the qualitative research design emphasizes words rather than numbers in the gathering and analysis of data. ‘Qualitative’ is often used as a synonym for data collection techniques and data analysis procedures that generates non-numeric data (Saunders et al., 2012, p. 161). Further, an inductive and interpretive approach is favored, and the emphasis is focused on the development of theories (Bryman & Bell, 2015, p. 38; Saunders et al., 2012, p. 163). The practices of the social reality, such as positivism, is rejected. Instead, it takes the view of the social reality as a constantly changing reality dependent on the individuals’ mindsets (Bryman & Bell, 2015, p. 38). It is interpretive since the researcher must be subjective during the study to be able to obtain an in-depth understanding of what is being studied. The main characteristics of a qualitative research design is that the meanings of the participants and the relationship between them is studied in order to establish a conceptual framework. The researcher is interactive during the study,
as well as the use of non-probability sampling techniques is favored (Saunders et al., 2012, p. 163).

A quantitative research design will be used in this study because it is the most relevant design based on our method and research question. In order to get an in-depth answer on the research question, numerical data is preferred since it can provide us with a wider answer than what non-numerical data can. Non-numerical data, such as interviews, is not suitable for our research question as we believe that firms will not be completely honest in the interviews because they do not want to admit conducting economic crimes. We also believe that the number of participants in the interviews would be low because several firms would not want to participate in a study of this nature. In addition, it will also be difficult to get a full and complete answer based on non-numeric data. Since we are seeking to understand how the income tax frauds have changed since the mandatory audit was abolished on the 1st of November in 2010, we will gather data from multiple years. The most effective way to do this is by collecting numerical data from a database and use statistical techniques. Further, we are intended to maintain a positivist view and a deductive approach in this study, and these views are in accordance with a quantitative research design.

2.6 Literature selection

Secondary sources have been used in order to complement our existing knowledge within this area. Several databases have been used to be able to find relevant literature for this study. The database ‘Business Source Premier’ have been used and was accessed for free via Umeå University Library. When using this database there is an option to only include peer reviewed articles in the search. The peer reviewed articles are scholarly works and have been screened by an expert before being published (Ecker & Skelly, 2010, p. 10). This increases the reliability of these articles and therefore we find them trustworthy and relevant to use in our study. In addition to ‘Business Source Premier’ we have also used the database ‘Google Scholar’ which is available via Google. ‘Google Scholar’ has a broad selection of articles, however, we chose to only study articles that has been published in journals to increase the credibility. Further the database ‘DiVA’ have been used. This database contains previous theses made by students. In ‘DiVA’ we have searched for theses that are similar to ours in order to grasp the main secondary sources that have been used in previous theses. By studying previous articles, inspiration and suggestion for literature that could be relevant for our study was found. Further, searches at the Umeå University Library website was conducted, and the findings could either be in the format of online articles or hard copy books. Several hard copy books provided us with theories and descriptions of fundamental concepts that have been useful for this study.

A variety of keywords have been typed in in the databases when searching for literature and previous studies. Ejvegård (2003, p. 45) suggest searching for specific subjects in databases to find relevant facts. To find relevant facts we have searched for the following keywords: ‘audit’, ‘mandatory audit’, ‘voluntary audit’, ‘economic crimes’, ‘tax evasion’, ‘tax fraud’, ‘tax payment’, ‘consequences of mandatory audit’, ‘consequences of voluntary audit’ and, ‘earnings management’. Many of the keywords have also been used together in one search when looking for specific facts. It was realized that the single keywords would generate a result of a large number of previous studies, therefore it was preferred to combine some keywords to achieve fewer and more relevant results. Moreover, due to our study being an unexplored area, it was difficult to find relevant literature that studied the same topic and settings as us. Only a few previous studies were relevant to our study. Because of this, we had to broaden our perspective and therefore studied literature from other industries and
contexts. For example, it was found that the same issue has been studied but in other countries or in other industries.

When searching for theories, other keywords have been used such as ‘agency theory’, ‘stakeholder theory’, ‘rational choice theory’. These words have also appeared in searches in combination to keywords such as ‘audit’ and ‘accounting’.
3.0 Theoretical framework

This chapter presents theories that are relevant to this topic. This is followed by a hypothesis formulation and a presentation of similar previous research. Lastly, the sources used in this study are criticized.

3.1 Theories relating to the study

3.1.1 Agency theory

The agency theory arose in the 1970’s as a response to the political nature of accounting (Artsberg, 2005, p. 83). The aim of the agency theory is to lay the basis for a descriptive theory, a theory that describes the reality and does not intend to change it. According to Jensen and Meckling (1976, p. 308), an agency relationship refers to when a principal engages another person (an agent) to perform a task or service on the behalf of the principal. If both parties are utility maximizers, then it is fair to believe that the agent might not always act in ways that will benefit the principal the most. Due to this, the principal can in some cases pay the agent in order to secure a good act from the agent. However, there is no guarantee that the agent will make optimal decisions from the principal’s viewpoint (Jensen & Meckling, 1976, p. 308). Jensen and Meckling (1976, p. 309) point out that an agency cost may arise in any situation where a cooperative act is needed between two or more parties. Agency cost might also arise regardless if there is not a clear ‘principal and agent’ relationship. In addition, they shed light on the generality of the agency theory. One example of the generality is the fact that the agent should act in the best benefit for the principal. The agency theory is applicable to all forms of organizations and situations that require a cooperative effort (Jensen & Meckling, 1976, p. 309).

Artsberg (2005, p. 84) claims that the agency theory is based on the traditional assumptions within economic theories which states that all actors are utility maximizers and rational in their thinking and behavior. The agency theory focuses on the relationship between actors within the accounting area, such as a principal and an agent. This relationship may easily cause conflicts, as the agent wants to do what is best for him/herself and not the principal. Artsberg (2005, p. 84) explains that the agent does not do what is best for him/herself because he wants to be portrayed as a very capable agent or because he does not want to be held accountable for bad businesses. Instead, the agent does what is best for him/herself because of the economic consequences that may arise for him/her. The agent can, for example, choose an accounting method that gives a higher profit if his own salary is connected to the profit. Further on, Artsberg (2005, p. 84) clarifies that the occurrence of the audit profession can be explained by this phenomenon. A principal, such as an employer, will hire an auditor that will behave in the best interest of the principal as long as the economic benefits will exceed the auditing fees. Also, the principal sometimes feels obligated to compensate the agent with benefits, such as a bonus, in order to make sure that the agent will act in the best benefit for the principal. A principal can for example be an employer, a shareholder or a creditor. These principals usually make sure that the job of the agents and the agents accomplishments are connected to an economic consequence, and in this way they can make sure that they act in their best behavior.

The agency theory has previously been criticized because it is based on traditional economic theories, such as that all actors are utility maximizers and rational (Artsberg, 2005, p. 85). The theory has also been criticized because it has never been tested on its a priori assumptions. Since the agency theory is a descriptive and deductive theory the hypotheses are deduced based on the a priori assumptions (Artsberg, 2005, p. 85-86). But if the a priori
assumptions have not been tested, they might be incorrect and in turn this can lead to incorrect explanations of the a priori assumptions (Artsberg, 2005, p. 86).

It is also argued by Hanlon & Heitzman (2010, p. 168) that tax research in accounting needs more theories. A great start of this is the work made on tax avoidance in connection to a principal- and agent relationship where the tax agency is seen as having the position of an external monitor of management (Hanlon & Heitzman, 2010, p. 168-169) Traditionally, the agency theory has been applied to larger firms who have external shareholders. However, it is argued by Collis et al. (2004, p. 89) that the agency theory can also be applied in smaller firms. Disputes because of information asymmetry can arise in even the smallest firms and because of this, the information asymmetry does not necessarily depend on the size of the firm. Information asymmetry can also arise among internal shareholders if they lack the knowledge on how to interpret financial data. In a small firm, a principal can be seen as anyone who is external to the director’s (the agent’s) actions and decisions of the firm (Collis et al., 2004, p. 89). The principal can for example be external shareholders or credit providers (Collis et al., 2004, p. 89; Hanlon & Heitzman, 2010, p. 169). Evidence from previous studies about small firms and credit ratings show that having audited accounts are crucial when seeking loans from credit providers as it will facilitate their decision to lend money. Banks are more willing to lend money to small firms if they are audited (Collis et al., 2004, p. 89). On the other hand, it is argued that the agency costs will increase in relationship with a firm’s size and complexity. Due to this, the agency cost is smaller among smaller firms (Collis et al., 2010, p. 90).

3.1.2 Stakeholder theory

The stakeholder theory is an old theory that can be traced to the ideas of Adam Smith and his book “The Theory of Moral Sentiments” (Wagner Marinates et al., 2011, p. 227). Smith’s discoveries evolved, and the theory was first conceptualized by Freeman year 1984. Freeman’s reasoning for developing the theory was that he wanted to create a solution towards a potential problem concerning the increased internationalization and competitiveness. The theory states that external stakeholders, other than the organization itself, should be taken into account when making strategic decisions in an organization (Wagner Mainardes et al., 2011, p. 227). The concepts relate to the interrelationship between the firm and its stakeholders and depicts the firm’s relationship with the environment and how they interact with each other (Wagner Mainardes et al., 2011, p. 229).

The theory originally emerged from ideas that the firms were relying on external sources to function, explicitly, external groups. It was these groups that Freeman later came to define as stakeholders. Freeman also based the theory on four different areas within the organizational management field. These are: strategic organizational planning, systems theory, corporate social responsibility and organizational theory (Wagner Mainardes et al., 2011, p. 230). The strategic organizational planning focuses on making sure that all parties interests are taken into consideration and are combined into the strategies that the organization enforce. Somewhat similar are the systems and organizational theory where the aim is to find collective strategies that unifies all related parties since the organization is open and interactive towards different third parties. The corporate social responsibility depicts the importance of maintaining trust and a good relationship with all stakeholders in order to keep growing the success of the firm. (Wagner Mainardes et al., 2011, p. 230-231). Other aspects that the theory concerns are that it focuses on the processes and results from these previously mentioned relationships. It also discusses that all trustworthy and real stakeholders’ interests are driven of intrinsic values and no specific interests are present. In addition, it also approaches the fact that the firm tries to balance the interests and needs of
its all representative stakeholders as well as the firm tries to maintain its own interests and objectives (Wagner Mainardes et al., 2011, p. 229-230).

Despite that the stakeholder theory is well-established and well-known in most instances, the theory has some weaknesses. The weaknesses themselves are not about the theory itself but rather about the definition stakeholder. Since there are many different definitions of the term, the theory might seem somewhat diffuse (Wagner Mainardes et al., 2011, p. 237). Additionally, Wagner Mainardes et al. (2011, p. 237) criticizes that the definition that Freeman demonstrates neither provide any practical examples and guidelines on how the firm should act nor how the external actors should act. It is merely a description of the firms’ relationship between the external groups.

As mentioned previously, a firm have many different stakeholders. For small limited firms the main stakeholders are: the owners, lenders, suppliers and customers, competitors, employees, state and municipalities (Smith, 2006, p. 17). The central question is how to strategize the accounting so that it will satisfy the needs of all groups (Smith, 2006, p. 17). All groups have different needs and it is perhaps here the challenge begins. Firms must know that their decisions to engage in economic crimes can have negative effects on their stakeholders. Typically, the owners of the firms focus on the profitability and future prospects of the firm since they have invested in the firm (Smith, 2006, p. 18). Two additional objectives from the owners’ perspective are to either evaluate the management team’s work and consider if someone needs replacement, or to decide about the purchases of stocks in the firm (Smith, 2006, p. 18). The primary interest of the lenders is the credit risk. The lenders have agreements with the firm and they need to make sure that the firm will repay the loan in the future (Smith, 2006, p. 20). The banks and credit institutions analyze the liquidity and solidarity. Based on these numbers, the banks will make a judgement and make decisions regarding investments/loans (Smith, 2006, p. 20-21). The suppliers and customers will look for information that strengthen the firm’s ability to pay. If they have positive future indications to pay then they might enter into agreements and could possibly maintain long relationships (Smith, 2006, p. 21). The competitors could also share an interest in the firm and want to obtain valuable information from their reports (Smith, 2006, p. 21). Further on, the employees are interested in the firm since they aim to ensure their safety of employment or for possible indications of a future wage rise (Smith, 2006, p. 22). Lastly, the government and municipalities require financial information of the firm to be able to apply the correct tax and to make sure that they follow the rules and regulations set up. For example, the Swedish Tax Agency wants to analyze the financial information in order to make sure that the correct amount has been used when calculating the tax liability. (Smith, 2006, p. 22)

To sum up, there are several important aspects considering firms’ stakeholders. The correct presentation of financial information is crucial since several important decisions and stakeholders rely on it. This means that an untruthful presentation, or possible errors in the financial statements could lead to less income tax payments. In turn, this could have negative consequences on the society and the firms’ external stakeholders.

3.1.3 Rational choice theory

The abolishment of the mandatory audit can be analyzed in the light of the rational choice theory. There are several studies conducted in this area and there are also many definitions that can explain the decision-making process. A normative analysis can explain how people act when they are making choices (Kahneman & Tversky, 1986, p. 251). One way of illustrating the behavioral acts in decision-making is when people try to maximize their goals (Kahneman & Tversky, 1986, p. 251). Fundamental and early studies of the rational
choice theory have focused on how people or firms behave when they ought to make a decision. Early studies discuss phenomenon such as having full knowledge about the environment that one is situated in, and the strategies that is used when choosing between alternatives (Simon, 1995, p. 99). The idea is to find and choose the perfect alternative that will provide the highest satisfaction of all alternatives that was available (Simon, 1995, p. 99). However, Simon (1995, p. 99) explains that the recent research within this field discusses whether the old theory rather explains the ideal situation of how choices should be made rather than explaining how it works (Simon, 1995, p. 99). When making a rational decision, certain assumptions underlies: what alternatives one must choose from, the “pay-offs” of the decision, and the satisfaction that the alternatives can attain (Simon, 1995, p. 100). Simon (1955, p. 102, 104) also announces that there must exists a possibility that these alternatives are likely happen. Therefore, an evaluation of the amount of information about the likelihood that the events will occur also have a big impact in the rational decision-making process. On the other hand, Peterson (2009, p. 4) separates between a rational decision and a “right” decision per se. A right decision does not always translate into the rational decision. Peterson (2009, p. 5). continues to describe that researchers in the field of decision-making are interested in the rational decisions since they believe that this decision is the most reasonable. What researchers have focused on when researching the rational decision theory is often the outcomes. Peterson (2009, p. 5) says that a right decision is when the outcome and results from the decision is as good as any other outcome. Further, a rational decision symbolizes the most reasonable and logical decision that could be made at that moment (Peterson, 2009, p. 5).

Connecting the rational choice theory to economic crimes, Braithwaite & Geis (1982, p. 302) argues that the decision to make economic crimes is based on rational decisions. The corporate crimes are rarely based on unconsidered and spontaneous impulses (Braithwaite & Geis, 1982, p. 302). A firm has usually a future oriented mindset and the price arising from the consequences is important to consider (Braithwaite & Geis, 1982, p. 302). Since the firms are future oriented, they also tend to be “risk averse” and concerned about their reputation. So therefore, a decision to do criminal activities is not a spontaneous impulse. Braithwaite and Geis (1982, p. 302) argues that firms has usually the resources to calculate risk and the potential costs that could arise when engaging in criminal activities. The firm then weights the benefits against the costs and if the cost from the consequences is not too high, then the firm can conduct the act. One cost for firms could be fines, and it is then up to the firm to determine where the limit of where the costs outweigh the benefits is drawn (Braithwaite & Geis, 1982, p. 302-303).

However, in contrast to the decision of being rational when making criminal activities, Baer (2015, p.87) explains that corporate fraud is also based on an unconsidered misconduct. The decision is not solely based on an agent who aim to overstep and use the principal, rather, it is also based in the temptations that appears and works as incentives for undergoing crimes. Bear (2015, p.154) believes that corporate fraud is a problem based on two things as mentioned previously. In order to prevent that the agent oversteps the principal, the firm can use an integrated response that function to support policing and structural commitments. The policing can reduce the crimes of the most severe kind, but not prevent the crimes committed based of temporal inconsistency (Bear, 2015, p. 154). Today, there is no solution on how to reduce the corporate frauds. However, Bear (2015, p. 154) suggests future research and analysis for more insights in the relationship between opportunism and temporal inconsistencies to be able to know how to battle economic crimes.
3.2 Hypothesis formulation

The agency theory refers to the relationship between a principal and an agent (Jensen & Meckling, 1976, p. 308; Artsberg, 2005, p. 84). It is noted that the relationship may easily cause conflicts since the agent prefers to act on the behalf of his own self-interest, and not on the behalf of the principal’s interest (Artsberg, 2005, p. 84). The agent does what is best for him/herself as he is aware of the economic consequences that may arise for him/her (Artsberg, 2005, p. 84). Thus, based on the agency theory it can be said that an auditing function may be needed in a principal and agent relationship, since the audit can protect the shareholders’ interests (Audit Quality Forum, 2005, p. 8). This indicates that the auditor can work as a controlling function who ensures that the shareholders rights and interests are maintained.

Further, it has been argued that the use of an auditor can prevent economic crimes among firms (Prop. 1982/82:171; Swedish National Audit Office (2017, p. 10). This gives us reasons to believe that firms who seek to commit economic crimes may choose to quit audit based on a rational decision. It facilitates to commit economic crimes if there is no auditor to audit the bookkeeping, the annual reports and the administration reports. Also, Braithwaite & Geis (1982, p. 302) support our believes as they state that economic crimes are based on rational decisions.

According to the stakeholder theory, it is important to value the stakeholders interests (Wagner Mainardes et al., 2011, p. 229-230). The stakeholders should be taken into consideration when making strategic decisions in the firm. This suggests that a firm should aim to find a balance between its own interest and the interest of the stakeholders. Hence, the auditor functions as the connecting link between the firms and its stakeholders (FAR, n.d).

Due to this, we argue that the auditor has an essential role for the stakeholders of the firms. If firms are unaudited, then there is no guarantee that the interests of the stakeholders will be taken into consideration. It can be questioned whether firms that commit economic crimes only take their own interests into consideration.

Moreover, the relationship between economic crimes, in terms of income tax fraud, and the abolishment of mandatory audit is interesting to study because of the strong arguments that was put forward (prop. 1981/82:171). However, it is also an interesting study since strong arguments was also put forward for its abolishment. Further, it is intriguing to see whether the abolishment was a success for the restaurant industry, or if it rather has increased the economic crimes as multiple authorities were fearing.

Based on these arguments, with support from the agency, rational and stakeholder theories, the following hypothesis has been formulated:

\[ H1: \text{The abolishment of mandatory audit has led to changes in the income tax payments.} \]

On the other hand, the importance of an auditor for small limited firms has been questioned. The fact that the Swedish Riksdag decided to abolish the mandatory audit can be questioned from an agency theory perspective. It is questioned whether the controlling function of auditors are necessary for small firms nowadays.
3.3 Previous studies

3.3.1 Consequences of the mandatory audit

Previous research has been done in the field concerning the consequences of a mandatory audit. Chung & Narasimhan (2001, p. 120) performed a quantitative study where they examined the opinions of exposed groups (small private limited firms and small audit firms) about a mandatory audit. The study was sent to the directors of the firms where they wanted to map out how much they valued having an audit. The study was made on firms in Hong-Kong where they have not applied an abolishment of mandatory audit yet. The study found that the both studied groups have positive attitude towards an audit. The results also indicated that the costs of having an audit is perceived as lower compared to the benefits an audit brings (Chung & Narasimhan, 2001, p.122). The group consisting of the small audit firms do not find quitting audit as a financial advantage for small firms, and the other studied group do not find any advantages or disadvantages with quitting audit (Chung & Narasimhan, 2001, p.122-123). Another interesting finding was that both groups were consistent believing that information would be more trustworthy and more favored by users if being audited. Also, both groups believed that small firms would choose being unaudited instead of being audited. The results that both groups would not recommend an abolishment nor acknowledge one if one was made by the government was therefore interesting (Chung & Narasimhan, 2001, p. 123). Moreover, the other group sees no difference in being audited or not (Chung & Narasimhan, 2001, p.123). To conclude, it is evident that neither one of the groups believes that the audit needs to be abolished.

Further, other relevant studies have been done prior to the implementation of the voluntary audit. Sundgren (2003) discusses in his study the advantages and disadvantages of a voluntary audit for small firms in Finland. The purpose of this research was to analyze the mandatory audit among small firms in Finland (Sundgren 2003, p. 259). To conduct this study, data from annual reports of 3363 firms was collected as well as information about the auditors’ qualifications and remarks in the audit report were gathered (Sundgren, 2003, p. 260).

Sundgren (2003, p. 261) explains that the audits conducted by lay auditors are usually of lower quality, compared to the audits conducted by approved accountants. However, there are only few studies made on this area. Based on his own analyzation of data, Sundgren (2003, p. 261) could see that lay auditors often provide the firms with better auditor reports than what GRM and CGR auditors (approved accountants and certified public accountants) do. In 56.1% of the cases the lay auditors provided a clean audit report, in 36.4% of the cases the CGR-auditors provided a clean report, and in 22.2% of the cases the GRM-auditors provided a clean report (Sundgren, 2003, p. 262). On the other hand, it could also be seen that the audit reports conducted by lay auditors were fitted to the firm up to 7%, while the audit reports conducted by GRM auditors and CGR auditors were fitted to 14.1% respective 13.2% (Sundgren, 2003, p. 263). Further on, it is explained that when audits are made carefully and accurately, the firm’s stakeholders, such as banks, tax agencies and customers receive a more exact information about the firm’s finances. Normally, the owners themselves are the most important stakeholders in correlation to the audit. Audit is partly demanded because of agency problems, but also to increase a firm’s credibility and reduce the occurrence of manipulation. At times the board of a firm might have incentives to manipulate the accounting in order to maximize their bonuses and signal a positive picture about their prestation. To prevent this, auditing is preferred (Sundgren, 2003, p. 265). Sundgren (2003, p. 266) also explains that audits may potentially reduce that agency problem arises between the board/owners and employees. In larger firms it may be difficult to control all employees, hence the demand for auditing services increases as the firms grow.
For example, an audit may propose suggestions on how to improve the internal control and routines which may obstruct the rise of bad incentives or behaviors by the employees (Sundgren, 2003, p. 266). Creditors also see a demand for audits as they are interested in the firms’ financials. Loans are usually determined upon firms’ financials, therefore the creditors want to be sure on that the accounting is correct. The auditor can in this case reduce the risk of manipulation in the accounting and give interesting disclosures such as if the firm can continue as a going concern (Sundgren, 2003, p. 267). These aspects are considered as valuable for creditors. Further, the tax agencies are also interested in credible and trustworthy financial statements. The financial statements lay the basis for what the income tax payments should be. If an auditor is used, then a certain credibility in the financial statement can be established. However, by being audited the firms may lose money in terms of paying taxes since it is difficult for the firms to manipulate the numbers while having an audit (Sundgren, 2003, p. 268).

Sundgren (2003, p. 273) argues that lay auditors should be refrained from, and that there are not enough reasons for keeping mandatory audit for small firms. He believes that a voluntary audit could improve the ability of firms and its stakeholders to choose certification form (Sundgren, 2003, p. 274). In addition, it is argued that an assurance of the accounting could be enough for some small firms, rather than having a complete audit. Another option is that auditors in some situations can make reviews of the overall accounting (Sundgren, 2003, p. 274).

Further, a study conducted by Collis (2010) investigated the adequacy of having turnover as a proxy when studying the demand for voluntary audit in the UK and Denmark. Collis (2010, p. 213) argues that both the UK and Denmark are well established economies with some similarities and differences. Some significant differences are apparent when studying the number of small firms in the countries. There are approximately a number of 0.14 million small firms in Denmark, while there are about 1.2 million of them in the UK. In both countries, the small firms account for the majority of firms. Small firms account for 95% of all Danish firms, while they account for 99% of all firms in the UK. The majority of all the small firms in both countries exert an external accountant for preparation of financial statements (Collis, 2010, p. 218). 85% of the small firms had an external accountant in 2003. It is also noted that the UK and Denmark are similar in their national accounting practices based on social, cultural and economic grounds (Collis, 2010, p. 214). For example, both countries prefer ‘professionalism’, ‘flexibility’, ‘optimism’ and ‘transparency in their accounting values. These values are based on Hofstede’s cross-cultural research, declared by Gray in a seminal article in 1988 (Collis, 2010, p. 214).

The EU Fourth Directive have allowed member states to grant exemption from the mandatory audit for small firms since 1978, but the UK decided to wait 16 years before implementing it in 1994 (Collis, 2010, p. 211, 214). In 1994 the EU maximum turnover threshold was not implemented, it was rather reached in 2004. On the other hand, Denmark introduced the exemption first in 2006, which indicates that they waited 26 years (Collis, 2010, p. 211, 214). The argument for abolishing mandatory audit was, in both countries, that it would reduce the burdens that usually fall disproportionatenly on the small firms that are affected by the voluntary audit (Collis, 2010, p. 217). Furthermore, it was argued that the cost of mandatory audit is higher than the benefits for small firms below a particular size. The Trade Secretary in the UK argued that quitting the mandatory audit would result in an average save of 5.000 pounds. On the counter argument, the accountancy profession claimed that a save between 1.200 and 1.500 pounds is more realistic. Based on a survey consisting of 790 small firms in the UK, the cost of having an audit was a factor for quitting voluntary audit (Collis, 2010, p. 218). However, only 43 firms out of the 790 firms were
able to present their cost savings. It is widely claimed that the size of a firm has an impact on the costs, they increase in proportion to each other. Another survey constituted by Collis et al. (2004) consisted of 385 small firms who had a turnover up to 4.2 million pounds. Based on this survey it was concluded that turnover was a predictor for voluntary audit (Collis et al., 2004; Collis, 2010, p. 218).

Moreover, Collis (2010, p. 219) constitutes a hypothesis saying that larger firms are more likely to be able to afford voluntary audit. Further, three additional hypotheses are formulated in connection to management and rationality. These hypotheses assume that the directors of firms conclude rational decisions based on weighing the costs of having an audit with the benefits of reducing risk, such as control risk and information risk. Further, three additional hypotheses are based on the agency theory (Collis, 2010, p. 220). These were based on that firms choose voluntary audit to satisfy the interests of shareholders and stakeholders such as suppliers/creditors and lenders.

Data was gathered in the UK by randomly collecting a sample of 2 633 firms from the database FAME (Collins, 2010, p. 220). These firms filled the criteria regarding firm size set up by the EU at that time. Questionnaires were sent to these firms, resulting in a response rate of 30%. In Denmark, a sample size of 1 671 firms was achieved from the DCCA register. The response rate was 33% of these firms. The non-parametric test Mann-Whitney test was used in order to study the independence of the two groups (the UK and Denmark) and chi-square tests were also used in order to measure the relationship between the groups (Collis, 2010, p. 223). Lastly, a multiple regression containing the agency, management and size factors was ran (Collis, 2010, p. 224).

The results of the study showed that the majority of the firms in the UK have a turnover smaller than 250 000 pounds, and only one or two shareholders (Collis, 2010, p. 222-223). Further, 57% of the firms in the UK supported the decision of having the audit exemption for small firms at the EU maximum threshold (Collis, 2010, p. 223). 31% of the firms in Denmark supported this decision. Additionally, it was found that 43% of the director in the UK and 41% of the directors in Denmark could see themselves having a voluntary audit if it were eligible for exemption. The other 59% of directors in Denmark would rather quit audit or choose another form of assurance if it was available on the market. Further, the result from the regression analysis showed that the results of size (in terms of turnover) was significant for both countries (Collis, 2010, p. 224). This implies that turnover itself may predict audit, but it is still argued that this factor is not a sufficient proxy for firms to choose voluntary audit (Collis, 2010, p. 226). Looking at the management factors, it was found that audit expense is not considered as a significant cost, and that audit can improve the quality of financial statements. Further, it was also found that Denmark considered the audit function of reducing risk as important, this could not be confirmed in the UK (Collis, 2010, p. 226-227). Regarding the agency factors it was shown that the study supported the agency relationships with shareholders in Denmark (Collis, 2010, p. 227). A lower level of trust with unrelated shareholders was found in the UK. Lastly, that the audit can enhance a relationship with bank/lenders was shown to be a factor in Denmark, the relationship with supplier/creditors was thus not a factor in Denmark. For the UK it results was shown to be the opposite.

In addition to the study by Collis (2010), Lennox & Pittman (2011) have also studied the voluntary audit but in another setting. Lennox & Pittman (2011) studied whether imposing audits voluntarily would suppress any valuable information about firms’ type, and if it would have any effects on the firm’s credit ratings. In 2004, there was a regime switch in the U.K. Audits became voluntary for larger private firms. Previously, the audits had been
mandatory until 1994, and after 1994 the audits had become voluntary for only small privately held firms (Lennox & Pittman, 2011, p. 1656). Lennox and Pittman (2011, p. 1656) studied a sample of large private firms who were obliged to be audited in 2003, but who in 2004 got to decide themselves if they wanted to keep the audit or not. They examined changes in the firms’ credit ratings after the regime switch to be able to estimate whether the voluntary audits would suppress any new valuable information about the firms (Lennox & Pittman, 2011, p. 1657). Their predictions were grounded on the fact that a firm’s decision to be audited or not will send a signal about their type, even though the signal may not display the true type of the firm. The decision to be voluntarily audited is seen as an informative indication about the firms’ types. Lennox & Pittman (2011, p. 1657) provide strong opinions and evidence that the credit ratings will rise for the firms who decide to voluntarily continue with auditing. It can be said that these credit ratings will rise because of the decision. The decision to voluntarily continue with auditing conveys a positive signal about the firm's credit risk. However, the firms who decided to quit audit during the voluntarily regime are more likely to be high-risk types of borrowers, due to this their credit ratings are expected to decline (Lennox & Pittman, 2011, p. 1657). In line with this, the researchers found that the credit ratings actually dropped for firms who decided to quit auditing, as the decision would send a negative signal about the firms’ types (Lennox & Pittman, 2011, p. 1657-1658).

The results of this study showed that when the regime in the U.K switched from mandatory audit to voluntary audit in 2004, the types and credit ratings of larger private firms were affected as a consequence to the regime switch (Lennox & Pittman, 2011, p. 1675). It was found that the firms who decided to continue with auditing after the regime change would signal a picture as being low-risk firms and thus, enjoy higher credit ratings (Lennox & Pittman, 2011, p. 1675). These firms would on average enjoy an upgrade of two points to their credit ratings (Lennox & Pittman, 2011, p. 1665). To voluntarily choose to be audited conveys a positive picture to outsiders (Lennox & Pittman, 2011, p. 1675). On the other hand, the firms who decided to quit auditing after the regime switch were appointed lower credit ratings and seen as high-risk types (Lennox & Pittman, 2011, p. 1675). A significant fall in credit ratings could be seen, they had a downgrade of around four points to their credit ratings (Lennox & Pittman, 2011, p. 1665). It was also found that these firms were less likely to appoint Big 4 firms (EY, PwC, Deloitte or KPMG) and paid lower audit fees during the mandatory regime (Lennox & Pittman, 2011, p. 1673, 1675).

Further, a previous research regarding the consequences of mandatory audit in the UK has been performed by Clatworthy & Peel (2013). Clatworthy & Peel (2013) analyzed what effects the voluntary audit had on private small limited firms in the UK. They studied other factors, compared to other previous studies, such as corporate governance and gender diversity when accounting for the reasons of the effect. The purpose of this study is founded in a message by the British Government who announced to abolish the mandatory audit for small limited firms in the UK. The British Government also presented risks that they believed that a voluntary audit could bring. For example, that accounts could be misstated since an auditor did not control the accounts anymore (Clatworthy & Peel, 2012, p. 2, 22). To follow this argument up, Clatworthy & Peel (2013) did a study where the aim was to discover potential errors in the accounts that could be classified as misstatements. The study was limited to small private firms in the UK that were all within the limits of the regulations set up by the Companies Act for being classified as a small limited firm. A total of 1 067 577 firms participated in the study, and some of the variables used to test the accuracy of the claim were: fulfilled accounts, abbreviated accounts, voluntary audits, if the firm had a qualified accountant at the board, gender in the board and key ratios (Clatworthy & Peel, 2012, p. 7, 9).
The study also performed statistical tests and analyses regarding gender diversity and its effect on the accuracy of the financial reporting. The statistical tests and analyses also examined to what extent female directors can reduce the amount of accounting errors in private firms (Clatworthy & Peel, 2013, p. 2). By having mixed genders in the boards, the firms can improve and develop the communication, compliance and advisory function of the firm. The study also showed that audit has an important role in the accuracy and credibility of reporting (Clatworthy & Peel, 2013, p. 2). For third parties, reliable information is necessary for usage for investment purposes. The regulation for how much financial information that needs to be declared in public is different for private firms compared to public and quoted firms. The private firms have not the same duty on reporting the full financial information, thus, as a consequence, outside investors and debt holders have to rely on incomplete and less information from the published documents when they are making investment decisions (Clatworthy & Peel, 2013, p. 2).

To conclude, this study examined different variables such as gender diversity, firm size and corporate governance (Clatworthy & Peel, 2013, p. 3). One finding from the study is that by having reliable and accurate information of the bookkeeping makes it easier to acquire funds from outside parties (Clatworthy & Peel, 2013, p. 22). In addition, errors in the bookkeeping are most likely to occur twice as often in firms that would take advantage of this exemption and go from being audited to unaudited (Clatworthy & Peel, 2013, p. 22). Lastly, another finding from the study is that the errors are most likely to diminish when the boards of firms are constructed with mixed genders. Clatworthy & Peel (2013, p. 23) also expresses that their findings support and complements other findings that female presence in boards of public firms increases the earnings quality. Further, it is emphasized that this study is useful for those who are considering implementing a voluntary audit for larger firms. This means that the results of this study could provide useful information that is necessary to obtain in order to take the most convenient decisions (Clatworthy & Peel, 2013, p. 22).

Several Swedish Authorities and Agencies have also studied the abolishment of the mandatory audit in Sweden. One of them is the Swedish Economic Crime Authority who released a report of what consequences the abolishment of mandatory audit had on the economic crimes in Sweden (Backeström & Lundin, 2016). In order to conduct this study, the Swedish Economic Crime Authority examined 325 notifications regarding economic crimes for two months. The notifications came from various industries but mainly from the construction industry (25%), the retail industry (14%) and hiring of staff and cleaning (10%). The firms that took part of this study was divided into three different categories, ‘A’, ‘B’ and ‘C (Backeström & Lundin, 2016, p. 3):

- A: All limited firms that is believed to have been established in order to be used for economic crime activities.
- B: All limited firms that was established for a legal purpose, but where economic crimes may be present from time to time.
- C: All limited firms that has a legal and serious business, but where economic crimes may be present because of carelessness or the lack of knowledge in accounting.

It was found that 99 firms out of 325 firm were classified as category A and 48 firms out 325 firms were found to be classified as category B. Based on this it can be said that 147 firms out of 325 firms were established in order to conduct economic crimes or where planned and conscious economic crimes are present (Backeström & Lundin, 2016, p. 3).
In this study the Swedish Economic Crime Authority could clearly see an increase in the number of small limited firms that decided to quit audit when it became voluntarily (Backström & Lundin, 2016, p. 7). The firms who were founded after when the mandatory audit had been abolished were more likely to conduct economic crimes in their businesses (Backström & Lundin, 2016, p. 9). When looking at the firms who were registered before the mandatory audit was abolished, it could be concluded that one out of three firms decided to not be audited. However, when studying the firms who were established after the mandatory audit were abolished, it could be seen that eight out ten firms were not being audited (Backström & Lundin, 2016, p. 7). The Swedish Economic Crime Authority acknowledge this amount as a risk factor for an increase in economic crimes (Backström & Lundin, 2016, p. 3). In the study, 176 firms of a total of 325 firms chose to be unaudited (Backström & Lundin, 2016, p. 4). Based on these numbers, it is concluded that there has been a significant increase in the number of firms who decide to avoid auditing after it became voluntarily (Backström & Lundin, 2016, p. 7).

Some of the conclusions drawn from this study are that about one third of the firms who were established after the abolishment can be assumed of being created for the purpose to commit economic crimes. For the part of firms who were established prior to the abolishment it can be assumed that a fourth of these were involved in economic crimes (Backström & Lundin, 2016, p. 14). Further, the Swedish Economic Crime Authority concluded that the abolishment of the mandatory audit is a risk factor since it makes it easier for firms to conduct economic crimes when they are unaudited (Backström & Lundin, 2016, p. 14).

In addition to the Swedish Economic Crime Authority, the Swedish National Audit Office (Swedish National Audit Office, 2017) also reviewed the consequences of abolishing the mandatory audit in Sweden in 2010. Swedish National Audit Office (Swedish National Audit Office, 2017, p. 5) stated that the reason for abolishing the mandatory audit was that it would reduce the administrative burden for the small limited firms, as it would also increase the competition between them and lead to a higher growth. The concerns regarding this reform was if the reform would result in higher economic crimes, lower accounting qualities and lower income tax revenues. The main purpose of this study is to clarify if the intentions of the reform have been accomplished, and if the reform have caused any consequences (Swedish National Audit Office, 2017, p. 5). They used both a quantitative and a qualitative method in order to get an overall picture of the study. Both interviews and descriptive data from secondary sources have been used when examining this topic (Swedish National Audit Office, 2017, p. 18).

The results of the study showed that the consequences of the abolishment of mandatory audit outweighed the benefits (Swedish National Audit Office, 2017, p. 5). Neither an increase in the competition nor a higher growth among the firms could be seen. The small limited firms who decided to quit auditing faced a decline in their growth in terms of personnel and net sales. It is shown that the firms who quit audit were facing more disadvantages than benefits (Swedish National Audit Office, 2017, p. 6). One of the possible explanations for why the opt-out firms faced a decrease in net sales is that they recorded less revenues on purpose in order to pay less income tax. Since the opt-out firms do not have an auditor there is no one to screen their accounting and therefore it is also easier to get away with these types of crimes. Based on this, the reform might have facilitated the actions of economic crimes. However, another explanation could be that the firms who quit auditing also lowered their ambitions in growing their businesses and therefore faced lower net sales. A further consequence is that the misstatements have become more present in the annual reports. This means that more firms have had to correct and complement parts of
their annual reports, which is time consuming for both the firms in question and the responsible authorities (Swedish National Audit Office, 2017, p. 7). Since the mandatory audit was abolished in 2010, the amount of misstatements in the annual reports have increased from six percent to around nine percent (Swedish National Audit Office, 2017, p. 36). The increase of misstatements in annual reports is mostly common among start-ups without any audit (Swedish National Audit Office, 2017, p. 7).

Another consequence with the abolishment of mandatory audit is that the amount of notifications sent to the Swedish Economic Crime Authority have significantly increased. In many cases, these notifications are because of carelessness, such as errors in the accounting. As a consequence, the Swedish Economic Crime Authority have faced a rise in their amount of work and due to this they have also experienced less amount of resources to be focused on the large and serious economic crimes (Swedish National Audit Office, 2017, p. 7).

In line with the abolishment of mandatory audit it was decided that the Swedish Tax Agency should be given 40 million SEK annually in order to prevent accounting errors and misstatements in annual reports. The Swedish Tax Agency have taken advantage of this opportunity, however, their input has not yet resulted in less accounting errors or misstatements in the annual reports. In addition, the Swedish Tax Agency is uncertain whether the abolishment of mandatory audit has affected the income tax revenues in Sweden, they are not certain of what the consequences this reform brings (Swedish National Audit Office, 2017, p. 8).

The Swedish National Audit office also concluded that the firms who decided to quit audit were mainly within industries who deal with large amounts of cash, such as the restaurant- and taxi industry (Swedish National Audit Office, 2017, p. 7).

To further examine the role of auditing and the voluntary audit, Collis (2012) studied 592 micro and small firms in the UK. The aim of the study was to analyze and discover the determinants of having a voluntary audit and the determinants for register voluntary full accounts. The study also aimed to settle the motives behind the voluntary audit and what made UK set the limits of the size thresholds to the EU maxima (Collis, 2012, p. 442, 445). Collis (2012, p. 442) explains that the EU directive brings certain exemptions for micro-entities. For instance, it allows micro-firms to not include all types of accounts meaning that they are allowed a higher level of transparency in their accounts. In addition, the directive suggest that micro firms are not liable to publish annual reports, on the premises that they are available on request and transmitted to a trade register and registered by an authority (Collis, 2012, p. 442). In the UK, the Companies Act that was first introduced in 1981 and presented that the SME’s were allowed to fill in less detailed information in their accounts. This is also known as abbreviated accounts (Collis, 2012, p.442). However, in 2004, UK applied the maximum level of the thresholds so that it would match the statements regarding the SME’s in the Companies Act (Collis, 2012, p. 443).

Moreover, 24 hypotheses were formed and based on an analysis of the cost and benefits of a voluntary audit of the full accounts (Collis, 2012, p. 445). Based on the results from this study, it was found that of the sample of 78% of the firms in the sample had chosen to quit audit. The study also showed that 55% of the studied firms chose the abbreviated full accounts. Turnover resulted to be the strongest incentive for small firms to choose the voluntary audit. The larger sales firms have, the more likely they are to have an audit (Collis, 2012, p. 462). Additionally, other incentives were the investors requirements of audited accounts and the perceived cost of auditing. The largest incentive for micro firms was the
recommendations from the accountant (Collis, 2012, p. 462-463). Other incentives for the micro firms were the cost of auditing, turnover and the requirements from the investors and banks (Collis, 2012, p. 463). Further Collis, (2012, p. 463) states that the largest incentives for small firms for having voluntary full accounts are that the publishing of the turnover is not perceived as negative. Also, it is believed that the information that is published is relevant and valuable for users. For micro firms, the voluntary audit plays the most important role and also the fact that the information disclosed is desired and used by banks and investors (Collis, 2012, p. 463). The final takeaway from the study is that there is a link between the voluntary audit and the voluntary full accounts. Also, the study shows that the benefits of having an audit exceeds the costs associated with an audit. Hence, the EU directive is not strong enough to have an impact the recognized benefits of having an audit (Collis, 2012, p. 463).

3.3.2 Economic crimes

A previous study made by Alalehto (1999, p. 13) examines the economic crimes within the restaurant industry. This study is of interest since it explores many components that can be seen as valuable for this study. Alalehto (1999, p. 16) clarifies that the economic crimes within the restaurant industry can be explained as a situational action based upon a number of factors. One of the main factors is the high competition that is present within the restaurant industry. The competition within the restaurant industry in Sweden shifted when the system ‘Vinstkvantitetssystemet’ was abolished in 1963. This meant that the restaurants now could price their products as they wanted, and in turn this lead to high competition in the industry (Alalehto, 1999, p. 18-19). Alalehto (1999, p. 16) also explains that the combination of high competition in the industry and weak controls from authorities increases the risk for occurrence of economic crimes.

Another factor is the combination of the size of the restaurant and the fellowship among the owners and employees. The smaller the restaurants are, the less transparent and more complex they are for authorities to control, compared to larger restaurants. These restaurants are also known for having a strong and social bond between the owners and the employees, leading to less exposure of the owner’s/board’s business plans. Due to the strong and social bonds, the economic crimes can develop into accepted actions among the employees and owners because they do not want to interrupt their social and strong bond. Another meaningful factor is that the economic crimes have a discrete nature. It is not as easy to identify and notice these types of crimes as it is with traditional crimes (Alalehto, 1999, p. 17). Alalehto (1999, p. 17) further explains that it is very seldom that the victims to economic crimes can be identified as victims since the crime itself is difficult to notify.

Further, Alalehto (1999, p. 21) sheds light on the fact that the restaurant industry is known for having a low degree of controls. It is difficult and time consuming for the authorities to control the sales and tax payments in the restaurant industry because there is a large amount of cash circulating in the industry and the customers are unknown to the system. Another factor that complicates the controls is that the cash registers are usually manipulated (Alalehto, 1999, p. 21). Only the cashier him/herself know how much money is left unregistered. Due to this, the manipulation of cash registers has become a frequently practiced economic crime in the restaurant industry (Alalehto, 1999, p. 21).

The result of the study is that there is a obvious price competition in the restaurant industry, leading to disloyal competition among restaurants (Alalehto, 1999, p. 154). Authorities classify the disloyal competition as a reason for performing economic crimes. The restaurant industry is characterized as involved in a lot of economic crimes where the possibility to trick the state on money is seen as a success (Alalehto, 1999, p. 154). The most common
methods of tricking the state on money is by manipulating the cash register, using ‘black work’ and manipulating the value-added tax (Alalehto, 1999, p. 155).

In addition to Alalehto (1999) the National Swedish Council for Crime Prevention released a report about the evolution of crimes in Sweden. One of the main focus of this report was economic crimes. In the end of the 1970’s there were around 5000-6000 reported economic crimes per year. In 1980’s this amount had doubled, and in 1995 the reported economic crimes amounted up to 16 000 (National Swedish Council for Crime Prevention, 2008, p. 315). This large increase of economic crimes can be explained by the economic crisis that was present at the time, as the economic crisis lead to a large number of firms filing for bankruptcy. Economic crimes could easier be discovered when the firms had filed for bankruptcy (National Swedish Council for Crime Prevention, 2008, p. 315). The National Swedish Council for Crime Prevention also clarifies, in line with Alalehto (1999), that some industries are more common to commit economic crimes. Economic crimes in the form of ‘black work’ and not reporting revenues, are mostly common in industries who handles large amounts of cash, such as the restaurant industry and hairdresser industry (National Swedish Council for Crime Prevention, 2008, p. 306).

The income tax crimes accounts for 52% of all economic crimes (National Swedish Council for Crime Prevention, 2008, p. 313). The amount of tax crimes has increased steadily during the 21st century. The notifications about tax crimes increased from 5 500 to 7 800 between the years 2003 and 2004, and in 2007 the notifications about tax crimes amounted up to 12 000 National Swedish Council for Crime Prevention, 2008, p. 316, 317) The increase of notifications of tax crimes can partly be explained by an increase in the notifications sent to the Swedish Tax Agency (National Swedish Council for Crime Prevention, 2008, p. 315). Due to this, the tax crimes are also mainly discovered by the Swedish Tax Agency by making controls and investigations on firms (National Swedish Council for Crime Prevention, 2008, p. 315). It is also pointed out that manipulation of accounting numbers is the most common individual way of committing economic crimes (National Swedish Council for Crime Prevention, 2008, p. 314). In 2000 there was barely 4 000 notifications about accounting manipulation registered in Sweden, but in 2007 this number had increased to 8 700 notifications. The number of notifications regarding accounting manipulation have increased during the 21st century, and in 2007 they accounted for about 32% of all economic crimes at that time (National Swedish Council for Crime Prevention, 2008, p. 314). The motivation for manipulating the accounting is usually not because firms aim to gain money, it is rather made because it is a way of hiding other economic crimes. Based on this, it can be said that firms who manipulate their accounting do it in connection to other economic crimes (National Swedish Council for Crime Prevention, 2008, p. 314).

The National Swedish Council for Crime Prevention further explains, in line with Alalehto (1999), that economic crimes very seldom have victims who identify themselves as victims (National Swedish Council for Crime Prevention, 2008, p. 311). Economic crimes seldom affect individuals in ways that traditional crimes, such as abuse and robbery do. Individuals who are victims of economic crimes are often not aware of it themselves, therefore they are not able report the crimes they have been exposed to and do not consider themselves as victims. Many individuals are not aware of the economic crimes that are present in industries where they spend their money. Due to this, most of the economic crimes are discovered by controls made by, for example the Swedish Tax Authority and the Financial Supervisory Authority (National Swedish Council for Crime Prevention, 2008, p. 311).

There are three types of exposures that victims face in economic crimes; primary exposure, secondary exposure and tertiary exposure (National Swedish Council for Crime Prevention,
Primary exposure is when single individuals are exposed to economic crimes, such as employees and customers. It can also be investors who lose their money because of dishonest firms. Secondary exposure is when firms and organizations are exposed to, for example, disloyal competition in the industry. Tertiary exposure is when the society itself is exposed. The society can be exposed in ways such as receiving less tax payments, having less ability to solve and detect economic crimes and facing a lower growth in the economy (National Swedish Council for Crime Prevention, 2008, p. 320). However, the tertiary exposure also has some diffuse damages whose costs are not easy to estimate.

The National Swedish Council for Crime Prevention find that men who are in their younger middle ages are overrepresented when it comes to committing economic crimes (National Swedish Council for Crime Prevention, 2008, p. 320). In 2007 there was 5 256 men held accountable for various types of economic crimes in Sweden. The reason for men being overrepresented in economic crimes is because they also are overrepresented in the industries (National Swedish Council for Crime Prevention, 2008, p. 321). Around 70% of all self-employed workers in Sweden are men, and normally 70-80% of the manager-positions in firms are occupied by men. Many of the industries who engage in economic crimes are also usually “typically male” industries. Based on this, a distinct overrepresentation of men can be seen in the business community (National Swedish Council for Crime Prevention, 2008, p. 321).

Moreover, Kankaanranta & Muttilainen (2010) also present a relevant study regarding economic crimes. However, this study takes place in another setting, namely the construction industry in Finland. The study examines which firms and type of cases are suspected for being involved in economic crimes. It also aims to identify potential losses for the society (Kankaanranta & Muttilainen, 2010, p. 417). Kankaanranta & Muttilainen (2010) also examined whether economic crimes are present in the construction industry by particularly looking at dealing in receipts. This type of crime is increasing in the Finish construction industry (Kankaanranta & Muttilainen, 2010, p. 418). Dealing in receipts is one way of carrying out income tax fraud and to mislead the tax agencies by paying less tax or no tax at all (Kankaanranta & Muttilainen, 2010, p. 420). Kankaanranta & Muttilainen (2010, p. 420) claim that the crimes are conducted by the constructing firms who claim, on paper, that they have bought services from other firms. These firms, who sell services on paper, are usually illegal and established only for invoicing purposes (Kankaanranta & Muttilainen, 2010, p. 418).

This study also show that criminal actions are directly correlated to financial losses for the society (Kankaanranta & Muttilainen, 2010, p. 419). Kankaanranta & Muttilainen (2010, p. 419) use the concept negative externalities, which symbolizes the price that people pay for another person's actions. These externalities are, in this study connected to the financial losses of the society that could exist when criminal activities are taken into action.

The findings of this study showed that in 2007 in Finland, around 14 % of all economic crimes were made by firms within the construction industry (Kankaanranta & Muttilainen, 2010, p. 417). Every seventh economic crime that was reported to the police in Finland in 2007 was related to the construction industry (Kankaanranta & Muttilainen, 2010, p. 426). Further, it was found that almost 75% of these reported economic crimes were related to dealing in receipts. Approximately 20% of all the economic crimes found in this study were either tax fraud or aggravated tax fraud (Kankaanranta & Muttilainen, 2010, p. 423). In addition, around 29 million euros was lost due to economic crimes within the construction industry in Finland (Kankaanranta & Muttilainen, 2010, p. 427). This means that there is a big potential for improvements in this industry to decrease the amount of economic crimes.
Further, the Swedish Tax Agency published a report in March 2017 where they investigated and mapped out citizens and organizations opinions and conceptions on the taxation system, taxation evasion, taxation controls and the communication between the related parties (Swedish Tax Agency, 2017, p. 2). The purpose was to determine how the citizens perceptions have developed since the last survey. Since the Swedish Tax Agency work against the taxation frauds, the results from this survey will help them to improve their work knowing what areas needs to be improved. The Swedish Tax Agency states that they believe that the reasons for taxation fraud is highly complicated (Swedish Tax Agency, 2017, p. 5). Some of the factors affecting taxation fraud are changes in the society, the quality of the institutions and the effect of the Tax Agency’s controls.

When determining how the work against the taxation frauds and errors are developing, a theoretical model is used (Swedish Tax Agency, 2017, p. 5). The model presents the factors that the Swedish Tax Agency believes are causing tax frauds. The factors are: trust, motivation, abilities to do things right, to what extent its allowed to make errors and the risk of being discovered (Swedish Tax Agency, 2017, p. 14). Motivation and trust reflects the trust that the citizen has towards the Authorities and Agencies and whether they want to contribute financially to them (Swedish Tax Agency, 2017, p. 15). This trust is influenced by different factors such as: the quality of the Authorities/Agencies and the rules regarding taxes. The other three factors are aspects that the Authorities and Agencies can affect and control. Concerning the ability to do things right is dependent on the rules regarding the tax payments. With less complex rules increases the chance that the taxpayers will do the right thing regarding the tax payments. The Tax Agency can work towards facilitating the complexity and improve the understanding of the legal framework. The risk of making errors is dependent on the information the Tax Agency receives from other organizations or employers. The errors are partly dependent on the laws that the tax authority can improve. The risk of being discovered is connected to the tax authorities’ ability to detect errors. Private persons and firms may also avoid committing fraud and make errors in the bookkeeping due to the serious consequences those actions can bring. The Swedish Tax Agency carries out controls in order to reduce the risk of occurrence of income tax frauds (Swedish Tax Agency, 2017, p. 15).

3.3.3 Earnings management
Earnings management is a form of manipulation and can often be connected to tax fraud. Coppens & Peek (2005) studied whether firms in eight European countries were engaged in earnings management and if they had any tax incentives. Belgium, Denmark, France, Germany, Italy, the Netherlands, Spain and the UK were studied, and data about public firms in the same countries were used as a benchmark for this study. Most prior studies have focused on earnings management among public firms and this often lead to a failure when trying to separate the influence-based monitoring and the monitoring arising from market pressures (Coppens & Peek, 2005, p. 2). Coppens & Peek (2005, p. 4) analyzed the distributional properties of earnings in order to detect earnings management. They analyzed distributional properties as they found discretionary accruals as problematic for their study. In addition, they also had a lack of data on specific accruals for private firms, which is another reason for why they would not use discretionary accruals. Their null hypotheses formulated are:

H1: “Private firms do not manage earnings to avoid reporting losses.”
H2: “Private firms do not manage earnings to avoid reporting earnings decreases.”
The researchers expect that private firms who are located in countries where financial and tax accounting are strongly correlated avoid reporting losses and earnings decreases due to tax incentives. The accounting methods of the firms will affect their tax payments, and due to this they avoid to account increases in their incomes in order to pay less tax (Coppens & Peek, 2005, p. 5). In countries where financial and tax accounting are strongly correlated it is believed that private firms accounting methods will directly affect their taxable profits. Based on this, the researchers decided to test the hypotheses separately for private firms in countries where there is a strong correlation between financial and tax accounting, and for private firms in countries where there is a weak correlation (Coppens & Peek, 2005, p. 5).

The result of the study is that the null hypothesis 1 “Private firms do not manage earnings to avoid reporting losses.” is rejected. This means that private firms do not avoid to report earnings decreases in their financial statements (Coppens & Peek, 2005, p. 10). On the other hand, the null hypotheses 2 “Private firms do not manage earnings to avoid reporting earnings decreases.” was not rejected (Coppens & Peek, 2005, p. 10).

The researchers found that loss avoidance is more present in the consolidated financial statement among private firms in Spain, compared to the other countries in the sample (Coppens & Peek, 2005, p. 11). It was also found that private firms in Belgium and Italy practice loss avoidance (Coppens & Peek, 2005, p. 12). Further, it was also found that Belgium and Italy had significantly lower net profit changes compared to France and Germany (Coppens & Peek, 2005, p. 12, 13). This may indicate that private firms in Belgium and Italy practice earnings smoothing as a result of their strong tax incentives (Coppens & Peek, 2005, p. 12). Earnings smoothing lead to less tax payments, and therefore, high earnings in the financial statements will be avoided. At the same time, the earnings in the financial statement will not be stated too low either, in order to reduce the risk of getting investigated by the tax authority. When looking at firm size and industry, it was found that all countries except France and Germany presented loss avoidance (Coppens & Peek, 2005, p. 11). The study also showed that the level of inventory and receivable were larger for private firms who report small profits, compared to private firms who report large profits (Coppens & Peek, 2005, p. 11).

As stated earlier, earnings management is one form of manipulation that firms can use in order to present their financial results in a better light. One study conducted by Beuselinck & Deloof (2014) examines Belgian firms with the aim to investigate whether the organizational structure has an important role if the firm performs earnings management or not. The results of the study showed that firms who have holdings are more likely to perform earnings management (Beuselinck & Deloof, 2014, p. 27). The results also revealed that firms’ controlling shareholders encounter fewer restrictions for practicing earnings management if they meet the following principles: (1) the manipulated earnings do not affect the value of the minority shareholders, (2) the controlling shareholders can hide the transactions regarding the earnings that they benefit from (Beuselinck & Deloof, 2014, p. 27). In addition, the most important incentive for performing earnings management is for tax purposes (Beuselinck & Deloof, 2014, p. 27). Also, by having grouped the firms together, it provides them with more resources and opportunities to perform earnings management (Beuselinck & Deloof, 2014, p. 33). Beuselinck & Deloof (2014, p. 33) further demonstrated that when using the grouped dynamics, the minority shareholders have less power to monitor the intra-control transactions. It is then possible to reallocate resources at the cost of the minority-shareholders (Beuselinck & Deloof, 2014, p. 33).


3.4 Source criticism

When searching and collecting sources and information we have focused on following the four criteria developed by Thurén (2013, p. 7-8). The criteria are:

- The source need to be authentic. The source should include what it is told to include.
- The source should be up to date. The older the source is, the more reasons there are to find it as irrelevant.
- The source should be independent. It should contribute with something new, and not be a transcript of another source.
- There should not be any suspicions against the source being biased because of personal, economic or political beliefs. Further on, there should not exist other suspensions towards the author(s) incentives to misrepresent the reality.

All of the sources that have been included in this study have been approved based on these criteria and are therefore considered as reliable and relevant sources. Yet, when looking at both the theories and previous studies it is clear that a large amount of them are not up to date and do therefore only partly comply with the second criteria. The theories used in this study are old, well-established theories. Despite this, these theories are still considered as popular in studies within business today. This proves that they are still applicable in today’s studies. Regarding the previous studies, a large amount of them are recent work, while some are relatively old such as the studies made by Alalehto (1999), Sundgren (2003) and Coppens & Peek (2005). Still, we argue that these sources are of use since they contribute with valuable knowledge that is applicable to this research.

Further, we argue that the trustworthiness of a source increases when referring to the original source. There is always a risk that the authors in the secondary source might have misinterpreted the text in the original source. Consequently, we have always aimed to track the sources to the primary sources. We have attempted to avoid trading throughout this study. Trading is known as when information has been passed on to several parties (Thurén, 2013, p. 8). Thurén (2013, p. 242) also argue that it is central criteria to always be aware of trading, therefore it is preferred to refer to the original source, rather than to a secondary source.

The database Retriever was applied in order to retrieve data of the firm’s annual reports and variables. This database was also criticized as we were not sure of the accuracy and reliability of the downloaded data. For that reason, we decided to check for the data by manually checking if the downloaded numbers agreed to the numbers in the annual reports. This can be read more about under chapter 4.1.1. Financial information about firms and organizations are updated regularly on Retriever, hence, the database was a suitable choice when collecting data for our sample.
4.0 Empirical method

This chapter displays how the data and samples were collected, and the processes used to obtain the final samples. Furthermore, an explanation of the statistical methods is given as the hypothesis is based on the result of the statistical methods. The chapter sums up with a critical review of the statistical methods used in this study.

4.1 Data collection

The sample size is an important determination in the statistical tests. A larger sample size helps to increase the power of the tests. A high power means a better fit of the regression model and a decrease in the divergence of the sample and population. It also increases the chance of receiving a significant result (Fan et al., 1999, p. 57). The data that has been used to analyze and statistically test the hypothesis has been collected in several steps. To gather the sample, secondary data was first collected from the database Retriever that was available for free via the Umeå University website. To include the correct firms for the sample, firms had to be gathered from six individual searches. The three initial searches were conducted in order to find the firms who was audited before 2010 (in the years 2008-2009) and the ones who decided to continue audit after 2010. The reason for why the search for these firms needed to be conducted in three steps was because the firms needed to fill the criteria of firm size in order to be affected by the abolishment of mandatory audit. The criteria state that the firms are required to not exceed more than one of the following criteria during two financial years (Prop. 2009/10:124):

- Having 3 000 000 SEK in net sales
- Having 1 500 000 SEK in assets, and
- Having maximum 3 employees in the firm

In the first search no limit was set on net sales while assets and employees were limited to the maximum amount. This was made because the requirement states that firms have the right to exceed one of these limits. The firms who was found from this search was noted and then a second round was performed with no maximum number of employees while the other two variables were limited by the criterion. The same technique was applied in the third search; no limit was set on assets while the number of employees and net sales was restricted by the requirement. A list of all firms who decided to continue audit after 2010 could be compiled in Excel when these three steps had been completed. The total amount of firms after this was 128 firms. Later, the list was checked for duplicates of firms, since some firms could appear in more than one of the searches. An amount of 36 duplicates was found, thus, these duplicates were deleted resulting in that the firms would only appear once in the list. The new total sample size after the removal of duplicates amounted up to 92 firms.

The following three searchers on Retriever was conducted using the same method as described above, except these searches only included firms who had quit audit after 2010 (in the years 2012-2013). The total amount after this was 1221 firms. However, 514 duplicates were found and removed. After removing the duplicates, a final list of 707 firms who quitted audit remained.

It was necessary to download the data in two rounds since a separation between the ones who quitted audit and the ones who continued audit was needed. In the first round, a box saying “are audited” was filled in Retriever and the years 2008, 2009, 2012 and 2013 was also checked. In the second round a box saying “not audited” was filled in combination to
the years 2012 and 2013. This method was the only option to use as there is no function in Retriever who permits you to download two separate lists at once.

4.1.1 Sample testing
The next step in the data collection was to check for the accuracy of the downloaded data. A random sample of 10% of all firms from the two lists (N=92, N=707) were selected to be checked manually if their data was accurate. The annual reports of the selected random sample of firms were studied to see if the numbers reported in their annual reports was consistent with the numbers in the downloaded data. When studying this it was evident that the downloaded data was consistent with the numbers in their annual reports. On the other hand, it was noted that some firms who were audited according to Retriever were not audited according to their annual reports, and some firms who were not audited according to Retriever were shown to be audited according to their annual reports. As this serious issue was noted, it was decided to download the data from Bisnode instead. Data was downloaded for the same firms and lists, one list with a sample size of N=92 and another list with a sample size of N=707. The new lists from Bisnode illustrated what years the firms were audit and/or what years they were not audited. The accuracy of this list was also checked by randomly selecting 10% of the sample size of both lists and then manually comparing it to the firm’s annual reports. This list was shown to be consistent with the annual reports. Due to this, the lists from Retriever were manually corrected by gathering information from the list from Bisnode. The first list of firms contained a sample size of N=707 and these firms were supposed to be audited in the years 2008 and 2009 and unaudited in 2012 and 2013. However, the list from Bisnode showed that a large number of the firms did not qualify for these criteria. Due to this, they were removed from the list. A number of 367 firms were removed, resulting in a new sample size of N=340 for the firms who quitted audit after 2010. When investigating the other list (N=92) it was evident that a number of 15 firms did not comply with the criteria saying that they were audited in the years 2008, 2009, 2012 and 2013. These firms were removed which resulted a new final sample size of N=77.

The final sample sizes of the lists follow:
- Sample size N=340 of the firms who quitted audit after 2010 and were unaudited in the years 2012 and 2013.
- Sample size N=77 of the firms who continued audit after 2010 and were audited in the years 2012 and 2013.

4.1.2 Withdraws of outliers
After looking at the boxplots of ‘tax payment’ (see appendix 1) and ‘tax payment/purchase’ (see appendix 2), we concluded that the sample contained a large number of extreme outliers. This made the sample skewed and distinguished from a normal distribution. An outlier is classified as an observation that is situated far apart from most of the other observations. Despite a reliable and careful collection of the data there is a possibility that the outliers are not correctly representing the sample and might create errors in the sample (Ghosh & Vogt, 2010, p. 1233). In order to make the sample more normal, actions for dealing with the outliers was taken. Ghosh & Vogt (2010, p. 1233) explain that there are two methods for improving the normality of the sample: winsorization and trimming. Additionally, Feng et al. (2014, p. 105) adds a third method called log transformation. Winsorization is a method for changing the outlier to a more suitable value that fits better to the sample (Ghosh & Vogt 2010, p. 1233). In previous studies, winsorization has been conducted through replacing the outliers with values corresponding to the 99th percentile and 1st percentile, (Kothari et al. 2005, p. 178; Hribar & Collins 2002, p. 105). It was
decided to use the same method of winsorization for this study. However, after the winsorization had been conducted the data was still not normally distributed and therefore it was decided to use the original data for the nonparametric tests as it was the most appropriate. This means that the data used in the nonparametric tests were neither winsorized nor normally distributed.

Moreover, the next step after the nonparametric tests was check for the correlation between the independent variables and the control variable and to perform linear regression analyses. The correlation should be studied before performing the linear regression analysis in order to assure that the variables do not correlate too much (Wahlin, 2011, p. 277). According to Wahlin (2015, p. 254) a correlation that exceeds 0.85 is considered as a very strong correlation. Variables that correlate strongly should not be used in the same model in order to maintain a confident result (Wahlin, 2011, p. 277).

To be able to perform the analyses, the data and the residuals need to be completely normally distributed (Lunt, 2015, p. 1141). Therefore, further actions were taken since our data was not normal. Log transformations was conducted for the dependent variable ‘tax payment’ and the control variable ‘net sales’. This was performed to decrease the number of outliers and variance in the residuals. Log transformation is one of the most common techniques used to reduce the variance and to make the data more normal (Feng et al., 2014, p. 105-106). Further, it raises the validity to draw better conclusions from statistical analyses. After the log transformations, it was concluded that the residuals were approximately normally distributed for this sample. Therefore, the final sample size for ‘tax payment’ is still N=417 after log transformations. This can be seen in Table 1 below.

In order to perform a linear regression analysis on the dependent variable “tax payment/purchase”, trimming was conducted to improve the normality of the residuals. This was necessary because the residuals were abnormal and contained several extreme outliers. Trimming is a method that completely removes outliers from the sample in order to make the sample and the residuals more normal (Kwak & Kim, 2017, p. 410). Hence, 1% of the sample was trimmed resulting in a new total sample size of N=409. The final amount of the samples can be seen in Table 1 below. After trimming, it was concluded that the residuals were approximately normally distributed.

Questions can be raised to whether manipulating the data is ethical and objective. We are aware that this manipulation of the data moves us from our objective standpoint and allows us to be more subjective, however, as the data is required to be normal before performing a linear regression analysis, we believe that this is needed to be done (Lunt, 2015, p. 1141).
4.2 Statistical method

The statistical program SPSS have been used for all statistical tests and analyses made in this study. Two nonparametric tests, namely the Wilcoxon signed-rank test and the Mann-Whitney U test have been conducted as the data was shown to not be normally distributed (Vickers, 2005, p. 1; Pallant, 2010, p. 210). These tests were followed by a correlation test and two linear regression analyses.

The variables used in the nonparametric tests and regression analyses are:

- **Nonparametric tests:**
  - Dependent variables: ‘tax payment’, ‘tax payment/purchase’
  - Independent variable (dummy variable in regression analyses): ‘audit’

- **Regression analyses:**
  - Dependent variables: ‘tax payment’, ‘tax payment/purchase’
  - Independent variable (dummy variable): ‘audit’
  - Control variable: ‘net sales’

‘Tax payment’ was chosen as a dependent variable as it accounts for the income tax payments made by the firms. Since the income tax payment is the main topic to be studied, it is obvious to study this variable as it catches the income tax payments of the firms. In a previous study made by Mohamad et al. (2016), they studied the factors influencing the tax frauds made in small and medium enterprises. In this study Mohamad et al. (2016, p. 981) used the ‘total amount of tax evasion’ as the dependent variable. Looking at this, it falls naturally for us to study the variable ‘tax payment’ when investigating if the income tax payment has been affected due to the abolishment of the mandatory audit. In addition, ‘tax payment/purchase’ has also been studied as an additional dependent variable. This variable was chosen to be included since it captures the proportion of the relationship between income tax payments and purchases the firms have made. It is interesting to study the income tax payments in proportion to another variable, as the payment itself can be

### Table 1: Summary of the number of firms in the samples

<table>
<thead>
<tr>
<th></th>
<th>Audited</th>
<th>Not Audited</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Original sample size</td>
<td>1221</td>
<td>128</td>
<td>1349</td>
</tr>
<tr>
<td>from retriever</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Withdraws of</td>
<td>-514</td>
<td>-36</td>
<td>-550</td>
</tr>
<tr>
<td>duplicates</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Withdraws of</td>
<td>-367</td>
<td>-15</td>
<td>-382</td>
</tr>
<tr>
<td>unqualified firms</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sample used in</td>
<td>340</td>
<td>77</td>
<td>417</td>
</tr>
<tr>
<td>nonparametric tests</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>+ regression analysis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>‘tax payment’</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>withdraw of</td>
<td>-4</td>
<td>-4</td>
<td>-8</td>
</tr>
<tr>
<td>outliers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sample used in</td>
<td>336</td>
<td>73</td>
<td>409</td>
</tr>
<tr>
<td>regression analysis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>‘tax payment/purchase’</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 1: Summary of the number of firms in the samples
manipulated. It is known that firms who engage in earnings management in order to avoid tax do it by understating their revenues and hence reduce their taxable incomes (Healy & Wahlen, 1998, p. 7; Scholes et al., 1992, p. 164). Bank (2018) explains that if firms overstate their revenues or understate their expenses they will pay a larger amount of income tax. It is then evident that firms can commit income tax fraud by paying less tax through reporting a larger amount of expenses than what they have in reality. Hence, it is interesting to see the relationship between the recorded income tax payments and the purchases.

The independent variable ‘audit’ is used in both tests and analyses. This is because the aim is to examine if there is a change in income tax payments depending on if the firms are audited or not. The independent variable ‘audit’ represents a cause and a potential reason for a variance, therefore, it is natural to set ‘audit’ as the independent variable since the dependent variables depend on it.

The aim of the control variable ‘net sales’ is to control the size of the firms. Since the income tax payments may differ significantly between firms because of their sizes, it is important to include this in the regression analyses. Several previous studies who have studied economic crimes have used the size of a firm as a control variable. Some studies have for example measured size in form of gross sales (Lee et al., 1999; McKeown et al., 1991; Fich & Shivdasani, 2007). Other studies have measured size in form total capital (Fanning & Cogger, 1998; Spathis, 2002). Further, a study made by Dedman & Kauser (2012) showed that there is a relationship between the size of a firm and the choice of being audited. This evidence is an additional motivation on why to include size as control variable for the regression analyses.

The control variable ‘net sales’ was found to best measure the size of the firms, compared to other control variables such as ‘number of employees’. ‘Number of employees’ was first inserted as a control variable instead of the ‘net sales’, but it was then found that the number of employees did not differ much among the firms, at the same time as the net sales and income tax payments varied much more. In addition, it was found that ‘number of employees’ and the independent variable correlated strongly, as the correlation exceeded 0.7. Further, it is argued that ‘net sales’ better described the size of the firms and correlated better with the independent variable. ‘Net sales’ was also more similar to the income tax payments and purchases of the firms in terms of their behaviors. For example, firms that usually have high income tax payments also have high net sales. In addition, ‘net sales’ was also regarded as an appropriate control variable because it is used as a criterion when determining the size of the firms in the Auditing Act (Sw.: Revisorlagen) (SFS 1999:1079). Hence, ‘net sales’ was chosen as the control variable for the regression analyses.

4.2.1 Wilcoxon Signed-Rank Test

The Wilcoxon signed-rank test is a nonparametric test that can be compared to a paired-samples t-test, also known as a dependent t-test (O'Brien & Fleming, 1987, p. 169, Pallant, 2010, p. 223). As it is a nonparametric test, it does not include specific assumptions of the shape of the population distribution. This indicates that there is no requirement that the data must be normally distributed (Pallant, 2010, p. 210). Although, nonparametric tests seem to have less stringent assumptions compared to parametric tests, there are still two assumptions that must be met in order to be able to conduct a nonparametric test (Pallant, 2010, p. 211). These assumptions are:

- Random samples, and
- Independent samples
The Wilcoxon signed-rank test is conducted when one’s subjects are measured at two different points in time. The Wilcoxon signed-rank test does not compare means as in a paired-samples t-test, instead the Wilcoxon signed-test converts the scores to ranks and compares them at the two different points in time (Pallant, 2010, p. 223). In this study, a Wilcoxon signed-rank test was conducted on all the firms in the sample in order to detect if there was any significant difference in the income tax payments before and after the mandatory audit was abolished. The two different occasions were (1) the years 2008-2009 when the audit was mandatory and (2) the years 2012-2013 when the audit was voluntarily. Since a Wilcoxon signed-rank test is comparing two different points in time, it was decided to calculate the mean of the income tax payments for the years 2008-2009 for each individual firm, and the same for the years 2012-2013. The mean score of the years 2008-2009 was then seen as the point in time accounting for when the audit was mandatory and the mean score of the years 2012-2013 was seen as the other point in time when the audit was voluntary. Data regarding the income tax payments of the total sample was collected for the years 2008, 2009, 2012 and 2013 by downloading it from the database Retriever. Later, the downloaded data was summarized in an Excel sheet where the means were calculated before exporting them to the statistical program SPSS. In SPSS, a Wilcoxon signed-rank test was first made for all firms who had quitted audit when it became voluntary and then another test was made for the firms who continued being audited despite it being voluntarily. The first group who was tested had a larger sample size (N=340) compared to the other group who was later tested (N=77). The tests were divided into two rounds because the aim of the tests was to see if the income tax payments had changed for the firms who quitted audit, and if it had changed for the firms who continued audit. When the tests are divided into two rounds it is easier to see how the payments differed between these groups.

4.2.2 Mann-Whitney U test
The Mann-Whitney U test is the nonparametric alternative to the independent-samples t-test. In line with the independent-samples t-test, it is used for testing if there are any differences between two independent groups. However, instead of comparing the means of the two groups as the independent-samples t-tests do, the Mann-Whitney U test compare the medians instead (Pallant, 2010, p. 220). The scores of the continuous variables are converted to ranks across both groups. Then, the ranks are compared to see if there is any difference between the two groups. As this is a nonparametric test and the scores are converted to ranks, there are no requirements on the shape of the distribution (Pallant, 2010, p. 220). The aim of this test is to find if there are any differences in the variables ‘tax payment’ and ‘tax payment/purchase’ between two groups; the firms who decided to continue with audit, and the firms who decided to quit audit. Data was downloaded from the database ‘Retriever’ and summarized in an Excel sheet and then imported to SPSS. In SPSS the independent variable ‘audit’ was coded with numbers in order to separate its categories. The variable was coded to 0 and 1. The code 0 accounted for the firms who had quit audit when the mandatory audit was abolished. The other category code, 1, accounted for the rest of the firms who continued with audit when the mandatory audit was abolished. The sample sizes of the two groups differed significantly, as the group who was coded 0 had a sample size of N=340, and the second group who was coded 1, had a sample size of N=77. The Mann-Whitney U test was conducted in SPSS containing two dependent variables (‘tax payment’ and ‘tax payment/purchase’) and one independent variable (‘audit’).

4.2.3 Linear regression analyses
A regression analysis is a statistical method used to investigate the relationship between variables (Montgomery et al., 2012, p. 1). A variable can be predicted upon another single
variable, or multiple variables by using a linear regression (Lunt, 2015, p. 1141; Wahlin, 2015, p. 272). A model with a simple regressor (predictor) is known as a simple linear regression model (Montgomery et al., 2012 p. 2, 12; Wahlin, 2015, p. 255). A model that contains more than one regressor is known as a multiple regression model (Montgomery et al., 2012, p. 67). In this study, simple regressors are used which means that the analyses conducted are referred to as simple linear regressions analyses.

In the previous tests (Mann-Whitney U test and Wilcoxon signed-rank test) it was noted that the data did not have a normal distribution, and therefore the nonparametric tests were chosen to be used. As it is required to have a normal shape of the data to be able to perform a regression analysis it was decided to manipulate the data before conducting the regression analyses (Lunt, 2015, p. 1141). The data was manipulated in forms of log transforming and trimming 1% of the total data N=417 (N=340 + N=77). The log transformation resulted in a maintained sample size N=417. It should be mentioned that the firms who had zero SEK in income tax payment and were logged, were remained unchanged since it is not possible to log transform zero. On the other hand, the sample that was trimmed resulted in a new sample size of N=409 (N=336, N=73). The manipulated data was then inserted in Excel. The independent variable ‘audit’ was transformed into a dummy variable, meaning that it was coded in order to separate its two categories from each other. The dummy variables were coded as follows:

- Quitted audit when the mandatory audit was abolished = 0
- Continued audit when the mandatory audit was abolished = 1

The next step was to run two separately linear regression analyses, since there were two dependent variables to test for; ‘tax payment’ and ‘tax payment/purchase’. In the first linear regression analysis three variables was included, those were the logged dependent variable ‘tax payment’ together with the dummy variable ‘audit’ and the logged control variable ‘net sales’. The control variable was included because it can help explain if the independent variable (dummy variable) account for the relationship or if there is any other possible explanation for the variance in the dependent variable (Dahmström, 2005, p. 216). The control variable also has the capability to increase the coefficient of multiple determination ($R^2$) of the analysis (Dahmström, 2005, p. 216). The model for this regression analysis is set up as follows in figure 1:

\[
\text{Tax\_Payment} = b_0 + b_1\text{Audit}_0 + b_2\text{Net\_Sales}_0 + \varepsilon
\]

Figure 1: Linear regression model for tax payment as dependent variable

In the second regression analysis, the dependent variable ‘tax payment/purchase’ was tested. The variables ‘tax payment/purchase’ and ‘net sales’ had previously been trimmed. The model for this linear regression analysis follows in figure 2:

\[
\text{Tax\_Payment/Purchase} = b_0 + b_1\text{Audit}_0 + b_2\text{Net\_Sales}_0 + \varepsilon
\]

Figure 2: Linear Regression model for tax payment/purchase as dependent variable
4.3 Method criticism

The method applied in this study can be criticized as it may have caused a risk for errors in the data. First of all, the method of collecting data can be criticized. It is unknown to what extent the database ‘Retriever’ is trustworthy, therefore, a sample check was made to test the accuracy of the data. However, as ‘Retriever’ is offered by Umeå University Library and have been extensively used in previous theses it signals a picture as a well-established database. Despite this it was decided to manually check the downloaded data from ‘Retriever’. The downloaded data were compared to the annual reports of the firms in order to see if the information corresponded. It was found that many of them did not correspond and therefore another database known as ‘Bisnode’ was used to complement this error. Further, there is also a risk of errors in the data due to conducting the data checks manually. However, the manually work have been done as carefully and as meticulous as possible.

The removal of outliers can also be criticized. Attempts were made in order to achieve a normally distributed data. The methods applied to remove the outliers were trimming and log-transforming. The drawbacks of these methods are that they affect the ontological standpoint of the study, resulting in move from the ontological assumption towards a subjective assumption. However, it was determined that these actions were necessary as it was the only solution to achieve an approximately normally distributed data. It is not possible to conduct linear regression analyses with abnormal data and hence, these methods were regarded as essential (Lunt, 2015, p. 1141).

Lastly, the sample size can also be criticized. The final sample size amounted up to N=417 for the nonparametric tests and linear regression analysis when studying ‘tax payment’ and N=396 for the linear regression analysis when studying ‘tax payment/purchase’. These sample sizes are regarded as relatively small as they are representing all small limited firms within the restaurant industry in Sweden. On the other hand, it is still believed that these sample sizes are useful in the statistical tests. Larger sample sizes could better represent the population and make the data more normal. The sample size could also decrease the difference between the sample and the population and make the statistical tests more significant (Fen et al., 1999, p. 57). Additionally, with normal data, the normal t-tests could have been conducted with the mean as a test factor. It is possible that the results could differ from the results of this study and that other conclusions could have been taken.
5.0 Results

This chapter presents detailed results from the statistical tests and answers the hypothesis question. The chapter begins with a summarize of the descriptive statistics of the samples, followed by a thorough review of the findings from the nonparametric tests and linear regressions.

5.1 Descriptive statistics

Descriptive statistics have been made in order to facilitate the interpretation of the results of this study. All firms participating in this study are classified as small limited firms and are operating within the restaurant industry in Sweden. All these firms are under the influence of the voluntary audit and within the criterion of the law, which is to not exceed more than one of the following: having more than 3 000 000 SEK in net sales, 1 500 000 SEK in assets or having more than three employees.

When performing the nonparametric tests, a sample size of N=417 (N=340 + N=77) was used. The sample for the nonparametric tests were not required to be normally distributed. The number of firms that continued to be audited after 2010 was 77 firms which constitutes 18.5% of the total sample, and the number of firms that chose to quit audit after the abolishment was 340 which represents 81.5% of the total sample (see appendix 3). This sample size was also used in the linear regression analysis for ‘tax payment’ (see appendix 4).

The sample size used in the linear regression analysis for the variable ‘tax purchase/purchase’ had been trimmed and thus consisted of a smaller sample size, namely N=409 firms, and 73 of them decided to continue audit after 2010 and 336 of them decided to quit audit when it became voluntary in 2010. The firms that continued audit, despite the voluntary audit, represents 17.8% of the total sample size, whereas the other firms who decided to quit audit represents 82.2% of the total sample size. This is illustrated in a histogram in appendix 5.

Table 2 presents a summary of the characteristics of the studied variables ‘tax payment’ and ‘tax payment/purchase’ during the period years 2008-2009 and 2012-2013 for the sample that was used in the nonparametric tests. The data for the variable ‘tax payment’ shows that the lowest payment of income tax was 0.000 SEK while the highest payment was 414 500 SEK. Regarding the ratio of the dependent variable ‘tax payments/purchases’ the lowest amount was 0.00 while the highest amount was 6 500. Moreover, when looking at the kurtosis and skewness for ‘tax payment’ one can see that it is not normally distributed as their values amounted up to 24.708 respectively 4.659. For ‘tax payment/purchase’ the kurtosis was 100.728 and the skewness was 9.645. Further statistics can be found in table 2 below.
The skewness of the data presents the shape of the distribution, while the kurtosis shows at what data-point the observations are clustered the most (Pallant, 2010, p. 56). A perfectly normal distribution of the data should give a kurtosis and skewness of zero according to Pallant (2010, p. 56). A positive kurtosis denotes a significant higher peak around the normal peakedness and heavy tails, while a negative kurtosis denotes a flatter curve with lighter tails (DeCarlo, 1997, p. 292). Consistently, Westfall (2015, p. 1) argues in line with DeCarlo (1997), that the kurtosis cannot be associated and correlated to peakedness. The kurtosis is rather associated with the tail and its actuality to contain outliers or extremities. A positive kurtosis would be explained in a wide and large tail, much wider than a normal distributed sample (Cain et al., 2016 p. 1718). Cain et al. (2016, p.1718) explain that the reason for the wide tail, the positive kurtosis and the differentiation from a normal distribution is that the dataset contains outliers. As can be seen from the statistics in table 2, the respective variables have high positive values of kurtosis, which results in wide tails. Further on, as mentioned earlier, this sample have high positive values of skewness which according to Cain et al. (2017, p. 1717) means that the distribution has a longer right tail in the positive direction. In contrast, a negative skewness would indicate the longer tail towards the left direction. The distribution of this data is skewed to the right on both variables. Another way of explaining the skewness is through asymmetry and symmetry. Kim (2013, p. 52) mean that a distribution is symmetric when the distribution is normal, and the tails are equally long on each side. A skewed distribution then mean that the distribution is asymmetric.

Looking at the descriptive statistics from the linear regression analyses in table 3, one can see that the lowest amount of the ratio ‘tax payment/purchase was 0.00 while the highest amount was 6 500. For the variable ‘tax payment’ the lowest amount was log 0.693147181 SEK and the highest amount was log 6.027072975 SEK. The kurtosis for ‘tax payment/purchase and ‘tax payment amounted up to 97.280 respective -0.0206. Skewness for ‘tax payment/purchase’ and ‘tax payment’ were 9.482 respective 1.053. The kurtosis and skewness of the variable ‘tax payment’ are registered as approximately normal since they are close to zero (Pallant, 2010, p. 56). However, the kurtosis of the variable ‘tax payment/purchase’ is relatively high, which indicates a wide tail and an abnormal data. These statements are illustrated in table 3 below.

Table 2: Descriptive statistics of sample used in non-parametric tests

<table>
<thead>
<tr>
<th>Sample Size</th>
<th>Minimum Statistic</th>
<th>Mean Statistic</th>
<th>Maximum Statistic</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tax Payment</td>
<td>417</td>
<td>0.0</td>
<td>19.894</td>
<td>414.5</td>
<td>4.659</td>
</tr>
<tr>
<td>Tax Payment/Purchase</td>
<td>417</td>
<td>0.0</td>
<td>0.0846412916</td>
<td>6.5</td>
<td>9.645</td>
</tr>
</tbody>
</table>

44
5.2 Correlations

To further analyze the data, a correlation test was carried out to see how the control variable and the variables correlate with each other. The correlation test is used to measure the strength and trend that the variables have (Pallant, 2010, p. 126). Pallant (2010, p. 126) describe that the Pearson correlation test shows variables that have a correlation ranging between +1 and -1. Respective signs indicate the trend that the variables can have. A positive sign means that if one variable increases, the other variable increases, and respectively, a negative sign means if one variable increases, the other one decreases (Pallant, 2010, p. 126). Further, a correlation between the dependent and independent variable that ranges from 0.3 up to 0.7 is preferred. If correlations exceed 0.7 there may be a risk that multicollinearity exists between the variables (Pallant, 2010, p. 155).

The significance level related to the correlation tests states how much credibility there is in the correlations between the variables, but with larger samples the focus of the correlation tests will rather be at the strength between variables (Pallant, 2010, p. 133). As can be seen on table 4 below, the correlation between the variables are both positive and negative and statistically significant on a 1% significance level. Looking at the variables logged ‘tax payment’ and ‘audit’ the Pearson correlation test indicates a correlation of 0.223. This indicates that the variables have a relationship and can influence each other. A correlation of simply 0 would be useless since it means that the variables have no relationship (Pallant, 2010, p. 126; Wahlin, 2015, p. 254). On the other hand, Pallant (2010, p. 155) mean that a correlation of at least 0.3 is preferred. This indicate that the correlation between logged ‘tax payment’ and ‘audit’ is relatively weak, but existing. Moreover, the relationship between logged ‘tax payment’ and logged ‘net sales’ shows a correlation of 0.404 which indicates a positive correlation that is above the preferred limits of 0.3. Further, logged ‘tax payment’ and ‘audit have a correlation of 0.223 which means that the variables may influence each other.

<table>
<thead>
<tr>
<th>Sample Size</th>
<th>Minimum Statistic</th>
<th>Mean Statistic</th>
<th>Maximum Statistic</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tax Payment</td>
<td>417</td>
<td>0.693147181</td>
<td>1.225234233</td>
<td>6.027072975</td>
<td>1.053</td>
</tr>
<tr>
<td>Tax Payment/Purchase</td>
<td>409</td>
<td>0.0000000</td>
<td>0.086445685</td>
<td>6.5000000</td>
<td>9.482</td>
</tr>
</tbody>
</table>
Moreover, studying table 5 below it is noticeable that the correlation between ‘tax payment/purchase’ and ‘audit’ shows a negative correlation of -0.029. This indicates a weak relationship. Looking at ‘tax payment/purchase’ and ‘net sales’, the results also show a negative correlation of -0.029. The correlation between ‘audit’ and ‘net sales’ is 0.492 and this means that there is a strong relationship. Lastly, in table 5 one can see that the correlation between ‘net sales’ and ‘audit’ is statistically significant on a 1% significance level, on the other hand, the correlation between ‘net sales’ and ‘tax payment/purchase’ is not statistically significant.

Table 5: Correlation test of tax payment/purchase
All the variables in table 4 and 5 have correlations within the range -0.029 and +0.503. Further, correlations between the range of 0.3 - 0.7 is suggested by Pallant (2010, p. 155). As three correlations out of total six correlations have values below 0.3 it implies a weak relationship between the dependent and independent variables. The weak correlations indicate that these variables do not fit well and fails to fully explain the variances among each other. Pallant (2010, p. 158) suggest that a correlation should be above 0.3 to have qualified assertions from the model output. The remaining three correlations were above 0.3 which indicates strong relationships. Despite that 50% of our correlations had values below 0.3, we still argue that the data is useful for our regression analyses. We are only interested in finding if there is a relationship between the variables or not. To specifically explain how strong or weak the relationship is, is not our main interest. Further, it is only preferred by Pallant (2010, p. 155) to have a correlation within the range, it is not mandatory.

5.3 Non-parametric tests

5.3.1 Wilcoxon Signed-Rank Test

The Wilcoxon signed-rank test was performed in order to explain what impact the abolishment of the mandatory audit had on the income tax payments. The Wilcoxon signed-rank test was first made on both variables; ‘tax payment’ and ‘tax payment/purchase’ on the sample of firms who quitted audit (N=340) after 2010. Table 6 illustrates the test statistics of the Wilcoxon signed-rank test, and table 7 represents the descriptive statistics of the test. Both tables are necessary to examine in order to interpret the result of the test.

<table>
<thead>
<tr>
<th></th>
<th>Tax Payment/Purchase</th>
<th>Tax Payment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z</td>
<td>-1.070</td>
<td>-0.163</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>0.285</td>
<td>0.871</td>
</tr>
</tbody>
</table>

When examining the variable ‘tax payment’ in table 6 it is noticeable that the significance (2-tailed) amounted to 0.871. This probability value of 0.871 is higher than 0.1. Thus, it is concluded that there is no statistically significant difference in the income tax payments between the years 2008-2009 and in the years 2012-2013 on a significance level of 10%. There was no change in the median score between the years 2008-2009 (Md= 0.000) and the years 2012-2013 (Md=0.000), as seen in table 7.

When examining the other variable ‘tax payment/purchase’ for the same sample (N=340) it is evident, as seen in table 6, that the probability value equals 0.285. This probability value is also higher than 0.1 and therefore it can be concluded that there is no statistically significant difference in ‘tax payment/purchase’ between the years 2008-2009 and 2012-2013. In addition, there was no change in the median score for this variable, as can be seen in table 7 below.
Table 7: Descriptive statistics of Wilcoxon Signed-Rank Test (N=340)

<table>
<thead>
<tr>
<th></th>
<th>Sample Size</th>
<th>25th Percentile</th>
<th>50th (Median) Percentile</th>
<th>75th Percentile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tax Payment 2008-2009</td>
<td>340</td>
<td>0.000</td>
<td>0.000</td>
<td>9.250</td>
</tr>
<tr>
<td>Tax Payment 2012-2013</td>
<td>340</td>
<td>0.000</td>
<td>0.000</td>
<td>10.875</td>
</tr>
<tr>
<td>Tax Payment/Purchase 2008-2009</td>
<td>340</td>
<td>0.000</td>
<td>0.000</td>
<td>0.007</td>
</tr>
<tr>
<td>Tax Payment/Purchase 2012-2013</td>
<td>340</td>
<td>0.000</td>
<td>0.000</td>
<td>0.011</td>
</tr>
</tbody>
</table>

Another Wilcoxon signed-rank test was conducted for the firms who decided to continue with auditing after 2010 (N=77). Meaning that they had an auditor in the years 2008-2009 when it was mandatory, but also in 2012-2013 as a voluntary choice. When studying the variable ‘tax payments’ for these firms it can be seen in table 8 below that the probability value equals 0.084. This probability value of 0.084 is smaller than 0.1. Hence, it can be said that there is a statistically significant difference in the income tax payments between 2008-2009 and 2012-2013 on a significance level of 10%.

Table 8: Test statistics for Wilcoxon Signed-Rank Test (N=77)

<table>
<thead>
<tr>
<th></th>
<th>Tax Payment/Purchase</th>
<th>Tax Payment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z</td>
<td>-1.723</td>
<td>-1.731</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>0.085</td>
<td>0.084</td>
</tr>
</tbody>
</table>

Further, the median score on ‘tax payment’ decreased from the years 2008-2009 (Md=3.000) to the years 2012-2013 (Md=1.000), as illustrated in table 9 below.

Table 9: Descriptive statistics for Wilcoxon Signed-Rank Test (N=77)

<table>
<thead>
<tr>
<th></th>
<th>Sample Size</th>
<th>25th Percentile</th>
<th>50th (Median) Percentile</th>
<th>75th Percentile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tax Payment 2008-2009</td>
<td>77</td>
<td>0.000</td>
<td>3.000</td>
<td>28.250</td>
</tr>
<tr>
<td>Tax Payment 2012-2013</td>
<td>77</td>
<td>0.000</td>
<td>1.000</td>
<td>81.000</td>
</tr>
<tr>
<td>Tax Payment/Purchase 2008-2009</td>
<td>77</td>
<td>0.000</td>
<td>0.000</td>
<td>0.019</td>
</tr>
<tr>
<td>Tax Payment/Purchase 2012-2013</td>
<td>77</td>
<td>0.000000</td>
<td>0.000192</td>
<td>0.035</td>
</tr>
</tbody>
</table>
Further, the variable ‘tax payment/purchase’ was also examined for the firms who decided to continue with auditing after 2010 (N=77). Looking at table 8 it is apparent that the probability value of ‘tax payment/purchase’ equals 0.085. This probability value indicates that there is a statistically significant difference of ‘tax payment/purchase’ on a significance level of 10%. In table 9 it is noticeable that the median score on ‘tax payment/purchase’ increased from the years 2008-2009 (Md=0.000) to 2012-2013 (Md=0.000192).

5.3.2 Mann-Whitney U Test

The Mann-Whitney U test was conducted in order to test for differences between the two independent groups; the firms who decided to quit audit after 2010 and the firms who decided to continue audit after 2010. This test was conducted for both variables, ‘tax payment’ and ‘tax payment/purchase’. Table 10 shows the test statistics of this test.

<table>
<thead>
<tr>
<th>Tax Payment/Purchase</th>
<th>Tax Payment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z</td>
<td>-2.527</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>0.011</td>
</tr>
<tr>
<td></td>
<td>-3.471</td>
</tr>
<tr>
<td></td>
<td>0.001</td>
</tr>
</tbody>
</table>

Examining the results collected from table 10 is evident that the probability value for the variable ‘tax payment’ equals 0.001. This probability value indicates that there is a statistically significant difference in income tax payments on a 1% significance level. The results also show that the probability value for the variable ‘tax payment/purchase’ amounted up to 0.011. As this probability value is larger than 0.01, it is concluded that there is a statistically significant difference in ‘tax payment/purchase’ on a significance level of 5%.

As a statistically significant difference was found between the groups, it is necessary to depict the direction of the difference. This is best described by studying the medians of the groups (Pallant, 2010, p. 222). However, SPSS is not able to produce an output of the medians together with the results of the Mann-Whitney U test and therefore a separate median table was produced manually from SPSS. Table 11 show the medians of the variable ‘tax payment’, while table 12 illustrates the medians of the variable ‘tax payment/purchase’.

<table>
<thead>
<tr>
<th>Audit</th>
<th>N</th>
<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audited</td>
<td>77</td>
<td>1.000</td>
</tr>
<tr>
<td>Not Audited</td>
<td>340</td>
<td>0.000</td>
</tr>
<tr>
<td>Total</td>
<td>417</td>
<td>0.000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Audit</th>
<th>N</th>
<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audited</td>
<td>77</td>
<td>0.0001916</td>
</tr>
<tr>
<td>Not Audited</td>
<td>340</td>
<td>0.0000000</td>
</tr>
<tr>
<td>Total</td>
<td>417</td>
<td>0.0000000</td>
</tr>
</tbody>
</table>
In table 11 it is noticeable that the audited group has a higher median, and the same goes for table 12.

5.4 Linear regression analyses

A linear regression analysis is conducted so a value of a dependent variable can be predicted upon an independent variable. The aim of the analysis is to see whether the value of income tax payments after 2010 can be predicted upon having an audit. To test this, two analyses was conducted. In the first regression analysis the variable ‘audit’ (N=417, audited N=77, not audited N=340) was used as the independent variable, together with the logged dependent variable ‘tax payment’ and the logged control variable ‘net sales’. In the second regression analysis the trimmed variable ‘audit’ (N=409, audited=73, not audited=336) was used as the independent variable in connection with the dependent variable ‘tax payment/purchase’ and the control variable ‘net sales’.

In the first analysis examining the variables ‘tax payment’, ‘audit’ and ‘net sales’, it is noticeable that the adjusted R² is 16.0% (see appendix 6), this means that ‘audit’ can explain 16.0% of the variance in ‘tax payment’. Moreover, when studying the Anova table (appendix 7), it is evident that the regression model can, with a statistical significance, explain the tax payments. However, when examining to what extent ‘audit’ can predict ‘tax payment’, the results in table 13 show that the prediction is not statistically significant, as the p-value presents as 0.607. On the other hand, the variable ‘net sales’ is statistically significant on a 1% significance level.

Table 13: Summary of the coefficients of the linear regression for dependent variable tax payment

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1 (Constant)</td>
<td>0.793</td>
<td>0.091</td>
<td>8.681</td>
<td>0.000</td>
</tr>
<tr>
<td>Net sales</td>
<td>0.000</td>
<td>0.000</td>
<td>0.391</td>
<td>7.519</td>
</tr>
<tr>
<td>Audited</td>
<td>0.118</td>
<td>0.229</td>
<td>0.027</td>
<td>0.515</td>
</tr>
</tbody>
</table>

The second linear regression analysis that was performed through measuring the relationship between the variables ‘tax payment/purchase’, ‘audit’ and ‘net sales’ showed an adjusted R² of -0.4% (appendix 8). This means that the variable ‘audit’ can explain -0.4% of the variance in the variable ‘tax payment/purchase’. This number is regarded as remarkably low compared to the previous adjusted R² of 16.0%. The relationship between the abolishment of the mandatory audit in connection to ‘tax payment/purchase’ is relatively weak. The variance in the mandatory audit can only explain a small part of the variance in the tested variable ‘tax payment/purchase’. The low degree of the coefficients of determination (R²) thus implies that these variables are not a good match and that there are probably other more suitable variables that explain the tax manipulations rather than the abolishment. Further, the regression model for this variable shows that the model cannot explain the variable ‘tax payment’ with statistically significant evidence. This finding is presented in appendix 9. Lastly, to predict the variable ‘tax payment/purchase’, the
coefficient shows a probability value of 0.736 which indicates that the results are not statistically significant and that the independent variable is a poor predictor of the dependent variable. Moreover, the variable ‘net sales’ also not statistically significant. This can be seen in table 14 below.

Table 14: Summary of the coefficients of the linear regression for dependent variable tax payment/purchase

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standard Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
</tr>
<tr>
<td>1 (Constant)</td>
<td>0.098</td>
<td>0.032</td>
</tr>
<tr>
<td>Net sales</td>
<td>-2.801E-16</td>
<td>0.000</td>
</tr>
<tr>
<td>Audited</td>
<td>-0.027</td>
<td>0.081</td>
</tr>
</tbody>
</table>

5.5 Concluding results

To further draw conclusions about the hypothesis, the results from the Wilcoxon signed-rank test, Mann-Whitney U and the linear regression analyses will be used for the interpretation. All tests and analyses will be tested on a 1%, 5% and 10% significance level.

Firstly, a Wilcoxon signed-rank test was performed to be able to see if there was any difference in the variables ‘tax payment’ or ‘tax payment/purchase’ for the firms who were audited in the years 2008-2009 and 2012-2013. The results of this test show that there is no statistical difference on any significance level. Further, a second Wilcoxon signed-rank test was conducted on the firms who were audited in the years 2008-2009 but decided to quit audit in the years 2012-2013. The result regarding the variable ‘tax payment’ show a probability value of 0.084 which means that there is a statistically significant difference in the income tax payments between the two occasions on a significance level of 10%. The result regarding the other variable ‘tax payment/purchase’ shows that the probability value equals 0.085 and that there is a statistically significant difference in ‘tax payment/purchase’ between the two occasions on a significance level of 10%.

Supplementary, a Mann-Whitney U test was carried out in order to determine whether there was a significant difference in the ‘tax payments’ and the ‘tax payments/purchase’ between the audited firms and the unaudited firms. Based on the result of this test, the probability value for the variable ‘tax payments’ amounted to 0.001 which indicates that there is a statistically significant difference on a 1% significance level. The probability value for the variable ‘tax payment/purchase’ amounted to 0.011 which means that it is statistically significant on a 5% significance level.

Lastly, the results from the linear regression analyses are studied. In the first regression analysis, containing the logged variable ‘tax payment’ it is evident that the probability value equals to 0.607 (table 13). This probability value is not statistically significant. Looking at the second analysis when the variable ‘tax payment/purchase’ was tested, the probability value equals to 0.736 which also indicates no statistically significant results (table 14).
The results from the statistical tests and analyses result in accepting the null hypothesis and rejecting the alternative hypothesis. After evaluating all the results from both the non-parametric tests and the linear regression analyses, we have decided that the results from the linear regression analyses give more reliable and detailed results. We have therefore concluded to answer our hypothesis mostly based on the results of the linear regression analyses. As both analyses resulted in insignificant results, the null hypothesis was accepted. This can be seen in Table 15 below.

Table 15: Results of the hypothesis testing

| H:0 The abolishment of mandatory audit has not lead to any changes in income tax payments | Accepted |
| H:1 The abolishment of mandatory audit has lead to a change in income tax payments | Rejected |
6.0 Analysis

In this section, an analysis is performed based on the results of the study in connection to the theories and previous research presented earlier. Our results are compared to the results of previous studies in terms of similarities and dissimilarities. In addition, possible relationships of the findings are discussed.

6.1 Introductory analysis

The purpose of this study was to examine whether there has been a change in income tax payments stemming from the restaurant industry in Sweden as a response to the abolishment of mandatory audit in 2010. To answer this, the overall research question was stated as:

“Does the abolishment of mandatory audit in Sweden lead to a change in income tax payments from the restaurant industry?”

Based on the research question, a hypothesis was tested and formulated as follows:

“The abolishment of mandatory audit has led to a change in income tax payments”

Initially, when the new regulation was put into force it affected an amount of 95 000 firms in Sweden (SOU 2008:32). Based on previous literature, both the Swedish Tax Agency and the Swedish Crime Authority Office presented concerns that this new regulation would lead to negative effects on the income tax revenues (National Audit Office, 2017, p. 13; Swedish Economic Crime Authority, 2016, p. 3). Based on these statements and indications from the authorities, assumptions were made where it was believed that the mandatory audit would have an impact on the income tax frauds.

The majority of our samples chose to be unaudited after 2010. This finding is consistent with the findings of studies made by the Swedish National Audit Office (2017) and Backenström & Lundin (2016). Backenström & Lundin (2016, p. 7) confirmed that the Swedish National Crime Authority had clearly seen an increase in the number of small limited firms that decided to quit audit when it became voluntarily. In addition, the Swedish National Audit Office (2017, p. 6) found that the firms who were to quit audit when it became voluntary was mainly firms within heavy cash industries, such as the restaurant industry. Our statistical median tests also show that the firms who quitted audit paid less income tax than the firms who continued audit. In line with this finding, the Swedish National Audit Office was also concerned that the abolishment of mandatory audit would lead to less income tax revenues (Swedish National Audit Office, 2017, p. 5).

6.2 Analysis based on theories

This study found no statistical evidence that the abolishment of mandatory audit has led to a change in income tax payments from the restaurant industry. This can partly be analyzed in relation to the theories.

Firstly, it can be questioned whether the Government of Sweden took a rational decision when abolishing the mandatory audit for small firms, due to the concerns raised by the authorities and agencies. Authorities and agencies such as the Swedish Tax Agency and the Swedish Crime Authority Office, have alarmed their concern regarding the abolishment of
mandatory audit in Sweden (Swedish National Audit Office, 2017, p. 13; Swedish Economic Crime Authority, 2016, p. 3). The Swedish National Audit Office (2017, p. 5) also believed that the consequences of the abolishment would outweigh the benefits. In contrast, Collis (2012, p. 463) claimed that the benefits of having an audit exceed the cost in the UK.

In line with the Swedish National Audit Office (2017), the study made by Backström & Lundin (2016, p. 14) concluded that firms who had quit audit were more likely to be accused for economic crimes. It was also concluded that the abolishment of the mandatory audit is a risk factor since it is easier for firms to conduct economic crimes when they are not audited (Backström & Lundin, 2016, p. 14). Despite these authorities and agencies being doubtful regarding the abolishment, the Government of Sweden still decided to abolish the mandatory audit in 2010. The incentives for implementing the new regulation were thus to ease the administrative costs for small limited firms and to increase the competition between them (Prop. 2009/10:100; Swedish National Audit Office, 2017, p. 67). Another incentive was to decrease the obstacles for small limited firms as they could put more focus on the core business instead (Prop. 2009/10:100). The Swedish National Audit Office (2017, p. 5) also concluded that this abolishment came with several risks such as, decreased taxes, increased economic crimes and weaker quality of the accounting. With these fears of the risks in mind, it is debatable whether the decision was based on rational grounds. However, our study shows that there were no negative consequences of the abolishment in terms of income tax payments. Thus, the Government’s decision to abolish the mandatory audit could have been a rational decision.

It may be believed that firms who quit audit have incentives to commit economic crimes because of the consequences that have been in the spotlight regarding the abolishment. However, based on the results of this study, we cannot see that the abolishment had a negative impact on the income tax payments from small firms in the restaurant industry. The counter arguments brought up by the authorities were not evident in the results of this study.

Rationality can also be connected to the management of the firms. Collis (2010, p. 219) based some of her hypotheses on the fact that directors of small firms make rational decisions by comparing the cost of audit with the benefits of the reducing risk function the auditors possess. However, the majority of the firms in the samples in this study quit audit when it became voluntary, but it is unknown for what reasons. Thus, it can be discussed whether it was a rational decision. Based on the results of this study it seems as they did not quit audit in order to perform economic crimes in terms of income tax fraud. On the other hand, it can also be discussed whether it was a rational decision of the rest of the sample who decided to continue audit. It could be that they continued with audit because they had the incentive to maintain the benefits of it, such as better credit ratings (Allee & Yohn, 2009; Collis et al., 2004; Dedman & Kauser, 2012; Lennox & Pittman, 2011; Sundgren, 2003; Thorell & Norberg, 2005).

According to the agency theory, an external auditor in a firm can be regarded as similar to a principal. A principal can be seen as anyone who is external to the agent’s actions (Collis et al., 2004, p. 89). As the board of a firm might manipulate their numbers in order to signal a positive picture about their firm, an auditor can be preferred in these cases (Sundgren, 2003, p. 265). Sundgren (2003, p. 266, 273) explains that an auditor may potentially reduce the agency problem. However, he still believes that there are not enough reasons for keeping the mandatory audit. Sundgren (2003, p. 274) further states that a voluntary audit could
improve the ability of firms and their stakeholders. Moreover, the result of our study can verify the claims by Sundgren (2003), stating that a mandatory audit may not be necessary.

In accordance to the stakeholder theory one can question how firms interact and influence their stakeholders (Wagner Mainardes et al., 2011, p. 229). In an ideal stakeholder relationship, the firms try to balance the interests of themselves as well as their stakeholders (Wagner Mainardes et al., 2011, p. 229-230). A negative relationship would be when the firm tries to manipulate its bookkeeping for their own benefit. To prevent this an auditor could be of use, as the auditor review the bookkeeping of the firms. The use of an auditor can result in a decreased amount of errors and manipulation of the bookkeeping. When looking at the results from this study, a negative relationship seems to not exist. Even the firms who decided to quit audit after 2010 are still paying their income taxes and it seems as they are not manipulating their accounting. Based on this theory we believe that the firms in this study share their interests with their stakeholders.

6.3 Analysis based on previous studies

Our results did not correlate with the report released by the Swedish National Audit Office (2017). As this report was conducted recently it was believed that our results would be similar to the report. Due to the short period of time between the studies, it was believed that not many conditions could have changed and therefore would lead us to a similar result, however, that was not the case. One of the reasons for this could be that our methodologies were only partly similar. We studied the firms’ income tax payments in the years 2008-2013, while Swedish National Audit Office studied the economic development of the years 2007-2015 (Swedish National Audit Office, 2017, p. 19). It is also unknown what statistical tests or procedures were used by the Swedish National Audit Office. Furthermore, the Swedish National Audit Office used several quantitative and qualitative methods. It is possible that the use of different methods resulted in the dissimilar results. Another explanation for dissimilar results could be the fact that we restricted our study to the restaurant industry.

As mentioned before, our study shows that a large number of firms in the restaurant industry chose to quit audit. However, previous studies (Allee & Yohn, 2009; Collis et al., 2004; Dedman & Kauser, 2012; Lennox & Pittman, 2011; Sundgren, 2003; Thorell & Norberg, 2005) have shown that voluntarily audit is an advantage when seeking loans and improving credit ratings. It is proven to easier attain credits from investors and loan lenders if the financial statements are audited. Further, Collis (2010, p. 227) argued that having an audit can improve Danish firms’ relationship with banks/lenders. However, the results from our study show that there is no significant difference in income tax payments between firms who continue audit and firms who quitted audit after the abolishment in 2010. Therefore, our study suggest that creditors should not lay focus on the use of auditors since unaudited firms also pay their income taxes. This seems to already be the case in the UK as Collis (2010) found that UK firms who are audited do not maintain a better relationship with banks/lender compared to the unaudited firms.

Further, findings from a study made by Clatworthy & Peel (2013, p. 22) show that errors in the bookkeeping are twice as likely to occur in firms who have gone from being audited to unaudited. Another study made by Alalehto (1999, p. 154) states that the restaurant industry is typically involved in economic crimes and tricking the state on money. The findings of Clatworthy & Peel (2013) and Alalehto (1999) do not correlate with the finding of our study. We found that there is no change in the income tax payments dependent on whether the
firms had an auditor or not and therefore it seems as no manipulation in order to avoid tax have been made among these firms.

Clatworthy & Peel (2013) and Alalehto (1999) expressed concerns regarding a voluntarily audit, as various Swedish Authorities also did. The fact that several previous studies and propositions (Swedish National Audit Office, 2017; Prop. 2009/10:204; Swedish Economic Crime Authority, 2016) have expressed negatively about the abolishment of mandatory audit might have convinced the state to implement stricter laws and controls for industries that are more likely to commit crimes, such as the restaurant industry. A new law was implemented in 2006, focusing on working against tax crimes within the restaurant industry and the hairdresser industry. As this law was implemented in 2006, which was before conducting our study, it may have affected our results since we have studied the years 2008-2013. This law is known as the Law of Controlling Certain Industries (Sw.: Lag (2006:575) om särskild skattekontroll i vissa branscher) (SFS 2006:575). In addition to this law, the Government of Sweden also introduced certified cash registers to be mandatory (SOU 2005:35). The National Swedish Council for Crime Prevention (2018) states, that the amount of reported crimes depends on how effective the agencies are in their controls. Since this study shows no results of economic crimes in terms of income tax fraud in the restaurant industry, it might indicate that the authorities work to prevent and detect crimes has been efficient. The improved and increased numbers of controls have probably affected our results implying that there is no difference in income tax payments between audited and unaudited firms. It can also be the case that the negative opinions expressed by previous research are no longer relevant since stricter controls now have been implemented.

Further, it can also be argued that the decreased usage of cash might have influenced our results. Previous research has claimed that a large amount of cash is circulating in the restaurant industry (Alalehto, 1999; National Swedish Council for Crime Prevention, 2008; Swedish National Audit Office, 2017; SOU 2005:35). It is also known that economic crimes are mostly conducted in heavy cash industries, such as the restaurant industry (National Swedish Council for Crime Prevention, 2008, p. 306). However, recent studies show that the amount of cash circulating in Sweden had decreased (Arvidsson, 2013; Arvidsson et al., 2018). Arvidsson et al. (2018, p. 5) explained that usage of cash in the Swedish society is significantly declining and by year 2020 it is believed that one fourth of the traders will not accept cash payments. Based on the decreased usage of cash, it comes naturally to believe that the amount of economic crimes in heavy cash industries will decrease in the same proportion. Thus, the results of this study may partly be explained by this fact.

6.4 General analysis

There could be a correlation between what legal form newly founded businesses choose and economic crimes. As audit was mandatory for all limited firms before 2010 it can be discussed whether this legal form of firm was avoided by the ones who had crime incentives. Firms would probably avoid being registered as a limited firm in order to refrain being audited. Thereof, other forms of firms would be chosen. However, an increase in newly founded limited firms was seen after the abolishment of the mandatory audit (Swedish National Audit Office, 2017, p. 24). The majority of these firms also chose to not be audited (Swedish National Audit Office, 2017, p. 25). This may imply that as the mandatory audit now is abolished, firms can now create limited firms even if they have incentives to commit crimes. Additionally, this can also denote that a large proportion of firms who have had crime incentives before the abolishment were probably registered in other legal forms. There is a possibility that our results showed no correlation since the firms who had crime
incentives are founded in other legal forms. However, this is solely a speculation regarding a possible relationship.

Moreover, it was noticed from our statistics that the majority of our sample had zero SEK in income tax payments. The firms who have paid zero SEK in income tax have had a negative net income, and therefore not been able to pay tax. It is interesting to discuss why it is that case. One reason could be that small limited firms in the restaurant industry are not profitable and therefore usually result in zero or negative net incomes. It can also be that the firms manipulate their bookkeeping in order to not have a taxable income. Our result of the study shows that there is no income tax fraud present based on the firms reported income tax payments. However, it is possible that fraud is present in firms that are audited as well as unaudited as the firms might manipulate the bookkeeping in order to achieve a negative net income.
7.0 Conclusion and contributions

In this section the final conclusions are presented based on the analysis in the previous chapter. This is followed by our recommendations for future studies and what practical and theoretical contributions this study brings. Finally, ethical and societal aspects of the research design and the findings are considered and discussed.

7.1 Conclusion

The aim of this study was to examine if the abolishment of mandatory audit has led to a change in income tax payments. This question was raised because it was decided to abolish the mandatory audit for small firms in Sweden in 2010. Therefore, this would be an interesting and relevant topic to study today. Further, we have not seen any similar studies to ours and therefore it is interesting to examine an unexplored field of study.

Thus, the aim of this study was to answer the following research question:

“Does the abolishment of mandatory audit in Sweden lead to a change in income tax payments from the restaurant industry?”

The study found that the abolishment of mandatory audit in Sweden has not led to changes in the income tax payments from the restaurant industry. Thus, based on the overall conclusions of the statistical tests, the null hypothesis was accepted. A potential explanation for this can be the stricter controls that were implemented to heavy cash industries, such as the restaurant industry. The stricter controls in terms of running documents and certified cash registers may have made it more difficult for firms to conduct and get away with frauds. Another reason could be that small firms do not have enough resources and hence less opportunities to be able to engage in earnings management, as larger firms might have (Beuselinck & Deloof, 2014, p. 33). Additionally, it was evident from the downloaded secondary data that many of these small firms had negative net incomes and therefore did not pay any income taxes.

However, it shall be mentioned that the non-parametric test ‘Wilcoxon Signed-Rank test’ for the sample who continued with auditing were shown to be statistically significant on a 10% significance level, and the Mann-Whitney U test were statistically significant on a 1% and a 5% significance level for the variables ‘tax payment’ respective ‘tax payment/purchase’. Both linear regression analyses were not statistically significant at any level. After examining the results of these tests and analyses we sought that the overall conclusion would be to accept the null hypothesis.

Most of the previous studies have expressed a fear that the abolishment will result in negative consequences, such as decreased income tax payments from certain industries (Backeström & Lundin, 2016; Swedish National Audit Office, 2017; Alalehto, 1999). But based on our study we cannot confirm this since our findings does not comply with the majority of the previous studies. An explanation for this could be that many of the previous studies have examined other settings than this study. For example, the studies made by both Clatworthy & Peel (2013) and Lennox & Pittman (2011) were conducted on firms in the UK, within no particular industry. Further, Beuselinck & Deloof (2014) studied earnings management in Belgium, and Coppens & Peek (2005) studied whether firms in eight European countries were engaged in earnings management and if they had any tax incentives. The settings of our study differ from the previous studies as we have focused on
small limited firms in the restaurant industry in Sweden. Moreover, another explanation for the different findings is that we studied a different research question compared to the previous studies.

On the other hand, there are a few studies that support the findings of our study. However, it shall be mentioned that these studies have also not studied the exact same research question and settings as us. Looking at previous theories, such as the agency theory, it has been concluded that an auditor can be useful for small firms. The role of the auditor is to prevent errors in the bookkeeping and to detect potential frauds. As can be concluded from our results of the Mann-Whitney U test, there has been a difference in income tax payments between the group that chose to continue being audited and the group of firms that chose to quit audit. The firms who continued being audited had a larger median income tax payment while the median income tax payments of the firms who quitted audit was smaller. It is also evident that the firms who continued with audit had larger gross sales, and this may have had an influence on the income tax payments. It can also be argued that this difference was due to the choice of having an auditor or not. On the other hand, as the null hypothesis cannot be rejected it means that there was not a significant change in the income tax payment because of the abolishment of mandatory audit. This concludes that, whether or not the firms had an auditor after 2010 the income tax payments had not significantly changed. This could indicate that the auditor was not needed as a control function in order to keep the financial statements honest and free of fraud. Hence, the agency theory does not comply with our results.

Some conclusions can also be drawn when examining the rational choice theory and the stakeholder theory in connection to our results. It has been argued in previous studies that firms who avoid audit would be more likely to have the intentions to commit economic crimes, such as tax fraud (Backström & Lundin, 2016; Swedish National Audit Office, 2017). After the abolishment of mandatory audit, the firms could take rational decisions to quit audit to engage in economic crimes, as it is easier to commit economic crimes when there is no auditor to review the bookkeeping. It is not certain whether the firms in this study have intentionally quitted audit in order to commit economic crimes in terms of income tax fraud. However, based on our results we cannot detect any income tax fraud among the unaudited firms.

Moreover, it is concluded that the decreased usage of cash in the Swedish society might have had an impact on the results of this study. As less cash is used, it can be believed that the number of economic crimes will also decline. On the other hand, it is also concluded that firms may be engaged in economic crimes in terms of manipulating their bookkeeping in order to avoid paying income tax. We believe that this may be the case because a large portion of our sample had negative or zero net incomes and did not pay any income taxes. However, the negative net incomes and zero income tax payments may also be a sign that the restaurant industry is an unprofitable industry.

Finally, it can be concluded that the purpose of this study has been fulfilled. In line with the hypothesis testing, it can be concluded that there is no correlation between the abolishment of the mandatory audit and a change in the income tax payments.

7.1.1 Recommendations for future studies

For future studies in this field it is recommended to broaden the perspective of the study. For example, it would be interesting to include other heavy cash industries. Examples of such industries are the hairdresser-, construction- and the cab- industry. Since it is known that these industries are more likely to commit economic crimes and deal with more cash
than other industries, these are relevant to study. It is possible to either examine these industries all together as one sample, or to do a comparative study between the industries. If more industries were included it would generate a larger sample which could lead to a more reliable result. A larger sample size would also probably make the sample more normal which could be beneficial when doing t-tests and regression analyses, as they require the data to be normal.

To continue, another idea for future studies could be to examine a larger time-span to cover the long-term effect in terms of economic crimes of the abolishment. Since we have only studies four years (two years prior to abolishment, and two years after abolishment) it is difficult to draw conclusions of the long-term effects. Also, for future studies it would be interesting to put more focus on how the decreased usage of cash could have had an impact on the economic crimes. It known that these industries are classified as ‘cash heavy industries’ and that economic crimes are more present in these industries (Swedish National Audit Office, 2017, p. 7). At the same time, it is also known that the usage of cash has decreased in the Swedish society and therefore it would be interesting to map out the impact of cash and its relationship to economic crimes. One can assume that the economic crimes should decrease if the usage of cash have decreased, as cash is the main problem in these industries.

Taking another perspective, it would be interesting to study this topic from another viewpoint. For example, the research question could be examined by conducting a qualitative study by doing interviews or case studies. A qualitative study could give more in-depth answers about the topic, which a quantitative study could not provide. The focus could then be on authorities and/or audit firms in order to analyze their thoughts and predictions upon this issue.

7.1.2 Contributions

Many previous studies have focused separately on both areas; the abolishment of mandatory audit and economic crimes (such as income tax fraud) within the restaurant industry. However, we have not found any study that examines these areas together in one single study. Hence, we have not either found any previous studies that examined the correlation between the income tax payments from the restaurant industry and the abolishment of mandatory audit in Sweden. This means that our study is exploring an unexplored subject. Moreover, the results of this study suggest that there might be other factors other than the voluntary audit that could influence the choice of committing economic crimes. Other factors, such as the less usage of cash and the Government's control functions might have affected to what extend crimes are conducted. Due to this, our study contributes with new knowledge and findings for future research.

Further, this study shows that the agency theory in connection to this setting is questionable. Previous studies have shown that agency theory can be appilcated to the audit profession as an audit can work as a control function among and prevent crimes among firms. However, our study indicates that unaudited firms do not engage in income tax frauds.

This study also contributes with practical aspects. The results saying that there is no relationship between the abolishment and income tax frauds can be valuable information for Authorities and Agencies in Sweden. It can also be valuable for other shareholders and stakeholders, such as credit providers, investors and suppliers. The results and analyses also give an indication that the controls carried out by the Swedish Tax Authority has been effective in order to detect and prevented economic crimes.
7.2 Ethical and societal aspects

The research topic and research question of this study is based on our ethical and societal concerns. Economic crimes and income tax frauds are considered as unethical behaviors. The act of manipulating the bookkeeping to pay less income tax is a violation of the law, but it is also unethical as it creates disloyal competition within the industry. Therefore, it has been highly argued that auditors play an important role within firms as they can prevent economic crimes and errors in the financial statements. Not just in large firms, but also in the small limited firms. Based on this, it can be considered whether the abolishment of mandatory audit was an ethical decision since auditors are important in several aspects. The fears expressed regarding a voluntary audit involved societal and ethical issues, such as an increase of economic crimes. Thereof, it was a brave decision to abolish it despite the potential consequences. Grounded on these issues, the topic and research question of this study is of interest since it will map out the outcomes of the abolishment. However, this study found that the abolishment did not have any negative ethical or societal implications. No manipulation of income tax payment could be found as a result of the abolishment.

Also, economic crimes may affect several stakeholders in different ways. For instance, investors and credit providers rely on information provided in financial statements when taking important investment/credit decisions. Hence, if firms would practice economic crimes or manipulate their numbers to look more beneficial, it demonstrates that they would be unethical towards these stakeholders. Also, less paid income taxes will have a negative effect on the society in the long term. The welfare is dependent on income tax payments, therefore, less income tax payments would result in a weaker welfare. As all citizens are surrounded by the welfare, this suggests that all citizens will be affected by it. The results of this study also influence stakeholders in the sense that it indicates that the controls of Authorities and Agencies have been effective. The decision to abolish the mandatory audit was not a disadvantage as our results suggest no unethical behavior among the firms.

Additionally, one could discuss the research process and the way this study has been conducted in connection to ethical and societal aspects. We have been objective and transparent throughout the research process in order to maintain an ethical standpoint. However, the ethical aspect of the manipulation of the data is questionable. Since the data turned out to be abnormal, manipulation of the outliers was necessary. The fact that the data was manipulated through trimming and log transforming could be questioned whether it is ethical or not. However, we argue that these methods were necessary in order to be able to conduct the study and follow the statistical tests according to the rules. This lead us to analyze our ontological standpoint, which is objectivism. When having an objective standpoint, it means that we believe that there is only one reality and that the reality exists independently or separately from social actors (Bryman & Bell, 2015, p. 32). This implies that we should not put our own judgements or try to affect the collected data in any way. However, as we have manipulated the data in order to decrease the abnormality in the residuals it means that our ontological standpoint moves towards a subjective assumption.

Based on the results of our study, we can conclude that the studied firms have not engaged in manipulation in the form of income tax fraud. This suggests that the firms have operated in an ethical and social manner when presenting their financial information. This also means that stakeholders, who are affected by income tax payments and who value ethical behavior, can rely on these firms.
8.0 Quality criteria

In this final chapter, we argue and discuss for the study’s quality criteria: validity, reliability and replication.

8.1 Validity

Validity refers to measuring relevant factors in the right context (Gunnarsson, 2010). As researchers, you must measure the factors that you intend to measure in order to achieve a favorable validity in the study (Ejvegård, 2003, p. 73). Sufficient methods of measuring the phenomena is required, otherwise the validity will be low (Ejvegård, 2003, p. 73). This means that in this study, we measure income tax fraud by looking at relevant factors. We have measured income tax fraud by examining how the variables ‘tax payment’ and ‘tax payment/purchase’ have changed throughout the years as we classify these variables as relevant. These variables are suitable as measures of the income tax fraud since they capture the yearly income tax payments and can be studied by comparing several years to detect any changes in the payments.

We argue that our measurements of income tax fraud are relevant based on our research question. We have measured the variables that was intended to be measured in this study. Also, we are aware that the size of the firms might have an impact on the volume of income tax fraud, thus we decided to use ‘net sales’ as control variable that captures the size of the firm. Previous studies have used ‘gross sales’ as a control variable when studying economic crimes (Lee et al., 1999; McKeown et al., 1991; Fich & Shivdasani, 2007). Other studies have used ‘total capital’ as a control variable when studying economic crimes (Fanning & Cogger, 1998; Spathis, 2002). Based on these studies, it is proven that there are other variables that could be used in the tests when studying economic crimes. Therefore, we cannot be completely certain that the variables used are the only variables that can explain income tax fraud, therefore the level of validity can be questioned.

Further, Bryman (2011, p. 50) clarifies the concept of internal validity which is a subcategory to validity. According to the internal validity, the independent variable should influence the dependent variable. In some cases, there may be another variable, other than the independent variable, that can explain the dependent variable better (Bryman, 2011, p. 50). Based on our study, it is evident that all the independent variables have weak correlations to the dependent variables. This means that the independent variables do not influence the dependent variables to a large extent. Accordingly, the strength of the internal validity of this study can be criticized.

The external validity can be described as whether the study can be generalized or not (Bryman, 2011, s. 51). The external validity increases as the sample size gets larger as the goal is to have the sample representing the population. A census study creates the highest external validity as the whole population is examined. This study is a census study since all the small limited restaurant firms in Sweden is used in the sample, therefore the generalizability of this study can be classified as high. A higher generalizability is not achievable since the whole population is already examined. However, it is worth to mention that the results of the study cannot be generalized to populations other than the small firms in the Swedish restaurant industry. Nonetheless, the results of this study can still give valuable results and indications possible trends in other industries and countries.
8.2 Reliability

The reliability measures the accuracy of a measuring instrument (Ejvegård, 2003, p. 70; Bryman, 2011, p. 49). The internal consistency of a measurement should be stable across similar scale items in order for it to be reliable (Kayes, 2005, p. 251). Additionally, Bryman (2011, p. 49) explains that the measuring instrument should measure relevant factors based on the research question. Reliability also refers to if the collected data is trustworthy (Holme & Solvang, 1997, p. 94). In this study, it can be questioned whether the measuring instruments; ‘tax payment’ and ‘tax payment/purchase’, are the right ones to use when studying income tax fraud. We believe that these variables are suitable for this study and should generate a higher reliability.

Ejvegård (2003, p. 71) explain that the reliability of the measuring instrument will be lower if the researcher him/herself construct the measuring instrument. We, as researchers, have decided to use these variables as measuring instruments and have not based them on previous studies. Hence, the reliability of this study should be lower. Further, Ejvegård (2003, p. 71) points out that the reliability can be tested by, for example, replicating the study or by using control questions. However, this is only useful for qualitative studies who uses interviews or surveys.

It is difficult to quantify the strength of the reliability, but as there are no previous studies to base this study on, the reliability can be considered as relatively weak.

8.3 Replication

The study should be replicable so that other researchers can repeat the study and its results (Bryman, 2011, p. 43). We argue that this study should be replicable since the procedures of how to perform this study is clearly and thoroughly explained. If the procedure of the statistical method is followed, the same results should be achieved. Additionally, the data used in this study is publicly published which also indicates that anyone can collect the same data as we collected.

If a study is replicable then the reliability of the study will be high (Ejvegård, 2003, p. 71). As no one have replicated our study it is not proven if our study is replicable or if it is reliable. Once again, we believe that the study is replicable based on our in-depth description of the steps in the statistical method. As we believe that the study is replicable, this also indicates that study should be reliable.
Reference list


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Appendix 1: Boxplot illustrating all observations, ‘tax payment’
Appendix 2: Boxplot illustrating all observations, ‘tax payment/purchase’
Appendix 3: Histogram illustrating the distribution of firms after 2010 used in the non-parametric tests

Appendix 4: Histogram illustrating the distribution of firms after 2010 used in the regression analysis ‘tax payment’
Appendix 5: Histogram illustrating the distribution of firms after 2010 used in the regression analysis ‘tax payment/purchase’

Appendix 6: Model summary ‘tax payments’

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
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<tr>
<td>1</td>
<td>0.405a</td>
<td>0.164</td>
<td>0.160</td>
<td>1.568658695</td>
</tr>
</tbody>
</table>

a. Predictors: (constant), Audited, Net Sales (logged)
b. Dependent Variable: Tax Payment (logged)

Appendix 7 - Anova table ‘tax payment’

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Regression</td>
<td>199.804</td>
<td>2</td>
<td>99.902</td>
<td>40.599</td>
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<tr>
<td></td>
<td>Residual</td>
<td>1018.726</td>
<td>414</td>
<td>2.461</td>
<td></td>
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<tr>
<td></td>
<td>Total</td>
<td>1218.530</td>
<td>416</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: Tax payment (logged)
b. Predictors: (Constant), Audited, Net Sales (logged)
Appendix 8: Model summary ‘tax payment/purchase’

<table>
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<tr>
<th>Model</th>
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<th>$R$ Square</th>
<th>Adjusted $R$ Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
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<td>0.303$^a$</td>
<td>0.001</td>
<td>-0.004</td>
<td>10.5285770</td>
</tr>
</tbody>
</table>

a. Predictors: (constant), Audited, Net Sales
b. Dependent Variable: Tax Payment/Purchase

Appendix 9: Anova table ‘tax payment/purchase’

ANOVA$^a$

<table>
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<tr>
<th>Model</th>
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<th>Mean Square</th>
<th>$F$</th>
<th>Sig.</th>
</tr>
</thead>
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<td>0.801$^b$</td>
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<td>0.279</td>
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<tr>
<td>Total</td>
<td>111.882</td>
<td>408</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

a. Dependent Variable: Tax payment/Purchase
b. Predictors: (Constant), Audited, Net Sales