



UMEÅ UNIVERSITY

**Essays on Audit Fees and  
the Joint Provision of Audit  
and Non-Audit Services**

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*To my parents*



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Umeå, November 2017

## Abstract

This thesis examines the factors affecting audit and non-audit fees and the effects of the joint provision of audit and non-audit services on auditing.

The first essay focuses on environmental factors. Using data for Swedish listed companies over a six year span, including pre-crisis, crisis and post-crisis periods, the essay investigates whether changing economic conditions affect the level of fees paid for audit and non-audit services. The finding suggests that auditors increase their risk premium for auditing during a financial crisis and tend to charge higher audit fees as a response to lower risk levels in the post-crisis period. On the other hand, a significant reduction in non-audit fees suggests that companies are less willing to invest in consulting services during the crisis and post-crisis periods.

The second essay also studies the effects of environmental factors on audit pricing. Using data for financial institutions in 24 European countries, the study examines whether the level of effort spent on the evaluation of fair values is higher for more uncertain fair values. The result suggests that an increasing level of complexity and risk requires greater audit effort. Furthermore, the results show that the strength of a country's institutional setting is positively associated with the effort spent on the evaluation of high uncertainty fair value estimates. The finding implies that auditors spend more effort in stronger regulated countries, possibly due to higher potential litigation costs.

The third essay focuses on the factors related to an individual audit partner. Based on the data of publicly listed Swedish companies, it investigates whether partner special competencies are reflected in the prices charged for auditing. The findings show that partner industry expertise and client-specific expertise are associated with higher audit fees. A further finding is that female partners are considerably under-represented among specialists. However, the under-representation of females among higher qualified partners does not seem to negatively affect their possibilities to earn higher fees.

The fourth essay investigates how the joint provision of audit and non-audit services affects perceived knowledge spillover and audit efficiency. The essay makes use of survey data from a large sample of Swedish auditors and finds that the levels of communication and trust are positively associated with knowledge spillover. The result further suggests that the information gained from the provision of non-audit services can reduce auditors' effort (time) spent on different audit procedures, thereby increasing audit efficiency.

**Key words:** audit fees, non-audit fees, crisis, fair value measurement, banking industry, engagement partner, industry expertise, public company expertise, tenure, gender, non-audit services, knowledge spillover, audit efficiency



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## Appended papers

- I. **Alexeyeva, I.** & Svanström, T. (2015), “The impact of the global financial crisis on audit and non-audit fees: Evidence from Sweden”, *Managerial Auditing Journal*, Vol. 30, No. 4/5, pp. 302-323.
- II. **Alexeyeva, I.** & Mejia-Likosova, M. (2016), “The Impact of Fair Value Measurement on Audit Fees: Evidence from Financial Institutions in 24 European Countries”, *International Journal of Auditing*, Vol. 20, No. 3, pp. 255-266.
- III. **Alexeyeva, I.** (2017), “Individual auditor competencies and the pricing of audit services”, Manuscript.
- IV. **Alexeyeva, I.** & Svanström, T. (2017), “Knowledge Spillover and Audit Efficiency: Evidence from the Joint Provision of Audit and Non-Audit Services”, Manuscript (under review).



# **1. Introduction**

## **1.1 Background and research context**

This dissertation examines the factors affecting audit and non-audit fees and the effects of the joint provision of audit and non-audit services on auditing. In particular, the dissertation studies how audit/non-audit fees are affected by environmental and individual factors and how the provision of non-audit services by the incumbent auditor affects audit performance. This dissertation is motivated by external stakeholders' demand for a high informational value of companies' financial reports and is especially focused on the notion that audit fees can reduce information risk by reflecting the riskiness of companies. This work is also motivated by an ongoing debate about the costs and benefits associated with the provision of non-audit services to audit clients.

The mission of auditing is to ensure the accuracy of accounting information and to reduce information risk, both of which are essential for a more accurate resource allocation (DeFond & Zhang, 2014). From an agency perspective, the demand for auditing originates from an information asymmetry between the principal (i.e., owner) and agent (i.e., manager). There are two types of potential agency conflict, owner-manager and owner-debtholder. Agency relationship is described as a contract where the principal appoints the agent acting on the principal's behalf. Such a relationship involves the delegation of some decision-making authority to the agent. A problem could arise if both parties attempt to maximize their own utility but their interests do not really coincide. The information asymmetry between the two parties thus creates an opportunity for the agent to gain own interest contrary to the contract's principles. This moral hazard problem gives rise to agency costs (Jensen & Meckling, 1976). Auditing is viewed as a mean of mitigating these costs (Francis & Wilson, 1988). Auditors provide assurance of the integrity of the accounting information produced by the client's accounting technology and the accounting information is used for contractual relationships between the firm and its stakeholders (Craswell et. al., 1995). Studies further suggest that the degree of agency conflict and the resulting agency costs affect the demand for quality-differentiated audits (e.g., Francis & Wilson, 1988; DeFond, 1992). Research suggests that higher quality auditors are associated with a higher accuracy of audited financial statements (Titman &

Trueman, 1986) and provide a greater assurance of financial reporting quality (DeFond & Zhang, 2014).

Audit quality is not homogeneous and can vary across a continuum (Francis, 2011). Auditors specialize in supplying different levels of audit quality (DeAngelo, 1981). In this context, DeFond (1992) suggests that the only way a company can change audit quality is by changing auditor. The choice of higher quality auditors has been shown to have a signalling effect on investors (e.g., Titman & Trueman, 1986) and is associated with a lower cost of equity (Balvers et. al., 1988; Beatty, 1989) and lower borrowing costs (Mansi et. al., 2004; Causholli & Knechel, 2012). Arguably, higher quality auditors can provide greater assurance for shareholders/debtholders and create a greater value for companies in the form of more favourable capital market conditions.

In the literature, audit fees are regarded as an input in audit quality (e.g., Francis, 2011) in that they represent auditors' "total expected cost of providing assurance to stakeholders" that companies' financial statements follow International Financial Reporting Standards (IFRS) (Stanley, 2011, p. 160). In Simunic's (1980) the conceptual model for audit pricing (a detailed description of the model is presented in Chapter 3.1.1), audit fees are presented as a function of the audit effort and risk premium to cover possible future losses (e.g., sanctions, litigations, impaired reputation). The liability losses are arguably largely affected by client size, client complexity and client risk (Simunic, 1980). In the three or so decades of the investigation, the key factors affecting audit fees have been empirically confirmed by a large number of studies (e.g., Francis & Stokes, 1986; Ferguson et. al., 2003; Hoitash et. al., 2007; Stanley, 2011; Kim et. al., 2012).

Auditors can either reduce the risk of possible future losses by increasing their efforts or passing the risk on to the client in the form of fee premium (DeFond & Zhang, 2014). In both these cases audit fees will increase. The fact that auditors respond to a higher client risk and complexity by increasing audit effort has been extensively reported in the literature (e.g., Firth, 1997; Choi et. al., 2008; Cameran & Perotti, 2014). However, the evidence concerning risk premiums is mixed. Some studies have reported the presence of a risk premium due to an increased level of risk (Niemi, 2002; Kim & Fukukawa, 2013; Zhang & Huang, 2013), while others have failed to find any support at all (Simunic & Stein, 1996; Bell et. al., 2001). Since both factors (audit effort and risk premium) can result in

higher audit fees, it can sometimes be difficult to establish a real reason for fee increases (DeFond & Zhang, 2014).

In addition to the client size, complexity and risk, auditor characteristics also seem to affect audit fees. There is considerable evidence to show that fee premium is associated with Big 4 auditors (e.g., Francis & Stokes, 1986; Crasswell et. al., 1995; Johnson et. al., 1995). Palmrose (1986) attributes higher fees charged by Big 4 auditors to the fact that they spend more time on their clients, while DeAngelo (1981) explains higher fees by a greater cost of impaired reputation for Big 4 auditors. Therefore, higher audit fees charged by Big 4 auditors can depend on greater audit effort, risk premium or a combination of both these factors. There is also extensive evidence on higher audit quality provided by Big 4 auditors (e.g., Palmrose, 1988; Becker et. al., 1998; Francis & Yu, 2009). Another auditor characteristic associated with a fee premium and reported in many studies is an auditor's industry expertise (e.g., DeFond et. al. 2000; Mayhew & Wilkins 2003; Casterella et. al., 2004; Carson, 2009). Industry specialization allows auditors to meet unique client needs and create significant competitive advantage relative to other firms (Mayhew & Wilkins, 2003). Auditor industry specialists have been found to be positively related to audit quality (e.g., Owthoso et. al., 2002; Balsam et. al., 2003; Reichelt & Wang, 2010). Industry specialists are also often associated with fee premium (e.g., Craswell et. al, 1995; DeFond et. al., 2000; Francic et. al., 2005).

The provision of audit services by the auditor is commonly accompanied by the provision of a range of supporting (non-audit) services. It is argued that the joint provision of audit and non-audit services by an incumbent auditor is beneficial for audit quality, in that the auditor acquires a deeper knowledge about the client (knowledge spillover), which positively affects auditing (Simunic, 1984; Krishnan & Yu, 2011; Joe & Vandervelde, 2007; Svanström & Sundgren, 2012). However, other researchers have questioned the positive effect of such simultaneous provision and have instead pointed to the possible impairment of auditor independence (Swanger & Chewning, 2001; Teoh & Lim, 1996; Ebaid, 2011). Although, research has predominantly failed to provide evidence that non-audit services impair audit quality (DeFond & Zhang, 2014), consensus on the pros and cons of the joint provision has still not been reached.

Following on from the above discussion, audit fees and the joint provision of audit and non-audit services have been in focus for researchers for quite a long

time. However, the world is far from static and is constantly changing. Recently, a number of macroeconomic and regulatory events have had a major effect on audit practices. Moreover, new available data on audit partner characteristics has led to a stream of studies on whether partner-related attributes affect auditing. However, the effects of certain attributes is still unclear. These events evoke new challenges and the research community is expected to address the challenges in a timely fashion. This dissertation aims to address topical questions related to audit/non-audit fees and the joint provision of audit and non-audit services.

### ***Environmental factors***

The growing complexity of accounting standards and business transactions adds value to auditing (DeFond & Zhang, 2014). In the last decade auditing has undergone substantial global changes. A number of accounting and auditing scandals have triggered more stringent audit regulations (Köhler et. al., 2016). In the European Union, some of the more major changes affecting auditing included the application of International Financial Reporting Standards (IFRS) in 2005 and the financial crisis in 2008-2009. Changes in the environment can considerably affect the audit process in terms of the levels of complexity and risk. Increased levels of complexity and risk are often accompanied by an increased level of audit effort or risk premium, which is often reflected in audit fees (e.g., Firth, 1997; Choi et. al., 2008; Cameran & Perotti, 2014).

Environmental factors include the conditions and circumstances that surround an auditor when performing a task, although these are not related to either the individual or the task (Bonner, 1999). Environmental factors, such as an economic crisis, can seriously affect a company's business by increasing its levels of risk. Possible disruptions to the business could affect the company's solvency and increase the risk of bankruptcy. Changing economic conditions could affect the demand for audit and non-audit services in different ways. Increased concern on the part of investors and creditors can push auditors to perform more extensive analyses in their monitoring of companies (Choi et. al., 2008; Francis & Wang, 2008). The higher risk of litigation during macroeconomic fluctuations may force auditors to increase their efforts or risk premiums. On the other hand, an economic crisis could adversely affect companies' profitability. In such a case, they may be able to negotiate a lower price (Krishnan & Zhang, 2014) or reduce their consumption of services.

Another environmental factor affecting auditing is regulation. The introduction of International Financial Reporting Standards (IFRS) in Europe in 2005 is one of the most significant regulatory changes. The purpose of IFRS adaption is to improve the transparency and comparability of financial statements in order to increase the efficiency of the EU capital market (EC 2002). IFRS adoption entails considerable changes in auditor tasks. The implementation of standards requires effort, knowledge and technology. In addition, compliance with the new standards increases the risk of material misstatements, thereby increasing auditor litigation risk. Thus, additional audit effort can be required (De George et. al., 2013). This is why researchers' attention has been focused on the effects of IFRS on audit fees, which in turn provides insights into the impact of IFRS on the audit function (e.g., Kim et. al., 2012; De George et. al., 2013). Studies have found that IFRS adoption is accompanied by significantly higher audit fees (Kim et. al., 2012; De George et. al., 2013; Cameran & Perotti, 2014). However, research on IFRS adoption has also reported significant variations in adoption benefits (Daske et. al., 2008) and the quality of financial reporting (Bischof, 2009), thus suggesting that outcomes of IFRS application are affected by countries' institutional environments and can, therefore, differ across countries. Holthausen (2009) posits that the effect of the new standards alone may be poor relative to regulation, enforcement and other institutional features. Cross-country studies show that the effect of IFRS adoption on audit fees is determined by a country's institutional environment (Choi et. al., 2008; Kim et. al., 2012). Both these studies suggest that auditors increase their efforts in countries with stronger institutional settings due to potentially higher legal liability costs.

IFRS standards emphasize a more extensive application of fair value approach for the assessment of assets. The main purpose of this approach is to determine the item's market price at the measurement date that will provide a better approximation of its real value. The standard IFRS 7 Financial instruments, which include requirements for the disclosure of financial instruments, were implemented in 2007. In 2009, the amended version of the standard was applied. This required a detailed disclosure of fair value estimation using three levels of fair value hierarchy (described in Chapter 3.1.2). The increased application of the fair value approach and the uncertainty involved in the audit process have attracted the attention of researchers. It has been suggested that the amended version of IFRS 7 will require greater audit effort (e.g., Bell & Griffin, 2012).

## ***Individual factors***

Individual factors are related to an individual and include demographic characteristics (e.g., gender, age etc.), knowledge and skills. In recent years there has been great research interest in the effects of individual auditor attributes on audit outcomes (e.g., Ittonen & Peni, 2012; Gul et. al., 2013; Sundgren & Svanström, 2014). A group of audit partners is far from homogenous (Taylor, 2011). Audit partners are required to have many skills and abilities, such as technical knowledge, problem-solving abilities, business acumen, visibility, interpersonal skills and communication skills (Tan, 1999). Taylor (2011) suggests that by only advancing auditors with acceptable levels of these skills to partnerships, audit firms reduce the differences between partners' abilities. However, of the partners who meet the minimum standards for admission, "there is a range of abilities and some partners are simply better than others" (p. 253). A range of different audit partners will probably provide different levels of audit quality and, thus, be able to charge different levels of audit fees (Taylor, 2011). It may also be the case that more capable partners would need to put in less effort to achieve the required standard. If a competent auditor adjusts "effort" rather than "quality", the fees should not be affected. Prior research suggests that individual auditor characteristics can affect audit quality (Gul et. al., 2013; Ittonen et. al., 2013; Cahan & Sun, 2015; Sundgren & Svanström, 2014). Therefore, it is reasonable to expect a variation in audit fees related to individual partners. Several researchers have shown that various partner characteristics can affect audit fees (Zerni, 2012; Goodwin & Wu, 2014; Hardies et. al., 2015). The above studies indicate that audit partners have considerable impact on auditing, which makes the topic worthy of further investigation.

## ***Joint supply of audit and non-audit services***

The costs and benefits associated with the joint provision of audit and non-audit services has been a controversial topic in both the academic literature and the profession for many years. Despite extensive investigations, researchers cannot unequivocally posit that the joint provision of services impairs auditor independence (see the review by DeFond & Zhang, 2014; Ratzinger-Sakel & Schönberger, 2015). However, the concern of regulators is that auditors' objectivity is compromised when a client purchases considerable amounts of non-audit services. As a result, the EU Audit Reform came into force in June 2016 (for more detailed discussion see Chapter 4.3). This included new rules for the

provision of non-audit services that reduced the scope of potential non-audit service engagements. The ambition with the new rules was to enhance auditor independence and harmonize national regulations. The effects of the new regulation remain to be seen. Evidence relating to the effects of a similar reform in the US (SOX 2002) (Knechel & Sharma, 2012) indicates that the existence of knowledge spillover (measured as the association between higher non-audit fees and shorter report lag) can only be found prior the reform. Reductions in non-audit services have led to the disappearance of any beneficial effects of knowledge spillover on audit efficiency (Knechel & Sharma, 2012). Debates about the appropriateness of the new highly restrictive rules are continuing. Evidence of the impact of non-audit services on auditing would be a valuable input in this discussion.

## **1.2 Purpose of the dissertation and research questions**

The dissertation specifically focuses on fees for audit and non-audit services and the mechanism and effects of knowledge spillover in these services. The dissertation consists of four essays. The first and second essays address the effects of environmental factors on audit/non-audit fees. The third investigates the effect of individual (auditor-related) factors on audit pricing. The fourth essay examines the perceived effects of the joint provision of audit and non-audit services on auditing. The first three essays focus on audit fees. Audit fees represent an observable and measurable instrument which allow us to capture the effects of a wide range of different changes (i.e., in macroeconomic conditions, regulations) and variations (i.e., in auditor characteristics) in auditing. The fourth essay is based on a survey and captures auditors' perceptions of and attitudes towards the joint provision of services.

The Swedish setting provides a unique opportunity to study audit and non-audit fees. All listed companies disclose their expenditure on audit and non-audit services and the name of the auditor signing the audit report. The data for different audit partner characteristics (e.g., client portfolio, tenure etc.) are available in Sweden. Therefore, this setting allows us to study the effects of various factors (both company-related and auditor-related) on audit fees. Concerning non-audit fee studies, the strength of this setting is that up until June 2016 auditors in Sweden were allowed to provide most types of non-audit services to audit clients. Compared to many other countries (i.e., the UK, Germany, France, the US Australia, China and Japan) the regulation in Sweden was less restrictive.

Previous research suggests that the regulation for the provision of non-audit services may also have had an impact on audit services. For example, the ban on the provision of most non-audit services in the US in 2002 resulted in a large increase in audit fees and a decrease in non-audit fees (Chan et. al., 2012; Knechel & Sharma, 2012). The reason for this was that auditors incurred additional audit effort due to additional obligatory audit procedures and higher litigation risks (Ghosh & Pawlewicz, 2009; Knechel & Sharma, 2012). In the Swedish setting, where the provision of non-audit services is not constrained by the regulation, the demand for services may better reflect companies' needs and financial abilities.

The essays included in this dissertation are motivated in several ways. First, conceptually, audit fees are influenced by the amount of audit effort exerted on the evaluation of financial statements and risk premiums (i.e., compensation for the auditor's expected losses). In accordance with these engagement concerns, previous studies find that auditors' assessments of client risk play an important role in audit pricing (e.g., Firth, 1997; Stanley, 2011; Kim et. al., 2012). Given that recent events such as the financial crisis and amendment of IFRS 7 are expected to considerably affect the levels of client uncertainty and risk, it is important to investigate whether the increased risk will be reflected in audit fees.

The second motivation is that in their review of studies concerning IFRS adoption, Soderstrom and Sun (2007) especially encourage the investigation of the effects of IFRS "on other contracting parties such as banks" in order to better understand the consequences of harmonization (p. 686). Compared to other industry types, financial institutions have the greatest proportion of financial instruments. Therefore, studying IFRS 7 in financial institutions can better capture its effects. As a rule, financial institutions are excluded from audit fee studies due to their different asset structure. Thus, providing evidence on audit fees from financial institutions is very important for audit fee studies in general. In addition, previous cross-country studies indicate that a country's institutional environment can affect auditor behaviour and, as a consequence, audit fees. In particular, in their study of 15 countries, Choi et.al. (2008) find that auditors charge higher audit fees in countries with stronger legal settings. This result suggests that when faced with potentially higher legal liability costs, auditors have a greater incentive to increase their efforts. Examining the effects of IFRS adoption in 14 European countries, Kim et.al. (2012) find that audit effort linked to an increased audit complexity is greater in stronger regulated countries. This result suggests that severe consequences in the form of higher liability costs in

such countries motivate auditors to put more effort into performing the audit. However, evidence on the impact of institutional settings on audit fees is very limited. To fully understand the effects of IFRS 7 implementation it is important to investigate how the applied standard affects audit function in different institutional environments.

The motivation for the third research is the growing interest in the role of an individual auditor in auditing. A number of recent studies have documented a high variation in audit outcomes due to different auditors' characteristics (e.g., Carey & Simnett, 2006; Zerni, 2012; Gul et. al., 2013; Sundgren & Svanström, 2014). DeFond and Zhang (2014) point to the limited evidence on auditor competencies in driving audit quality and emphasize that auditor competency incorporates various aspects that are currently under-investigated. In this respect they highlight the necessity to focus on the traits of individual auditors. In general, very little research has been conducted on the possible effects of individual auditor competencies on audit outcomes and, in particular, on how auditor competencies affect audit pricing.

A fourth motivation is that debates about the joint provision of audit and non-audit services by incumbent auditor dictate the need for more research on the effects of non-audit services on auditing. Prior research (Knechel & Sharma, 2012; Knechel et. al., 2012; Walker & Hay, 2013) typically tests the association between non-audit fees and an audit efficiency variable (i.e., audit report lag). The researchers interpret a positive association as indirect evidence of knowledge spillover. However, these studies do not provide any insight into the mechanisms of knowledge spillover. Therefore, in order to provide more information to policymakers, it is important to use an approach that facilitates the acquisition of more knowledge about knowledge spillover and its effect on audit efficiency.

The purpose of the dissertation is to identify the factors that affect the pricing of audit and non-audit services and the knowledge spillover that occurs as a result of the joint provision of these services. More specifically, the dissertation investigates how the fees charged for auditing are influenced by environmental (i.e., the financial crisis and the new accounting standards) and internal (i.e., partner expertise) factors. Further, the dissertation studies the factors that are associated with knowledge spillover and audit efficiency. The main research questions answered in the individual essays are as follows:

- (1) How does the financial crisis affect the levels of fees charged for audit and non-audit services?
- (2) How does the estimation of fair-valued assets using three level hierarchy affect audit fees?
- (3) How do individual partner competencies affect audit pricing?
- (4) Which factors contribute to knowledge spillover and audit efficiency under jointly provided audit and non-audit services?

By addressing the first research question, insight into how companies' behaviour in the consumption of audit and non-audit services changes in response to changing macroeconomic conditions is provided. Prior literature has only focused on audit fees during a crisis and provided conflicting evidence. The analyses provided by this research can reflect companies' preferences for both audit and non-audit services, thereby providing a comprehensive picture of companies' expenditure during an economic downturn.

The second research question is related to auditor behaviour in response to an increase of task-related complexity and risk (caused by the changed regulation). An examination of audit fees makes it possible to gain insights into the effects of IFRS 7 on audit function. In addition, the analyses enhance our understanding of the impact of a country's legal environment on auditor behaviour.

By addressing the third research question, the understanding of the role played by an individual auditor in audit pricing can be advanced. The research shows that partner special competencies are associated with clients' perceived value (which is reflected in the fee premium). Further, the research highlights the gender aspect related to partner special expertise.

Answering the fourth research question extends our understanding of the effects of the joint provision of audit and non-audit services by highlighting the factors that affect perceived knowledge spillover and audit efficiency.

The research questions are addressed in the four essays included in this dissertation. The number of each question corresponds to the number of the essay, e.g., the first research question is addressed by the first essay etc. The contributions of the dissertation are highlighted in the next sub-chapter.

## 1.3 Contributions

This dissertation contributes to the audit literature by means of four separate yet interconnected essays. Taken together, the essays contribute to the existing literature in the following ways.

First, the evidence provided in the dissertation contributes to the understanding of how the auditing profession's pricing practices change in response to recent macroeconomic and regulatory shifts. According to the conceptual audit pricing model (Simunic, 1980), audit fees are determined by audit effort and risk premium. Therefore, changing the level of risk will likely result in greater audit effort or/and risk premium. The first and the second essays demonstrate how macroeconomic and regulatory shifts accompanied by increased levels of uncertainty and risk can influence audit price, thereby increasing our understanding of how audit fees reflect information about the external audit process.

Second, the dissertation contributes to a growing literature on international differences in auditing (the second essay). Prior research has analyzed the relation between fair value estimation and audit fees in Europe without taking international differences in institutional factors into consideration (Goncharov et. al., 2014). The result of the second essay suggests that a country's legal environment influences the evaluation of fair-valued assets. In this regard, this research complements the recent work of Kim et. al. (2012) which documents how differences in institutional factors produce variations in the effects of IFRS adoption on audit fees. To our knowledge, this is also the first study to investigate the impact of institutional setting on audit pricing in financial companies.

Third, the dissertation contributes to the growing literature (e.g., Cahan & Sun, 2015; Goodwin & Wu, 2014; Hardies et. al., 2015) on the role of individual auditor characteristics in audit pricing (the third essay). Evidence of the effects of partner special competencies on audit fees is, in general, very limited and mainly concerns industry and public company expertise (Zerni, 2012; Goodwin & Wu, 2014). The third essay extends previous studies in two ways. First, the study focuses on multiple partner competencies (i.e., industry expertise, public company expertise, client-specific expertise) and examines their impact on audit fees. Second, the study investigates whether the effect of partner competencies

on audit pricing is influenced by partner gender, especially as the gender aspect in relation to partner special competencies has not been previously investigated.

Fourth, the findings of the dissertation (the fourth essay) contribute to the literature on the joint provision of audit and non-audit services. The study is novel in that it is based on expert opinions from professional auditors regarding the impact of non-audit services on auditing. This kind of data provides deeper insights into the effects of joint provision by highlighting the essential factors that affect knowledge spillover and audit efficiency.

## **1.4 Structure of the dissertation**

The remainder of the dissertation is organized as follows. The theoretical background is presented in the second section. The third section reviews related theories. The fourth section includes a discussion about the effects of institutional setting. The methodological issues are presented in the fifth section. Some concluding remarks are offered in the sixth section. The second part presents all four essays included in the dissertation in their complete form.

## **2. The role of auditing**

*This chapter discusses some background theories and begins by describing where the demands for auditing in general and for quality-differentiated auditing in particular originate. Further the signalling mechanism behind auditor selection is explained. Finally, how auditors can create additional value for clients by highlighting the effects of auditor choice on capital market participants is discussed.*

### **2.1 Demand for auditing**

The demand for auditing stems from agency theory. Jensen and Meckling (1976) have comprehensively investigated the conflicting interests of management, owners and creditors that affect the equilibrium contractual form that defines the relationship between the agent (i.e., manager) and principal (i.e., shareholder). They point to the moral hazard problem that can occur due to information asymmetry and consider the agency costs arising from this as “unavoidable result of agency relationship” (Jensen & Meckling, 1976, p. 328). Jensen and Meckling (1976, p.308) further emphasize the importance of monitoring procedures “to limit the aberrant activities of the agent”. The auditor provides assurance to

shareholders that financial statements give a true and fair view in all material respects and, thereby, reduce the information asymmetry between management and shareholders. Therefore, auditing is considered as a means of mitigating agency costs (Francis & Wilson, 1988). Proceeding from the agency costs theory developed by Jensen and Meckling (1976), the researchers further investigate the factors that affect the demand for external auditing (Chow, 1982; Francis & Wilson, 1988, DeFond, 1992). Chow (1982) provides evidence of the importance of agency costs in the external auditing decision. The result of Francis and Wilson (1988) also suggests that greater agency costs require a higher quality of audit service. However, due to the weak support for this fact, they conclude that “the auditor selection seems to be more complex” (Francis & Wilson, 1988, p.680). DeFond (1992) investigates whether the extent of agency conflict determines the degree of auditing needed to ensure the credibility of the financial statement. He empirically investigates the suggestion that the extent of agency conflict is positively associated with the demand for audit quality. The result suggests that the change in the degree of agency conflict is associated with changes in audit quality, i.e., that the aggravations of agency conflict negatively affect the auditor’s ability to mitigate it. DeFond (1992) also finds that managers are inclined to change auditors anticipating some agency conflicts and reaction of others. Craswell et. al. (1995) emphasize that “the demand for auditing in general and for quality–differentiated auditing in particular” is the efficient resolution of costly agency problems. Several studies provide support for this fact by showing that companies with a greater need for monitoring due to larger agency costs tend to hire Big 4 auditors (DeFond, 1992; Francis & Krishnan, 1999; Niskanen et. al., 2011), since Big 4 auditors are associated with higher audit quality (Simon & Francis, 1988; Gist, 1992; Ferguson, 2003; Caneghem, 2010).

## **2.2 Effects of auditor choice**

Does the choice of auditor play a role? There are signalling theories behind the choice of auditor that are based on information asymmetry between two parties, e.g., shareholders and creditors (Titman & Trueman, 1986; Balvers et. al., 1988; Dharan, 1992). These theories originate from the signalling theories in economics of information (Spence, 1974, Rothschild & Stiglitz, 1976, Riley, 1979a), in which the concept of an informational equilibrium was developed (Riley, 1979a, Riley, 1979b, Cho & Kreps, 1987). Mansi et. al. (2004) posit that a high quality of auditing is crucial for creditors who use audited financial statements as grounds for asset-allocation decisions. Higher quality auditing implies a greater accuracy

of the information provided to investors. Therefore, the prevailing belief is that higher quality auditors provide true information about the firm (Titman & Trueman, 1986).

A number of studies have investigated the signalling effects of auditor selection on investors. Titman and Trueman (1986) developed an equilibrium model that explains an owner's motives behind the choice of an auditor prior to an initial public offering (IPO) and the signalling effect of this selection. The result suggests that an owner with more favourable information about the company can communicate this information to an investor through the employment of higher quality auditor. Intention to pay a higher price for auditing is related to the fact that the transferred information is likely to be favourable. In contrast, an owner with less favourable information anticipates a less favourable audit report and does not see any sense in paying more for an audit. Being aware of this informational signal, investors will interpret the information of higher quality auditor more favourably, which will positively affect the price of the new issue.

A body of research has investigated whether audit quality affects a company's cost of capital. Several studies have examined this issue in relation to a company's equity (Balvers et. al., 1988; Beatty, 1989). Balvers et. al. (1988) and Beatty (1989) have focused on the relationship between the choice of auditor and the underpricing (difference between the offering price and the market price) of an IPO. The general idea behind the tests is that a more accurate auditor will provide more precise information to uninformed investors. Reducing investor uncertainty is likely to contribute to less underpricing of an IPO. The results provide support for the fact that hiring a higher quality auditor is associated with a lower underpricing of an IPO. Another body of research has investigated the association between auditor choice and a company's cost of capital in the context of debt (Mansi et. al., 2004; Pittman & Fortin, 2004; Karjalainen, 2011; Causholli & Knechel, 2012). The above studies have shown that higher quality auditors can reduce borrowing costs due to the higher credibility of financial statements. It has also been documented that the effect of audit quality is stronger for younger firms. The results further suggest that the effect of auditor reputation on debt pricing can decline with a company's age, in that a creditor obtains more knowledge about a client and information asymmetry decreases (Pittman & Fortin, 2004; Causholli & Knechel, 2012).

Research suggests that the identity of the auditor gives a strong signal about audit quality. Big 4 auditors have been shown to be associated with high earnings quality (Francis et. al., 1999; Francis & Wang, 2008). Recent evidence (Aobdia et. al., 2015) suggests that the identity of an individual audit partner also acts as a signal to capital market participants. It is suggested that the value of this information complements the value provided by the identity of the audit firm. Higher quality audit partners have been found to be associated with a greater access to credit, a lower cost of debt, positive abnormal returns and lower initial public offering (IPO) underpricing.

The above studies thus suggest that the quality of auditors matters to capital market investors. Hiring a more qualified auditor seems to result in more favourable conditions for companies. The results jointly imply that higher quality auditors can create greater value for companies.

### **3. Theoretical framework**

#### **3.1 Audit fees as reflection of inputs in auditing**

*This chapter begins by providing a framework for audit pricing. The riskiness of a client determines the amount of resources (i.e., audit effort, knowledge and expertise) needed to provide reasonable assurance (an appropriate level of audit quality). The chapter first explains how auditors respond to client riskiness in terms of audit effort and how this affects audit fees. Further, how auditor characteristics are reflected in audit fees is discussed. The latter discussion begins with the impact of auditor size. The literature on the effects of auditor special expertise (i.e., industry specialization) on auditing is then reviewed. Finally, recent advances in the audit literature concerning the role of individual auditors is discussed.*

##### **3.1.1 Audit pricing**

A commonly used model for audit pricing was developed by Simunic (1980), who assumes that both the auditee and auditor are risk neutral and seek to maximize their own profits. Following Simunic, the following symbols are used in the formula:

$\alpha$  = the quantity of resources used by the auditee in internal accounting system

$q$  = the quantity of resources used by the auditor in performing the audit  
 $v$  = the per-unit cost of resources to the auditee  
 $c$  = the per-unit cost of resources to the auditor

Simunic proceeds from the fact that the auditee and auditor together are liable to the user of financial statements for losses resulting from imperfections in the audited financial statements. Based on this assumption, he suggests that benefits from the financial reporting system can be derived by both sides exclusively from the reduction of losses (e.g., costs of wrong resource-allocation) to users of financial statements. Denoting  $d$  as the present value of possible future losses from the period in which the financial statement is audited, the author suggests that the expected present value of possible future losses is a function of the financial reporting system:

$$E(\bar{d}) = f(\alpha, q)$$

Further, Simunic denotes  $\theta$  as the ex-post fraction of losses borne by the auditor (e.g., loss of reputation, possible litigation costs).

Based on the above assumptions, the minimum audit fee will be equal to the expected total cost (i.e., audit fees),  $E(\bar{C})$ :

$$E(\bar{C}) = cq + E(\bar{d} | \alpha, q) * E(\bar{\theta}),$$

where  $E(\bar{\theta})$  is the expected ex-post fraction of losses borne by the auditor.

The above model thus implies that the expected total audit cost consists of two elements: (i) the cost of the invested auditor's resources ( $cq$ ) and (ii) the potential costs arising from possible future losses ( $E(\bar{d} | \alpha, q) * E(\bar{\theta})$ ). Conceptually, audit fee is therefore a function of audit effort and the client's business risk borne by the auditor (risk premium). Further, Simunic identifies general factors that affect loss exposure. These factors have been proved and developed by other researchers in different audit settings. The main determinants that are shown to have a significant effect on audit fees are client's size, complexity, risk and size of auditor. The reason to include the auditee size (measured in total assets) in the model is that assets are closely associated with possible loss exposure, since "defective financial statements which result in a lawsuit frequently involve some deficiency in asset valuation" (Simunic, 1980, p.172). Further, it has been

suggested that loss exposure increases due to a company's larger decentralization and diversification. More complex companies require more time and effort from auditors, which is likely to result in greater audit fees (Simunic, 1980). The next factor to affect loss exposure is a company's risk. If an auditor suspects that the financial statement is materially misstated, he or she will apply more extensive audit procedures, which are expected to have a positive effect on audit fees (Gist, 1992; Craswell et. al., 1995; Fergusson et. al., 2003). After auditee size, complexity and risk, the identity of the auditor is shown to considerably affect audit price. Higher audit fees are generally associated with fee premiums charged by Big 4 (Francis & Stokes, 1986; Craswell et. al., 1995; Johnson et. al., 1995). The prevalent explanation for this is a higher level of audit quality when audits are performed by Big 4 auditors (Palmrose, 1988; Craswell et. al., 1995, Becker et. al, 1998; Francis & Yu, 2009).

The next sub-chapter highlights the situations that can affect a company's level of risk and complexity and discusses their possible effects on audit fees.

### **3.1.2 Effects of risks and complexity on audit fees**

#### *3.1.2.1 Greater audit effort or risk premium?*

Simunic's (1980) basic audit fee model, presented above, explains how auditor risk assessment is taken into account in the audit pricing decision: "The riskiness of a client is dependent on the complexity of transactions and accounting systems in place and can be influenced by management's incentives to produce reliable financial statements" (Knechel et. al., 2013). Auditors reduce risk "by improving or increasing the level of audit evidence collected", which means an increase in audit effort followed by an increase in audit fees (Charles et. al., 2010). Similarly, the audit pricing model (Simunic, 1980) suggests that auditors will charge higher fees for auditing when the risk level is higher. The model presents audit fee as a function of the audit effort and risk premium to cover possible future losses (e.g., sanctions, litigations, impaired reputation and financial costs). Auditors can respond to any risks they face either by increasing audit effort (which will increase audit fees) or by passing this risk on to the client (which will result in a fee premium) (DeFond & Zhang, 2014). In both cases the audit fees will be adjusted. The fact that auditors respond to a higher client-specific risk and complexity by increasing audit effort has been widely confirmed in the literature (Firth, 1997; Choi et. al., 2008; Francis & Wang, 2008; Ghosh & Pawlewicz, 2009; Cameran & Perotti, 2014). However, the number of studies investigating

risk premium is relatively low and they provide mixed evidence. Niemi (2002) found evidence of the existence of a risk premium for listed companies in Finland with a risk higher than average. Kim and Fukukawa (2013) reported that Japanese firms responded to clients' higher business risk by employing a risk premium in addition to increasing audit effort. Zhang and Huang (2013) reported a risk premium in China during the global financial crisis. However, other studies have found no evidence at all of the existence of risk premium (Simunic & Stein, 1996; Bell et. al., 2001).

### *3.1.2.2 Impact of environmental factors on audit fees*

Macroeconomic and regulatory changes can considerably affect company's level of risk and/or make the audit process more complex. This can result in an increase in audit effort and/or risk premium. Macroeconomic fluctuations represent a substantial challenge for a business and influence its risk levels. The changed risk level can, in turn, effect the amount of audit and consulting services required, which can be reflected in the level of fees charged for these services. The impact of previous economic crises on audit and non-audit fees is largely unknown. However, the most recent financial crisis has drawn attention to auditors' auditing and the fees charged (Sikka, 2009). Several studies have examined the effect of the crisis on audit fees (Krishnan & Zhang, 2014; Xu et. al., 2013; Zhang & Huang, 2013). Results from Australia (Xu et. al., 2013) and China (Zhang & Huang, 2013) show an increase in audit fees during the financial crisis, whereas data from the US (Krishnan & Zhang, 2014) reports a reduction in audit fees. Therefore, evidence relating to the impact of a financial crisis on audit fees is contradictory and more research is needed to investigate this issue.

Prior studies have investigated the impact of changes in the accounting regulation and suggest a significant impact on audit function followed by a significant impact on audit fees (Ghosh & Pawlewicz, 2009; Charles et. al., 2010; De George et. al., 2013). One of the important shifts in the auditing regulation is the Sarbanes-Oxley Act (SOX) in the US. Studies have examined the impact of SOX on audit fees (Ghosh & Pawlewicz, 2009; Charles et. al., 2010). Based on the assumption that some key SOX provisions involve considerable changes in audit complexity and risks in performing the audit, Ghosh and Pawlewicz (2009) hypothesize that an increase in audit effort and greater exposure to legal liability in the period following SOX will be reflected in audit fees. The result shows a higher level of fees in the period around SOX. Charles et. al. (2010) study whether

the association between financial reporting risk and audit fees changes in response to the events surrounding SOX and find that this association strengthened significantly during the period following SOX.

The adoption of the IFRS standards in many European countries (in 2005) represents another important regulatory and task-related change in accounting. The adoption of the new standards has motivated researchers to investigate its possible effect on auditing and, as a consequence, on audit fees (Kim et. al., 2012; De George et. al., 2013; Cameran & Perotti, 2014). The underlying assumption is that the adoption of IFRS would require effort, knowledge and technology related to the implementation, and additional effort in response to the higher risk of material misstatements appearing in financial statements compliant with the new standards (De George et. al., 2013). The results of these studies support the suggestion that there is an increase in audit fees in response to a greater exposure to audit complexity and risk.

IFRS standards focus on a wider application of fair value approach for the evaluation of assets and liabilities. The purpose with this approach is to estimate the market price, which will better reflect the real value of the estimated item. IFRS 7 *Financial instruments*, including requirements regarding the disclosure of financial instruments, was applied in 2007. In 2009, the standard was amended to include the requirement to provide a detailed disclosure of fair value estimation using three levels of fair value hierarchy. Level 1 inputs are based on quoted prices directly observable on the market. The verification of this level is not problematic for auditors. Level 2 implies the existence of similar assets and liabilities in markets that are not active. This level is associated with a certain degree of subjectivity due to the absence of directly observable prices. As this level involves a degree of uncertainty, verification is more challenging. Level 3 includes unobservable inputs and therefore implies the highest level of uncertainty due to the subjectivity involved in the process. This level is also subject to misspecification and error and is a very complicated task for auditors.

Uncertainty in the audit process represents a considerable challenge for auditors. An increasing usage of fair value approaches and uncertainties in the audit process have attracted the attention of researchers (Bell & Griffin, 2012; Christensen et. al., 2012; Bratten et. al., 2013). Bratten et. al. (2013) relate uncertainty to the evaluation of estimates using Level 2 and Level 3 inputs. However, the greatest concern is expressed for Level 3 inputs due to the absence

of observed prices (Bell & Griffin, 2012; Song et. al., 2010). It has been suggested that the progressively growing level of uncertainty will result in progressively growing audit effort which, in turn, will be reflected in audit fees. Two recent studies (Ettredge et. al., 2014; Goncharov et. al., 2014) have empirically studied the relationship between three levels of fair value measurement and audit fees. Using data from US bank holding companies for the years 2008-2011, Ettredge et. al. (2014) find a positive relationship between the proportions of fair-valued assets and audit fees. The result suggests an increase of audit effort in response to an increasing level of complexity. At the same time, Goncharov et. al. (2014) study of the European real estate companies has shown that audit fees were lower for firms with a greater proportion of fair-valued assets; a result that is attributed to the reduced level of effort and risk. As the findings are inconsistent, the effect of fair value on auditing is worth further investigation.

### **3.1.3 Auditor characteristics**

#### *3.1.3.1 Large auditors*

Auditor size, which is usually measured as affiliation to Big 4 firms, has been widely associated in the literature with a higher quality audit (Simon & Francis, 1988; Gist, 1992; Ferguson, 2003; Caneghem, 2010; Chan & Wu, 2011).

This higher quality is attributed to the stronger incentives of Big 4 auditors, arising largely from reputation and litigation concerns. DeAngelo (1981, p. 197) suggests that “the larger the auditor as measured by the number of current clients and the smaller the client as a fraction of the auditor's total quasi-rents, the less incentive the auditor has to behave opportunistically, and the higher the perceived quality of the audit”. Impaired reputation thus represents a greater concern in larger audit firms with more clients than in smaller audit firms. Therefore, the motivation to provide higher quality audits seems to be greater in large audit firms. A study of 420 cases of audit-related litigation against both Big 4 and large non-Big 4 firms from 1960-1985 indicates that Big 4 firms have lower litigation activities. This finding suggests a higher quality amongst larger audit firms (Palmrose, 1988, p. 72).

As a rule, higher audit quality is consistent with a fee premium to Big 4 auditors. Researchers provide different explanations for this. Francis (1984) suggests that “the effect of audit firm size on audit prices is a complex function of competition in the market for audit services, product differentiation, and scale economics to

large firms” (p.134). Palmrose (1986) posits that Big 4 firms “reflect greater productive activities”, since they spend more time on clients’ audits (p.108). Product differentiation is another common explanation for Big 4 price premium (Gist, 1992; Lee, 1996; Simon, 1997). Chan et. al. (1993) suggest that the product differentiation of Big 4 firms is maintained by high quality employees “who can command high salaries which are necessarily reflected in audit fees” (p. 781). Higher audit quality and fees are also attributed to the fact that larger firms spend more resources on training their employees (Firth, 1985, p.28).

### *3.1.3.2 Industry specialization*

Auditor industry specialization is also used as an input in audit quality, in that specialist auditors are expected to be more competent and have stronger reputation concerns (DeFond & Zhang, 2014). Audit firms use industry specialization as a differentiation strategy that allows them to meet a broader spectrum of client needs and create a substantial competitive advantage relative to other audit firms (Mayhew & Wilkins, 2003; Casterella et. al., 2004). Industry specific knowledge and expertise improve the effectiveness and efficiency of audit processes (Solomon et. al., 1999; Owhoso et. al., 2002; Moroney, 2007). There is also evidence to suggest that industry specialists are associated with higher quality audits (e.g., Balsam et. al., 2003; Reichelt & Wang, 2010).

Mayhew and Wilkins (2003) summarize the different effects of industry specialization on audit firm costs. On the one hand, a specialist firm could increase its market share in a particular industry due to clients’ demands for specialized services. The firm’s employees could therefore develop industry-specific knowledge and expertise. An increased number of clients could reduce a specialist firm’s costs for two reasons. First, by serving more clients within an industry, a firm becomes better “at identifying and addressing industry-specific audit issues”. As a result, a specialist firm becomes more efficient at performing audits. Second, such a firm can spread industry-specific staff training costs over more clients. In other words, the staff’s training costs allocated to each client will be lower if the firm serves more clients within a particular industry. On the other hand, an industry specialist audit firm has a propensity to create greater value for its clients by reducing client effort (e.g., less time is required for the explanation of industry-specific issues), thereby increasing client satisfaction and providing a higher quality audit. This also creates an opportunity to earn economic rents.

From the above discussion it follows that industry specialization can have two potential effects on audit fees: lower fees due to economies of scales or higher fees due to a differentiation strategy. The association between auditor industry specialization and audit fees has been studied in different countries and at different levels (i.e., city-level, national-level and global-level). The majority of studies have reported that audit fee premium is associated with auditor industry specialization (e.g., Craswell et. al., 1995; DeFond et. al., 2000; Ferguson et. al., 2003; Carson, 2009). In recent years the level of analysis on industry specialization has shifted to a partner-level. Two published studies have examined the possible effects of partner-level industry expertise on audit fees. Zerni (2012) uses a set of public Swedish companies and focuses entirely on a partner-level of analysis. He finds that a statistically significant audit fee premium is earned by partner specialists. The explanation he provides is that partner industry specialization is part of partner deep expertise that is not transferable across offices and partners within an audit firm, but is instead incorporated in partners' private human capital. Goodwin and Wu (2014) study Australian companies and focus on firm, office and partner specific levels of analysis. The result indicates that the importance of office-level industry specialization disappears when individual-level expertise is controlled for. Goodwin and Wu conclude that an industry specialization premium is primarily an audit partner phenomenon and is probably not transferable across partners in an office. The results of both studies indicate the importance of partner-related industry expertise. However, the evidence is scanty and further research could shed more light on this interesting phenomenon.

### *3.1.3.3 Role of individual auditors*

As the above discussion indicates, the audit fee literature provides solid evidence of the impact of large auditors (i.e., Big 4) and audit firm industry specialization on audit fees, which reflects well-established quality differences. A more recent interest in the role of an individual auditor in auditing has resulted in a number of studies suggesting that the variation in individual auditor attributes has a significant impact on audit quality. The commonly provided reason in the literature is that auditors' individual attributes differently affect their judgements and decisions, thus resulting in a variation in audit outcomes (e.g., Taylor, 2011; Zerni, 2012; Gul et. al., 2013). Using a sample of 3726 individual auditors in China, Gul et. al. (2013) study the possible effects of auditors' individual characteristics, such as education, Big 4 audit firm experience, rank in the audit

firm and political affiliation, on audit quality. Audit quality is measured by multiple measures, including audit reports, abnormal accruals, below-the-line items and the presence of a small profit. Gul et. al. estimate the magnitude and variation of individual auditor effects on audit quality and find that individual auditor fixed effects are statistically significant for all quality proxies. The researchers conclude that there are systematic differences between audit partners in terms of audit quality. Sundgren and Svanström (2014) have investigated how Swedish audit partners' workload (measured as a number of audit assignments) and their age are associated with their propensity to issue a going-concern opinion. Here, they find a negative association, thus suggesting that "auditing too many clients negatively influences audit quality" (Sundgren & Svanström, 2014, p.531). They also report a negative association between partner age and the likelihood of issuing a going-concern opinion. The researchers provide two alternative explanations for the latter finding. Given that going-concern reporting has been applied relatively recently in Sweden, older partners may be less motivated to put in much effort into learning the standard. Another explanation suggests a greater indulgence of older partners with their clients. In their study of a possible effect of partner gender on audit quality, Ittonen et. al. (2013) find that female partners are associated with smaller abnormal accruals, thereby implying higher audit quality. The above evidence jointly points to the fact that there is significant variation in the effects provided by audit partners on audit quality. Therefore, it is reasonable to suggest that the variation in audit fees is related to individual partners.

Studying Australian public companies, Taylor (2011) reports significant variations in the fee levels of different audit partners and concludes that "clients do not treat partners as interchangeable, but rather they value some partners more highly than others" (Taylor, 2011, p. 270). A number of published studies have focused on the association between different audit partner characteristics and audit fees. Two studies have examined the effect of gender. Ittonen and Peni (2012) investigate a sample of companies from Finland, Denmark and Sweden and find significantly higher audit fees for female auditors. The finding is attributed to possible differences in risk tolerance between male and female auditors, which may affect audit procedures in terms of the amount of audit effort or/and risk premium. The explanation provided is that female auditors are associated with more meticulous planning and a higher risk aversion. Hardies et. al. (2015) analyze a set of Belgian companies and report similar results. They attribute increased audit fees to the higher (perceived) audit quality associated

with female auditors. Taken together, both findings confirm the existence of a fee premium associated with female auditors. Cahan and Sun (2015) have analyzed the effects of partner experience on audit quality and audit fees using Chinese data and find that more experienced auditors charge higher audit fees and are associated with higher quality audits. Cahan and Sun further suggest that audit quality increases with experience. In addition, they report that audit fee premium is associated with a higher level of partner education. Several studies have shown that partner special competencies are valued by clients. Bedard and Johnston (2010) have investigated the differences in audit fees associated with partner tenure in the US. They report a positive association of long-tenured partners with audit price, thus suggesting that partners with more in-depth client knowledge can either provide the same or a higher level of audit quality, which is valued by clients. Using a set of Swedish data, Zerni (2012) reports that auditors' industry specialization and specialization in large public companies are significantly and positively related to audit fees. Using data from Australian companies, Goodwin and Wu (2014) find a significant risk premium associated with industry knowledge. Both studies suggest the importance of partner-related human capital in audit pricing.

Although the number of studies on the association between individual auditor characteristics and audit fees is growing, as yet the topic is insufficiently explored. In a recent review, DeFond and Zhang (2014) emphasize the necessity for more research on auditor competencies, because since there are indications that they improve audit quality. They also encourage focusing on other dimensions of auditor competencies that are currently under-investigated. In this regard, it seems to be more important to focus on audit partners' characteristics related to their competency.

### **3.2 Simultaneous provision of audit and non-audit services**

*This chapter discusses aspects related to the joint provision of services that is currently in the research focus. Developments pertaining to the knowledge spillover phenomenon and its beneficial effects on auditing are also highlighted.*

The joint provision of audit and non-audit services has received much attention in the literature. Two aspects of the simultaneous provision of services have been in focus for researchers, namely the independence issue and knowledge spillover between the two services.

A large stream of research has investigated whether the provision of non-audit services to audit clients could threaten auditor independence (e.g., Gul, 1987; Lowe et. al., 1999; Jenkins & Krawczyk, 2002; Basioudis et. al., 2008; Colbert et. al. 2008; Callaghan et. al., 2009; Church & Zhang, 2011). The economic bonding (DeAngelo, 1981) between the auditor and the client has often been used as an argument against the joint provision of services. It has been speculated that financial dependence on the client could prevent an auditor from reporting possible problems for fear of interrupting the relationship with the client (DeFond & Zhang, 2014). In their review of archival auditing studies, DeFond and Zhang (2014) conclude that using various outputs of audit process, studies have predominantly failed to provide support for the fact that the provision of non-audit services to audit client impairs auditor independence. Auditors have two incentives to remain independent: reputational concerns and the risk of litigation. These incentives are showed to be stronger than any possible benefits to auditors of compromising their independence (DeFond et. al., 2002; Hope & Langli, 2010).

The attention of researchers has also been directed towards another aspect of the joint provision – synergy effect. Simunic (1984) suggested that the simultaneous provision of audit and non-audit services created knowledge spillover between two services and that the synergy effect reduced the time spent on auditing and could result in lower audit costs. Therefore, Simunic expected to find a negative association between audit and non-audit services. However, contrary to expectations, the finding revealed a positive correlation between the services. This result implies that clients purchasing more non-audit services from the incumbent auditor pay more for these services. Simunic attributed the finding to the degree of (weak) competition on the audit market, which made it possible for the auditor to retain any cost savings. Numerous studies have since confirmed a positive correlation between the two services (e.g., Davis et. al., 1993; Barkess & Simnett, 1994; Ezzamel et. al., 1996; Antle et. al., 2006; Chan et. al., 2012). However, a few studies have not found any relationship (e.g., Abdel-khalik, 1990; O’Keefe et. al., 1994); one study even reported a negative relationship between the services (Krishnan & Yu, 2010). Nevertheless, the vast majority of studies have found significantly higher audit fees for clients purchasing non-audit services from the same auditor. Thus, even if non-audit services enhance audit efficiency, the possible fee reduction is retained by auditors.

The literature suggests that there are positive effects of knowledge spillover on audit quality from the joint provision of audit and non-audit services (e.g., Simunic, 1984; Kinney et. al., 2004; Antle et. al., 2006). In their work, Antle et. al. (2006) show that non-audit fees increase audit quality through decreased abnormal accruals. The researchers attribute this result to the “productive effects of non-audit services”. Other studies also suggest that there is a beneficial effect of tax-related services on audit quality (Huang et. al., 2007; Robinson, 2008; Gleason & Mills, 2011; Paterson & Valencia, 2011).

Although positive effects of knowledge spillover on audit quality have been suggested in the literature, very few insights into this process are forthcoming. Svanström and Sundgren (2012) have investigated factors affecting companies’ choice of purchasing non-audit services and pointed to the two main forms that knowledge spillover can take. First, by conducting the mandatory audit, an auditor obtains knowledge about a company’s business that can then reduce the net cost of non-audit services. If the cost reduction can be passed on to the client, at least partially, the client will be more inclined to purchase non-audit services from the same supplier, rather than an alternative source. Second, a client may benefit from purchasing non-audit services from the same auditor. Since it is inherently difficult to separate high and low quality suppliers. Here, a repeated purchase resulting in good reputation effects can help in the selection of higher quality auditors. This in turn can lead to lower search costs. Svanström and Sundgren (2012, p.73) have shown that the length of the relationship between auditors and clients affects knowledge spillover in that knowledge spillover “accumulates over time” as by time an auditor provides non-audit services more cost-efficiently.

Several studies (Knechel & Sharma, 2012; Knechel et. al., 2012; Walker & Hay, 2013) have empirically studied the effect of the provision of non-audit services on audit efficiency, measured as the time required to complete audit report (report lag). Knechel and Sharma (2012) studied US companies prior and after SOX and found that greater fees for non-audit services were associated with shorter audit report lag in the prior-SOX period. A substantial reduction in non-audit services is associated with longer report lag, which suggests that through the joint provision of audit and non-audit services, an auditor acquires client-specific knowledge (knowledge spillover), which yields audit efficiency. The ban on the provision of most types of non-audit services has been shown to result in a loss of synergy between the two services. Knechel et. al. (2012) have studied the effect

of the joint provision of services on audit efficiency using data from New Zealand. Compared to the US there are few restrictions on the provision of non-audit services to audit clients. The result from this institutional setting shows that higher non-audit fees are associated with shorter report lag. As in the previous study, the researchers attribute the result to the existence of knowledge spillover between audit and non-audit services. Walker and Hay (2013) have also investigated a similar association in New Zealand and show that higher audit fees are associated with shorter report lag in the following year (not in the year in which non-audit services are provided). They also explain the finding in terms of knowledge spillover, but suggest that this has a delayed effect.

The above discussion suggests that the joint provision of services has a beneficial impact on auditing. Archival studies (Knechel & Sharma, 2012; Knechel et. al., 2012; Walker & Hay, 2013) provide consistent evidence of the positive effect of non-audit services on audit efficiency (measured as audit report lag). However, due to data limitations in previous archival research, the mechanisms behind knowledge spillover are largely obscure.

## **4. Effect of institutions on audit and non-audit services**

*This chapter discusses the most essential institutional changes aimed at improving audit quality. How a country's institutional environment can affect the quality of financial reporting and audit fees is highlighted. Finally, the impact of the regulation on the simultaneous provision of audit and non-audit services is considered.*

### **4.1 Substantial changes in audit legislation**

The institutional audit environment includes a set of institutions that regulate accounting and auditing practices and a country's legal system and determine auditors' responsibilities. Auditing is heavily regulated when it comes to the demand, supply and production of audit services. There is also risk of litigation against an auditor in case of improper, illegal, or negligent professional activity. In the last decade, accounting scandals and the recent financial crisis have led to a large increase in audit regulations globally that are intended to improve audit quality. The most essential regulatory changes are the Sarbanes-Oxley Act of 2002 (SOX) in the US, the implementation of the European Union's Statutory

Audit Directive 2006/43/EC and the latest European audit legislation of 2014 (Köhler et. al., 2016).

SOX has made fundamental changes in the institutional arrangements that define auditing in the US. More specifically, SOX has transformed auditing “from a self-regulated industry that is *overseen* by a government agency, the U.S. Securities and Exchange Commission (SEC), to an industry that is now directly *controlled* by a quasi-governmental agency, the Public Company Accounting Oversight Board (PCAOB)” (DeFond & Francis, 2005, p. 6). SOX has also made a number of changes in engagement-specific characteristics in order to improve auditor independence. Different aspects of SOX have attracted the attention of researchers (e.g., Cohen et. al., 2008; Hoitash & Hoitash, 2009; Chan et. al., 2012). The most controversial change was the banning of most types of non-audit services provided by the incumbent auditor (DeFond & Francis, 2005) (the effects of this change are discussed later in the chapter).

The implementation of the Statutory Audit Directive 2006/43/EC was a step toward the harmonization of statutory audit requirements. The Directive contains the requirement that a statutory auditor should be independent and stipulates that Member States should ensure that an auditor (i.e., an audit partner or an audit firm) does not perform a statutory audit if there is any direct or indirect relationship, including the provision of non-audit services, between the auditor and the client from which an objective third party could conclude that the auditor’s independence is compromised (Article 22). The Directive also points out that the level and/or the structure of fees received from a client could threaten auditor independence and requires that Member States should ensure that audit fees are not influenced or determined by the provision of non-audit services to the audit client (Article 25). Furthermore, the Statutory Audit Directive includes the requirement for listed companies to have an audit committee, which among other things is expected to review and monitor the independence of the auditor and, in particular, the provision of additional services to the client (Article 41). In addition to the above measures, the Directive mandates a regular rotation (within a maximum period of seven years) of key audit partners (Article 42).

The Statutory Audit Directive 2006/43/EC was passed by the EU legislature on 17<sup>th</sup> May 2006 and was followed by a number of implementing directives in March 2008. Member States were required to finalize the transposition of the Statutory Audit Directive into national law between the fiscal years of 2008 and

2010. However, the implementation of the Directive allowed some flexibility to Member States to add national requirements. The Swedish Government conducted an investigation in order to revise existing national regulations under the new directive. The Government Bill 2008/09: 135 provides suggestions as to how the Statutory Audit Directive Audit should be implemented in Sweden. Article 22 and Article 25 (discussed above) include the rules concerning audit and non-audit fees. In particular, Article 22.2 contains a principle-based analysis model. The Swedish Auditors Act contains rules on auditors' independence, of which the central rule is the so-called analysis model (Section 21), which requires an auditor to reconsider a business assignment if there is the possibility of a lack or loss of confidence in the auditor's independence.

The result of the investigation indicated that the Swedish analysis model was in general consistent with the Directive's analysis model (Government Bill 2008/09: 135, p.78). Article 25 lacks an explicit equivalent in Swedish law. However, after the investigation, the Swedish Government concluded that the requirements of Article 25 were covered by the existing national rules on auditor independence in the Swedish Auditors Act. The government therefore considered that there was no need for any explicit regulation of audit fees (Government Bill 2008/09: 135, p.85). The scoreboard on the transposition of the Statutory Audit Directive (2010) indicated that the full transposition of the Statutory Audit Directive was completed in Sweden by September 2010. As the national rules concerning the provision of non-audit services were generally consistent with the Directive's requirements, Swedish auditors did not appear to be unduly affected and were not prohibited from providing most types of non-audit services after the transposition of the Directive. However, the issue of the suitability of the current audit legislation was raised soon afterwards.

The financial crisis of 2008-2009 raised doubts in the appropriateness of legislative auditing framework. The European Commission (EC) expressed concern about the suitability and adequacy of the current auditing legislation. In 2010, it issued a Green Paper (2010) to encourage a debate on the potential enhancement of auditing in order to contribute to financial stability. The EC highlighted that the main function of audits was to re-establish trust and market confidence and thereby enhance investor protection and reduce capital costs. The publication of the Green Paper initiated public debates, which finally resulted in Directive 2014/56/EU, which amended Directive 2006/43/EC, on the statutory audits of annual accounts, and the EU Regulation on specific requirements

regarding the statutory audit of public-interest entities No 537/2014. The new regulatory framework is intended to improve audit quality in the EU and contains enhancing measures for auditor independence, the informative value of audit reports and audit supervision (Köhler et. al., 2016). In 2016, the Committee of European Auditing Oversight Bodies (CEAOB) was created with a view to improving cooperation between European national audit authorities in the EU. The CEAOB facilitates supervisory convergence and thereby contributes to the proper application of EU audit legislation (EC).

In Sweden, Government Bill 2015/16:162, based on Directive 2014/56 and EU Regulation No 537/2014, was presented to the Swedish Parliament on 7<sup>th</sup> April 2016. The Bill included suggestions for changes in the current Swedish legislation in accordance with the new EU regulatory framework. A number of proposals concerned the Swedish Auditors Act. Among other things, Government Bill 2015/16:162 (p. 10) suggested designating the current Section 21 (mentioned above) to Section 21a and including a new section (Section 21b) containing the restrictive rules on the provision of most types of non-audit services. The Committee on Civil Affairs 2015/16: CU21 endorsed the government's draft law and the new legislation was enforced on 17<sup>th</sup> June 2016. The Swedish Parliament had voted on the implementation of the new rules based on EU audit reform on 18<sup>th</sup> May 2016.

## **4.2 Role of country-specific institutional environments**

In European countries, institutions include the International Accounting Standards Board, which issues international financial accounting and reporting standards, and the International Auditing and Assurance Standards Board, which issues international auditing and assurance standards. Besides this, each country has its own institutions for regulating auditing. However, previous cross-country studies suggest that the quality of financial reporting is largely affected by countries' institutional environments (Arce & Mora, 2002; Daske et. al., 2008; Francis & Wang, 2008; Christensen et. al., 2013). Research shows that earnings quality is positively associated with the degree of investor protection (Ball et. al., 2000; Leuz et. al., 2003; Francis & Wang, 2008). The main reason for this is that the legal environment itself can affect managers' and auditors' incentives differently, depending on the varying consequences for undesirable behaviour. More stringent enforcement reduces corporate insiders' incentives to manage

earnings (Ball et. al., 2000, Leuz et. al., 2003) and auditors' incentives to go along with earnings management behaviour (Francis & Wang, 2008).

Prior to the adoption of IFRS in Europe, researchers suggested that the interpretation and application of the standards might differ between countries with different institutional settings (Schipper, 2005; Whittington, 2005). Several studies have provided cross-country estimations of the effects of first-time IFRS adoption on reporting quality and audit fees and reported significant variation across countries (Choi et. al., 2008; Bischof, 2009; Kim et. al., 2012). The findings highlight an important role of enforcement activities for financial reporting quality.

Motivated by the fact that country-specific institutional settings can affect the incentives and behaviour of market actors, several studies have examined the effect of a country's institutional setting on auditors' behaviour and audit fees. Using an international sample from 15 countries, Choi et. al. (2008) find that audit fees increase steadily with the strength of a country's legal regime. The explanation they provide is that the strength of a country's legal environment increases the possibility for auditors to bear legal liability in case of failure and, as a result, increases their potential legal liability costs. This motivates auditors to increase their efforts while performing the audit. Focusing on the effect of IFRS adoption on audit fees, Kim et. al. (2012) investigate a sample of 14 countries in the EU and show a general increase in audit fees due to the increased complexity caused by IFRS adoption. Similar to the first study, the effect on audit fees is positively related to the strength of a legal regime. The authors conclude that auditors exert higher audit effort in a stronger legal regime due to higher expected legal liability costs.

Evidence relating to the effect of institutional setting on audit fees is, in general, very limited. IFRS emphasizes a greater usage of the fair value approach. The amended IFRS 7 requires the disclosure of fair value estimation using three levels of hierarchy (this is discussed in more detail in Chapter 3.1.2.2). Level 2 and Level 3 imply considerable complications in auditors' tasks, which are likely to result in an increasing amount of audit effort. In this regard, it is particularly interesting to study whether auditors' responses (measured by the level of audit fees) to the increasing level of complexity (Level 2 and Level 3) is similar in different institutional settings. The effect of fair value measurement on audit fees in different institutional settings is largely unknown.

### **4.3 The impact of regulation on the joint provision of audit and non-audit services**

Major US scandals, such as Enron and WorldCom, cast a shadow on the independence of incumbent auditors providing significant amounts of non-audit services to their clients. Undermined trust in auditors resulted in the introduction of SOX 2002 by the US Congress. One of SOX's main objectives was the improvement of auditor independence. Section 201 of SOX especially imposes restrictions on the provision of most non-audit services by incumbent auditors. This measure, aimed at improving the performance of the audit, will reduce the scope of auditor knowledge gained from the provision of non-audit services and could in fact result in lower audit quality or a higher cost of audit services (Knechel & Sharma, 2012). The possible effects of Section 201 of SOX have been animatedly discussed by practitioners and academics. Some studies (Ghosh & Pawlewicz, 2009; Chan et. al., 2012; Knechel & Sharma, 2012) have empirically investigated the effects of the restrictions imposed by SOX on audit fees and show that they resulted in a large increase in audit fees and a reduction in non-audit fees. As the result of the ban, auditors incurred additional audit efforts due to additional obligatory audit procedures and higher litigation risks (Ghosh & Pawlewicz, 2009; Knechel & Sharma, 2012). This evidence indicates that the regulatory environment has a strong effect on auditors' behaviour. Discussions about the joint provision of non-audit services are still ongoing.

The bankruptcy of Lehman Brothers during the financial crisis caused considerable concern about the credibility of audited financial statements. In an attempt to restore confidence, a Green Paper (2010) was issued to highlight the necessity of reform measures in the EU. One of the discussed topics was the scope of non-audit services provided by the incumbent auditor. A public consultation process culminated in the EU Regulation on specific requirements for statutory audits of public-interest entities (Regulation (EU) No 537/2014). The Regulation includes new rules for the provision of non-audit services. Fees related to non-audit services should not amount to more than 70 % of the average fees paid during the last three following years for statutory audits (Article 4). Moreover, the Regulation introduces a blacklist of prohibited non-audit services (Article 5 (1)). Member States are allowed to prohibit services other than those listed in a blacklist if they regarded as threatening auditor independence (Article 5(2)). The rules of the Regulation supersede existing national rules, which means that

possibilities to change the scope of non-audit services provided by incumbent auditors will be very limited. The Regulation took effect in June 2016.

Will the new rules be effective? How will they affect the quality of audits? Ratzinger-Sakel and Schönberger (2015) have analyzed the potential impact of these measures by examining fee levels in France, Germany and the UK, which represent three very different institutional settings concerning the provision of non-audit services to audit clients. They also discuss the potential effects of the new measures in the light of existing evidence on the joint provision of services. By analyzing descriptive data relating to current fee levels, Ratzinger-Sakel and Schönberger find that the studied countries have already applied restrictive measures on most types of non-audit services included in the blacklist. However, disclosed information about the types of non-audit services provided vary considerably. They conclude that the country-specific regulations and definitions of non-audit service categories do not contribute to a common understanding of the allocation of fees for different non-audit service categories. On the one hand, the Regulation could contribute to a harmonization of national regulations, which would be beneficial for the European market and increase transparency. On the other hand, it replaces existing national rules that have been developed over time and include country-specific features: “A supranational blacklist which overwrites existing professional and legal national guidelines may be overly restrictive and inadequate” (Ratzinger-Sakel & Schönberger, 2015, p. 75).

Ratzinger-Sakel and Schönberger (2015) further highlight the “fundamental potential conflict” between auditor independence and audit quality. They point out that despite extensive evidence on the provision of non-audit services, the findings concerning auditor independence are inconclusive and “do not support an independence-decreasing effect of non-audit services” (p. 72). The researchers also emphasize that non-audit services can provide knowledge spillover that beneficially affects audit quality. They further suggest that “drastic measures to secure independence in appearance may affect beneficiary effects, for example, knowledge spillovers” (p. 74). Ratzinger-Sakel and Schönberger suggest that auditor independence could be secured at the expense of spillover effects from certain types of non-audit services and conclude that “it remains unclear whether the reform of auditor-provided non-audit services is necessary and designed in an appropriate manner” (p. 79).

The above discussion indicates that the conflict between “auditor independence” and “audit quality” is not resolved. Therefore, evidence from different institutional settings is important and could add to the debate about the advantages and disadvantages of the joint provision of audit and non-audit services.

The Swedish Parliament voted on the implementation of the EU audit reform on 18<sup>th</sup> May 2016. The new rules were then implemented on 17<sup>th</sup> June 2016 (FAR, 2016). Up until that date, the regulatory environment in Sweden was traditionally less restrictive than that in many other countries, such as the US, Australia, China, Japan and Mexico, and also compared to some European countries, such as United Kingdom, Germany and France. Auditors were, in general, allowed to provide many different types of non-audit services to audit clients. The new rules have now changed the practices developed in recent years.

## **5 Research design**

### **5.1 Methodological consideration**

The objective of the dissertation is to investigate how audit/non-audit fees are affected by environmental (i.e., the financial crisis and the amended standard) and individual factors (i.e., partner special competences). Further, the objective is to highlight the factors that are associated with knowledge spillover and audit efficiency. The first, second and third research questions concern the impact of macroeconomic, regulatory and auditor-related factors on audit fees. An important advantage of audit fees is that they are an observable and measurable instrument that can capture the slightest changes in the factors affecting auditing. The disclosure of audit fees in Sweden and in other European countries provides an opportunity to investigate the above mentioned issues.

In order to address the first, second and third research questions, audit fees are associated with a set of predictive variables, including experimental variables and control variables. I begin by outlining the association between audit fees and their strongest predictor, client size; evidence that has initially been provided by Simunic (Simunic, 1980). The explanation for this relationship is that a larger auditee size requires more work from an auditor to monitor the company. However, the relationship between client size and audit fees is not linear, since

auditors can achieve certain economies of scale as the client size increases and also that audit fees will increase at a lower rate (Simunic, 1980, Gerrald et. al., 1994). For this reason, the natural logarithm of audit/non-audit fees as the dependent variable and the natural logarithm of client size as the main predictor variable have been used in the majority of audit fee research (see the review of audit fee studies by Hay et.al., 2006). The logarithmic form has been adopted for the standard audit fee model. Hay et al. (2006, p. 146) present the typical audit fee model as follows:

$$\ln f_i = b_0 + b_1 \ln A_i + \sum b_k g_{ik} + \sum b_e g_{ie} + e_i$$

where  $\ln f_i$  is the natural log of the audit fee,  $\ln A_i$  is the natural log of a size measure, and  $g_{ik}$  and  $g_{ie}$  are two groups of potential fee drivers. Most papers using this approach have addressed one (or a few) specific independent variable(s), so the resulting regression model is usually presented as a series of control variables ( $g_{ik}$ ) that have been shown to be significant in prior studies, plus the experimental variables ( $g_{ie}$ ) that are being added.

With regard to the above model, Hay et. al. (2006, p. 146) point out: “Regardless of the purpose, a common methodology has developed for examining the determinants of audit fees that has been used in well over 100 published journal articles. Typically, an estimation model is developed by regressing fees against a variety of measures surrogating for attributes that are hypothesized to relate to audit fees, either negatively or positively.” Therefore, the methodology applied in order to address the first, second and third research questions follows well established traditions in audit fee research.

The fourth research question focuses on the factors affecting knowledge spillover and audit efficiency. The existence of knowledge spillover between audit and non-audit services has been suggested in archival studies showing a positive relationship between audit and non-audit fees (e.g., Davis et. al., 1993; Barkess & Simnett, 1994; Antle et. al., 2006; Chan et. al., 2012). There are also beneficial effects of non-audit services on audit quality (e.g., Kinney et. al., 2004; Antle et. al., 2006) and audit efficiency (e.g., Knechel & Sharma, 2012; Knechel et. al., 2012). However, owing to the data limitation of previous archival studies very little is known about the mechanism of knowledge spillover. The fourth research

question is addressed by referring to the expert opinions of professional auditors on the different aspects of the joint provision of services. This approach is novel and there is no established way of analyzing this data. Therefore, in order to analyze these phenomena, knowledge spillover and audit efficiency variables are regressed on a number of potentially influential factors. Prior research suggests that knowledge spillover is largely associated with the degree of communication and trust (Vera-Muñoz et. al., 2006; Bobek et. al., 2012). Hence, in this study these variables are tested as the main determinants of knowledge spillover. The model also includes a number of control variables, such as different non-audit services and auditor-related characteristics. However, it should be acknowledged that knowledge spillover is a broad phenomenon that incorporates various client-specific aspects. The proxy used in this study measures perception of knowledge spillover in the general sense.

## **5.2 Data**

The dissertation focuses on the pricing of audit and non-audit services and on the knowledge spillover between these services. The first, second and third research questions are related to the service pricing and therefore use audit fees as a dependent variable. Audit fees have been studied for a long time. The literature has developed rather sophisticated fee models with a high degree of explanation (R square exceeds 70 per cent) (DeFond & Zhang, 2014). Besides the investigated factors, the models also include a large number of company-related control variables. These models are based on archival data. Therefore, archival data is used in all three essays studying audit/non-audit fees. As all Swedish and European public companies disclose the fees paid for audit and non-audit services, public companies are studied in these three studies. In Sweden, the name of the partner providing the auditing is disclosed. In addition, information about other partner-related attributes, such as gender and tenure, is available. The uniqueness of the data provides an opportunity to study the effect of various auditors' attributes on audit pricing. The studied companies are either registered in Sweden or in other European countries.

The first and third essays are based on public Swedish companies. Financial institutions are excluded, because their asset structure is different compared to other companies. As IFRS standards were applied in Sweden in 2005, 2006 is the starting point for both study periods. In the first essay, 119 companies are studied from 2006-2011, yielding 714 firm-year observations. In the third essay, 225

companies are investigated from 2006-2015, which results in 1461 firm-year observations. The second essay focuses on financial institutions in that they have a significant share of fair-valued assets. The study covers the period from 2009-2013. The sample comprises 192 European listed banks from 24 countries. The total number of firm-year observations is 940. The data for these studies has been collected from companies' annual reports and the Orbis, Bankscope, Datastream, Amadeus and Retriver databases.

The fourth research question focuses on knowledge spillover and its effects. The survey method has been used to obtain the data on auditors' attitudes and opinions on different aspects of the joint provision of audit and non-audit services. A survey with Likert scale answers is an accepted method for measuring of attitudes and opinions and makes the questions easy for participants to reply to, in that they are not forced to take a stand on a particular issue but can express a degree of agreement. The answers can also be easily coded, because each respondent's response is depicted by a number. The questionnaire was sent to the whole population of certified auditors in Sweden. The response rate is equal to 11.4% and the final sample includes 414 auditors. A potential problem with a survey study is that respondents differ systematically from those in the population (Sekaran & Bougie, 2016, p. 242). In such a case, the possibility to generalize findings to the population can be limited. The non-response bias test (see the fourth essay for more information) indicates that the proportion of Big 4 auditors is representative for the population, while female auditors are under-represented in our sample. The comparison was only possible along the two above dimensions due to the availability of such data.

### **5.3 Statistical models**

The empirical analyses in all four essays are based on regression models. Regression analysis allows for the controlling of multiple factors simultaneously affecting the dependent variable (Wooldridge, 2013). The regression equation takes the following form:

$$Y' = A + B_1X_1 + B_2X_2 + \dots + B_kX_k,$$

where  $Y'$  is the predicted value on the dependent variable,  $A$  is the  $Y$  intercept.  $X$  represents the various independent variables, and  $B$  are the coefficients assigned to each of the independent variables during regression. The purpose of regression

is to arrive at the set of regression coefficients ( $B$  values) for the independent variables that bring the  $Y'$  value predicted from equation as close as possible to the actual  $Y$  value (Tabachnick & Fidell, 2014).

The ordinary least square (OLS) regression is used in the first, second and third essays. This model estimates the unknown parameters in a linear regression model. The best fitting regression coefficients make the difference between  $Y$  and  $Y'$  as small as possible. As the squared errors of prediction  $(Y - Y')^2$  are minimized, this solution is called a least-squares solution.

The fourth essay is based on ordinal logistical regression. In logistic regression, the predictors do not have to be linearly related to the dependent variable. The dependent variable in logistic regression can have two or more levels (Tabachnick & Fidell, 2014). For the ordinal dependent variable (which suggests the rank order 1st, 2nd, 3rd etc.), the ordered logit model is applied. This model is appropriate for the fourth essay, which is based on survey data in which the dependent variable is an ordinal scale variable ranging from strongly disagree (1) to strongly agree (7). Logistic regression highlights the probability of a particular outcome in each case. The outcome variable,  $\bar{Y}$ , is the probability of having one outcome or another based on a nonlinear function of the best linear combination of predictors. With two outcomes:  $\bar{Y}_i = e^u / (1 + e^u)$ , where  $u$  is a linear regression equation. This linear regression creates the log of the odds:  $\ln(\bar{Y} / (1 - \bar{Y})) = A + \sum B_j X_{ij}$ . Therefore, the linear regression equation is the natural logarithm of the probability of being in one group divided by the probability of being in the other group. The aim with this model is to find the best linear combination of predictors to maximize the likelihood of obtaining the actual outcome frequencies (Tabachnick & Fidell, 2014).

## 5.4 Operationalization

The first, second and third essays study how various factors (i.e., financial crisis, fair-valued estimates and partner industry expertise) affect audit fees. Therefore, the dependent variable in all these essays is the natural logarithm of the company's audit fees. The concept for audit pricing is initially developed by Simunic (1980). This concept (presented in detail in Chapter 3.1.1) is used as a base for all three studies. The main identified factors affecting audit fees are client size, complexity, risk and auditor size. This model has been used mainly for non-

financial companies (banks have been excluded due to their different asset structure). The general form of the model is presented below:

$$AUDIT = \beta_0 + \beta_1 ClientSize + \beta_2 Complexity + \beta_3 Risk + \beta_4 Auditor\_Size + e \quad (1)$$

Each factor is measured by one or a few variables that have been tested in previous audit fee research. Table 1, below, shows how each of the factors used in Model 1 are operationalized:

<b>Table 1: Operationalization of the variables included in Model 1</b>	
<i>Factor</i>	<i>Variable</i>
Client size	Total assets
Complexity	Number of segments Number of Swedish subsidiaries Number of foreign subsidiaries
Risk	INVREC ratio ROA Leverage Loss
Auditor size	Big 4

In the second essay, the model for financial institutions developed by Fields et. al (2004) is used. The main difference between the model for financial institutions and that for other companies is that the former includes a broader spectrum of risk, such as liquidity, operating, credit, solvency and market risks. The second distinctive feature of the model is that bank risks include elements of client risks and client complexity. In this regard, Fields et. al. (2004, p.58) highlight the challenge “to tease out the audit effect attributable to “client complexity” and the audit fee effect attributable to “client risk”.

$$AUDIT = \gamma_0 + \gamma_1 * ClientSize + \gamma_3 * AuditorSize + \gamma_4 * Risk * + e \quad (2)$$

**Table 2: Operationalization of the variables included in Model 2**

<i>Factor</i>	<i>Variable</i>
Client size	Total assets
Risks:	
1. Liquidity risk	Transactions accounts Investment securities
2. Operating risk	Efficiency ratio
3. Credit risk	Commercial loans Residential mortgage loans
4. Capital risk	Total risk-adjusted capital ratio Intangible assets
5. Market risk	Interest-sensitive assets minus interest-sensitive liabilities
Auditor size	Big 4

The above tables present the most essential drivers of audit fees in both models. The models used in the studies also include experimental variables (i.e., financial crisis, fair-valued assets and partner special competencies). The models also control for some partner characteristics, such as gender and age.

The fourth study aims to provide insights into the factors related to the joint provision of audit and non-audit services that drive knowledge spillover and audit efficiency. Both knowledge spillover and audit efficiency are well-established concepts in the literature. In earlier studies the existence of knowledge spillover has primarily been evidenced by a positive association between audit and non-audit services (e.g., Davis et. al., 1993; Ezzamel et. al., 1996), while its beneficial effects on audit efficiency have been supported by the decreased time to complete audit report (audit lag) (e.g., Knechel & Sharma 2012; Knechel et. al., 2012). However, the audit lag measure does not provide any insights into audit process. This study provides the first evidence of perceived knowledge spillover and audit efficiency based on auditors' opinions. There are therefore no established models to measure the concepts. This study is more explorative. The perceived knowledge spillover and efficiencies are measured by straightforward questions, where the answers range from strongly disagree (1) to strongly agree (7). The models measure how well perceived knowledge spillover and audit efficiency can be predicted by responses to questions relating to the factors that have been identified by prior studies as impacting these two phenomena (see the fourth essay for more detail).

## **6. Concluding remarks**

### **6.1 Limitations, caveats and alternative explanations**

Before discussing the conclusions of the dissertation, certain limitations of the study are addressed that could be important when interpreting the results. First, it can be difficult to establish a real reason for audit fee increases. Increases in audit fees can be attributed to an increase in audit effort, risk premium, or a combination of both these factors. Another limitation of audit fees is that they reflect both supply and demand factors (DeFond & Zhang, 2014).

Second, a potential concern could be that the results of the first essay are affected by Statutory Audit Directive 2006/43/EC implemented in Sweden by 2010. Ratzinger-Sakel and Schönberger (2015), in their study of the effect of EU Regulation No 537/2014, find that market participants voluntarily adjust to new legislation before the legislation is formally implemented. Therefore, it cannot be ruled out that firms had started to behave in accordance with the rules imposed by the Statutory Audit Directive even before the Directive was implemented. However, the conclusions of the government investigation presented in the Government Bill 2008/09: 135 suggest that the national rules for audit/non-audit fees were generally consistent with those of the Directive and had therefore not been changed. Nevertheless, based on Directive 2014/56/EU amending Directive 2006/43/EC and EU Regulation No 537/2014, the Swedish rules on the provision of non-audit services were changed on 17<sup>th</sup> June 2016. Among other things, Section 21b prohibiting the provision of most types of non-audit services was included in the Swedish Auditors Act. However, the possibility that Directive 2006/43/EC affected the fees charged for audit and non-audit services during 2006-2011 seems low.

Third, empirical accounting/auditing research is often criticized due to the possibility of omitted variables, endogeneity, measurement errors and sample selection bias. The studies included in this dissertation may also be subject to the above problems. First, in the tests reported in the first essay, audit and non-audit fees are both dependent and independent variables. Hence, there could be a problem of endogeneity for audit fees and non-audit fees. The 2SLS model (Whisenant et. al., 2003) can be used instead of OLS. However, the focus of the first essay is on the crisis effects on the fees, rather than the relationship between audit and non-audit fees, where the crisis is a completely exogenous variable.

Therefore, the 2SLS model is not fully relevant to the study's research question. Instead, additional tests were conducted where non-audit fees were removed from the audit fee model and audit fees were removed from the non-audit model (the tables with the results were available on request from the journal reviewers). Results relating to the test variables (crisis and post-crisis) were qualitatively similar to the main finding. Second, the result of the third essay could be subject to selection bias, in that since audit engagement is jointly influenced by clients and auditors. For example, industry specialists may accept clients based on their own risk preferences, while clients may have their own preferences affecting their choice of specialists (Hsieh & Lin, 2016). To address this potential problem, entropy balancing was applied (see the information in the essay). The result of this analysis confirms the main finding.

Fourth, survey methods have their limitations. In the fourth essay, the perceptions on the possible effects of the joint provision of services are self-reported by auditors. Auditors might favour joint provision, which could have an impact on the responses. In other words, they could overestimate the benefits. At the same time, auditors who primarily work with the joint provision can provide new and valuable information on this issue.

## **6.2 Conclusions**

The primary results of this dissertation concern the impact of various factors on audit/non-audit fees and the effects of a joint provision of services on auditing. The findings of this study complement prior research in a number of ways. First, the results indicate that auditors' responses to environmental changes (the financial crisis or changed rules regarding fair value estimation) are characterized by an increased level of risk and by an increased price for audit services. These findings suggest that auditors face higher risks by exerting more audit effort. Further, the results indicate a negative effect of the financial crisis on non-audit fees, thus suggesting that deteriorating economic conditions restrain companies from buying supporting services. To our knowledge, the effect of a crisis on non-audit fees has not been studied previously. Second, the results show that the effects of fair value estimation on audit fees differ systematically between stronger and weaker institutional settings. To our knowledge, the study provides the first evidence of the impact of institutional settings on the association between fair value estimation and audit fees. This finding suggests that a country's legal environment is an important factor and affects auditors' behaviour. Third, the

results indicate that in general, audit partners with special competencies are more valued by clients. The findings also indicate that such specialists are mostly male. However, the under-representation of females amongst higher qualified partners does not seem to negatively affect their possibilities to earn higher fees. Finally, the dissertation contributes to the debate about the provision of audit and non-audit services by highlighting that factors like communication, trust and certain types of non-audit services beneficially affect knowledge spillover and audit efficiency.

The evidence provided in this dissertation has practical value for regulators, auditors, researchers and managers. With respect to regulators, the results reflect how auditors' risk management and pricing strategies change in response to significant events. In particular, evidence relating to the recent financial crisis provides demonstrates how auditors respond to varying risk levels in different periods. The results relating to the implementation IFRS 7 provide useful insights into the channel of audit complexity (i.e., Level 3 estimates), whereby the application of the standard influences audit pricing. The results of the analyses of different institutional settings suggesting that auditors exert a higher audit effort in stronger regulated countries is of particular importance to regulators because it highlights the role of regulation for audit quality. The result regarding individual partners suggests that clients value special expertise and are willing to pay higher fees to more competent partners. Therefore, more support should be provided for the development of partner competencies. Finally, evidence relating to the beneficial effects of non-audit services on audit efficiency provides novel insights into the ongoing debate about such services.

Concerning auditors, the information about changes in audit pricing during macroeconomic fluctuations and in conjunction with the application of the amended IFRS 7 standard can be used as a benchmark for the evaluation of their own responses to increased risks in similar situations. Another message to auditors is that it makes sense to invest in partner-level industry expertise and in other forms of professional competency. Finally, as communication with and trust in colleagues providing non-audit services have shown to beneficially affect audit process, audit firms should develop strategies to support and facilitate communications between employees.

With respect to researchers, the findings enhance the understanding of audit fee determinants and how they change in response to greater inputs in the form of

audit effort and auditor special expertise. The evidence also contributes to an understanding of the factors that affect audit fees in the financial sector, which has so far been excluded from the majority of audit fee research.

### **6.3 Suggestions for future research**

There are a number of suggestions for future research that could lead to a better understanding of the issues studied in this dissertation.

Regarding the impact of the financial crisis on audit/non-audit fees, future research could investigate whether the economic risk caused by macroeconomic fluctuations is accompanied by the financial risk, suggesting potential for financial losses, and evaluate the impact of both risks on audit/non-audit fees. Furthermore, to better understand companies' needs in difficult macroeconomic conditions, qualitative research could study the demand for audit and non-audit services and the factors affecting this demand. In addition, it would be interesting to examine whether the quality of auditing changes during this period.

The result of fair valued assets on audit fees suggests that higher uncertainty fair value estimates require greater audit effort. Future research could usefully investigate whether more competent auditors with industry expertise affect the association between higher uncertainty estimates and audit fees.

Regarding the individual partner effects, future research could address whether the audit fee premium associated with partner special competencies is accompanied by higher audit quality. Further, it would be interesting to study whether the audit quality of female partners with specialization in public companies is higher than that of their male counterparts.

Finally, concerning the joint provision of audit and non-audit services, future studies could evaluate the effects of the more restrictive regulation on audit performance.

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