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KNOWLEDGE IN ACTION

2016 | Faculty of Business Economics

DOCTORAL DISSERTATION

Audit Demand in Private Firms: a Multi-Theoretical Perspective

Doctoral dissertation submitted to obtain the degree of
Doctor of Applied Economic Science, to be defended by

Maarten Corten

Promoter: Prof. Dr Tensie Steijvers
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Acknowledgements

During the past 5 years, I have been examining the drivers of appointing a high quality auditor. Towards the end of my PhD, I also started wondering which drivers led to the completion of a (hopefully) high quality doctoral dissertation.

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No clear results without control variables. The exact impact is sometimes difficult to predict but without them your research is worthless. Dear sister, friends, family and relatives, thank you so much for the support and the distraction you provided. Life would be much more boring without you. I would

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Samenvatting

Het hoofddoel van een externe audit kan algemeen omschreven worden als het reduceren van de informatiekloof tussen het management van een onderneming en haar aandeelhouders door het verifiëren van de jaarrekeninggegevens. Het management zou immers geneigd kunnen zijn om de financiële resultaten beter voor te stellen dan ze in werkelijkheid zijn om op die manier een hogere bonus te krijgen, een betere reputatie op te bouwen, foute investeringsbeslissingen te verbergen, fraude te maskeren, etc. Een externe audit stelt de aandeelhouders in staat om deze financiële resultaten objectief te beoordelen en op die manier dergelijke waardereducerende activiteiten te voorkomen.

Traditioneel wordt een externe audit vooral waardevol bevonden voor grote beursgenoteerde ondernemingen omwille van de grote afstand tussen het management en de aandeelhouders. In (kleinere) private bedrijven wordt een externe audit vaak als overbodig beschouwd omdat de scheiding tussen management en eigenaarschap er veel kleiner is. Enerzijds zijn vele managers in deze bedrijven ook aandeelhouder van het bedrijf, hetgeen de belangen van managers en aandeelhouders reeds meer in overeenstemming brengt en waardereducerende activiteiten ten koste van deze aandeelhouders dan ook automatisch zal inperken. Anderzijds zullen aandeelhouders veel makkelijker in staat zijn om het management rechtsreeks te controleren zonder volledig afhankelijk te zijn van de financiële staten. In familiebedrijven (die toch het overgrote deel uitmaken van de private ondernemingen) worden deze effecten nog sterker geacht aangezien de hechte familiale relaties ervoor zullen zorgen dat managers nog minder geneigd zullen zijn om te handelen ten koste van de

(andere) aandeelhouders. Tevens zullen deze familiale banden het rechtstreeks controleren van het management nog vergemakkelijken.

Er komt echter steeds meer kritiek op deze traditionele visie omtrent de rol van de externe audit voor private bedrijven. Verscheidene onderzoekers stellen zelfs dat een externe audit waardevoller zou kunnen zijn voor private bedrijven dan voor beursgenoteerde bedrijven aangezien aandeelhouders van beursgenoteerde ondernemingen reeds informatie over de bedrijfsprestaties kunnen inwinnen via analisten, de overnamemarkt en de beurzen zelf. Verder stellen meer en meer onderzoekers dat familiale relaties in familiebedrijven veel te rooskleuring worden voorgesteld in de traditionele literatuur. Familiale conflicten, jaloezie en andere (vaak emotionele) spanningen zouden de goede werking en zelfs de intenties van het management kunnen beïnvloeden, waardoor een externe audit toch waardevol zou kunnen zijn.

Gezien het grote belang van private bedrijven voor de globale economie is er nood aan onderzoek om de effectieve rol van de externe audit voor private bedrijven te bevatten. In dit proefschrift dragen we bij aan dit onderzoek door op zoek te gaan naar de factoren die de vraag naar de externe audit in private bedrijven bepalen. Om dit te bewerkstelligen, doen we beroep op verscheidene theorieën die nog nauwelijks met de vraag naar *auditing* in verband werden gebracht. Op die manier zijn we in staat een meer compleet beeld van de rol van de externe audit voor private bedrijven te portretteren.

Hoofdstuk 1 biedt een meer gedetailleerde inleiding van dit proefschrift en legt tevens de context uit waarin het onderzoek gevoerd werd. Verder wordt in dit hoofdstuk uitgelegd waarom de vraag naar *auditing*, afhankelijk van de

context, geïnterpreteerd dient te worden als de vrijwillige vraag naar een externe audit of de vraag naar een hoge kwaliteitsauditor.

In hoofdstuk 2 en 3 verrichten we verder onderzoek naar de rol van de externe audit voor private familiebedrijven. Indien deze rol minimaal zou zijn zoals traditioneel gesteld werd, zou verwacht worden dat er nauwelijks een vraag naar *auditing* zou bestaan in deze bedrijven, en zeker in bedrijven waarin de volledige eigendom en het management nog in handen zijn van de familie. In hoofdstuk 2 onderzoeken we daarom waarom verscheidene van deze bedrijven toch vrijwillig een externe audit laten uitvoeren. Uit onze resultaten blijkt dat deze ondernemingen wel degelijk te maken kunnen krijgen met managers (in dit geval actieve eigenaars) die niet in het belang handelen van de andere (passieve) familiale aandeelhouders, waardoor controle door een externe auditor toch zeer waardevol kan zijn. Verder blijkt dat dit voornamelijk het geval is in latere generatie familiebedrijven, waarbij vooral de focus op het eigen gezin ten koste zou kunnen gaan van de andere familiale aandeelhouders.

In hoofdstuk 3 gaan we dieper in op de invloed van deze familiale belangenconflicten op de vraag naar *auditing* in familiebedrijven die niet volledig in handen zijn van een familie. Hierbij gebruiken we de mate van familiale cohesie als maatstaf voor deze conflicten aangezien ze vaak het gevolg zijn van emoties en gevoelens en nauwelijks te maken hebben met zakelijke en/of rationele aangelegenheden. De bevindingen in dit hoofdstuk bevestigen dat een externe audit in staat wordt geacht de emotionele lading uit deze conflicten te halen door alle familieleden van objectieve informatie te voorzien en hen op die manier opnieuw in staat te stellen meer rationele beslissingen te nemen. Toch blijkt uit onze resultaten ook dat familiebedrijven dergelijke (vaak gevoelige)

conflicten eerst intern zullen trachten op te lossen, via de raad van bestuur, en pas in tweede instantie beroep zullen doen op een auditor (van hoge kwaliteit).

Hoofdstuk 4 behandelt de invloed die het management, en meer specifiek de CEO, zelf kan hebben op de vraag naar *auditing*. Aangezien een externe audit in eerste instantie dient om de bedrijfsprestaties (en dus het management) beter te beoordelen, zou een dergelijke invloed vragen kunnen oproepen bij de effectiviteit ervan. Uit onze resultaten blijkt dat deze invloed wel degelijk bestaat, meer bepaald vonden we dat de waardeperceptie van de CEO over de externe audit de werkelijke vraag naar *auditing* kan beïnvloeden.

In hoofdstuk 5 bestuderen we in welke mate de vraag naar de externe audit beïnvloed wordt door de auditorkeuze van externe stakeholders zoals leveranciers, klanten en concurrenten. Hoewel de externe audit traditioneel wordt beschouwd als een antwoord op interne belangenconflicten, kijken we in dit hoofdstuk of het willen verhogen van de eigen legitimiteit ten opzichte van deze externe partijen ook een reden kan zijn om een bepaalde auditor aan te stellen. Hierbij vinden we dat vooral de belangrijkste leverancier gevolgd wordt in zijn auditorkeuze, al blijkt deze navolging beperkter te zijn indien het bedrijf een raad van bestuur heeft met sterke netwerkcapaciteiten. Dergelijke raden van bestuur worden dan ook verwacht altijd een hoge kwaliteitsauditor te kiezen om hun reputatie verder te maximaliseren, ongeacht de keuze van de belangrijkste stakeholders.

In het laatste hoofdstuk staan we stil bij de contributies van dit proefschrift en geven we een overzicht van gerelateerde opportuniteiten voor toekomstig onderzoek.

Chapter 1 – Introduction

1.1 Objective of the dissertation

While external auditing is considered as a crucial service to protect the interests of a firm's stakeholders, this role is especially articulated in a listed firm context. Listed firms are therefore in general also legally required to engage an external auditor to verify the firm's financial statements. In a private firm context, the value of external auditing is more questioned. Several countries therefore also started debates to raise the audit exemption thresholds for private firms (e.g. Collis, Jarvis, & Skerratt, 2004; Niemi, Kinnunen, Ojala, & Troberg, 2012). These debates, however, are heavily influenced by findings from the listed firm context while Ball and Shivakumar (2005) point out that such findings cannot be extended to private firms. Contrary to what is generally expected, Lennox (2005) suggests that the value of auditing could even be higher in private firms because they are less vulnerable to takeovers, are less monitored by analysts and stock markets and are required to disclose much less accounting information to shareholders. Moreover, the role of auditing for private firms may also differ from its role in a listed firm context as private firms often have unique ownership structures (e.g. family ownership) and management dynamics. Especially when taking into account that private firms drive more than 50% of a country's GDP, the need to further examine the role of auditing in private firms seems essential to feed the debates that are currently going on. However, studies that examine the role of auditing in a private firm context and take into account the unique characteristics of private firms remain scarce, which is

probably due to the fact that most of these studies keep relying almost exclusively on the agency theory to explain this role.

The agency theory considers auditing as one of the main devices to reduce agency conflicts (Jensen & Meckling, 1976). Since most managers of a company (the agents) are generally no or only small owners of the company they work in, the agency theory assumes that they will not always act in the best interest of the owners, which is labeled an agency conflict (Jensen & Meckling, 1976). The owners (the principals) will therefore try to monitor managers or try to give them the right incentives through contracts (e.g. variable remuneration based on performance) to reduce this divergence of interest. To monitor managers or to contract with managers, owners generally have to rely on the financial statements but these are often prepared under the supervision of management itself and therefore may not always present the actual financial position of the firm (Jensen & Meckling, 1976; Lennox, 2005). This so-called information asymmetry restricts the owners in their monitoring and contracting possibilities towards management. By verifying the validity of the financial statements, an auditor is considered to decrease this information asymmetry and is therefore considered to increase the monitoring and contracting effectiveness of the principals towards the agents again (Becker, Defond, Jiambalvo, & Subramanyam, 1998; Lennox, 2005). Accordingly, this will reduce the possibilities of management to behave opportunistically and will therefore reduce the loss incurred by the owners due to such opportunistic behavior, labeled the agency costs.

Similarly, agency conflicts may also arise between shareholders and debtholders since managers are generally considered to deem the interests of

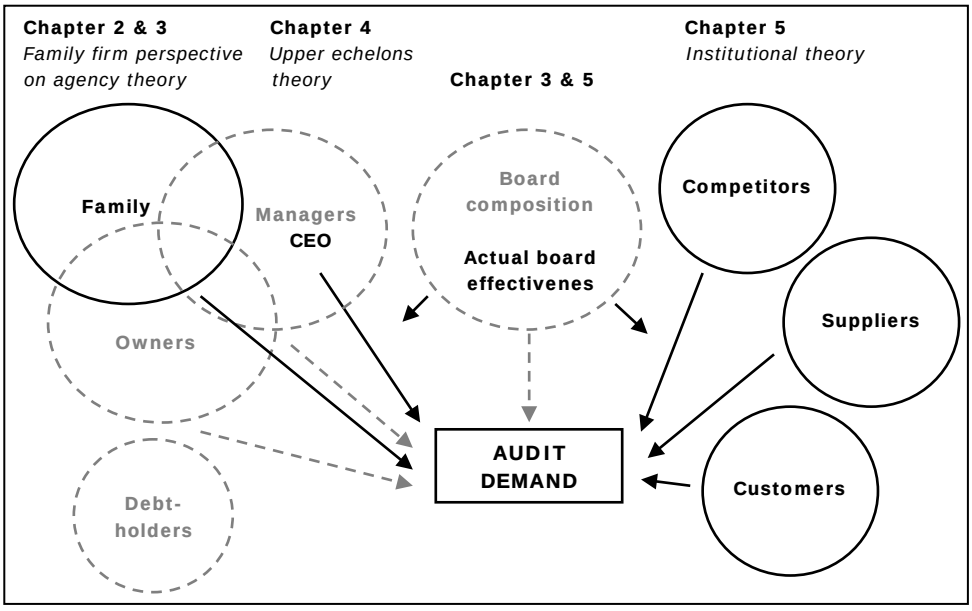
shareholders as more important than the interests of debtholders and the latter may therefore be concerned about possible wealth transfers to shareholders (Francis & Wilson, 1988; Jensen & Meckling, 1976). Debtholders (the principals) therefore often include restrictive covenants in their loan agreements but these are generally based on the financial statements as well (DeFond, 1992). Consequently, also in the shareholder-debtholder agency relationship an auditor is considered to be able to reduce information asymmetries between the principals and the agents and therefore the level of agency costs (DeFond, 1992).

Although the agency theory is widely accepted as the main theory to explain the role of auditing, the related empirical findings remain often inconclusive in the private firm context (Allee & Yohn, 2009; Dedman, Kausar, & Lennox, 2014; Lennox, 2005). While we do not contest the value of agency theory in explaining the role of auditing in private firms, such findings may indicate that auditors may have additional roles in a private firm context. By this dissertation, we want to add to the current knowledge we have about the role of auditing in private firms by further examining the **drivers of audit demand** in this **private firm context**, in which audit demand can mean both the demand for a voluntary audit and the demand for a high quality audit, dependent on whether the firm is already required by law to have its financial statements audited. Moreover, in order to take into account the unique ownership structures and dynamics of private firms and to grasp the potential additional roles of auditors, this demand is examined from several **nontraditional perspectives** and **theories**. This will lead to a more complete view about the drivers of audit demand and therefore the role of auditing in this private firm context.

1.2 Outline of the dissertation

In this dissertation, we integrate the family firm perspective on agency theory, the upper echelons theory and the institutional theory to further explain audit demand in a private firm context. Our overall research model is summarized in figure 1 and depicts our contributions towards the audit demand literature. More specifically, prior audit demand literature is portrayed by the dashed grey circles and arrows, showing that most audit demand studies focusing on private firms examine the influence of the shareholder-manager and shareholder-debtholder agency conflicts on audit demand. Moreover, the figure also shows that several studies took into account the role of another very important agency cost reducing device, namely the board of directors. Our contributions to the audit demand literature are depicted by the solid black circles and arrows.

Figure 1. Research model of this dissertation



The upper left corner of figure 1 depicts the three-circle model of Tagiuri and Davis (1996) as this model perfectly represents the focus of former audit demand literature and the contributions we made to this literature in chapter 2 and 3. More specifically, although most private firms are family firms, most audit demand studies do not consider this family aspect and keep focusing on the audit demand effect of the shareholder-manager and shareholder-debtholder agency conflicts. Probably this is due to the fact that agency theory expects the level of agency conflicts to be minimal in private family firms because most managers are also owners of the firm and will therefore also behave more like owners and because family bonds are considered to facilitate monitoring and disciplining each other (Fama & Jensen, 1983a, 1983b). However, family firm literature argues that family firms might incur even higher agency costs than non-family firms due to possible negative effects of self-control and altruism (e.g. Chrisman, Chua, Kellermanns, & Chang, 2007; Gomez-Mejia, Nuñez-Nickel, & Gutierrez, 2001; Schulze, Lubatkin, & Dino, 2003b; Schulze, Lubatkin, Dino, & Buchholtz, 2001). The studies from Collis et al. (2004), Carey et al. (2000) and Niskanen et al. (2010) are valuable exceptions that did include family related aspects when examining audit demand but mainly focused on the agency conflicts between family and non-family members. In chapter 2 and 3, we add to these studies by also examining the potential influence of the intrafamily agency conflicts on audit demand.

More specifically, in **chapter 2** we examine audit demand in wholly (100%) family-owned private firms. Although former audit demand studies would generally expect the demand for auditor services to be minimal in such firms due to the low level of agency costs, we show that these firms do engage

audit firms to reduce agency costs. Moreover, in this chapter we also elaborate on the potential influence of generation on the existing agency relationships and their associated audit demand effects in this private firm setting.

In **chapter 3**, the audit demand effect of intrafamily agency conflicts in a non completely family-owned private firm context is examined. In order to measure these conflicts, we do not rely on compositional variables like family ownership and generational stage as such variables lack the ability to fully take into account the heterogeneity of family firms as they consider firms with a similar ownership structure and firms within the same generational stage to be a homogeneous (sub)group of firms. As this will not always be the case, especially since intrafamily agency conflicts are merely based on emotions instead of economically rational behavior, we proxy these intrafamily agency conflicts by the level of family cohesion. While this chapter also supports our expectation that auditors are demanded to reduce intrafamily agency conflicts as well, it also shows that the monitoring effectiveness of the board of directors weakens the association between the level of intrafamily agency conflicts and audit demand. This indicates that the audit demand effect of intrafamily agency conflicts decreases when family firms are able to reduce the related agency costs internally. We also add to the audit demand literature by using questionnaire data to measure the monitoring effectiveness of the board and by examining its moderating influence on audit demand (as indicated in figure 1). While prior studies mainly examined the direct effect of board composition, current board literature (e.g. Finkelstein & Mooney, 2003; Gabrielsson & Winlund, 2000; Minichilli, Zattoni, Nielsen, & Huse, 2012; Minichilli, Zattoni, & Zona, 2009;

Zona & Zattoni, 2007) argues that composition does not necessarily explain behavior such that these proxies do not adequately measure board effectiveness. In this chapter, we therefore take into account the heterogeneity of firms regarding both the level of intrafamily agency conflicts and the effectiveness of the board.

Chapter 4 integrates the upper echelons theory in the audit demand literature. While a qualitative study of Cohen et al. (2010) pointed out that management is mostly the driving force behind auditor appointments and terminations, studies examining this influence of management remain scarce (Carcello, Hermanson, & Ye, 2011; Cohen, Krishnamoorthy, & Wright, 2004). This is probably due to both the overreliance on agency theory again (which considers CEOs as rational decision makers who will base their audit decision on the level of agency conflicts as well (Jensen & Meckling, 1976)) and the fact that most studies rely on archival data and are therefore not able to take this influence into account. By using questionnaire data, we are able to examine the influence of the CEO on audit demand. Moreover, by relying on the upper echelons theory, we take into account that CEOs may also take bounded and even non-rational decisions based on perceptions. In this chapter, we therefore examine to what extent the CEO's perception towards auditing should also be considered as a driver for audit demand. In line with the marketing literature, we examined this CEO's perception in a multidimensional way and indeed found significant audit demand effects for several of its dimensions.

In **chapter 5**, we rely on the institutional theory to further explain audit demand in the context of private firms. Based on this theory, we argue

that firms do not only engage (high quality) auditors to reduce agency conflicts, as suggested by agency theory, but also to increase their legitimacy towards their main stakeholders. Moreover, increasing the legitimacy of the firm towards its stakeholders is also an important part of the network role of the board of directors. Therefore we also argue that audit demand may be less influenced by institutionally related factors in firms with an effective network board as these boards will in any case hire an auditor to further increase the firm's legitimacy, irrespective of whether the firm's main stakeholders also hired such an (high quality) auditor.

While figure 1 already gives an indication about the contributions of this dissertation to the audit demand literature, we elaborate more on both the theoretical and practical contributions in **chapter 6**. This chapter also summarizes the main findings of the other chapters and provides recommendations for future research.

1.3 Research context

The Belgian private firm context is the main context in which we tested our hypotheses, although we also examined private firms from the United States in chapter 2. The main difference between the US[1] and Belgium regarding audit demand is the fact that this demand is not voluntary for many private firms in Belgium (Willekens & Achmadi, 2003). More specifically, a Belgian limited-liability firm is required to hire an auditor when the annual average workforce is higher than 100 or when at least two of the following thresholds are exceeded:

[1] More information about this context is provided in chapter 2 itself.

annual average workforce of 50 employees, balance sheet total of 3 650 000 EUR and turnover of 7 300 000 EUR (article 15 of the Belgian Company Legislation[2]). Since these thresholds are rather low, it is expected that the current level of audit demand is larger than the demand would be in case of absence of these thresholds (Willekens & Achmadi, 2003). This is also supported by Sarens et al. (2012), who found the level of voluntary audit demand to be fairly limited in the Belgian private firm context.

Because of the low size criteria to be legally required to be audited, the group of firms that is exempted from this requirement may show too little variation to be able to examine our research questions. We therefore mainly examine audit *quality* demand in this dissertation instead of *voluntary* audit demand (except for chapter 2, in which we do examine voluntary audit demand in the US context). More specifically, we examine the firms that are already legally required to be audited and examine whether they hire a high quality auditor or not. We argue that this approach is the most appropriate for our research goals since it is in line with several other audit demand studies that focused on a similar context (e.g. Hope, Langli, & Thomas, 2012; Lennox, 2005; Niskanen, Karjalainen, & Niskanen, 2011). Moreover, firms with little or no need for auditing are expected to engage a cheaper low quality auditor in order to fulfill the legal requirement in the most cost-effective way while high quality auditors will be mainly demanded by firms who have an actual (economic) need for auditing (Willekens & Achmadi, 2003). The motives to hire a high quality auditor in a context in which firms are legally required to be audited seem

[2] The thresholds were changed in 2016, after we conducted our research. The current thresholds are: annual average workforce of 50 employees, balance sheet total of 4 500 000 EUR and turnover of 9 000 000 EUR.

therefore similar to the motives to hire a voluntary audit. Voluntary audit demand studies and audit quality demand studies also generally rely on the same theoretical frameworks and arguments to explain this demand. The results of this dissertation may therefore also be generalized to other (less regulated) contexts, which is confirmed by the replication analysis we report in chapter 6, although more research will be needed to examine the extent of this generalizability.

Other aspects of the Belgian audit context that should be taken into account when interpreting the findings of this dissertation relate to the auditor choice itself. The board of directors generally has to suggest an auditor to the general shareholders' meeting, which will appoint the auditor for a (renewable) period of three years (article 130 and 135 of the Belgian Company Legislation). The audit fee, which needs to be a fixed amount, is also ratified by this shareholders' meeting and can only be changed during the engagement in case both the auditor and the shareholders' meeting approve this change (article 134 of the Belgian Company Legislation). During its assignment, an auditor can only be dismissed based on legal grounds, in which a difference of opinion regarding accounting or control procedures is not considered as a legal ground (article 135 of the Belgian Company Legislation). The auditor itself can only resign in case of severe personal reasons or after having informed the general shareholders' meeting about the motives of his/her resignation (article 135 of the Belgian Company Legislation).

Chapter 2 –

The demand for auditor services in wholly family-owned private firms: the moderating role of generation[3]

2.1 Introduction

Although audit demand research, consisting of both audit quality demand and voluntary audit demand research, is still mainly focusing on listed companies, a few interesting studies examining audit demand in a private firm context have recently been published (Carey et al., 2000; Collis, 2012; Collis et al., 2004; Niemi et al., 2012; Niskanen et al., 2010). While these studies recognize a family firm effect on audit demand, they generally consider the presence of non-family members to lead to agency costs, thereby considering wholly family-owned private firms as a homogeneous group of firms that incur a minimal level of agency costs. However, as family firm literature argues that these firms can also incur a significant amount of agency costs, we want to complement the aforementioned studies and audit demand research in general by focusing on the heterogeneity within the group of private family firms. More specifically, by examining wholly family-owned private firms, we eliminate the possible influence of conflicts that arise between family and non-family shareholders, and focus solely on the audit demand effect of agency conflicts between family

[3] This chapter is published as "Corten, M., Steijvers, T., & Lybaert, N. (2015). The demand for auditor services in wholly family-owned private firms: the moderating role of generation. *Accounting and Business Research, 45*(1), 1-26".

owner-manager(s) (often referred to as the *active* owners as they are both owner and manager) versus passive (not part of the management team) family shareholders on the one hand and between family shareholders (active and passive) versus debtholders on the other. Moreover, grounded in family firm research as well (e.g. Blanco-Mazagatos, De Quevedo-Puente, & Castrillo, 2007; Miller & Le Breton-Miller, 2006), we argue that the generational stage should be considered as an important moderator within the audit demand functions of these wholly family-owned private firms.

We posit that the generational stage might moderate both the 'management ownership – audit demand' and 'leverage – audit demand' relationship within this context of private family firms. Although a negative association between management ownership and audit demand is generally hypothesized within audit demand literature because of the interest alignment effect of management shareholdings (more management ownership leads to a lower level of agency costs), we also take into account the possible influence of an opposing entrenchment effect, in which owner-managers will use their equity positions to divert resources away from the firm (more management ownership leads to a higher level of agency costs) (Morck, Shleifer, & Vishny, 1988; Short & Keasey, 1999), by considering the influence of the generational stage. More specifically, we expect this entrenchment effect to dominate in subsequent generation private family firms while having a prevailing interest alignment effect in first generation private family firms. Unlike first generation owner-managers whose altruistic feelings toward their family will lead them to take into account the needs of all family members, subsequent generation owner-managers will prioritize the interests of their own immediate families (Blanco-

Mazagatos et al., 2007). Due to a diminishing feeling of altruism towards their extended family, they may be more inclined to (mis)use their discretion over the firm's assets. In contrast to first generation private family firms, we therefore hypothesize a positive association between management ownership and the demand for auditor services in subsequent generation private family firms. The decrease in altruistic feelings among the family members involved in subsequent generation private family firms combined with the potential incompetence of family descendant-managers due to adverse selection may also deteriorate the shareholder-debtholder relationship (e.g. Anderson, Mansi, & Reeb, 2003; Blanco-Mazagatos et al., 2007). Therefore, we hypothesize that the positive association generally found between leverage and audit demand is higher for subsequent generation private family firms.

Besides considering the internal heterogeneity of wholly family-owned private firms, we also take into account the external heterogeneity related to auditor services used by US private firms. As US private firms are not required to have their annual accounts audited, they can also signal the true and fair view of their accounting figures by other means than by demanding an audit. Reviews and compilations could also be considered as valuable devices to reduce information asymmetries, and therefore we do not only focus on 'audit demand' but broaden our empirical research to the 'demand for auditor services', encompassing compilations, reviews and audits. More specifically, we examine the demand for 'auditor engagement', indicating whether the firm had any form of engagement with an auditor (irrespective of whether this engagement relates to an audit, review or compilation), by employing a multivariate logit analysis. Moreover, we also examine the demand for the level of 'auditor assurance' by an

ordered logit regression analysis as a higher level of assurance about the validity of the financial statements is obtained for audits than for reviews. The level of obtained assurance for reviews is, in turn, higher compared with compilations. Finally, we also examine the demand for the three services separately by estimating multinomial logit regressions to get a more detailed view about how management ownership and leverage are related to the demand for these services and how these relationships are moderated by generation.

Using a cross-sectional sample of 482 wholly family-owned and family-managed private firms, gathered by the 2003 US Survey of Small Business Finances, the results of our study indeed reveal that the generally hypothesized negative association between management ownership and the demand for auditor services only applies to first generation private family firms while turning positive for subsequent generation private family firms. However, this relationship was only found when including 'auditor engagement' as dependent variable. No significant relationship between management ownership and 'auditor assurance' was found. The more detailed multinomial logit analysis suggests that the association between management ownership and the demand for auditor services and the moderating effect of generation only holds regarding compilations and reviews but not regarding audits. This may be due to the fact that passive family shareholders in private family firms are likely to be able to acquire insider information if necessary and therefore do not require an audit (by which a high level of assurance is obtained about the validity of the financial statements). However, as this insider information can be biased as well, our results suggest that passive family shareholders are likely to demand a compilation or a review when shareholder-manager agency costs are high. Even

though a lower level of assurance is obtained by these services (a compilation even provides no explicit assurance but can provide some implicit assurance (Johnson et al. 1983)), they seem to provide the passive family shareholders with a monitoring tool that is sufficiently effective in reducing the existing agency conflicts. Moreover, when shareholder-manager agency costs are high, a review or a compilation may be a more cost-effective way to mitigate agency costs since an audit is substantially more expensive compared to a compilation and a review (AICPA, 2010).

This does not seem to be the case for the agency conflicts between shareholders and debtholders as leverage was only found to be positively associated with auditor assurance and not with auditor engagement. Higher levels of assurance therefore do seem better able to mitigate agency conflicts between shareholders and debtholders. The multinomial results partly confirm this since significantly positive coefficients for leverage are only found for reviews and audits. Generational stage was not found to moderate the leverage-auditor assurance/engagement relationship.

The remainder of this chapter proceeds as follows. In the next section, we develop testable hypotheses related to the demand for auditor services within wholly family-owned private firms. In section 2.3, we describe both the data and our methodology. Our results are presented in section 2.4 and conclusions are drawn in section 2.5.

2.2 Theory and hypotheses

2.2.1 Audit demand: literature review

Audit demand is generally explained by agency theory, which considers auditing as one of the main devices to mitigate agency costs. Agency costs arise in a relationship in which a person (the principal) engages another person (the agent) to perform services on his/her behalf which involves delegating some decision making authority to the agent (Jensen & Meckling, 1976, p. 308). As the agent will generally bear only a part of the wealth effects of his/her decisions, agency theory presumes the agent will not always act in the best interest of the principal[4]. Agency problems can be mitigated through explicit contracting (management compensation contracts based on performance, loan agreements, etc.) or implicit contracting (the threat of dismissal in case of disappointing performance) but contracts are often based on accounting numbers prepared by management (Lennox, 2005). By verifying the validity of these accounting numbers, auditing reduces the existing information asymmetries between the principal(s) and the agent(s) of a company and therefore its related agency costs (Becker et al., 1998). In this respect, auditing is considered to mitigate agency costs both within the shareholder-manager

[4] In the shareholder-manager agency relationship, agency costs will be generated when the manager does not own 100% of the company shares "…since he will then bear only a fraction of the costs of any non-pecuniary benefits he takes out in maximizing his own utility" (Jensen & Meckling, 1976, p. 312). In the shareholder-debtholder agency relationship, the owner-manager of highly leveraged firms "…will have a strong incentive to engage in activities (investments) which promise very high payoffs if successful even if they have a very low probability of success. If they turn out well, he captures most of the gains, if they turn out badly, the creditors bear most of the costs" (Jensen & Meckling, 1976, p. 334).

relationship (first agency cost hypothesis) and the shareholder-debtholder relationship (second agency cost hypothesis) (Jensen & Meckling, 1976).

The percentage of shares that is owned by managers (further referred to as management ownership) is generally included in the audit demand model to proxy for the shareholder-manager agency costs as agency theory expects the agency costs to decrease when managers' ownership increases. More specifically, it is assumed that the more shares managers have, the less they will be inclined towards consuming perquisites to maximize their own utility as the fraction of the costs the managers have to bear for consuming these perquisites is positively related with the percentage of ownership (Jensen & Meckling, 1976). Management ownership is thus considered to align the interests between shareholders and managers, and most audit demand studies therefore hypothesized a negative association between management ownership and audit demand. Evidence for this hypothesis was also found by some studies (e.g. DeFond, 1992; Firth & Smith, 1992) although there are also several studies that did not find significant results with respect to the management ownership – audit demand relationship (e.g. Francis & Wilson, 1988; Piot, 2001; Reed, Trombley, & Dhaliwal, 2000)[5].

In order to test the second agency cost hypothesis, leverage (defined as total debt to total assets) is generally added to the audit demand model. Managers are expected to deem the interests of shareholders as more important

[5] Most of these studies examined firms that were required to have their annual accounts audited. The dependent variable in these studies therefore relates to the choice of a high versus low quality auditor (mostly proxied by a Big N dummy) instead of an audit versus no audit.

than the interests of debtholders and the latter may therefore be concerned about possible wealth transfers to shareholders (Francis & Wilson, 1988; Jensen & Meckling, 1976). Debt agreements therefore commonly include restrictive covenants, which are mostly based on accounting numbers (DeFond, 1992). By verifying these accounting numbers, auditors may be considered as able to reduce the agency conflicts between shareholders and debtholders. As the amount of potential wealth transfers is positively related to the amount of debt, audit demand[6] is expected to be positively related with leverage, which is empirically supported by several studies (e.g. Chow, 1982; DeFond, 1992; Firth & Smith, 1992; Francis & Wilson, 1988; Piot, 2001; Reed et al., 2000).

Although audit demand seems to be an extensively studied topic, most studies examined the demand for auditing in a context of listed companies while studies focusing on private firms remain scarce. It is, however, argued that the monitoring value of auditing might be at least as important or even more important for private firms as it is for public firms since private firms are less vulnerable to takeovers and are less monitored by analysts, stock markets, etc. (Lennox, 2005). Studies such as Collis et al. (2004), Lennox (2005), Niskanen et al. (2011) and Hope et al. (2012) find that there is indeed also a demand for external auditing within private firms when shareholder-manager agency costs are expected to be high. Support for the second agency cost hypothesis is also

[6] This demand might originate from two reasons. Debtholders might reject a loan application when the financial statements are not verified by an (high quality) auditor, but may also increase the interest rates or collateral requirements. Related to this aspect, several studies (e.g. Pittman & Fortin, 2004; Kim et al., 2011) indeed found the cost of debt to be lower for (BigN) audited firms compared to non (BigN) audited firms.

found within this private firm setting (e.g. Blackwell, Noland, & Winters, 1998; Broye & Weill, 2008; Kim, Simunic, Stein, & Yi, 2011; Minnis, 2011).

If the literature on audit demand in private firms is scarce, it is virtually non-existent for private *family* firms. This might be due to the fact that agency theory expects the shareholder-manager agency costs to be minimal within private family firms because, besides the concentrated ownership in which the owner and manager are often the same person (leading to high levels of management ownership), "...family members have many dimensions of exchange with one another over a long horizon and therefore have advantages in monitoring and disciplining related decision agents" (Fama & Jensen, 1983b, p. 306). Although some empirical support for this view is found (Ang, Cole, & Lin, 2000; Chrisman, Chua, & Litz, 2004; Daily & Dollinger, 1992), other studies (e.g. Burkart, Panunzi, & Shleifer, 2003; Chrisman et al., 2007; Gomez-Mejia et al., 2001; Schulze et al., 2003b; Schulze et al., 2001) contest this view and argue that the 'many dimensions of exchange' in a family firm might lead to even higher agency costs than in non-family firms.

In contrast to agency theory, which assumes that owners and managers behave in an economically rational way, family firm literature argues that "...a relational contract between a firm owned by a family and an agent (a family member) involves a common bond and a set of mutual expectations that are more likely to be based on emotions and sentiments than a non[-]family relational contract. Therefore, family bonds engender agency contracts that are prone to depart from economic rationality" (Gomez-Mejia et al., 2001, p. 82). Because of these non-economically motivated preferences (such as family status), severe conflicts of interest may still arise in family firms (Schulze et al.,

2001). Such conflicts may lead to, among other things, poor investment decisions (e.g. owner-managers may veto investments if they could threaten the status quo) (Schulze et al., 2001), recruiting unqualified personnel (e.g. owner-managers might want their son or daughter to work for the firm, even if they lack the necessary competences) (Lubatkin, Schulze, Ling, & Dino, 2005) and free riding (e.g. non-family managers might resent the fact that most career opportunities are based on family status instead of demonstrated performance and might therefore shirk) (Gomez-Mejia et al., 2001). In order to mitigate the related agency costs, an auditor might be appointed in order to be better able to monitor the owner-managers and their effective performance reflected in the firm's accounting figures.

The results of Carey et al. (2000) and Niskanen et al. (2010) support the hypothesis that private family firms also demand auditing in order to mitigate agency costs. However, these studies generally focus on the agency conflicts between family and non-family members, thus assuming that the interests of family members are more aligned. Collis et al. (2004), Niemi et al. (2012) and Collis (2012) analogously hypothesize that wholly family-owned private firms incur a minimal level of agency costs and therefore demand less monitoring. In the next paragraphs, however, we will focus on the agency conflicts that might arise within these wholly family-owned private firms, namely between the active family shareholders (the agents) and the passive family shareholders (the principals). More specifically, we will elaborate on how these agency costs differ over generations, arguing that generational stage is an important moderator with respect to the agency cost hypotheses related to audit demand.

2.2.2 The moderating role of generation

2.2.2.1 Shareholder-manager agency relationship

As explained in the previous section, the hypothesized negative association between management ownership and audit demand is founded on the assumption that agency costs decrease when managers' ownership increases due to the interest alignment effect[7] of management shareholdings, as described by Jensen and Meckling (1976). Within finance literature, however, several studies (e.g. Cui & Mak, 2002; McConnell & Servaes, 1990; Morck et al., 1988; Short & Keasey, 1999) found evidence of an offsetting entrenchment effect within specific regions of management ownership in which there is a positive association between management ownership and the level of agency costs. As larger shareholdings give managers more discretion in using the firm's assets for their own purpose, they might be inclined to divert resources away from the firm if the value of this opportunistic behavior (e.g. perquisites consumption,

[7] In line with Niskanen et al. (2010), we use the term 'interest alignment effect' although other terms exist in the literature as well. Morck et al. (1988), for example, use the term 'convergence-of-interest' effect and Fan and Wong (2005) refer to the 'incentive alignment' effect to describe the effect that agency costs decrease when management ownership increases. Moreover, several studies (e.g. Lennox, 2005) prefer the term 'divergence-of-interests' effect. Although this term seems to contradict the others, it actually refers to the same effect but focuses on a decrease in management ownership (leading to higher agency costs). The term 'divergence-of-interests' effect is actually the most closely related to the description of Jensen and Meckling (1976, p. 313) as they describe it as follows: "...[a]s the owner-manager's fraction of the equity falls, his fractional claim on the outcomes falls and this will tend to encourage him to appropriate larger amounts of the corporate resources in the form of perquisites". In order to make the comparison with the entrenchment effect more clear (which generally focuses on an increase in management ownership), however, we prefer the term 'interest alignment effect'.

shirking, etc.) outweighs the loss they suffer from a reduced firm value (Morck et al., 1988; Short & Keasey, 1999).

Lennox (2005) and Niskanen et al. (2011) confirm the existence of both an interest alignment effect and an entrenchment effect in a private firm context. Within the context of private *family* firms, we also expect that both an interest alignment effect, in which management ownership is negatively associated with audit demand, and an entrenchment effect, in which management ownership is positively associated with audit demand, can be at play. In the next paragraphs, however, we argue that the prevailing effect depends on the generational stage the family firm is in. Based on family firm literature, we expect the interest alignment effect to prevail in first generation private family firms, which we define as firms that are still (mainly) owned by the founder(s) of the firm. Additionally, we expect the entrenchment effect to prevail in subsequent generation private family firms, which we define as firms that are (mainly) owned by the descendant(s) of the founder(s). More specifically, we argue that the extent of (parental) altruism in first and subsequent generation family firms has a pivotal role in altering the effect that management ownership has on audit demand.

The economic literature defines altruism as a utility function that positively links the welfare of an individual to the welfare of others (Becker, 1981; Lunati, 1997; Stark, 1995). Parents are concerned about the welfare of their children because they love them but also because they feel compelled to do so. Otherwise, they would harm their own welfare (Becker, 1981; Van den Berghe & Carchon, 2003).

Altruism will therefore compel first generation owner-managers to take into account the needs of all family members (i.e. themselves and their children) when making decisions. This helps to align incentives among the family members and can reduce information asymmetries and resulting agency costs (Karra, Tracey, & Phillips, 2006; Van den Berghe & Carchon, 2003). Although higher management ownership would make these first generation owner-managers more able to expropriate minority family shareholders (i.e. their children), they are not expected to do so as this would harm their own welfare[8]. We therefore expect the entrenchment effect to be minimal in first generation wholly family-owned private firms, leaving the interest alignment effect to prevail and thus having a negative association between management ownership and audit demand.

For subsequent generation private family firms, we hypothesize the opposite. As the interests of descendants will be centred on their own immediate families (their own children) (Blanco-Mazagatos et al., 2007), these descendants will have stronger altruistic feelings towards their own children than towards their extended family. This view is supported by research which shows that "…parents are generally found to be far more generous to their children than children are to either their parents or to each other" (Chakrabarti et al., 1993;

[8] On the contrary, parents may have a biased perception of the capabilities of their children active in the firm which hampers their ability to discipline them. These children may free ride and shirk, spoiling the firm's resources and thus destroy firm value (Schulze et al., 2001; Schulze et al., 2003b). Although this is often called the dark side of altruism (Lubatkin et al., 2005; Schulze et al., 2003a), it does not necessarily create agency problems in a wholly family-owned private firm if this behavior does not contravene the goals of the shareholder(s), i.e. the founder(s) (parent(s)) and their children (Chrisman et al., 2004).

Stark & Falk, 1998, in: Lubatkin et al., 2005, p. 320). Therefore, alignment of interests among shareholders becomes much more difficult to obtain. The potential result is a mix of competing values and interests among owner-managers and other (passive) family shareholders, each getting a different perception of what is best for the firm, which will increase the risk of family conflict (Miller & Le Breton-Miller, 2006).

In contrast to first generation private family firms, we expect that an increase in management ownership in subsequent generation private family firms will generate higher shareholder-manager agency costs. Active family owner-managers possessing a higher number of shares might misuse their discretion to achieve personal goals (i.e. goals that increase the welfare of their own immediate families) at the expense of the other (passive) minority family-shareholders (i.e. their brothers, sisters, cousins, etc. or their parents if they still own a minority of the shares) (Miller & Le Breton-Miller, 2006). The pursuit of these goals can lead to excessive consumption of perks, exorbitant salaries, investment in low return showcase projects to advance their own career perspectives, shirking, etc. (Blanco-Mazagatos et al., 2007; Gomez-Mejia et al., 2001; Poza, Hanlon, & Kishida, 2004; Schulze et al., 2003b; Schulze et al., 2001). Due to a diminishing feeling of altruism towards their extended family, there is a higher chance that the owner-managers will use the discretion the large ownership share provides them with, in using the firm's assets to achieve their own (i.e. immediate family) goals, hence generating higher agency costs (Blanco-Mazagatos et al., 2007; Miller & Le Breton-Miller, 2006).

Overall, instead of the generally hypothesized interest alignment effect, we thus expect the entrenchment effect to prevail within subsequent generation

private family firms, which leads us to hypothesize a positive association between management ownership and audit demand in subsequent generation private family firms.

Audit demand, however, should be defined more broadly in the US private (family) firm context as US private (family) firms have no audit requirement and can therefore choose among other auditor services than only an audit. In contrast to the European context, in which an audit firm is mostly hired for having the annual accounts audited, US private companies can choose among three related services (a compilation, a review and an audit) when hiring an audit firm[9] (Blackwell et al., 1998). Which type of auditor service the firm chooses should be based on the firm's needs and the requirements of creditors and investors (AICPA, 2010). As compilations, reviews and audits could all be considered as means to reduce information asymmetries, and therefore its related agency costs, we will not only examine audit demand. More specifically, we will examine the demand for auditor engagement, indicating whether the firm had any form of engagement with an audit firm, irrespective of whether this engagement relates to an audit, review or compilation. Following the above arguments, we therefore hypothesize:

[9] We use the term 'audit firm' or 'auditor' to indicate that these firms provide audit-related services (such as a compilation, review and audit). In the US, however, these firms are generally referred to as CPAs (Certified Public Accountant). Although this name might indicate that the primary services of CPAs relate to accounting and/or bookkeeping services, this is not the case. The provision of assurance services (audits, reviews and compilations) is generally considered as their core business and therefore we prefer the terms 'audit firm' and 'auditor' in order to prevent confusion that might arise when using the term 'CPA'.

H1a: *Generational stage will moderate the relationship between management ownership and auditor engagement in such a way that management ownership will have a negative effect on auditor engagement in first generation private family firms while having a positive effect in subsequent generation private family firms.*

2.2.2.2 Shareholder-debtholder agency relationship

We argue that the generational stage may also have a moderating effect within the 'leverage – audit demand' relationship. As owner-managers of family firms are generally considered to have a long-term perspective because of their often undiversified portfolios and their wish to pass the firm to their children (Anderson et al., 2003; James, 1999), they will be less inclined to transfer wealth from debtholders to shareholders and the related agency costs between both parties will therefore be relatively low. Moreover, families face reputation concerns arising from the long-term presence in the firm. The owner-manager is aware that one exploitive action on the part of the family can severely damage the family's and firm's reputation (Anderson et al., 2003). Given the low management turnover rate in family firms, owner-managers keep their positions for a long time. Therefore, banks and other debtholders will often "...develop personal and well-informed relationships..." with these family executives (Anderson et al., 2003, p. 267), which significantly reduces information asymmetries and therefore the related agency costs. However, the strength of these relationships may weaken as generations progress. The initial strong bond between the founder of the firm and a debtholder may fade when descendants

take over the firm as they generally do not know the debtholder as well as the founder did. Moreover, the managers' long-term perspective may be weaker or even completely absent in subsequent generation private family firms due to the aforementioned consequences of a greater concern about their own nuclear households since it raises the problem of opportunistic behavior, such as enjoying excessive salaries and shirking (Blanco-Mazagatos et al., 2007).

Debtholders may further consider family managers of subsequent generation private family firms to be less competent at running the firm since family managers are often selected, irrespective of merit, out of a restricted pool of talent due to parental altruism (Blanco-Mazagatos et al., 2007; Lubatkin et al., 2005; Schulze et al., 2003b; Schulze et al., 2001; Villalonga & Amit, 2006). As empirically confirmed by Anderson et al. (2003), this implies that descendant managers might lack the unique, value-adding skills that founders do have, which results in a higher agency cost of debt. These arguments are also consistent with the results of Villalonga and Amit (2006) and Morck et al. (1988), suggesting that founder led (first generation) companies outperform those led by descendants (subsequent generations).

Following the above mentioned arguments, we hypothesize that subsequent generation private family firms face higher agency costs of debt compared to first generation private family firms. This might lead debtholders to require more monitoring by auditors in subsequent generation private family firms. More specifically, we posit:

> H2a: *Generational stage will moderate the relationship between leverage and auditor engagement in such a way that leverage will have a stronger*

positive effect on auditor engagement in subsequent generation private family firms compared to first generation private family firms.

2.2.2.3 Auditor engagement versus auditor assurance

Compilations, reviews and audits differ in the level of assurance that auditors obtain about the validity of the financial statements. The level of obtained assurance is the highest for audits as the objective of an audit is "[t]o obtain a high level of assurance about whether the financial statements as a whole are free of material misstatement thereby enabling the auditor to express an opinion on whether the financial statements are presented fairly, in all material respects" (AICPA, 2010, p. 2). This implies that the auditor obtains an understanding of the entity's internal control and assesses fraud risk, performs inquiry and analytical procedures and performs verification and substantiation procedures (AICPA, 2010). For compilation engagements, the auditor does not obtain any assurance as such engagements only imply that the auditor "...assembles the firm's financial information and puts it into a format consistent with GAAP..." (Blackwell et al., 1998, p. 58). The objective of a review is "[t]o obtain limited assurance that there are no material modifications that should be made to the financial statements" and the level of obtained assurance therefore lies in-between those of audits and compilations (AICPA, 2010, p. 2). This implies that the audit firm remains necessary to perform inquiry and analytical procedures but should not obtain an understanding of the entity's internal control, assess fraud risk or perform verification and substantiation procedures (AICPA, 2010).

As a higher level of assurance corresponds to a lower risk of a material misstatement in the annual accounts, we might expect that higher levels of assurance are better able to reduce information asymmetries and therefore the related agency costs. To take this possible effect into account, we will not only examine the demand for auditor engagement, as formulated in H1a and H2a, but we will also examine the demand for auditor assurance:

> H1b: *Generational stage will moderate the relationship between management ownership and auditor assurance in such a way that management ownership will have a negative effect on auditor assurance in first generation private family firms while having a positive effect in subsequent generation private family firms.*
>
> H2b: *Generational stage will moderate the relationship between leverage and auditor assurance in such a way that leverage will have a stronger positive effect on auditor assurance in subsequent generation private family firms compared to first generation private family firms.*

2.3 Data and methodology

2.3.1 Data

In order to examine the demand for auditor services in US private family firms, we use data from the 2003 Survey of Small Business Finances (SSBF) conducted by the Board of Governors of the Federal Reserve. This database contains information about 4,240 firms, representing 6.3 million small businesses in the United States that were all for-profit, non-financial, non-farm and non-subsidiary

business enterprises that had fewer than 500 employees and were in operation as of year-end 2003.

As the dataset contains specific information about ownership characteristics, we were able to exclude all firms that were not wholly (100%) owned by members of the same family (where family refers to spouses, parents/guardians, brothers, sisters or close relatives), which led to a sample of 677 wholly family-owned private firms. Within this sample, we also removed those firms that were not family managed (31 observations) to eliminate the possible influence of agency conflicts between non-family managers-agents and family shareholders-principals in order to be able to focus on the agency conflicts arising between active family owner-managers and passive family shareholders. Moreover, we excluded 15 outliers[10] and 149 cases[11] with missing values, leading to a final sample of 482 firms. In order to alleviate potential outlier problems further, all continuous variables were winsorized at the 1st and 99th percentiles.

[10] Firms that filed for bankruptcy (5 cases), firms that had a negative value of total assets (5 cases) and firms with a negative quick ratio (5 cases) were considered as outliers and were therefore deleted.

[11] Of these 149 cases, 143 cases were deleted due to a missing value for the variable QUICK. More specifically, as this variable is a ratio (see section 2.3.2 for more information), these missing values were generated because of a value of 0 in the denominator. As QUICK is considered an important control variable in audit studies, we also included this variable in our study. However, we also ran our models without this variable in the robustness paragraph (see section 2.4.3) in order to be sure that the removal of these cases did not distort our results.

2.3.2 Model

In order to test hypothesis 1a and 2a, we employ a multivariate logit[12] regression analysis where the dependent variable, auditor ENGAGEMENT, is a dummy variable coded 1 if the firm's financial statements are audited, reviewed or compiled and 0 otherwise. In order to test hypothesis 1b and 2b, we use an ordered logit analysis where the dependent variable, auditor ASSURANCE, is an ordinal variable coded 1 if the firm has financial statements that are compiled (but not reviewed and/or audited), coded 2 if the firm's financial statements are reviewed (but not audited), coded 3 if the firm's financial statements are audited and 0 otherwise. This approach corresponds to that of Allee and Yohn (2009) while examining the financial reporting practices of small privately held businesses. Although both dependent variables are hardly used in audit literature focusing on private (family) firms, we believe the inclusion of those variables is necessary to adjust the audit demand model to the context of the US. As audits are not required for private firms in the US, reviews and compilations could be valuable substitutes and should therefore be taken into account as well. The model we use to test hypothesis 1a and 2a is specified as follows:

$$\text{Prob(ENGAGEMENT)} = \frac{1}{1+e^{-Z}}$$

$$\begin{aligned}\text{where } Z = {} & \beta_0 + \beta_1 \text{MAN\_OWN} + \beta_2 \text{GENERATION} + \beta_3 \text{MAN\_OWN*GENERATION} + \\ & \beta_4 \text{LEVERAGE} + \beta_5 \text{LEVERAGE*GENERATION} + \beta_6 \text{ROA} + \beta_7 \text{QUICK} + \\ & \beta_8 \text{DISTRESS} + \beta_9 \text{SIZE} + \beta_{10} \text{LIMITED} + \beta_{11,\ldots,17} \text{INDUSTRY} + \varepsilon\end{aligned}$$

[12] We prefer logit to probit as both methods are equally efficient but logit does not require normality of parameter distribution (Piot, 2001).

In order to test hypothesis 1b and 2b, we include the same independent variables within our ordered logistic regression model and examine their influence on the likelihood of demanding higher levels of ASSURANCE.

Since ordered logistic regression assumes the coefficients not to be dependent on the outcome category (Hosmer & Lemeshow, 2000), which is a strong assumption, we also estimate multinomial logistic regressions in which auditor ASSURANCE remains the dependent variable and in which we also include the same independent and control variables. This analysis will give a more detailed view about how generation may affect the relationship both between management ownership and each specific auditor service and between leverage and each specific auditor service. More specifically, it investigates the effect of our independent variables on the probability of (1) demanding a compilation versus no auditor service at all, (2) demanding a review versus no auditor service at all and (3) demanding an audit versus no auditor service at all.

MAN_OWN represents the sum of ownership percentages of the top three owners[13] of the firm who also manage it. Management ownership is frequently used within audit demand models as a proxy for the agency conflicts between owners and managers in order to test the first agency cost hypothesis (e.g. DeFond, 1992; Francis & Wilson, 1988; Lennox, 2005; Reed et al., 2000). Due

[13] If a firm has less than three owners, MAN_OWN refers to the ownership percentage of the one or two owner-manager(s). We were only able to calculate MAN_OWN based on the ownership percentages of the top three owners because of a limitation of the dataset. In the robustness section (2.4.3), we therefore also ran our regressions with other proxies for the shareholder-manager agency costs.

to our sample of wholly family-owned private firms, all owner-managers are also family members in this study.

LEVERAGE, defined as total debt to total assets, is included to test the second agency cost hypothesis, which is in accordance with several other studies as well (Francis, Richard, & Vanstraelen, 2009; Francis & Wilson, 1988; Hay & Davis, 2004; Niskanen et al., 2010, 2011; Piot, 2001; Reed et al., 2000).

GENERATION is a dummy variable coded 1 if the family firm is a subsequent generation family firm and coded 0 if the firm is a first generation family firm. Based on the survey questions, a firm is considered a first generation family firm if the current owners established or purchased[14] it while it is considered a subsequent generation family firm if the current owners inherited it or acquired it as a gift.

The interaction variables MAN_OWN*GENERATION and LEVERAGE*GENERATION are included to test our four hypotheses concerning the moderating role of generation within the auditor services demand functions of wholly family-owned private firms.

ROA, QUICK, DISTRESS and SIZE are included as control variables. We included ROA, defined as income after expenses and taxes to total assets, to control for the possible effect of profitability (Niskanen et al., 2010). Both QUICK, which is defined as current assets minus inventory to current liabilities, and DISTRESS, which is a dummy variable coded 1 if the total amount of the

[14] In the robustness section, we also ran our regressions without the firms that were 'purchased' as these firms might also include subsequent generation firms that children bought from their parents.

firm's equity is negative and 0 otherwise, are indicators for the firm-specific risk of bankruptcy (Niskanen et al., 2010). They are included as risk may engender information asymmetries and therefore the demand for auditor services in itself. SIZE, defined as the natural logarithm of total assets, is included to control for the complexity of firms as more complex firms may demand more monitoring to compensate for the loss of control (Abdel-Khalik, 1993).

Finally, LIMITED, which is a dummy variable coded 1 if the firm is organized with limited liability for the owners and 0 otherwise (Allee & Yohn, 2009) and INDUSTRY (8 dummy variables referring to the industry each firm is operating in, based on the two-digit SIC codes) are included to control for possible firm type and industry effects. An overview of all included variables can also be found in table 1.

Table 1. Definition of variables

Variable	Definition
Dependent variables:	
ENGAGEMENT	Whether the firm's financial statements are audited, reviewed or compiled (1, 0)
ASSURANCE	The level of auditor assurance that was demanded by the firm (3=audit; 2=review; 1=compilation; 0=no assurance)
Explanatory variables:	
MAN_OWN	The sum of ownership percentages of the top three owners of the firm who also manage it.
GENERATION	Whether the family firm is a subsequent generation private family firm (1, 0)
LEVERAGE	Total debt to total assets
Control variables:	
ROA	Income after expenses and taxes to total assets
QUICK	Current assets minus inventory to current liabilities
DISTRESS	Whether the total amount of the firm's equity is negative (1, 0)
SIZE	The natural logarithm of total assets
LIMITED	Whether the firm is organized with limited liability for the owners (1, 0)
INDUSTRY_1	Whether the firm is part of the mining or construction industry (1, 0)
INDUSTRY_2	Whether the firm is part of the manufacturing industry with SIC code 20-29 (1, 0)
INDUSTRY_3	Whether the firm is part of the manufacturing industry with SIC code 30-40 (1, 0)
INDUSTRY_4	Whether the firm is part of the transportation or public utilities industry (1, 0)
INDUSTRY_5	Whether the firm is part of the wholesale trade industry (1, 0)
INDUSTRY_6	Whether the firm is part of the finance, insurance or real estate industry (1, 0)
INDUSTRY_7	Whether the firm is part of the services industry with SIC code 70-79 (1, 0)
INDUSTRY_8	Whether the firm is part of the services industry with SIC code 80-90 (1, 0)

2.4 Results

2.4.1 Descriptive statistics and correlations

Of all our 482 sample firms, 319 (66%) were engaged with an auditor. Of these 319 firms, 74 firms had their annual accounts compiled (but neither reviewed, nor audited), 101 firms engaged an audit firm to review their financial statements and 144 firms actually demanded an audit. This distribution leads to a mean value of 1.47 for the variable ASSURANCE.

Table 2 presents the descriptive statistics of our sample. In panel A, we report the minima, maxima, medians, means and standard deviations of the continuous variables. Moreover, this panel presents the mean of the variable MAN_OWN and LEVERAGE for both first and subsequent generation private family firms and also presents the *p*-values of the mean-comparison t-tests. We also compare the means of each continuous variable between firms that engaged an auditor for some type of auditor service (ENGAGEMENT=1) and firms that did not (ENGAGEMENT=0). In line with the first agency cost hypothesis, firms that engaged an auditor have a significantly lower average management ownership percentage compared to firms that did not engage an auditor. The level of leverage is not found to be significantly different between firms that engage an auditor and those that do not.

Table 2. Descriptive statistics

Panel A. Continuous variables

						GENERATION (first/subsequent)			ENGAGEMENT (yes/no)						
						First (0)	Subs. (1)	(1) vs. (0)	No (n = 163)			Yes (n = 319)			'yes' vs. 'no'
Variable	*Min*	*Max*	*Median*	*Mean*	*s.d.*	*Mean*	*Mean*	*P-Value*	*Median*	*Mean*	*s.d.*	*Median*	*Mean*	*s.d.*	*p-Value*
MAN_OWN	0.00	100.00	100.00	73.72	34.26	75.08	62.44	0.012**	100.00	79.96	31.03	99.00	70.53	35.41	0.004***
LEVERAGE	0.01	8.28	0.54	0.72	0.99	0.72	0.66	0.678	0.45	0.70	0.98	0.57	0.72	1.00	0.835
ROA	-3.88	17.20	0.17	0.68	2.09				0.23	0.88	2.43	0.15	0.57	1.90	0.121
QUICK	0.05	213.81	2.34	10.52	29.47				2.64	10.67	30.13	2.10	10.45	29.18	0.940
SIZE	8.10	17.47	13.72	13.48	2.03				12.92	12.79	2.01	14.03	13.83	1.95	<0.001***
ASSETS (in millions)	0.01	88.30	0.91	3.52	8.27				0.41	1.80	3.85	1.24	4.41	9.68	0.001***

n = 482; *, **, *** indicate significance at the 10%, 5% and 1% levels respectively (two-tailed); ASSETS is defined as the untransformed value of total assets (in millions); See table 1 for the definitions of the other variables.

	ASSURANCE (0 = no assurance, 1 = compilation, 2 = review, 3 = audit)											
	Compilation (1) (n = 74)			Review (2) (n = 101)			Audit (3) (n = 144)			(1) versus (0)	(2) versus (1)	(3) versus (2)
Variable	*Median*	*Mean*	*s.d.*	*Median*	*Mean*	*s.d.*	*Median*	*Mean*	*s.d.*	*p-Value*	*p-Value*	*p-Value*
MAN_OWN	95.00	69.18	36.15	88.00	69.19	35.71	100.00	72.17	35.00	0.020**	0.998	0.516
LEVERAGE	0.55	0.57	0.46	0.58	0.88	1.30	0.55	0.70	0.95	0.252	0.053*	0.223
ROA	0.23	0.51	0.99	0.11	0.69	2.03	0.14	0.51	2.15	0.206	0.476	0.504
QUICK	2.38	10.90	29.02	2.14	8.02	23.97	2.06	11.92	32.48	0.955	0.473	0.306
SIZE	13.52	13.49	1.65	14.42	14.06	1.96	14.02	13.84	2.07	0.009***	0.046**	0.413
ASSETS (in millions)	0.74	2.28	3.70	1.84	4.22	6.43	1.23	5.63	13.00	0.370	0.021**	0.312

n = 482; *, **, *** indicate significance at the 10%, 5% and 1% levels respectively (two-tailed); ASSETS is defined as the untransformed value of total assets (in millions); See table 1 for the definitions of the other variables.

Panel B. Dichotomous variables

		ENGAGEMENT (yes/no)			ASSURANCE (0 = no assurance, 1 = compilation, 2 = review, 3 = audit)					
	N = 482	No (n = 163)	Yes (n = 319)	'yes' vs. 'no'	Compilation (1) (n = 74)	Review (2) (n = 101)	Audit (3) (n = 144)	(1) vs. (0)	(2) vs. (1)	(3) vs. (2)
Variable	*Prop.*	*Prop.*	*Prop.*	*p-Value*	*Prop.*	*Prop.*	*Prop.*	*p-Value*	*p-Value*	*p-Value*
GENERATION	0.11	0.07	0.13	0.041**	0.11	0.15	0.13	0.286	0.435	0.596
DISTRESS	0.17	0.18	0.16	0.561	0.16	0.22	0.13	0.683	0.358	0.053
LIMITED	0.85	0.82	0.87	0.127	0.82	0.90	0.87	0.877	0.138	0.432
INDUSTRY_1	0.11	0.13	0.10	0.254	0.08	0.10	0.11	0.234	0.684	0.762
INDUSTRY_2	0.05	0.06	0.05	0.502	0.03	0.03	0.07	0.264	0.916	0.172
INDUSTRY_3	0.09	0.05	0.12	0.017**	0.05	0.14	0.13	0.871	0.069*	0.880
INDUSTRY_4	0.05	0.02	0.07	0.053*	0.08	0.09	0.04	0.045**	0.851	0.127
INDUSTRY_5	0.32	0.28	0.33	0.263	0.45	0.34	0.27	0.013	0.142	0.268
INDUSTRY_6	0.06	0.06	0.06	0.938	0.04	0.02	0.10	0.514	0.416	0.016**
INDUSTRY_7	0.18	0.23	0.15	0.047**	0.14	0.19	0.14	0.100	0.352	0.300
INDUSTRY_8	0.14	0.16	0.13	0.303	0.14	0.10	0.14	0.628	0.458	0.349

n = 482; *, **, *** indicate significance at the 10%, 5% and 1% levels respectively (two-tailed); For variable definitions, see table 1.

Notes: This table presents the descriptive statistics of the variables used to test our hypotheses. Panel A presents the minima, maxima, medians, means and standard deviations of the continuous variables (ASSETS, defined as the untransformed value of total assets (in millions) is also included). Moreover, this panel presents the mean of the variable MAN_OWN and LEVERAGE for both first and subsequent generation private family firms and also presents the *p*-values of the mean-comparison t-tests. We also compare the means of each continuous variable between firms that engaged an audit firm for some type of auditor service (ENGAGEMENT=1) and firms that did not (ENGAGEMENT=0). A similar comparison is made between firms that did not engage an auditor (ASSURANCE=0, please remark that this is equal to ENGAGEMENT=0 and details for this particular group are therefore not mentioned in the 'assurance' section of the table) and firms that had their financial statements compiled by an auditor (ASSURANCE=1), between the 'compiled' firms (ASSURANCE=1) and the firms that had their annual accounts reviewed (ASSURANCE=2) and between the 'reviewed' firms (ASSURANCE=2) and the firms that actually demanded an audit (ASSURANCE=3).

Panel B presents the dichotomous variables and the proportion (relative frequencies) of the cases that are coded 1 for each variable. We compare the proportions of the firms that did not engage an auditor (ENGAGEMENT=0) with those that did (ENGAGEMENT=1) and a similar comparison is made between the firms that demand a different level of assurance.

A similar comparison is made between firms that did not engage an auditor for some type of service (ASSURANCE=0) and firms that had their financial statements compiled by an auditor (ASSURANCE=1), between the 'compiled' firms (ASSURANCE=1) and the firms that had their annual accounts reviewed (ASSURANCE=2) and between the 'reviewed' firms (ASSURANCE=2) and the firms that actually demanded an audit (ASSURANCE=3). For firms that engage an auditor for some type of service, the average management ownership percentages differ insignificantly among the three assurance levels while the average level of leverage is found to be significantly higher for firms that had their annual accounts reviewed compared to those that had their annual accounts compiled. Panel B of table 2 presents the dichotomous variables and the proportion (relative frequencies) of the cases that are coded 1 for each variable. In this panel, we also compare the proportions of the firms that did not engage an auditor (ENGAGEMENT=0) with those that did (ENGAGEMENT=1) and a similar comparison is made between the firms that demand a different level of assurance.

In table 3, we report the Pearson (below the diagonal) and Spearman (above the diagonal) correlations of the variables within our model. The correlations between management ownership and both auditor engagement and assurance are significantly negative, which is consistent with the first agency cost hypothesis. Contrary to the second agency cost hypothesis, leverage does not show significant correlations with the dependent variables. We further checked for multicollinearity using variance inflation factor analysis (VIF) and find all scores to be lower than 10 (the highest score was 2.54), indicating no problem of multicollinearity.

Table 3. Correlation matrix (Pearson correlations below the diagonal, Spearman correlations above the diagonal)

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. ENGAGEMENT	1	.85***	-.13***	.09**	.03	-.10**	-.02	-.03	.24***	.07	-.05	-.03	.11**	.09*	.05	.00	-.09**	-.05
2. ASSURANCE	.85***	1	-.08*	.08*	.04	-.12***	-.02	-.05	.23***	.07	-.03	.01	.13***	.04	-.02	.05	-.08*	-.03
3. MAN_OWN	-.13***	-.09**	1	-.12***	-.03	.14***	.13***	.07	-.30***	-.20***	.08*	-.08*	-.11**	-.01	-.07	.11**	.00	.09**
4. GENERATION	.09**	.08*	-.11**	1	-.06	-.09**	-.01	-.03	.22***	.11**	.00	-.05	.16***	.07	.04	-.06	-.07	-.08*
5. LEVERAGE	.01	.02	.04	-.02	1	-.16***	-.54***	.65***	.00	.18***	.01	.04	-.05	.06	.07	-.06	.04	-.12**
6. ROA	-.07	-.06	.11**	-.08*	.16***	1	.13***	-.07	-.25***	-.19***	.12***	-.03	-.02	-.12**	-.03	.03	-.06	.08*
7. QUICK	-.00	.01	.10**	-.04	-.12***	.00	1	-.30***	-.15***	-.16***	.09**	-.06	-.01	-.02	-.23***	.02	.05	.22***
8. DISTRESS	-.03	-.05	.10**	-.03	.63***	.08*	-.10**	1	-.18***	.05	.01	.02	-.03	.07	-.05	-.02	.05	-.02
9. SIZE	.24***	.23***	-.29***	.21***	-.22***	-.28***	-.12***	-.19***	1	.37***	-.03	.10**	.21***	.09**	.15***	-.12**	-.15***	-.24***
10. LIMITED	.07	.07	-.18***	.11**	.10**	-.07	-.11**	.05	.39***	1	.00	-.01	.09**	.10**	.07	-.07	-.05	-.14***
11. INDUSTRY_1	-.05	-.03	.07	.00	.00	.11**	.12***	.01	-.03	.00	1	-.08*	-.11**	-.08*	-.24***	-.09**	-.17***	-.14***
12. INDUSTRY_2	-.03	.01	-.08*	-.05	-.01	-.05	-.06	.02	.10**	-.01	-.08*	1	-.08*	-.05	-.16***	-.06	-.11**	-.09**
13. INDUSTRY_3	.11**	.13***	-.10**	.16***	-.03	-.05	-.07	-.03	.20***	.09**	-.11**	-.08*	1	-.08*	-.22***	-.08*	-.15***	-.13***
14. INDUSTRY_4	.09*	.04	-.01	.07	.07	-.06	-.04	.07	.09**	.10**	-.08*	-.05	-.08*	1	-.16***	-.06	-.11**	-.09**
15. INDUSTRY_5	.05	-.02	-.04	.04	.05	-.02	-.09**	-.05	.16***	.07	-.24***	-.16***	-.22***	-.16***	1	-.17***	-.32***	-.27***
16. INDUSTRY_6	-.00	.05	.11**	-.06	-.04	.11**	-.03	-.02	-.09**	-.07	-.09**	-.06	-.08*	-.06	-.17***	1	-.12***	-.10**
17. INDUSTRY_7	-.09**	-.08*	-.02	-.07	.02	-.05	-.03	.05	-.18***	-.05	-.17***	-.11**	-.15***	-.11**	-.32***	-.12***	1	-.19***
18. INDUSTRY_8	-.05	-.03	.07	-.08*	-.07	.02	.19***	-.02	-.22***	-.14***	-.14***	-.09**	-.13***	-.09**	-.27***	-.10**	-.19***	1

n = 482; *, **, *** indicate significance at the 10%, 5% and 1% levels respectively (two-tailed); For variable definitions, please refer to table 1.

2.4.2 Hypotheses tests

Table 4 presents our logistic regression models (model 1 and 2) and ordered logistic regression models (model 3 and 4) related to the demand for auditor engagement and assurance respectively. The table presents the beta coefficients of all explanatory and control variables, the robust standard errors, the Log likelihood statistic, the Chi-square statistic and three goodness of fit measures (Nagelkerke R^2, McFadden R^2 and Cox-Snell R^2). All models are found to be significant ($p \leq 0.0011$). The Nagelkerke pseudo R^2 values of our engagement models (0.120 and 0.137 respectively) are similar to the corresponding statistics reported by Niskanen et al. (2010) and Carey et al. (2000), which range between 0.10 and 0.21.

Model 1 can be considered as our benchmark model as it is comparable to the models included in audit demand studies focusing on listed companies. Although the coefficient of MAN_OWN is negative in this model, indicating that higher management ownership leads to a lower demand for auditor engagement (due to the interest alignment effect), it is not significant. We argue that this might be due to the existence of a moderating effect of the generational stage of the family firm, as hypothesized in H1a. To test this, we included the moderating variable MAN_OWN*GENERATION in model 2. H1a is supported by our data as this model shows a significant negative coefficient for the variable MAN_OWN and a significant positive coefficient for the interaction variable MAN_OWN*GENERATION. The sum of the coefficients of both variables is positive, denoting that management ownership is positively related to auditor engagement (indicating an entrenchment effect) if the firm is in a subsequent generational stage. Management ownership thus only seems to be negatively

associated with the demand for auditor engagement (indicating an interest alignment effect) in first generation private family firms.

Table 4. Regression results (logistic regression and ordered logistic regression)

Model	**1**	**2**	**3**	**4**
Dependent variable:	Auditor ENGAGEMENT		Auditor ASSURANCE	
Independent variables:				
MAN_OWN	-0.0052	-0.0080**	-0.0021	-0.0026
	(0.0033)	(0.0035)	(0.0024)	(0.0025)
GENERATION		-1.2871**		-0.1788
		(0.6450)		(0.6149)
*MAN_OWN*GENERATION*		0.0247**		0.0039
		(0.0104)		(0.0075)
LEVERAGE	0.2119	0.2147	0.2684**	0.2422**
	(0.1411)	(0.1510)	(0.1051)	(0.1119)
*LEVERAGE*GENERATION*		-0.0077		0.0855
		(0.1001)		(0.0708)
ROA	-0.0056	-0.0012	-0.0193	-0.0121
	(0.0481)	(0.0491)	(0.0574)	(0.0581)
QUICK	0.0033	0.0036	0.0034	0.0034
	(0.0034)	(0.0033)	(0.0034)	(0.0034)
DISTRESS	-0.1250	-0.1034	-0.3235	-0.2999
	(0.3542)	(0.3568)	(0.2765)	(0.2789)
SIZE	0.2730***	0.2717***	0.2411***	0.2389***
	(0.0668)	(0.0677)	(0.0584)	(0.0588)
LIMITED	-0.3878	-0.4132	-0.2084	-0.2020
	(0.2952)	(0.3012)	(0.2678)	(0.2685)
INDUSTRY_1	-0.2893	-0.3623	-0.2065	-0.2288
	(0.3738)	(0.3793)	(0.3664)	(0.3698)
INDUSTRY_2	-0.5893	-0.6412	-0.2156	-0.2207
	(0.4981)	(0.5013)	(0.5554)	(0.5555)
INDUSTRY_3	0.5371	0.3924	0.3828	0.3444
	(0.4809)	(0.4908)	(0.3745)	(0.3809)
INDUSTRY_4	0.7748	0.7729	0.0414	-0.0024
	(0.6136)	(0.6268)	(0.3566)	(0.3590)
INDUSTRY_5	0.0061	-0.0334	-0.2435	-0.2503
	(0.3244)	(0.3263)	(0.3078)	(0.3102)
INDUSTRY_6	0.2337	0.2270	0.6278	0.6268
	(0.4681)	(0.4670)	(0.5181)	(0.5154)
INDUSTRY_7	-0.2566	-0.2982	-0.2379	-0.2400
	(0.3573)	(0.3610)	(0.3453)	(0.3463)
Intercept 1	-2.3802***	-2.1128**	2.3006***	2.2316***
	(0.9186)	(0.9297)	(0.8015)	(0.8034)
Intercept 2			2.9919***	2.9243***
			(0.8133)	(0.8153)
Intercept 3			3.9392***	3.8718***
			(0.8306)	(0.8324)
Log likelihood	-286.49	-283.29	-626.33	-625.80
Chi-square	36.02***	41.03***	35.83***	40.55***
Nagelkerke R^2	0.120	0.137	0.089	0.091
McFadden R^2	0.071	0.081	0.032	0.033
Cox-Snell R^2	0.087	0.099	0.083	0.085

n = 482; *, **, *** indicate significance at the 10%, 5% and 1% levels respectively (two-tailed); For variable definitions, please refer to table 1.

Notes: This table presents our logistic (logit) and ordered logistic (ologit) regression results. Both the beta coefficients and the robust standard errors (between brackets) are reported per variable for each model. In this table, also the Log likelihood and the Chi-square statistics are reported for each model, as well as three goodness of fit measures (Nagelkerke R^2, McFadden R^2 and Cox-Snell R^2).

Our results, however, do not support H1b since the coefficients of MAN_OWN and MAN_OWN*GENERATION are insignificant in model 4. We thus only find a moderating effect of generation when we treat all auditor services the same while we find no effect when we allow separate intercepts for the different services.

Our regression results do not support H2a as the coefficients of the variable LEVERAGE and the moderating variable LEVERAGE*GENERATION are insignificant in model 2. Although LEVERAGE is found to be significant in model 3 and 4, the moderating variable LEVERAGE*GENERATION remains insignificant and our results therefore provide no support for H2b either.

Table 5, which presents our multinomial logistic regression models, provides us with a more detailed view about how our explanatory variables relate to each auditor service separately. This table also presents the beta coefficients of all explanatory and control variables, the robust standard errors, the Log pseudolikelihood statistic, the Chi-square statistic and three goodness of fit measures (Nagelkerke R^2, McFadden R^2 and Cox-Snell R^2). Both models are found to be significant ($p \leq 0.0003$). The first model corresponds to models 1 and 3 of table 4 and thus does not yet include GENERATION and the moderating variables MAN_OWN*GENERATION and LEVERAGE*GENERATION. The second model of table 5 corresponds to models 2 and 4 of table 4 and does include these variables. These multinomial logistic regression results give a more nuanced view of our findings with respect to ENGAGEMENT and ASSURANCE.

More specifically, although the results in table 5 (model 2) indicate that generation moderates the relationship between MAN_OWN and the probability of

hiring an audit firm to prepare (compilation) or review financial statements (versus not hiring an audit firm at all), the coefficients of MAN_OWN and MAN_OWN*GENERATION are found to be insignificant for audits. This can be explained by the fact that passive family shareholders in private family firms are likely to be able to obtain insider information if necessary and therefore do not need audited financial statements. Since this insider information can be biased as well, however, they are likely to demand a review or compilation when shareholder-manager agency costs are high. Although the level of obtained assurance is lower for these services (a compilation even provides no explicit assurance but can provide some implicit assurance[15] (Johnson, Pany, & White, 1983)), they seem to provide the passive family shareholders with a monitoring tool that is sufficiently effective in reducing the existing agency conflicts. Moreover, since audits are substantially more expensive than reviews and compilations (AICPA, 2010), the demand for these lower assurance services could further be considered as a more cost-effective way to reduce shareholder-manager agency costs compared to demanding an audit in wholly family-owned private firms.

[15] Although the audit firm obtains or provides no explicit assurance in a compilation engagement, "...the CPA should develop an overall evaluation of the accounting information. This evaluation should be completed in the context of the CPA's understanding of the operating characteristics of the client and current economic conditions" (Madray, 2008, p. 4.21). Moreover, "[i]n a compilation, the CPA must comply with Statements on Standards for Accounting and Review Services (SSARSs), which require the accountant to have an understanding of the industry in which the client operates, obtain knowledge about the client, and read the financial statements and consider whether such financial statements appear appropriate in form and free from obvious material errors" (AICPA, 2010, p. 1). Therefore a compilation may provide some (implicit) assurance to the users of the financial statements.

Table 5. Multinomial logistic regression results

Model	**1**			**2**		
Dependent variable: Auditor ASSURANCE	COMPILATION	REVIEW	AUDIT	COMPILATION	REVIEW	AUDIT
Independent variables:						
MAN_OWN	-0.0085*	-0.0051	-0.0034	-0.0131***	-0.0092**	-0.0042
	(0.0047)	(0.0041)	(0.0038)	(0.0050)	(0.0044)	(0.0041)
GENERATION				-2.7684***	-1.7724*	-0.4499
				(1.0523)	(0.9203)	(0.7269)
*MAN_OWN*GENERATION*				0.0433***	0.0346***	0.0097
				(0.0145)	(0.0135)	(0.0118)
LEVERAGE	-0.5912	0.2844	0.3345**	-0.5795	0.3271*	0.2885
	(0.3677)	(0.1811)	(0.1638)	(0.3795)	(0.1872)	(0.1776)
*LEVERAGE*GENERATION*				0.0501	-0.1486	0.0712
				(0.1843)	(0.1375)	(0.1148)
ROA	-0.0605	0.0555	-0.0350	-0.0509	0.0533	-0.0258
	(0.0823)	(0.0526)	(0.0761)	(0.0799)	(0.0535)	(0.0758)
QUICK	0.0017	0.0017	0.0044	0.0021	0.0023	0.0045
	(0.0048)	(0.0050)	(0.0039)	(0.0046)	(0.0050)	(0.0039)
DISTRESS	0.8256	0.1639	-0.6002	0.8674	0.1873	-0.5548
	(0.6054)	(0.4480)	(0.4392)	(0.6082)	(0.4508)	(0.4422)
SIZE	0.1370	0.3702***	0.2870***	0.1411	0.3692***	0.2818***
	(0.0923)	(0.0882)	(0.0836)	(0.0951)	(0.0888)	(0.0844)
LIMITED	-0.4807	-0.3678	-0.3164	-0.5158	-0.4020	-0.3241
	(0.4166)	(0.4384)	(0.3682)	(0.4186)	(0.4371)	(0.3738)
INDUSTRY_1	-0.3972	-0.2391	-0.2998	-0.5260	-0.3720	-0.3135
	(0.5886)	(0.5418)	(0.4518)	(0.6069)	(0.5391)	(0.4534)
INDUSTRY_2	-0.9979	-1.0019	-0.2879	-1.1114	-1.0912	-0.2823
	(0.8704)	(0.7323)	(0.5837)	(0.8678)	(0.7383)	(0.5846)
INDUSTRY_3	-0.0697	0.7348	0.5563	-0.2968	0.4728	0.5181
	(0.7797)	(0.5819)	(0.5467)	(0.7967)	(0.6067)	(0.5516)
INDUSTRY_4	1.1619	1.0722	0.1681	1.2256	1.1502	0.0972
	(0.7690)	(0.7152)	(0.7041)	(0.7831)	(0.7320)	(0.7347)
INDUSTRY_5	0.5077	0.0416	-0.3456	0.4545	-0.0196	-0.3415
	(0.4581)	(0.4394)	(0.4077)	(0.4565)	(0.4438)	(0.4083)
INDUSTRY_6	-0.1892	-0.7841	0.6442	-0.2067	-0.7888	0.6349
	(0.7569)	(0.9281)	(0.5209)	(0.7649)	(0.9330)	(0.5172)
INDUSTRY_7	-0.3858	0.0908	-0.4486	-0.4761	0.0056	-0.4369
	(0.5144)	(0.4984)	(0.4384)	(0.5199)	(0.5106)	(0.4371)

Intercept	-1.3918 (1.2879)	-5.1226*** (1.2074)	-3.4606*** (1.1472)	-1.0396 (1.3286)	-4.7708*** (1.2226)	-3.3097*** (1.1524)
Log pseudolikelihood	-603.74			-595.97		
Chi-square	80.25***			100.69***		
Nagelkerke R^2	0.177			0.206		
McFadden R^2	0.067			0.079		
Cox-Snell R^2	0.165			0.192		

n = 482; *, **, *** indicate significance at the 10%, 5% and 1% levels respectively (two-tailed); For variable definitions, please refer to table 1.

Notes: This table presents our multinomial logistic regression results. Both the beta coefficients and the robust standard errors (between brackets) are reported per variable. In this table, also the Log pseudolikelihood and the Chi-square statistics are reported for both models, as well as three goodness of fit measures (Nagelkerke R^2, McFadden R^2 and Cox-Snell R^2).

Higher levels of assurance, however, do seem important to debtholders since the coefficient of LEVERAGE is significant for audits while not being significant for compilations and reviews in model 1 of table 5. After including GENERATION and the moderating variables, the coefficient of LEVERAGE also becomes significant for reviews. For audits, the p-value (0.104) of LEVERAGE just surpasses the 10% significance threshold. In line with our logit and ordered logit regression results, we find no support for the moderating effect of generation on the demand for auditor services (H2a and H2b). This may indicate that the aforementioned hazards of subsequent generation private family firms (e.g. incompetence of management, opportunism, etc.) not directly lead to higher agency costs of debt, possibly due to a reputation effect. Following Diamond (1989), who states that a good reputation is able to eliminate the conflicts of interest between borrowers and lenders over time, subsequent generation private family firms may already have developed this good reputation. Due to this good reputation, debtholders will be less concerned about possible wealth transfers to shareholders, which might in turn lead to a lower demand for auditor assurance.

Concerning the control variables, we find, consistent with several other studies (Broye & Weill, 2008; Francis et al., 2009; Knechel, Niemi, & Sundgren, 2008; Niskanen et al., 2011; Piot, 2001), that the variable SIZE has a strongly significant positive coefficient in our logit and ordered logit models, denoting that there is a higher demand for both auditor engagement and assurance within larger firms. SIZE also has a significant positive coefficient in the multinomial logistic regression results for reviews and audits but not for compilations.

2.4.3 Additional tests

In order to test the robustness of our findings, we ran the regressions with other proxies for both the shareholder-manager and shareholder-debtholder agency conflicts (see table 6 and 7). Instead of using management ownership to proxy for the possible agency conflicts between shareholders and managers, Niskanen et al. (2010) use ownership dispersion, defined as the natural logarithm of one plus the number of shareholders, as a measure for these agency costs. When replacing MAN_OWN in model 2 of table 4 with this proxy, the results remained similar[16] (model 1a of table 6). A significantly positive coefficient of LN_OWNERS (*p*-value of 0.066) was found and the moderating variable LN_OWNERS*GENERATION was found to be significantly negative (*p*-value of 0.075) and the sum of the coefficients of both variables was found to be negative. When replacing MAN_OWN with LN_OWNERS in the assurance models (model 1b of table 6), its coefficient was found to be insignificant, which is also in line with our previous results. When including LN_OWNERS in our multinomial logistic regressions (model 1 of table 7), the results remain in line with our previous findings reported in model 2 of table 5 regarding compilations and audits. Only regarding reviews, the coefficients of LN_OWNERS and LN_OWNERS*GENERATION became insignificant when using this proxy for the shareholder-manager agency costs (p-value of 0.266 and 0.106 respectively).

As a majority ownership stake in a company might give managers an even higher possibility to expropriate passive family shareholders, we also replaced

[16] In order to be similar, the coefficients should switch signs as, in contrast to management ownership, higher ownership dispersion is considered to lead to more agency costs according to agency theory.

the variable MAN_OWN in model 2 of table 4 by CONTROLLING_MAN, a dummy equal to 1 if managers are the ultimate controlling shareholders (model 2a of table 6). Results are in line with our previous findings as the coefficient of CONTROLLING_MAN was found to be negative and significant (*p*-value of 0.059), the interaction variable CONTROLLING_MAN*GENERATION was found to be significantly positive (*p*-value of 0.034) and the sum of both coefficients was found to be positive as well. The coefficient of CONTROLLING_MAN was, also in line with our previous findings, found to be insignificant when replacing MAN_OWN with this proxy in the assurance models (model 2b of table 6). When including CONTROLLING_MAN in model 2 of table 5 (model 2 of table 7), the results are also in accordance with our previous findings. In contrast to the previous robustness test, the moderating variable CONTROLLING_MAN*GENERATION becomes significantly positive again regarding reviews (p-value of 0.008) although CONTROLLING_MAN remains insignificant (p-value of 0.167).

Our findings reported in section 2.4.2 might also be a consequence of nonlinearities in the 'management ownership - auditor services demand' relationship only[17], as suggested by Lennox (2005). The fact that the mean value of management ownership is significantly higher for first generation firms compared to subsequent generation firms (see table 2, panel A) might also be an indication for such nonlinearities. Therefore we followed the same method (and used the same management ownership thresholds) as Lennox (2005) to examine this possibility and also tested a model with the variables MAN_OWN, MAN_OWN^2 and MAN_OWN^3. We, however, found no evidence of nonlinearities

[17] We thank an anonymous reviewer for raising this issue.

in the ‘management ownership - auditor services demand’ relationship (not tabulated).

Moreover, instead of defining LEVERAGE as total debt to total assets, several studies also proxy for the agency conflicts between shareholders and debtholders by defining LEVERAGE as long-term debt divided by total assets (e.g. Fan & Wong, 2005; Piot, 2001). The findings remain consistent with our previous results when using this alternative definition, as the coefficient of LONGTERMDEBT was found to be positive and significant in the assurance models of table 4 (*p*-value of 0.035 and 0.091 respectively, see model 3b of table 6) while being insignificant in the engagement models (model 3a of table 6). When including this proxy in the multinomial logistic regression model (model 2 of table 5), the coefficient of this proxy becomes significantly negative regarding compilations (p-value of 0.075, see model 3 of table 7) while being insignificant regarding the other services. This implies that an increase in long-term debt decreases the likelihood that an audit firm is hired to prepare the financial statements. Whether this is due to the fact the debtholders require higher levels of assurance about the validity of the financial statements, as indicated by the ordered logit results, cannot be deduced from these results and thus needs further examination.

Related to the control variables, we mentioned in section 2.3.1 that we excluded 143 cases due to a missing value for the variable QUICK. In order to be sure that the removal of these cases did not distort our results, we ran our models again without the removal of these cases and without the variable QUICK (model 4a and 4b of table 6 and model 4 of table 7). The results remained similar to our previous findings.

Table 6. Additional regression results (logistic regression and ordered logistic regression)

Model	1a	2a	3a	4a	5a	1b	2b	3b	4b	5b
Dependent variable:	Auditor ENGAGEMENT					Auditor ASSURANCE				
Independent variables:										
LN_OWNERS	0.5495* (0.2986)					0.2186 (0.2224)				
CONTROLLING_MAN		-0.4985* (0.2639)					-0.0959 (0.1882)			
MAN_OWN			-0.0081** (0.0035)	-0.0059* (0.0032)	-0.0105** (0.0042)			-0.0027 (0.0025)	-0.0019 (0.0023)	-0.0029 (0.0030)
GENERATION	1.4764* (0.8807)	-0.7312 (0.5383)	-1.2849** (0.6472)	-1.1269* (0.6282)	-1.3190** (0.6555)	0.3606 (0.7181)	0.1004 (0.5490)	-0.1642 (0.6134)	-0.1907 (0.5845)	-0.1518 (0.6075)
LN_OWNERS GENERATION*	-1.0007* (0.5619)					-0.2397 (0.5526)				
CONTROLLING_MAN GENERATION*		1.5944** (0.7504)					-0.0232 (0.5990)			
MAN_OWN GENERATION*			0.0244** (0.0104)	0.0196** (0.0095)	0.0270** (0.0105)			0.0036 (0.0075)	0.0025 (0.0071)	0.0044 (0.0075)
LEVERAGE	0.2229 (0.1517)	0.2177 (0.1539)		0.2493** (0.1053)	0.4438** (0.2199)	0.2467** (0.1122)	0.2456** (0.1134)		0.2186*** (0.0833)	0.3440*** (0.1295)
LONGTERMDEBT			0.0610 (0.0651)					0.0657* (0.0389)		
LEVERAGE GENERATION*	0.0052 (0.0931)	-0.0095 (0.0912)		0.0205 (0.1206)	-0.0918 (0.1084)	0.0858 (0.0708)	0.0884 (0.0715)		0.0964 (0.0663)	0.0317 (0.0718)
LONGTERMDEBT GENERATION*			0.0042 (0.1154)					0.1007 (0.0732)		
ROA	-0.0061 (0.0491)	-0.0038 (0.0491)	0.0107 (0.0486)	-0.0560 (0.0358)	-0.0805 (0.0678)	-0.0136 (0.0579)	-0.0140 (0.0586)	0.0060 (0.0607)	-0.0539 (0.0435)	-0.0805 (0.0554)
QUICK	0.0032 (0.0033)	0.0036 (0.0034)	0.0033 (0.0033)		0.0038 (0.0033)	0.0034 (0.0034)	0.0034 (0.0034)	0.0029 (0.0034)		0.0034 (0.0034)
DISTRESS	-0.1772 (0.3599)	-0.0983 (0.3650)	0.1301 (0.2961)	-0.3292 (0.3112)	-0.2297 (0.4616)	-0.3306 (0.2795)	-0.3111 (0.2797)	-0.0405 (0.2413)	-0.3937 (0.2549)	-0.2442 (0.3559)
SIZE	0.2608*** (0.0676)	0.2789*** (0.0674)	0.2618*** (0.0674)	0.2543*** (0.0529)	0.2726*** (0.0794)	0.2327*** (0.0599)	0.2425*** (0.0586)	0.2295*** (0.0594)	0.2163*** (0.0456)	0.2659*** (0.0692)
LIMITED	-0.4083 (0.2978)	-0.3672 (0.2994)	-0.3586 (0.2975)	-0.1839 (0.2304)	-0.5284 (0.3540)	-0.2052 (0.2691)	-0.1860 (0.2669)	-0.1448 (0.2668)	-0.0834 (0.2157)	-0.3098 (0.3036)
INDUSTRY_1	-0.3262 (0.3766)	-0.3883 (0.3813)	-0.3543 (0.3796)	-0.2922 (0.3174)	-0.4753 (0.4173)	-0.2170 (0.3689)	-0.2249 (0.3670)	-0.2268 (0.3706)	-0.2097 (0.2992)	-0.3311 (0.3888)
INDUSTRY_2	-0.6867 (0.5118)	-0.6244 (0.4974)	-0.6141 (0.5008)	-0.4189 (0.4770)	-0.7223 (0.6019)	-0.2359 (0.5518)	-0.1944 (0.5542)	-0.1856 (0.5552)	-0.1216 (0.4730)	-0.2677 (0.6268)
INDUSTRY_3	0.4657 (0.4897)	0.3854 (0.4957)	0.4175 (0.4896)	0.2140 (0.4346)	0.4253 (0.5762)	0.3696 (0.3793)	0.3677 (0.3786)	0.3671 (0.3826)	0.1401 (0.3171)	0.1926 (0.4089)

INDUSTRY_4	0.7455	0.7620	0.7772	0.3895	0.3442	0.0050	-0.0143	-0.0018	-0.1586	-0.1860
	(0.6250)	(0.6284)	(0.6252)	(0.5115)	(0.6563)	(0.3609)	(0.3557)	(0.3634)	(0.3133)	(0.3959)
INDUSTRY_5	-0.0329	-0.0315	0.0065	-0.0382	-0.4295	-0.2550	-0.2548	-0.2070	-0.2691	-0.5385*
	(0.3241)	(0.3265)	(0.3250)	(0.2664)	(0.3698)	(0.3086)	(0.3079)	(0.3098)	(0.2405)	(0.3254)
INDUSTRY_6	0.2027	0.1905	0.2175	0.2428	0.0402	0.6096	0.6094	0.6036	0.4022	0.3177
	(0.4693)	(0.4711)	(0.4642)	(0.3963)	(0.5082)	(0.5151)	(0.5186)	(0.5106)	(0.3864)	(0.5277)
INDUSTRY_7	-0.2779	-0.2914	-0.2733	-0.3524	-0.7292*	-0.2308	-0.2275	-0.2247	-0.2930	-0.4818
	(0.3593)	(0.3633)	(0.3585)	(0.2826)	(0.4214)	(0.3462)	(0.3457)	(0.3444)	(0.2709)	(0.3982)
Intercept 1	-3.1419***	-2.4755***	-1.9689**	-2.0707***	-1.7436	2.5662***	2.4151***	2.0836***	1.9233***	2.4009***
	(0.8491)	(0.8902)	(0.9263)	(0.7153)	(1.0996)	(0.7858)	(0.7838)	(0.8095)	(0.6198)	(0.9528)
Intercept 2						3.2578***	3.1056***	2.7721***	2.5529***	3.0702***
						(0.7985)	(0.7966)	(0.8209)	(0.6287)	(0.9667)
Intercept 3						4.2057***	4.0533***	3.7138***	3.4537***	4.0227***
						(0.8164)	(0.8144)	(0.8377)	(0.6403)	(0.9854)
Log likelihood	-285.35	-284.57	-284.07	-375.77	-207.08	-625.83	-626.15	-627.35	-798.74	-453.93
Chi-square	37.99***	38.23***	40.16***	62.10***	39.44***	40.25***	39.83***	37.85***	56.32***	46.48***
McFadden R^2	0.075	0.077	0.079	0.08	0.109	0.033	0.033	0.031	0.035	0.046
n	482	482	482	625	357	482	482	482	625	357

*, **, *** indicate significance at the 10%, 5% and 1% levels respectively (two-tailed); For variable definitions, please refer to table 1.

Notes: This table presents our additional logistic (logit) and ordered logistic (ologit) regression results. Both the beta coefficients and the robust standard errors (between brackets) are reported per variable for each model. Also the Log likelihood, the Chi-square statistic, the McFadden R^2 and the number of cases included are reported for each model.

Table 7. Additional multinomial logistic regression results

Model	**1**			**2**			**3**			**4**			**5**		
Dependent variable: Auditor ASSURANCE	COMP.	REV.	AUD.	COMP.	REV.	AUD.	COMP.	REV.	AUD.	COMP.	REV.	AUD.	COMP.	REV.	AUD.
Independent variables:															
LN_OWNERS	1.00**	0.41	0.40												
	(0.40)	(0.37)	(0.35)												
CONTROLLING_MAN				-1.00***	-0.47	-0.19									
				(0.36)	(0.34)	(0.31)									
MAN_OWN							-0.01***	-0.01**	0.00	-0.01**	-0.01	0.00	-0.02***	-0.01**	0.00
							(0.01)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.01)	(0.00)
GENERATION	2.41**	2.09*	0.75	-1.57*	-1.45*	0.00	-2.94***	-1.80*	-0.45	-2.37**	-1.48*	-0.48	-2.81**	-1.88*	-0.35
	(1.22)	(1.18)	(0.10)	(0.84)	(0.86)	(0.60)	(1.09)	(0.93)	(0.73)	(1.10)	(0.88)	(0.71)	(1.08)	(0.96)	(0.76)
LN_OWNERS GENERATION*	-1.88**	-1.31	-0.52												
	(0.84)	(0.81)	(0.65)												
CONTROLLING_MAN GENERATION*				2.69**	2.80***	0.23									
				(1.05)	(1.05)	(0.84)									
MAN_OWN GENERATION*							0.04***	0.03**	0.01	0.04**	0.03**	0.01	0.05***	0.04***	0.01
							(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
LEVERAGE	-0.57	0.35*	0.29	-0.56	0.33*	0.29				0.13	0.27**	0.30**	-0.39	0.51*	0.51*
	(0.38)	(0.19)	(0.18)	(0.37)	(0.19)	(0.18)				(0.17)	(0.13)	(0.12)	(0.47)	(0.27)	(0.27)
LONGTERMDEBT							-0.58*	0.12	0.07						
							(0.33)	(0.09)	(0.08)						
LEVERAGE GENERATION*	0.01	-0.14	0.07	-0.04	-0.16	0.07				-0.11	-0.08	0.10	0.02	-0.23	-0.05
	(0.35)	(0.15)	(0.10)	(0.40)	(0.13)	(0.10)				(0.18)	(0.16)	(0.14)	(0.18)	(0.16)	(0.12)
LONGTERMDEBT GENERATION*							0.41	-0.16	0.10						
							(0.34)	(0.15)	(0.13)						
ROA	-0.06	0.04	-0.03	-0.05	0.05	-0.03	-0.05	0.08	-0.01	-0.09**	-0.03	-0.05	-0.04	0.00	-0.28*
	(0.08)	(0.05)	(0.07)	(0.08)	(0.05)	(0.08)	(0.07)	(0.06)	(0.08)	(0.05)	(0.05)	(0.05)	(0.11)	(0.08)	(0.15)
QUICK	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00	0.00
	(0.00)	(0.01)	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)	(0.01)	(0.00)				(0.00)	(0.01)	(0.00)
DISTRESS	0.72	0.07	-0.58	0.88	0.17	-0.56	0.69	0.51	-0.22	0.01	-0.10	-0.67*	0.49	0.27	-0.60
	(0.60)	(0.45)	(0.44)	(0.61)	(0.46)	(0.45)	(0.47)	(0.37)	(0.38)	(0.47)	(0.39)	(0.39)	(0.80)	(0.57)	(0.57)
SIZE	0.11	0.37***	0.27***	0.15	0.38***	0.29***	0.14	0.36***	0.27***	0.17**	0.31***	0.27***	0.08	0.35***	0.32***
	(0.09)	(0.09)	(0.09)	(0.09)	(0.09)	(0.08)	(0.09)	(0.09)	(0.08)	(0.07)	(0.07)	(0.06)	(0.12)	(0.11)	(0.10)
LIMITED	-0.52	-0.38	-0.33	-0.44	-0.34	-0.30	-0.55	-0.33	-0.25	-0.28	-0.13	-0.16	-0.54	-0.63	-0.48
	(0.42)	(0.43)	(0.37)	(0.41)	(0.44)	(0.37)	(0.42)	(0.43)	(0.37)	(0.35)	(0.32)	(0.29)	(0.50)	(0.49)	(0.44)
INDUSTRY_1	-0.43	-0.32	-0.31	-0.56	-0.41	-0.32	-0.54	-0.39	-0.30	-0.39	-0.24	-0.30	-0.49	-0.57	-0.42
	(0.59)	(0.54)	(0.45)	(0.61)	(0.54)	(0.45)	(0.61)	(0.54)	(0.45)	(0.54)	(0.45)	(0.38)	(0.63)	(0.59)	(0.50)
INDUSTRY_2	-1.27	-1.09	-0.34	-1.09	-1.09	-0.25	-1.07	-1.07	-0.25	-0.93	-0.51	-0.23	-1.51	-0.84	-0.46
	(0.95)	(0.74)	(0.59)	(0.86)	(0.72)	(0.58)	(0.87)	(0.74)	(0.58)	(0.84)	(0.66)	(0.54)	(1.14)	(0.80)	(0.69)
INDUSTRY_3	-0.14	0.60	0.52	-0.32	0.44	0.54	-0.28	0.50	0.54	-0.13	0.32	0.24	-0.04	0.50	0.52
	(0.78)	(0.59)	(0.55)	(0.81)	(0.61)	(0.55)	(0.79)	(0.60)	(0.55)	(0.74)	(0.53)	(0.48)	(0.87)	(0.68)	(0.64)

INDUSTRY_4	1.18	1.07	0.07	1.21	1.13	0.09	1.27	1.15	0.11	0.90	0.71	-0.20	0.89	0.62	-0.20
	(0.78)	(0.72)	(0.73)	(0.78)	(0.75)	(0.73)	(0.78)	(0.73)	(0.74)	(0.69)	(0.61)	(0.62)	(0.84)	(0.80)	(0.74)
INDUSTRY_5	0.45	-0.03	-0.36	0.45	-0.01	-0.35	0.47	0.03	-0.29	0.51	-0.08	-0.33	0.08	-0.24	-0.88*
	(0.45)	(0.44)	(0.41)	(0.46)	(0.44)	(0.41)	(0.46)	(0.44)	(0.40)	(0.40)	(0.38)	(0.33)	(0.52)	(0.51)	(0.45)
INDUSTRY_6	-0.23	-0.81	0.62	-0.23	-0.87	0.62	-0.16	-0.83	0.62	0.02	0.01	0.41	-0.20	-0.65	0.31
	(0.75)	(0.93)	(0.52)	(0.76)	(0.94)	(0.52)	(0.76)	(0.94)	(0.51)	(0.66)	(0.60)	(0.44)	(0.79)	(0.95)	(0.58)
INDUSTRY_7	-0.42	0.04	-0.45	-0.46	0.03	-0.44	-0.47	0.03	-0.41	-0.47	-0.15	-0.44	-1.18*	-0.46	-0.74
	(0.51)	(0.50)	(0.44)	(0.53)	(0.51)	(0.44)	(0.52)	(0.50)	(0.44)	(0.46)	(0.41)	(0.34)	(0.63)	(0.59)	(0.50)
Intercept	-2.66**	-5.91***	-3.89***	-1.43	-5.30***	-3.57***	-1.13	-4.60***	-3.10***	-2.13**	-4.12***	-3.05***	0.17	-3.99***	-3.45**
	(1.11)	(1.12)	(1.08)	(1.23)	(1.18)	(1.11)	(1.34)	(1.19)	(1.16)	(0.99)	(0.99)	(0.87)	(1.60)	(1.48)	(1.40)
Log pseudolikelihood	-599.94			-595.06			-597.81			-777.23			-427.38		
Chi-square	93.88***			98.20***			97.45***			100.95***			95.28***		
McFadden R^2	0.073			0.081			0.076			0.061			0.102		
n	482			482			482			625			357		

*, **, *** indicate significance at the 10%, 5% and 1% levels respectively (two-tailed); For variable definitions, please refer to table 1.

Notes: This table presents our additional multinomial logistic regression results. Both the beta coefficients and the robust standard errors (between brackets) are reported per variable. Also the Log pseudolikelihood, the Chi-square statistic, the McFadden R^2 and the number of cases included are reported for each model.

Finally, with respect to our measure of GENERATION, we consider both purchased firms and firms established by the current owners to be first generation family firms. However, one could argue that descendants can buy the firm from their parents as well, which might make some of the purchased firms to be incorrectly classified as first generation family firms. As the survey does not include information about the seller(s) of the firm, we eliminated all cases in which the family firm was purchased (125 observations) and ran the regressions again (model 5a and 5b of table 6 and model 5 of table 7). The results remained in line with our previous findings.

2.5 Conclusions

Unlike former audit demand studies (Carey et al., 2000; Collis et al., 2004; Niemi et al., 2012; Niskanen et al., 2010), which consider wholly family-owned private firms as a homogeneous group of firms that incur a minimal level of agency costs, we focus on the heterogeneity of this particular type of firms and examine the moderating effect of generational stage within the auditor services demand functions of these firms.

Our results suggest that the frequently found negative association between management ownership, which proxies for the agency conflicts between owners and managers, and auditor services demand does not hold for all private family firms. Following the view of several family firm scholars (Blanco-Mazagatos et al., 2007; Gomez-Mejia et al., 2001; Poza et al., 2004; Schulze et al., 2003b; Schulze et al., 2001) on agency costs within private family firms, we hypothesized that the interest alignment effect, and thus the negative association, only prevails in first generation private family firms while

having a predominating entrenchment effect in subsequent generation private family firms. In contrast to founders, whose altruistic feelings towards their family will lead them to take into account the needs of all family members, descendants will prioritize the interests of their own immediate families (Blanco-Mazagatos et al., 2007). Due to a diminishing feeling of altruism towards their extended family, they may be more inclined to mis(use) their discretion over the firm's assets to achieve their own (immediate family) goals while ignoring the interests of other family shareholders. Due to this entrenching behavior, higher management shareholdings will lead to higher shareholder-manager agency costs in subsequent generation private family firms and therefore a higher demand for auditor services.

In order to test this hypothesis in the specific context of US private (family) firms, which have no audit requirement, we consider auditor services as a broad concept that includes audits, reviews and compilations as they could all be considered as agency cost reducing devices. More specifically, we examined the demand for both auditor engagement, which we defined as having any form of engagement with an auditor, and auditor assurance, which takes into account the different levels of assurance of an audit, a review and a compilation. Our results support our hypothesis, but only when including auditor engagement as dependent variable. Although we hypothesized a similar relationship when including auditor assurance as dependent variable, this hypothesis was not supported. A more detailed analysis based on multinomial logistic regressions, in which we examine the demand for each auditor service separately, reveals that our hypothesis is only supported regarding compilations and reviews but not regarding audits. Since passive family shareholders in private family firms are

likely to be able to get insider information if necessary, they may therefore not require an audit (by which a high level of assurance is obtained about the validity of the financial statements) to reduce the level of shareholder-manager agency costs. However, as this insider information can be biased as well, our results suggest that passive family shareholders are likely to demand a compilation or a review when shareholder-manager agency costs are high. Even though a lower level of assurance is obtained by these services, they seem to provide the passive family shareholders with a monitoring tool that is sufficiently effective in reducing the existing agency conflicts. Moreover, the demand for these lower assurance services could further be considered as a more cost-effective way to reduce shareholder-manager agency costs in wholly family-owned private firms compared to demanding an audit.

When considering the shareholder-debtholder agency relationship, a high level of assurance does seem important to mitigate the related agency costs since leverage, which proxies for the agency conflicts between shareholders and debtholders, was found to be significantly positively associated with auditor assurance and not with auditor engagement. The multinomial results generally confirm this since leverage was only found to have a positive effect on the probability of demanding an audit and review (versus not hiring an auditor at all), being the services with the highest level of assurance. Although hypothesized, generational stage was not found to have a moderating role in this relationship. The increase in shareholder-debtholder agency costs due to the aspects related to subsequent generation private family firms (e.g. possible absence of a long-term perspective, incompetence of management due to

adverse selection, etc.) may therefore be mitigated by an offsetting firm reputation effect.

Overall, we believe that this study makes several contributions to both practice and theory. Its main theoretical contribution lies in linking the family firm literature with the audit demand literature. Although family firms are often considered to be a homogeneous group in the audit literature, family firm literature clearly indicates that family firms should be studied as a heterogeneous group of ventures. Agency costs do exist in private family firms but the extent depends on the type of family firm. Therefore, it is necessary to study this heterogeneity in order to grasp what actually determines auditor services demand in private family firms. Several family characteristics and their resulting impact on agency costs, of which the generational stage of a family firm is one aspect, could for example explain why Collis et al. (2004) found that wholly family-owned private firms were significantly negatively associated with audit demand while Collis (2012) did not find a significant association. Although Carey et al. (2000) and Niskanen et al. (2010) already provided some interesting insights related to audit demand in private family firms, they generally focused on the agency conflicts between family and non-family owners/managers and therefore did not elaborate on the agency conflicts existing between active shareholder-managers and passive family shareholders. We did examine this particular type of agency conflicts and argued that they might be mitigated by auditor services as well.

In addition, considering these auditor services as a broader concept, including reviews and compilations, led to a more nuanced view about auditor services demand. More specifically, the services for which less assurance is

obtained seem effective substitutes to reduce the level of shareholder-manager agency costs (at least in a wholly family-owned private firm context) but not to reduce the level of shareholder-debtholder agency costs. Examining why this difference exists might be very interesting for both theorists and practitioners. For theorists, the answer to this question might reveal a new dimension of what actually determines audit demand. Auditors, on the other hand, might be better able to provide the services the clients actually need and can therefore reduce the expectation gap when knowing the answer to this question.

Due to the specific context in which we tested our hypotheses, one must be careful when generalizing our results or comparing them with others. More specifically, most audit demand studies that focus on private firms were set in a European context in which most small companies are required to publish their financial statements. The complete set of determinants of audit demand might therefore differ between US and European private family firms. However, revealing the complete audit demand function of wholly family-owned private firms is not the goal of this study, which is restricted to examining the moderating role of generation on the 'intrafamily related agency conflicts - auditor services demand' relationship.

There are some limitations associated with this study, indicating possibilities for future research. One important limitation is the age of our data, which was collected prior to the financial crisis. However, as this study focuses on the influence of agency conflicts on auditor services demand and the moderating role of generation on this relationship, there is no indication which suggests that the found relationships are not stable over time. Agency conflicts will arise in good and bad economic conditions as both principals and agents

want to maximize their personal wealth. We do recognize, however, that the financial crisis might have shifted the demand curve(s) upwards or downwards, even if the level of agency conflicts remained similar. Therefore, we only focused on the direction and significance of the coefficients in our models without trying to provide numerical estimations of the extent to which agency conflicts influence auditor services demand. Another limitation relates to the fact that we were not able to actually control for the differences in costs between audits, reviews and compilations. Finally, by including GENERATION as moderating variable, we were only partly able to take into account the heterogeneity of private family firms since the use of this variable assumes family firms that are in the same generational stage to be similar, which may not always be the case.

We hope that our study will encourage other audit researchers to focus more on how to better grasp this heterogeneity of private family firms and the specific context in which they are operating in order to develop the audit demand literature further.

Chapter 3 –

The effect of intrafamily agency conflicts on audit demand in private family firms: the moderating role of the board of directors

3.1 Introduction

Although audit demand is an extensively studied topic in accounting literature, most audit demand studies focused on listed companies (e.g. Fan & Wong, 2005; Firth & Smith, 1992; Francis et al., 2009; Francis & Wilson, 1988; Liu & Lai, 2012; Piot, 2001; Reed et al., 2000). In line with agency theory, these studies generally hypothesized and found the level of agency conflicts to be the main determinant of demanding a voluntary audit or a high quality audit in case the firm is already required by law to have its financial statements audited.

Audit demand studies that focus on private and especially private family firms are far more scarce. Some exceptional studies (Carey et al., 2000; Collis, 2012; Collis et al., 2004; Niemi et al., 2012; Niskanen et al., 2010) did examine audit demand in the specific context of private family firms but only focused on the audit demand effect of agency conflicts between family and non-family members while not examining the audit demand effect of intrafamily agency conflicts.

This is probably due to the fact that traditional agency theory expects the level of (intrafamily) agency conflicts to be minimal in private family firms since family bonds are considered to reduce both the intention and the possibility to behave opportunistically (Fama & Jensen, 1983a, 1983b). Several family firm scholars, however, depict a completely different view of private family firms, in which intrafamily agency conflicts can be omnipresent as well (Blanco-Mazagatos et al., 2007; Gomez-Mejia et al., 2001; Schulze et al., 2001). These agency conflicts may result from the fact that family relationships are generally based on emotions and the agency theory's assumption of economically rational behavior will therefore not hold in private family firms (Gomez-Mejia et al., 2001; Schulze et al., 2003a; Schulze et al., 2001). Family members may therefore be *dissatisfied* about their role in the family firm and be *jealous* of other family members, for example, which may lead to opportunistic behavior (Sharma, Chrisman, Pablo, & Chua, 2001).

If intrafamily agency conflicts do arise in family firms, there may also be a demand for an (high quality) auditor to reduce the related agency costs. More specifically, by verifying the financial statements, (high quality) auditors are expected to discourage family members to behave opportunistically and to 'de-emotionalize' potential conflicts by providing all family members with objective financial information that would enable them to make more rational business decisions again. Therefore we want to add to the aforementioned studies by examining the relationship between the level of these intrafamily agency conflicts and audit demand.

We use family cohesion as a (negative) measure for these intrafamily agency conflicts in order to grasp the emotional aspect of these conflicts. Family

cohesion is defined as "...the emotional bonding that family members have towards one another" (Olson, 2000, p. 145) and is considered to be negatively associated with the extent to which interests among family members diverge (Olson, 2000) and thus the level of intrafamily agency conflicts.

Moreover, since an effective monitoring board could be considered as an alternative instrument on which a family firm could rely to mitigate the level of intrafamily agency costs, we also take into account a possible moderating effect of the board of directors. More specifically, since privacy and confidentiality are considered to be two of the most important values for family firms (Lester & Cannella, 2006; Su & Dou, 2013), which will especially be the case regarding intrafamily agency conflicts, a family firm may consider the need for an (high quality) auditor to be lower when already having an effective board of directors that is able to mitigate these agency conflicts or at least the negative consequences of these conflicts (i.e. the agency costs) internally.

Using data of Belgian private family firms, our results confirm that the level of intrafamily agency conflicts is also a determinant of audit demand. However, this demand effect seems to be weaker when having an effective board of directors that is able to reduce the related agency costs internally.

These findings add significantly to the knowledge we have about the role of auditing in private family firms. While this role was considered to be minimal in this specific context, this study indicates that an external audit should be considered as an important mechanism for private family firms to reduce the level or at least the negative consequences of intrafamily agency conflicts. By measuring these agency conflicts by family cohesion, we also answer the call of

Kellermanns et al. (2014) to integrate concepts of other fields in the family firm literature in order to get a greater understanding about how emotions may influence strategic decisions. Moreover, this study also sheds light on the role of the board of directors within the audit demand curve in this specific context, by which we contribute to the limited knowledge we have about how the several monitoring mechanisms may influence each other.

The remainder of this chapter proceeds as follows. In the next section, we give a brief overview of past audit demand literature, after which we develop testable hypotheses related to the influence of intrafamily agency conflicts and the monitoring effectiveness of the board on audit demand in private family firms. Section 3.3 describes our data and methodology. Our results are presented in section 3.4 and our conclusions can be found in section 3.5.

3.2 Theory and hypotheses

3.2.1 Audit demand in private family firms

A considerable amount of literature has been published on audit demand, which includes both the voluntary demand for an auditor (e.g. Carey et al., 2000; Chow, 1982; Niemi et al., 2012) and the demand for audit quality (e.g. DeFond, 1992; Francis & Wilson, 1988; Niskanen et al., 2011; Piot, 2001). Voluntary audit demand studies focus on firms that are not required by law to have their financial statements audited (e.g. private firms in the USA) and therefore examine the drivers for the voluntary appointment of an auditor. Audit quality demand studies focus on firms that are required by law to hire an external auditor (e.g. listed companies, larger private companies in European countries,

etc.) and therefore examine the drivers for hiring a high quality auditor. Although this study actually relates to the second group of audit *quality* demand studies, both voluntary audit demand and audit quality demand are based on the same theoretical framework.

More specifically, audit demand studies generally rely on agency theory to explain the demand for voluntary or high quality auditing. Agency theory considers both the owners and managers of a company to be utility maximizers. In order to maximize their own utility, managers (the agents) will not always act in the best interest of the owners (the principals), which leads to agency costs (Jensen & Meckling, 1976). Principals will try to limit divergences from their interest by monitoring and contracting (e.g. management compensation contracts based on performance) (Jensen & Meckling, 1976; Lennox, 2005). These activities, however, often rely on the accounting numbers. Since these are generally prepared by management, there is information asymmetry between the managers and the owners and the latter are therefore limited in their ability to effectively monitor and contract with managers (Chow, 1982; Lennox, 2005). By verifying the validity of the financial statements, auditing reduces these existing information asymmetries and therefore contributes to the reduction of agency costs[18] (Becker et al., 1998). Audit demand literature therefore generally

[18] Agency costs include the reduction in welfare experienced by the principals due to self-interested behavior by the manager as well as the monitoring and bonding (related to the provision of incentives) costs to mitigate this behavior (Jensen & Meckling, 1976). Since auditing can be classified as a monitoring cost, it can therefore also be considered as an agency cost. Auditing will therefore only be demanded when the overall reduction in agency costs is higher than the cost of the audit.

hypothesizes a positive association between the level of shareholder-manager[19] agency conflicts (generally measured by the number of owners or the level of management ownership) and audit demand. The results of several studies also support this hypothesis within both a listed (e.g. DeFond, 1992; Firth & Smith, 1992) and private firm (e.g. Hope et al., 2012; Niskanen et al., 2011) context.

Within a context of private *family* firms, however, audit demand remains a relatively unexplored research area (Songini, Gnan, & Malmi, 2013). Some exceptional studies did examine audit demand in this specific context (Carey et al., 2000; Collis, 2012; Collis et al., 2004; Niemi et al., 2012; Niskanen et al., 2010) and focused on the audit demand effect of agency conflicts between family and non-family members. Carey et al. (2000) found audit demand to be positively associated with the proportion of non-family management in the firm and the proportion of non-family representation on the board of directors. Niskanen et al. (2010) found that both an increase in family ownership and influence decreases audit demand. Collis et al (2004), Niemi et al. (2012) and Collis (2012) controlled for complete (100%) family ownership while examining private firms and found that completely family-owned private firms demand less auditing, indicating that the presence of non-family owners leads to more audit demand due to a higher level of agency conflicts.

In this study, we want to add to these studies by examining whether audit demand is also driven by the level of agency conflicts *among* family members, being the level of intrafamily agency conflicts.

[19] Several audit demand studies also examined the influence of the level of shareholder-debtholder agency conflicts on audit demand (e.g. Firth & Smith, 1992; Reed et al., 2000). We do not elaborate on this type of agency conflicts and their influence on audit demand in this study.

3.2.2 Intrafamily agency conflicts

According to agency theory, the level of intrafamily agency conflicts will be minimal in private family firms. Most managers are also owners of the firm and will therefore also behave more like owners. Moreover, family bonds will facilitate monitoring and disciplining each other (Fama & Jensen, 1983a, 1983b). The higher management ownership levels and the existence of family bonds are therefore considered to reduce both the intention and the possibility to behave opportunistically. This agency theoretical view regarding (agency) conflicts in family firms is probably also the main explanation of why there is such a scarce amount of studies that examines audit demand in a private family firm context.

Although this view is also supported by some family firm studies (Ang et al., 2000; Chrisman et al., 2004; Daily & Dollinger, 1992), other family firm studies (e.g. Burkart et al., 2003; Chrisman et al., 2007; Gomez-Mejia et al., 2001; Schulze et al., 2003b; Schulze et al., 2001) argue that traditional agency theory may be too optimistic about the family relationships in private family firms. They argue that agency conflicts among family members will arise as well because relationships in such firms are often based on emotions and sentiments instead of economically rational behavior as suggested by traditional agency theory (Gomez-Mejia et al., 2001).

These emotions can both improve and deteriorate the relationships among family members and can therefore have both a positive and negative effect on the level of intrafamily agency conflicts. Schulze et al. (2003a, 2003b; 2001), for example, refer to altruism as driver of these emotion-based agency conflicts. Among family members, a high level of altruism is generally considered to lead

to a convergence of interests since it compels the owner-managers to take into account the needs of all family members when making decisions (Schulze et al., 2003a) and is therefore associated with a low level of intrafamily agency conflicts (Karra et al., 2006; Kellermanns & Eddleston, 2004, 2007). However, when altruism decreases or becomes asymmetric, which often arises in family firms since parents are generally considered to care more for their children than children do for either their parents or each other (Chakrabarti et al., 1993; Stark, 1989; Stark & Falk, 1998, in: Lubatkin et al., 2005), intrafamily agency conflicts will arise. Family members may start free riding, consuming perks and shirking, even if this harms other family members (Karra et al., 2006). Lambrecht and Lievens (2008) refer, among others, to family complexity, which is generally defined by the number of family members, the kind of relationships among them and the number of generations involved. They consider this family complexity as a determinant for the intrafamily agency conflicts since more family complexity leads to less commitment, more differences regarding personal goals and a dilution of their relationships with each other (Gimeno Sandig et al., 2006; Montemerlo, 2005; Ward, 1997, in: Lambrecht & Lievens, 2008). As indicated by Sharma et al. (2001), dissatisfaction about the role in the family firm may also induce intrafamily agency conflicts since it may hinder family members in working harmoniously together and may therefore engender opportunistic behavior.

If intrafamily agency conflicts arise in family firms, there may also be a demand for an (high quality) auditor to reduce the related agency costs (i.e. the negative consequences of the conflicts) since an examination of the accounting figures will discourage family members to behave opportunistically. Being able

to reduce the existing information asymmetries between the family members (which are more likely to arise when the level of intrafamily agency conflicts is high), an auditor could also be demanded to 'de-emotionalize' the discussions within a family firm and to help its members in making more rational decisions again. Moreover, auditors may also be able to facilitate the family problems itself (Jaffe, Lane, Dashew, & Bork, 1997) by performing a mediating role, in which he/she can offer a view that is independent from emotion, interest and ambition (Collin, Ahlberg, Berg, Broberg, & Karlsson, 2015).

3.2.3 Cohesion as measure for the level of intrafamily agency conflicts

Cohesion, also labeled as 'togetherness', is an established concept in the group effectiveness literature (Klein & Mulvey, 1995). More specifically, it is considered as "…the tendency for a group to stick together and remain united in the pursuit of its … objectives" (Tekleab, Quigley, & Tesluk, 2009, p. 174). Highly cohesive groups are therefore expected to actively contribute toward common goals (Tajfel & Turner, 1986, in: Andrews, Kacmar, Blakely, & Bucklew, 2008).

Michael-Tsabari and Lavee (2012) already theoretically coupled the family cohesion literature with the family firm literature and highlighted the value of integrating cohesion in this research stream since it gives a better understanding of the family itself, which is often neglected but highly necessary to get a better overall understanding of the behavior and decision making in family firms (Chua et al., 2003; Dyer, 2003, in: Michael-Tsabari & Lavee, 2012). Regarding our research purposes, family cohesion is able to actually grasp the emotional aspect of the intrafamily agency conflicts and in this way we are able

to provide a more complete view about audit (quality) decision making in family firms.

While management ownership measures the economical bonding that managers have towards the owners (the more shares the managers own, the more they will behave in line with the owners' interests) according to agency theory (Fama & Jensen, 1983a, 1983b; Jensen & Meckling, 1976), family cohesion can be described as "...the emotional bonding that family members have towards one another" (Olson, 2000, p. 145). More specifically, family cohesion is considered to be negatively associated with the extent to which interests among family members diverge (Olson, 2000).

Just like management ownership is a negative measure for the level of the rational shareholder-manager agency conflicts, family cohesion can be considered as a negative measure for the level of the emotional intrafamily agency conflicts. Comparable to the zero agency situation as defined by Jensen and Meckling (1976), in which management owns 100% of the firm's shares, Olson (2000) defines a situation (the enmeshed family) in which the cohesion levels are so high that there is almost complete consensus within the family and an extreme amount of emotional closeness. Such a situation can therefore be considered as the zero agency situation regarding the intrafamily agency conflicts, especially when taking into account that "…agency costs arise only when firm actions contravene owners' interests or when resources must be expanded to ensure that firm actions do not contravene owners' interests" (Chrisman et al., 2004, p. 336). The commonly mentioned agency behavior of family managers diverting resources away from the firm to pursue non-economic goals is therefore not an (intrafamily) agency conflict if the family owners prefer

these non-economic goals (family employment, a high standard of living, etc.), even though it is detrimental for the firm long-term performance (Chrisman et al., 2004).

The lower the level of family cohesion becomes, the more the family members are expected to behave individualistically and the more limited their attachment and commitment to their family is (Olson, 2000). This argument can be expanded towards commitment to the firm as well since the results of Lansberg and Astrachan (1994) indicate that family cohesion is positively associated with the family's commitment to the firm. In families with a very low level of cohesion (the disengaged family), "[t]here is little involvement among family members and there is a great deal of personal separateness and independence" (Olson, 2000, p. 147), leading to families in which the individual interests of the family members predominate and in which they are unable to turn to each other for support and problem solving (Olson, 2000).

Regarding audit demand, we hypothesize a negative association between the level of family cohesion and audit demand. Ceteris paribus, we do not expect a demand for an (high quality) auditor when the level of family cohesion is high (i.e. a low level of intrafamily agency conflicts). Not only will the interests among the family members be generally aligned, they will also turn to each other when a dispute should occur because of their close emotional bonding, and there is therefore no need for an independent third party to solve the (consequences of the) dispute.

When the level of family cohesion declines, however, an (high quality) auditor may become interesting for private family firms to reduce the level of

intrafamily agency conflicts or the related agency costs. Because diverging interests will arise, there is a higher probability that family members will engage in opportunistic behavior and that they will be unwilling to turn to each other to solve the existing problems. Therefore, as mentioned in the previous section, they may engage an (high quality) auditor to discourage potential opportunistic behavior by family members and/or to mediate the relationship among them. Formally, we therefore posit:

H1: *The level of family cohesion is negatively associated with audit demand.*

3.2.4 The moderating role of the board of directors

Since the board of directors has a prominent role in auditor selection (Beasley & Petroni, 2001; Carcello, Hermanson, Neal, & Riley Jr, 2002), it may also influence the relationship between the level of intrafamily agency conflicts and audit demand. More specifically, a board of directors will evaluate the level of agency conflicts and will stimulate the demand of an (high quality) auditor when this is a cost-effective way to reduce the related agency costs. The board will therefore not stimulate and even hold up the engagement of an (high quality) auditor in case of a minimal level of agency conflicts or if there are alternatives to mitigate the level of agency conflicts, since the cost related to this audit (including the audit fee, the time investment, etc.) would be higher than the reduction in agency costs.

The monitoring effectiveness of the board could possibly be considered as such an alternative. More specifically, being the main representative of the

shareholders, one of the main roles of the board of directors is monitoring and controlling management in order to reduce agency costs (Eisenhardt, 1989; Fama & Jensen, 1983b; Zahra & Pearce, 1989). In a family firm context, this also encompasses the mitigation of agency conflicts among family members (Voordeckers, Van Gils, & Van den Heuvel, 2007). It is argued that "...boards of directors should focus on reducing information asymmetries between the various family units and monitoring managerial behavior" to reduce the related intrafamily agency costs (Bammens et al., 2008; Bammens & Voordeckers, 2009; Steier, 2001, in: Bammens, Voordeckers, & Van Gils, 2010, p. 4). However, because of their overlapping goals, an audit could also contribute to the monitoring effectiveness of the board by providing objective financial data since information asymmetries towards the board may also arise.

Dependent on whether the board and an auditor are considered as alternatives (i.e. substitutes) or rather as complements to mitigate intrafamily agency costs, an effective monitoring board could both positively and negatively influence the relationship between the level of agency conflicts and audit demand.

Regarding the traditional agency conflicts between owners and managers in non-family firms, most authors consider the board and the auditor as complements, indicating that an effective board further increases the demand for an (high quality) audit in order to be better able to monitor management (e.g. Beasley & Petroni, 2001; Carcello et al., 2002; Carcello et al., 2011; Chen & Jian, 2007).

Regarding the mitigation of intrafamily agency costs in a family firm context, however, a substitution effect may be much more likely to prevail. Since privacy and confidentiality are considered to be two of the most important values for family firms (Lester & Cannella, 2006; Su & Dou, 2013), a family firm may be reluctant to hire an (high quality) external auditor, especially to mitigate and thus exposing family relationships. They may therefore rather try to mitigate the intrafamily agency conflicts internally first, through the board of directors, and only consider an (high quality) external audit as an alternative when the board fails.

This view is in line with the socioemotional wealth (SEW) perspective, stating that "…family firms are likely to place a high priority on maintaining family control even if this means accepting an increased risk of poor firm performance" (Gómez-Mejía, Haynes, Núñez-Nickel, Jacobson, & Moyano-Fuentes, 2007, p. 106). Since involvement of outsiders may be perceived as a loss of family control (Jones, Makri, & Gomez-Mejia, 2008), private family firms may initially be reluctant to hire an (high quality) auditor to preserve their SEW, even if this could rationally be considered as a good investment complementary to the board to be better able to reduce the intrafamily agency costs and therefore increase firm performance. However, although SEW preservation may be the primary goal in family firms, it is argued that the family may be forced to reconsider this in case of severe poor performance (or in our case: severe intrafamily conflicts that the board is not able to mitigate) because firm failure would lead to a complete SEW extinction (Berrone, Cruz, & Gomez-Mejia, 2012), which means that family firms may eventually hire (high quality) outsiders to

increase firm performance (or in our case: decrease the intrafamily agency costs) again.

We therefore argue that a kind of order exists regarding to how a family firm tries to mitigate intrafamily agency conflicts (if present). The family members will try to monitor the behavior of the family managers internally first, by the board of directors. When the board's monitoring effectiveness is low, however, the board will not be able to reduce the related agency costs and in that situation the family may consider to hire an (high quality) external auditor. We therefore hypothesize that the monitoring effectiveness of the board moderates the association between the level of intrafamily agency conflicts and audit demand in such a way that the association is weaker when having a high monitoring effectiveness of the board. Put formally and including our measure for the level of intrafamily agency conflicts, we thus posit:

H2: *The monitoring effectiveness of the board moderates the negative association between the level of family cohesion and audit demand in such a way that the association is weaker when having a high monitoring effectiveness of the board.*

3.3 Data and methodology

3.3.1 Data

We use data of Belgian private family firms to test our hypotheses. Since the thresholds to be legally required to hire an auditor are rather low in Belgium, voluntary audit demand is rare in the Belgian private firm context. More specifically, a Belgian firm is required to hire an auditor when the annual

average workforce is higher than 100 or when at least two of the following thresholds are exceeded: annual average workforce of 50 employees, balance sheet total of 3 650 000 EUR and turnover of 7 300 000 EUR (article 15 of the Belgian Company Legislation). In line with several other audit demand studies (e.g. DeFond, 1992; Francis & Wilson, 1988; Niskanen et al., 2011; Piot, 2001), we therefore do not examine *voluntary* audit demand but audit *quality* demand.

To examine the influence of family cohesion on audit quality demand and the moderating role of the monitoring effectiveness of the board, we therefore identified all active Belgian private firms that were legally required to be audited and are not part of the financial services industry from the Bel-First database of Bureau Van Dijk, which is in line with other audit quality demand studies (e.g. Hope et al., 2012; Niskanen et al., 2010). Unfortunately, this selection of firms still contains both family and non-family firms since no complete register of Belgian family firms exists and therefore our overall population is unknown, which is often the case in family firm studies (Collin & Ahlberg, 2012).

To all of the selected firms, except those with insufficient contact details, we sent a structured online questionnaire (see the appendix for the complete questionnaire) in February 2015 and asked the CEO to complete it (N = 8662). We obtained a response from 740 firms, which equals a response rate of 8.5%. We combined the data from the questionnaire with publicly available accounting data (of 2014) from the Bel-First database and from the individual financial statements of our sample firms. As our dependent variable was collected directly from the sample firms' financial statements while the explanatory variables were collected by the questionnaire, there is no common method bias threat.

In order to obtain a dataset of private *family* firms only, we selected those firms in which a single family owns more than 50 percent of its shares and/or in which the CEO perceives the firm as a family firm (Dyer, 2003; Westhead & Cowling, 1998), leading to a sample of 390 firms. Moreover, since Olson's (2000) family cohesion scale is a self-report instrument and we want to focus on the influence of the intrafamily agency conflicts on audit quality demand, we only selected the firms with a family CEO (n = 231). After removing cases with incomplete data regarding our explanatory and control variables, we obtain a final sample of 125 firms to test our hypotheses. We performed t-tests between early and late respondents regarding our explanatory and continuous control variables to check for potential response bias using cut-off points at 10, 20 and 30 percent but found no significant differences. Moreover, in order to alleviate potential outlier problems, all continuous variables were winsorized at the 1st and 99th percentiles.

3.3.2 Variables

3.3.2.1 Dependent variable

In line with most audit demand studies (e.g. Fan & Wong, 2005; Firth & Smith, 1992; Lennox, 2005; Piot, 2001), our dependent variable, audit quality, is proxied by a dummy variable BIG4 which is coded 1 if the firm hired a Big4 auditor and 0 otherwise. This proxy is based on DeAngelo (1981), who states that larger audit firms have more to lose in case of an audit failure and will therefore provide a higher level of audit quality. Several studies also support this thesis (e.g. Becker et al., 1998; Francis, Maydew, & Sparks, 1999) although there are also a number of studies that did not find a significant difference in

audit quality between BigN[20] and non-BigN audit firms (e.g. Boone, Khurana, & Raman, 2010; Lawrence, Minutti-Meza, & Zhang, 2011). However, not the actual level of audit quality is important to examine audit demand but rather the perceived level of audit quality. Boone et al. (2010) and Karjalainen (2011) found that Big4 audit firms are still perceived to provide higher levels of audit quality and therefore the BIG4 dummy remains a valuable proxy to measure audit quality demand.

3.3.2.2 Explanatory variables

In order to test our hypotheses, we use Olson's (2000) family COHESION scale, which is part of the FACES IV package. Despite the self-report nature of this instrument, it is "…one of the few statistically reliable and valid measures of family behavior available" (Green et al., 1985; Olson, 1986; Olson et al., 1988, in: Lansberg & Astrachan, 1994, p. 49). This measure is therefore largely used in studies focusing on family relations and dynamics, types of families, family counseling and education, etc. (Kouneski, 2000). Using a 5-point Likert scale, respondents were asked to give their opinion about 21 items, including for example "Family members consult other family members on important decisions", "Family members are involved in each others lives" and "We get along better with people outside our family than inside" (negative item) (Olson, 2010, pp. 5-6). These 21 items can be divided into 3 groups of 7 items labelled *balanced* (which measures to what extent the level of cohesion is moderately high/low), *enmeshed* (which measures to what extent the level of cohesion is very high) and *disengaged* (which measures to what extent the level of cohesion

[20] Due to the disappearance of Arthur Andersen and due to mergers between audit firms, the audit quality measure gradually evolved from Big8 to Big4.

is very low) (Olson, 2000). The negative items relate to the *disengaged* group and an overall cohesion score can therefore be calculated as follows: balanced score + enmeshed score - disengaged score. The Cronbach alpha for this 21-item scale is found to be 0.85.

While the effectiveness of the board of directors is generally proxied by compositional measures like board size, the percentage of outside directors, director shareholdings, CEO duality or the financial expertise of the board members (e.g. Beasley & Petroni, 2001; Chen & Jian, 2007; Ireland & Lennox, 2002), recent board literature (e.g. Finkelstein & Mooney, 2003; Gabrielsson & Winlund, 2000; Minichilli et al., 2012; Minichilli et al., 2009; Zona & Zattoni, 2007) argues that composition does not necessarily explain behavior such that these proxies do not adequately measure board effectiveness. In this study, we will therefore not rely on compositional measures for our moderating variable but use a direct measurement of the monitoring effectiveness of the board. More specifically, we rely on the measure of Minichilli et al. (2009) to proxy this monitoring effectiveness of the board. We include the 7-item measure MONITORING, in which all control tasks of the board are evaluated on a 5-point Likert scale, including for example “The board is actively involved in supervising the CEO” and “The board actively monitors and evaluates strategic decisions” (Minichilli et al., 2009, p. 71).

The monitoring role of the board is considered to consist of three sub-roles, namely behavioral control (BEHAV_CONTR), output control (OUTPUT_CONTR) and strategic control (STRAT_CONTR) (Huse, 2005; Minichilli et al., 2009). The behavioral control role encompasses supervising the CEO and monitoring the top managers’ behavior, the output control role mainly consists

of monitoring the financial performance of the firm and the strategic control role mainly focuses on high-level strategic decision making (e.g. acquiring a new firm) (Minichilli et al., 2009). We will also include these sub-roles separately in additional models to get a more detailed view about the moderating influence of the monitoring role of the board on audit (quality) demand.

Even though the FACES questionnaire, including the cohesion scale, is already extensively tested (Lansberg & Astrachan, 1994; Olson, 2011) and the scale on the board's monitoring effectiveness of Minichilli et al. (2009) is widely accepted in the governance literature, we conducted a confirmatory factor analysis to validate the scales. We allowed the error terms of the indicators to correlate but only if the terms belonged to the same construct and had a modification index score larger than the recommended level of 5 (Davis, Dibrell, Craig, & Green, 2013) and found the results to be satisfactory for being used in our regression analysis (RMSEA = 0.049; SRMR=0.073) (Hu & Bentler, 1999).

3.3.2.3 Control variables

In line with Carey et al. (2000), we include PROPMAN, defined as the proportion of non-family managers in the management team, to control for the agency conflicts between family and non-family members. We also include the natural logarithm of the number of shareholders (OWNERS) to control for the traditional shareholder-manager agency conflicts[21] and LEVERAGE, defined as total debt to

[21] We use this measure instead of management ownership to be consistent with Niskanen et al. (2010) since they examine the same context as we do. In our additional analyses, we also run our regressions with management ownership as proxy for the level of shareholder-manager agency conflicts but the results are similar.

total assets, to proxy for the agency conflicts between shareholders and debtholders (Niskanen et al., 2010). Other control variables that we include are SIZE, ROA, GROUP and INDUSTRY. SIZE, defined as the natural logarithm of total assets, is included to control for the complexity of firms as more complex firms may demand more monitoring to compensate for the loss of control (Abdel-Khalik, 1993) and ROA, defined as the ratio of annual net income to total assets, is included to control for the possible effect of profitability (Niskanen et al., 2010). In line with Niskanen et al. (2010) as well, we also include GROUP, coded 1 if the firm belongs to a group and 0 otherwise, to control for the fact that subsidiaries often have to hire the same auditor as the parent company, which is often a Big4 auditor because of their international orientation. Finally, we also control for industry effects by INDUSTRY, coded 1 if the firm is part of the manufacturing or construction industry and 0 otherwise.

3.3.3 Model

In order to test our hypotheses, we employ multivariate logit regression analyses, which is in line with prior audit demand studies (e.g. Firth & Smith, 1992; Lennox, 2005; Niskanen et al., 2010; Piot, 2001). While both logit and probit are used in the literature, we prefer logit as both methods are equally efficient but logit does not require normality of parameter distribution (Piot, 2001). More specifically, the model we use to test hypothesis 1 is specified as follows:

$$\text{Prob(BIG4)} = \frac{1}{1+e^{-Z}}$$

$$\text{where } Z = \beta_0 + \beta_1\text{COHESION} + \beta_2\text{PROPMAN} + \beta_3\text{OWNERS} + \beta_4\text{LEVERAGE} + \beta_5\text{SIZE} + \beta_6\text{ROA} + \beta_7\text{GROUP} + \beta_8\text{INDUSTRY} + \varepsilon$$

In order to test hypothesis 2, we specify the model as follows:

$$\text{Prob(BIG4)} = \frac{1}{1+e^{-Z}}$$

where $Z = \beta_0 + \beta_1 COHESION + \beta_2 MONITORING + \beta_3 COHESION*MONITORING + \beta_4 PROPMAN + \beta_5 OWNERS + \beta_6 LEVERAGE + \beta_7 SIZE + \beta_8 ROA + \beta_9 GROUP + \beta_{10} INDUSTRY + \varepsilon$

3.4 Results

3.4.1 Descriptive statistics and correlations

Table 8 presents the descriptive statistics (means or proportions, medians, minima, maxima and standard deviations) of our sample. 8 percent of our sample firms hired a Big4 auditor, which seems low but is not exceptional for a private family firm context as Niskanen et al. (2010) found this percentage to be around 13% while having a less strict definition of private family firms. The average value of family cohesion was found to be approximately 24.8 (minimum scale = -21; maximum scale = 63). Moreover, this table also compares the means or proportions of each variable between the firms that hired a BIG4 auditor and those that did not. The mean of COHESION is significantly smaller for firms that hired a BIG4 auditor, which is in line with our first hypothesis. The mean of OUTPUT_CONTR is found to be significantly smaller for these firms as well while the mean of SIZE and PROPMAN was found to be significantly larger for firms that hired a BIG4 auditor. No other significant differences in means were found regarding the other explanatory and control variables.

Table 8. Descriptive statistics

						BIG4 auditor (yes/no)		
						Yes (1)	No (0)	(1) vs. (0)
	Mean	*Median*	*Min*	*Max*	*s.d.*	*Mean*	*Mean*	*p-Value*
COHESION	24.77	26.00	-4.00	43.00	8.61	20.40	25.15	0.09*
MONITORING	13.72	14.00	0.00	28.00	6.65	10.70	13.98	0.13
STRAT_CONTR	2.06	2.00	0.00	4.00	1.18	1.90	2.08	0.65
OUTPUT_CONTR	2.08	2.00	0.00	4.00	1.05	1.53	2.13	0.08*
BEHAV_CONTR	1.80	2.00	0.00	4.00	1.00	1.40	1.84	0.18
PROPMAN	0.48	0.50	0.00	0.93	0.28	0.77	0.46	0.00***
OWNERS†	3.68	3.00	1.00	25.00	3.92	4.80	3.58	0.35
LEVERAGE	0.61	0.65	0.03	0.97	0.22	0.59	0.61	0.84
SIZE† (millions)	14.78	8.15	2.45	104.88	18.34	40.41	12.56	0.00***
ROA	0.06	0.04	-0.08	0.29	0.07	0.05	0.06	0.74
	Prop.					*Prop.*	*Prop.*	*p-Value*
GROUP	0.33					0.50	0.31	0.23
INDUSTRY	0.51					0.60	0.50	0.56
BIG4	0.08							

n = 125; *, **, *** indicate significance at the 10%, 5% and 1% levels respectively (two-tailed); † The natural logarithm of this variable is used in our statistical analysis.

Notes: This table presents the descriptive statistics (means or proportions, medians, minima, maxima and standard deviations) of the variables used to test our hypotheses. Moreover, this table compares the means (or proportions for the variables GROUP and INDUSTRY) of each variable between the firms that hired a BIG4 auditor and those that did not.

The correlations (both Pearson and Spearman) can be found in table 9. The correlations between COHESION and the other variables never exceed the value of 0.20 and also among the control variables the correlations remain rather low. Moreover, the variance inflation factors (not reported) indicate no multicollinearity problem either since all values are below the critical value 10 (the highest value is 3.63).

In line with our first hypothesis, the level of COHESION is found to be negatively correlated with hiring a Big4 auditor but only at the 10% significance level. The correlation between the monitoring effectiveness of the board (MONITORING) and hiring a Big4 auditor is not found to be significant. With respect to the control variables, only the proportion of non-family managers in the management team (PROPMAN) and SIZE are significantly positively correlated with audit (quality) demand.

Table 9. Correlation matrix

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1. BIG4	1.00	-0.16*	-0.12	-0.03	-0.13	-0.13	0.34***	-0.15*	-0.05	0.26***	-0.04	0.11	0.05
2. COHESION	-0.15*	1.00	0.09	0.14	0.13	0.00	-0.09	0.04	0.15*	0.02	0.06	-0.01	-0.14
3. MONITORING	-0.13	0.05	1.00	0.75***	0.92***	0.90***	-0.23**	-0.06	0.03	-0.03	-0.05	-0.01	-0.01
4. STRAT_CONTR	-0.04	0.11	0.75***	1.00	0.62***	0.59***	-0.03	-0.15*	0.01	0.06	-0.07	0.05	0.01
5. OUTPUT_CONTR	-0.16*	0.09	0.95***	0.63***	1.00	0.74***	-0.26***	-0.07	0.10	-0.04	-0.01	-0.07	-0.02
6. BEHAV_CONTR	-0.12	-0.03	0.94***	0.60***	0.80***	1.00	-0.22**	-0.02	-0.07	-0.03	-0.04	0.05	0.04
7. PROPMAN	0.31***	0.04	-0.20**	-0.01	-0.23***	-0.19**	1.00	0.03	0.07	0.21**	-0.19**	0.10	0.08
8. OWNERS	-0.07	0.02	-0.10	-0.16*	-0.10	-0.05	0.03	1.00	-0.12	-0.03	0.03	-0.04	-0.10
9. LEVERAGE	-0.02	0.14	0.02	0.00	0.09	-0.06	0.13	-0.07	1.00	-0.19**	-0.30***	-0.08	-0.21**
10. SIZE	0.35***	0.01	0.03	0.12	-0.02	0.03	0.27***	-0.12	-0.25***	1.00	0.03	0.01	-0.02
11. ROA	-0.03	-0.05	-0.06	-0.08	-0.04	-0.07	-0.15*	0.01	-0.29***	0.05	1.00	-0.14	0.08
12. GROUP	0.11	0.01	0.00	0.06	-0.06	0.04	0.10	-0.07	-0.08	0.02	-0.13	1.00	-0.07
13. INDUSTRY	0.05	-0.20**	0.00	0.01	-0.02	0.03	0.08	-0.08	-0.19**	0.00	0.10	-0.07	1.00

n = 125; *, **, *** indicate significance at the 10%, 5% and 1% levels respectively (two-tailed). The Pearson correlations are reported below the diagonal, the Spearman correlations above the diagonal.

3.4.2 Hypotheses tests

Table 10 presents our logistic regression models. The table presents the beta coefficients of all explanatory and control variables, the robust standard errors, the Log likelihood statistic, the Chi-square statistic and the McFadden R^2. All models are found to be significant ($p \leq 0.01$) and the R^2 values range from 41 to 52 percent.

Hypothesis 1 is supported by our data since model 1 shows a significant negative coefficient for the variable COHESION ($p = 0.001$). This result therefore indicates that auditors are also demanded to mitigate the intrafamily agency costs in private family firms.

We examine the moderating effect in model 2, which supports our second hypothesis. We find a significant negative direct effect of COHESION ($p = 0.005$) again and find a significant positive coefficient for the moderating variable COHESION*MONITORING ($p = 0.045$), indicating that the monitoring effectiveness of the board moderates the association between the level of intrafamily agency conflicts and audit quality demand in such a way that the association is weaker when having a higher monitoring effectiveness of the board. Moreover, this also supports our idea that a kind of order exists regarding to how a family firm tries to mitigate intrafamily agency conflicts such that the family members will try to monitor the behavior of the family managers internally first, by the board of directors, and only consider to hire an (high quality) external auditor when the board fails in doing this (i.e. when the monitoring effectiveness is low).

In model 3, 4 and 5, we replace the variable MONITORING by STRAT_CONTR, OUTPUT_CONTR and BEHAV_CONTR respectively to get a more detailed view about which control tasks specifically lead to this moderation effect. We find no significant results when including STRAT_CONTR (model 3) but when including OUTPUT_CONTR (model 4) and BEHAV_CONTR (model 5), we find significant coefficients for both COHESION ($p = 0.004$ and $p = 0.000$ respectively) and the moderating variables COHESION*OUTPUT_CONTR ($p = 0.040$) and COHESION*BEHAV_CONTR ($p = 0.018$).

The insignificant result regarding strategic control is not surprising since the strategic control role is considered to be particularly important when "critical choices must be made, such as acquiring a new firm, divesting a division or negotiating a takeover bid" (Baysinger & Butler, 1985; Zahra & Pearce, 1989, in: Minichilli et al., 2009, p. 58) and therefore does not directly relate to the mitigation of intrafamily agency conflicts. The output control role and the behavioral control role, on the other hand, do relate to this. More specifically, the behavioral control role encompasses supervising the CEO and monitoring the top managers' behavior and is therefore considered to have an internal focus (Boyd, 1995, in: Minichilli et al., 2009). Direct observation of management's behavior is considered to be one of the most effective ways to reduce agency conflicts but is often difficult to achieve due to the existence of information asymmetry between the board and management (Minichilli et al., 2009). The output control role mainly consists of monitoring the financial performance of the firm (Minichilli et al., 2009), which may especially be important for private family firms since family members may have different views on performance standards (growth in earnings versus growth in valuation) and may therefore

also trigger intrafamily conflicts (Schulze et al., 2003a). However, due to the existence of information asymmetries as well (the financial statements are generally prepared by management itself), the board is not always able to fulfil this role sufficiently.

Our results therefore suggest that a firm in which the board is able to execute the behavioral control and output control role effectively will have a lower need to hire an (high quality) auditor to reduce the intrafamily agency conflicts compared to a firm in which the board is not able to perform these tasks effectively, in which an (high quality) auditor will be much more useful to assist in mitigating these intrafamily agency conflicts.

Regarding the control variables, the coefficients of SIZE, LEVERAGE and GROUP are positive and significant in all models, which is in line with most audit demand studies (e.g. Dedman et al., 2014; Niskanen et al., 2010, 2011; Piot, 2001). The coefficient of PROPMAN is also significantly positive in each model, supporting the audit demand effect of agency conflicts between family and non-family members as found by Niskanen et al. (2010) and Carey et al. (2000). OWNERS was not found to be significant, indicating that audit demand is to a lesser extent determined by the traditional shareholder-manager agency conflicts. Unlike the traditional idea of audit demand literature that the role of auditing would be minimal in private family firms, our results show that external auditing remains to have an important role in these firms, more specifically to reduce the costs associated with the family related agency conflicts (both between family and non-family members and among family members).

Table 10. Logistic regression results

Model	1	2	3	4	5
Dependent variable:	BIG4	BIG4	BIG4	BIG4	BIG4
Explanatory variables:					
COHESION	-0.1337***	-0.5173***	-0.2699**	-0.5063***	-0.4665***
	(0.0401)	(0.1849)	(0.1198)	(0.1753)	(0.1328)
MONITORING		-0.7742**			
		(0.3868)			
COHESION MONITORING*		0.0289**			
		(0.0144)			
STRAT_CONTR			-1.9389		
			(1.2868)		
COHESION STRAT_CONTR*			0.0581		
			(0.0453)		
OUTPUT_CONTR				-4.8792*	
				(2.6041)	
COHESION OUTPUT_CONTR*				0.1917**	
				(0.0933)	
BEHAV_CONTR					-4.7962***
					(1.7765)
COHESION BEHAV_CONTR*					0.1756**
					(0.0745)
Control variables:					
PROPMAN	5.5314***	4.4298***	6.0032***	4.4615**	4.5933***
	(1.8245)	(1.6518)	(2.2366)	(1.7700)	(1.5921)
OWNERS	0.1640	-0.1046	-0.0688	-0.0535	-0.0938
	(0.5761)	(0.5874)	(0.4693)	(0.5729)	(0.6335)
LEVERAGE	3.7548*	4.6560**	5.1364**	4.0177**	4.2452**
	(2.0840)	(2.0816)	(2.0111)	(2.0292)	(2.1160)
SIZE	1.6221***	1.8896**	1.8974**	1.8112**	1.8973***
	(0.5228)	(0.8184)	(0.7633)	(0.7572)	(0.7390)
ROA	2.3872	-9.6544	-0.7790	-8.7804	-6.1199
	(4.7363)	(9.1485)	(5.3551)	(8.7865)	(6.4439)
GROUP	1.5030**	1.4813**	1.3591**	1.6391**	1.5104**
	(0.6695)	(0.6692)	(0.6748)	(0.6676)	(0.7164)
INDUSTRY	0.1149	0.8640	0.6987	0.8419	0.6079
	(0.9255)	(0.8712)	(0.9211)	(0.8879)	(0.9427)
Intercept	-21.9430***	-14.1351**	-21.4508***	-13.8812***	-15.2641**
	(5.5352)	(6.0646)	(7.7285)	(4.8707)	(6.8522)
Log likelihood	-20.3928	-16.8780	-18.9359	-16.9773	-17.0892
Chi-square	28.65***	52.94***	23.91***	64.11***	38.98***
McFadden R^2	0.4148	0.5156	0.4566	0.5128	0.5096

n = 125; *, **, *** indicate significance at the 10%, 5% and 1% levels respectively (two-tailed).

Notes: This table presents our logistic (logit) regression results. Both the beta coefficients and the robust standard errors (between brackets) are reported per variable for each model. In this table, also the Log likelihood and the Chi-square statistics are reported for each model, as well as the McFadden R^2.

3.4.3 Additional tests

We conducted several additional analyses in order to test the robustness of our findings, of which the results can be found in table 11a and 11b. These tables mainly represent results comparable to our main analyses (model 1 and 2 of table 10). The robustness tests on models 3, 4 and 5 of table 10 are not tabulated but are also described in the following paragraphs.

Since we had to drop 45 cases due to missing data regarding the monitoring effectiveness of the board, we also ran model 1 without the removal of these cases, leading to a dataset of 170 firms. The coefficient of COHESION was found to be significant at the 1% significance level ($p = 0.004$) when using this dataset as well, supporting our results regarding hypothesis 1 (model 1 of table 11a).

We also ran our regressions with other proxies for both our dependent and independent variables. More specifically, we replaced our dependent variable BIG4 by BIG4&BDO in our models since the predominance of the Big4 companies is not that pronounced in the Belgian context, in which BDO is also a very strong audit company (BDO is only between 17 and 31 percent smaller in terms of auditors compared to the other Big4 companies while the sixth largest audit company in Belgium is 45 percent smaller than BDO). When using this dependent variable in our models (11 percent of our sample firms hired a Big4 auditor or BDO), the results remain in line with our reported results. The coefficient of COHESION was found to be negative and significant in all models (the p-values range between 0.000 and 0.050) and the moderating variables COHESION*MONITORING ($p = 0.020$), COHESION*OUTPUT_CONTR ($p = 0.054$)

and COHESION*BEHAV_CONTR (p = 0.007) were found to be significant as well (model 2a and 2b of table 11a).

We also ran our regressions with a slightly different calculation of the level of COHESION. More specifically, since *enmeshed* and *disengaged* are two unbalanced scales of cohesion, one could argue they should not account for 2/3 of the overall cohesion score. We therefore also ran our regressions with a slightly adjusted measure (COHESION_ADJ) for family cohesion as suggested by Olson (2010), namely: balanced cohesion + (enmeshed - disengaged)/2. The results remain completely in line with our reported results. COHESION_ADJ is found to be significant and negative in all models (the p-values range between 0.000 and 0.013) and COHESION_ADJ*MONITORING (p = 0.019), COHESION_ADJ*OUTPUT_CONTR (p = 0.015) and COHESION_ADJ*BEHAV_ CONTR (p = 0.015) are all found to be significantly positive (model 3a and 3b of table 11a).

In order to examine the robustness of our findings regarding the moderating effect of the board of directors, we also used a different measure to proxy its monitoring effectiveness (MONITORING_ALT). This measure consists of the monitoring component of the index of Westphal (1999, p. 24), which includes the items “To what extent does the board monitor top management strategic decision making?”, “To what extent does the board formally evaluate your performance?” and “To what extent does the board defer to your judgment on final strategic decisions?”. The results (model 4 of table 11a) are in line with our reported results since we find a significant positive moderating effect for the monitoring role of the board when using this measure (p = 0.050).

Table 11a. Additional analyses

Model	**1**	**2a**	**2b**	**3a**	**3b**	**4**
Dependent variable:	BIG4	BIG4&BDO	BIG4&BDO	BIG4	BIG4	BIG4
Explanatory variables:						
COHESION	-0.0920***	-0.0874***	-0.3211***			-0.5043***
	(0.0317)	(0.0321)	(0.1025)			(0.1825)
COHESION_ADJ				-0.1807***	-0.6023***	
				(0.0549)	(0.1807)	
MONITORING			-0.4682***		-0.8940**	
			(0.1720)		(0.3866)	
MONITORING_ALT						-0.9988**
						(0.4319)
COHESION MONITORING*			0.0166**			
			(0.0072)			
COHESION_ADJ MONITORING*					0.0324**	
					(0.0138)	
COHESION MONITORING_ALT*						0.0344*
						(0.0176)
Control variables:						
PROPMAN	2.6368**	4.5115**	3.8781**	5.5237***	4.6169**	5.5443***
	(1.3169)	(1.9390)	(1.8762)	(1.8097)	(1.8099)	(1.9720)
OWNERS	-0.0506	0.1047	-0.1393	0.1689	0.0690	-0.0957
	(0.5761)	(0.5064)	(0.4937)	(0.5971)	(0.5659)	(0.6174)
LEVERAGE	1.9396	4.4348**	5.2407**	3.8827*	4.5098**	4.8828**
	(1.7641)	(2.0568)	(2.0497)	(2.0603)	(1.8564)	(2.3349)
SIZE	1.3746***	1.3322***	1.5048***	1.6388***	1.8401**	2.0127***
	(0.4250)	(0.3719)	(0.4569)	(0.5463)	(0.7632)	(0.6529)
ROA	-4.5228	0.6912	-4.3480	2.3776	-7.0903	-0.9411
	(5.4815)	(4.7549)	(5.6794)	(4.6547)	(6.8439)	(4.7117)
GROUP	0.5389	1.3976*	1.3620*	1.4438**	1.4269**	1.7241**
	(0.6488)	(0.7312)	(0.7449)	(0.6759)	(0.6145)	(0.6716)
INDUSTRY	0.0984	1.3228	1.8877**	0.1676	0.9127	0.3698
	(0.7177)	(0.8661)	(0.8860)	(0.9257)	(0.8852)	(0.9964)
Intercept	-16.1581***	-19.7817***	-14.9957***	-20.8279***	-11.1069*	-15.9811**
	(5.0651)	(4.6417)	(4.8071)	(5.3811)	(5.9763)	(6.4830)
Log likelihood	-32.4789	-28.2139	-25.4847	-20.5316	-17.7279	-18.7528
Chi-square	16.24**	24.74***	32.94***	32.10***	59.86***	23.27***
McFadden R^2	0.2926	0.3564	0.4186	0.4108	0.4913	0.4618
n	170	125	125	125	125	125

*, **, *** indicate significance at the 10%, 5% and 1% levels respectively (two-tailed).

Notes: This table presents our additional logistic (logit) regression results. Both the beta coefficients and the robust standard errors (between brackets) are reported per variable for each model. In this table, also the Log likelihood, the Chi-square statistic and the McFadden R^2 are reported for each model, as well as the number of cases included.

Since the generation of the owning family is also often proposed as a proxy for the level of intrafamily agency conflicts in family firm studies (e.g. Blanco-Mazagatos et al., 2007; Schulze et al., 2003a), we also replaced COHESION in our models by GENERATION, indicating which generation currently has the majority of the shares (model 5a and 5b of table 11b). None of its coefficients were found to be significant, however, which may indicate that a

compositional measure like generation is not fully able to capture the heterogeneity of family firms regarding the level of intrafamily agency conflicts.

We also ran our regressions with alternatives for the control variables. More specifically, we used family ownership (FAM_OWN), defined as the percentage of shares owned by the family, to measure the level of agency conflicts between family and non-family members instead of PROPMAN (Niskanen et al., 2010) and management ownership (MAN_OWN), defined as the percentage of shares owned by management, to measure the level of agency conflicts between owners and managers instead of OWNERS (Lennox, 2005). The results remain in line with our reported results when using these alternative measures for the traditional owner-manager and family-non-family agency conflicts (model 6a and 6b of table 11b). Since these alternative measures proxy the ownership structure of the firm and therefore more closely relate to the traditional view on agency conflicts (in which the level of agency conflicts would be a result of ownership structure only, due to rational behavior), the confirmed significant coefficient of COHESION further supports the proposition that intrafamily agency conflicts are mainly based on emotions and sentiments instead of economically rational behavior and highlights the value of a measure like cohesion to grasp these emotion based agency conflicts. We also conducted an analysis in which we control for the three compositional measures that may relate to the level of family related (both inter- and intrafamily) agency conflicts, being FAM_OWN, PROPMAN and GENERATION (model 7a and 7b of table 11b). Also in this analysis, the coefficient of COHESION is found to be (strongly) significant and negative (while COHESION*MONITORING is also significantly positive). This indicates that compositional measures are not completely able to

grasp the level of agency conflicts in private family firms and incorrectly consider firms with a similar 'composition' to be homogeneous. Including family cohesion therefore increased our ability to better take into account the heterogeneity of family firms regarding the level of agency conflicts.

Table 11b. Additional analyses (continued)

Model	5a	5b	6a	6b	7a	7b
Dependent variable:	BIG4	BIG4	BIG4	BIG4	BIG4	BIG4
Explanatory variables:						
COHESION			-0.1202***	-0.4776**	-0.1346***	-0.5645**
			(0.0358)	(0.2163)	(0.0464)	(0.2833)
GENERATION	0.3598	0.7595				
	(0.2739)	(0.5816)				
MONITORING		-0.0540		-0.8129*		-0.8173
		(0.1314)		(0.4881)		(0.5297)
COHESION MONITORING*				0.0274*		0.0306*
				(0.0159)		(0.0184)
COHESION GENERATION*		-0.0233				
		(0.0419)				
Control variables:						
PROPMAN	6.4075**	5.3815**			4.6327**	3.9889**
	(2.7857)	(2.4361)			(1.8878)	(1.8489)
FAM_OWN			-0.0328**	-0.0334*	-0.0282	-0.0305
			(0.0145)	(0.0193)	(0.0216)	(0.0272)
GENERATION					0.2782	0.2251
					(0.2911)	(0.3271)
OWNERS	0.0372	-0.1941			0.0427	-0.2066
	(0.5796)	(0.5182)			(0.5954)	(0.4806)
MAN_OWN			-0.0275***	-0.0326**		
			(0.0095)	(0.0150)		
LEVERAGE	1.4104	2.0149	1.5427	3.4511**	1.1486	2.6432
	(2.2575)	(1.9938)	(1.6294)	(1.7522)	(2.4287)	(2.5793)
SIZE	1.0025**	1.1328**	1.8743***	2.3207**	1.7242**	2.0894
	(0.4211)	(0.5376)	(0.6769)	(1.0063)	(0.6941)	(1.2803)
ROA	1.2362	1.4263	-6.0466	-13.9860	-5.0204	-17.1191
	(5.5156)	(5.2099)	(4.0065)	(9.9335)	(8.0159)	(15.5571)
GROUP	0.9829	0.9687	2.0547**	2.3617***	1.7286**	1.6791**
	(0.6895)	(0.6979)	(0.9325)	(0.8773)	(0.7297)	(0.7428)
INDUSTRY	0.2522	0.4115	0.3274	1.4680*	-0.2482	0.7002
	(0.9029)	(0.9047)	(0.8387)	(0.8505)	(0.9714)	(0.8474)
Intercept	-18.1392***	-18.4096***	-15.1174**	-10.6689**	-18.3204***	-10.9756**
	(3.8740)	(4.7897)	(5.9269)	(5.1674)	(5.1650)	(5.2954)
Log likelihood	-22.1612	-21.3062	-18.2918	-14.3926	-18.1004	-15.1500
Chi-square	35.58***	33.23***	31.56***	25.23***	44.88***	44.47***
McFadden R^2	0.3594	0.3841	0.4725	0.5850	0.4755	0.5610
n	122	122	123	123	121	121

*, **, *** indicate significance at the 10%, 5% and 1% levels respectively (two-tailed).

Notes: This table presents our additional logistic (logit) regression results. Both the beta coefficients and the robust standard errors (between brackets) are reported per variable for each model. In this table, also the Log likelihood, the Chi-square statistic and the McFadden R^2 are reported for each model, as well as the number of cases included.

Finally, we also added some other potential control variables (the QUICK ratio, the company's AGE, whether the company EXPORTs and whether the managers have a VARIABLE_REMUNERATION scheme) found in the audit demand literature (e.g. Francis & Wilson, 1988; Lennox, 2005; Niskanen et al., 2010). The results regarding the explanatory variables remain completely in line with our reported findings when including these control variables (not tabulated).

3.5 Conclusions

In this study, we examine whether audit (quality) demand is also driven by the level of intrafamily agency conflicts. As "...family bonds engender agency contracts that are prone to depart from economic rationality" (Gomez-Mejia et al., 2001, p. 82), we used the level of family cohesion to measure these intrafamily agency conflicts. We hypothesized that the level of family cohesion is negatively associated with audit (quality) demand, which was supported by our data.

Moreover, we also hypothesized that the monitoring effectiveness of the board of directors may weaken the association between family cohesion and audit (quality) demand since family members may, due to the importance of privacy and confidentiality, try to solve the intrafamily agency conflicts internally first, through the board of directors, and only consider an (high quality) external audit as an alternative when the board fails. This hypothesis was also supported by our data.

Since the monitoring role is considered to consist of three sub-roles, namely strategic control, output control and behavioral control (Huse, 2005; Minichilli et al., 2009), we also examined the individual effects of each sub-role separately and found a significant moderating effect when including output control and behavioral control but not when including strategic control. These results therefore suggest that a firm in which the board is able to execute the behavioral control role (which encompasses supervising the CEO) and output control role (which mainly consists of monitoring the financial performance of the firm) effectively will be able to reduce the intrafamily agency costs internally and will therefore have a weaker relationship between the potential level of agency conflicts and audit (quality) demand compared to a firm in which the board is not able to execute these roles effectively.

We believe that our findings regarding the relationship between the level of intrafamily agency conflicts and audit demand and the moderating effect of the board of directors on this relationship contributes significantly to both practice and theory. In the first place, we contribute to the family firm literature by highlighting a topic, audit demand, that has received little attention in this literature stream (Salvato & Moores, 2010; Songini et al., 2013). Moreover, we also add to one of the most notable exceptions that did examine audit demand in this private family firm setting, namely the study of Niskanen et al. (2010). They found that private family firms also demand (high quality) auditing to reduce family related agency conflicts between the family and non-family members. We add to this study by examining whether (high quality) auditing is also demanded to reduce the agency conflicts that arise among family members (intrafamily agency conflicts).

Moreover, by using family cohesion as measure for the level of intrafamily agency conflicts, we are also more able to take into account the heterogeneity of private family firms. While compositional measures like generational or ownership stage of the family firm are suggested and used in the literature to proxy the level of intrafamily agency conflicts, several drawbacks are associated with these measures. One could argue that agency conflicts will increase when generations progress and/or ownership disperses because the level of altruism may reduce (Lubatkin et al., 2005; Schulze et al., 2003a), goals are more likely to diverge (Miller & Le Breton-Miller, 2006) and family complexity increases (Lambrecht & Lievens, 2008). However, these arguments may not hold for all private family firms that evolve over generations and these proxies may therefore not be able to take into account the heterogeneity of private family firms, which is considered to be a very important aspect within the family firm literature (e.g. Burkart et al., 2003; Chrisman et al., 2007; Gomez-Mejia et al., 2001; Schulze et al., 2003b; Schulze et al., 2001).

By measuring emotions more directly, we also answer the call of Kellermanns et al. (2014) to integrate concepts of other fields in the family firm literature in order to get a greater understanding about how emotions may influence strategic decisions. We are aware, however, that other similar concepts, such as family identity, familiness, and family involvement may be suitable to measure the emotions related to the level of intrafamily agency conflicts as well and therefore we agree with Kellermanns et al. (2014) that future research needs to assess which measures and which research designs measure emotions in family firms the most successfully.

This study also contributes to the auditing and accounting literature, in which we consider the introduction of emotionally related constructs to be our main contribution. While most audit demand studies still fully rely on traditional agency theory and therefore expect the demand for auditor services to be minimal in private family firms because of the low level of agency conflicts, we depict a completely different view by focusing on the family firm literature and find that private family firms do demand (high quality) auditing to reduce family related (and emotion based) agency conflicts. By examining private family firms, we also answer the call of Trotman and Trotman (2010) to focus more on family businesses in the accounting literature. Moreover, we also contribute to this literature by actually measuring the monitoring effectiveness of the board of directors (instead of using compositional measures that proxy for board independence) and by examining its influence on audit demand. In this way, we also answer the call of Cohen et al. (2004) to examine the role of the entire board in auditor selection and to examine board characteristics other than independence only.

Finally, by taking a heterogeneous perspective on family firms and by revealing that family firms will demand an (high quality) auditor to mitigate intrafamily related agency costs, which is the opposite of what was traditionally expected (e.g. Fama & Jensen, 1983b), our findings may also be very interesting for auditors since they could use this knowledge to conform their services more to the demands of these firms and in this way create more value for both themselves and their clients.

There are, of course, some limitations associated with this study that indicate possibilities for future research. In the first place, we only examined

whether high quality auditors are demanded to mitigate intrafamily agency conflicts while we did not examine their effectiveness in doing this. Moreover, while the Big4 proxy for audit quality is used very often in audit demand studies, prior research did not yet examine whether Big4 auditors are also perceived to provide higher quality in a family firm context, especially regarding the mitigation of intrafamily agency costs. Since this study is a single country study, one should also be careful with generalizing its results and comparing them with others. However, we do not expect large differences between countries regarding how intrafamily agency conflicts could lead to the demand for an (high quality) audit as we expect the influence of contextual factors to be rather limited in this relationship but this needs further examination. The fact that we use data based on single respondents (the CEO) is another limitation of this study, especially since the CEO will only be able to provide his/her perception about the level of cohesion within the family and about the monitoring effectiveness of the board. While this choice is in line with other studies (e.g. Pearce & Zahra, 1991; Zahra, 1996; Zahra, Neubaum, & Huse, 2000, in: Minichilli et al., 2009) and seems reasonable given the difficulty of gaining access to primary data, especially regarding family relationships (several CEOs reported to us that the items included in the cohesion scale were too personal and therefore confidential), one should take this into account when interpreting the results of this study.

We hope that both our contributions and limitations will motivate other researchers to further examine the topics examined in this study in order to further increase our understanding of how emotions and intrafamily agency conflicts may influence corporate decision making.

Chapter 4 –

The influence of the CEO's perception towards auditing on audit demand

4.1 Introduction

The main part of audit demand studies keeps relying on agency theory to explain audit demand, in which a direct relationship between the level of agency conflicts and audit demand is generally hypothesized (e.g. Dedman et al., 2014; Hope et al., 2012; Lennox, 2005; Niskanen et al., 2011). While a qualitative study of Cohen et al. (2010) pointed out that management is mostly the driving force behind auditor appointments and terminations, studies examining the influence of management on audit demand remain scarce (Carcello et al., 2011; Cohen et al., 2004). This is probably due to the fact that agency theory suggests that management will also demand an (high quality) auditor when shareholder-manager agency conflicts are high and considering management in the analyses would therefore not lead to an additional effect as management will take into account the level of agency conflicts when making the audit decision. The finding of Cohen et al. (2010) does therefore not necessarily contravene the main hypothesis (agency conflicts lead to audit demand) of prior audit demand studies.

The hypothesis that agency conflicts lead to audit demand, however, is largely founded on the agency assumption that all actors in a firm will behave in

an economically rational way, which does not (always) seem to hold at all. Several scholars (e.g. Hambrick & Mason, 1984; Radner, 1996; Van den Berghe & Carchon, 2003), including Jensen (1994), indeed agree that people often behave in a bounded or even non-rational way. This view is also embraced by the upper echelons theory, which argues that strategic choices are based on managerial perceptions (Hambrick, 2007; Hambrick & Mason, 1984), which in turn are determined both by the cognitive base of the manager and his/her values and can therefore at most be considered as bounded rational decisions (Hambrick & Mason, 1984).

We take this bounded rational behavior and the influence of managerial perceptions into account by examining whether the CEO's perception towards auditing is also a driver of audit demand, additional to the level of agency conflicts. We define the CEO's perception towards auditing in terms of perceived value, which can be specified as the CEO's perceived overall utility of, in our case, the audit service based on a comparison of (perceived) benefits and (perceived) costs (Zeithaml, 1988, in: Sweeney & Soutar, 2001). Although Collis et al. (2004) and Niemi et al. (2012) already controlled for the influence of managerial perceptions about auditing on voluntary audit demand and indeed found a significant association, we hypothesize that CEO perception may also influence both audit *quality* (whether the firm hires a Big4 auditor or not) and audit *quantity* (the amount of audit effort that has to be performed) demand. Moreover, Collis et al. (2004) and Niemi et al. (2012) considered the managerial perceptions as a unidimensional construct with one item (the extent of agreement that the audit improves the quality of the financial statement information) while several marketing studies (e.g. Sweeney & Soutar, 2001;

Woo & Ennew, 2005) argue that perceived value consists of four dimensions, being functional value (perceived overall utility and quality), price value (perceived 'value for money'), social value (perceived capacity to increase the 'social image') and emotional value (which feelings does it arouse), each including several items. Therefore, we will examine the individual influences of these dimensions on audit *quality* and audit *quantity* demand instead of using an overall perception measure.

As no prior scales exist in the literature to capture the CEO's perception towards auditing in such a multidimensional way, we translated the items of the 'perceived value'-scale of Sweeney and Soutar (2001) to an auditing context. We relied on the roles of external audits as defined in the auditing literature (signaling information to stakeholders, reducing information asymmetries, etc.) (e.g. Dye, 1993; O'Reilly, Leitch, & Tuttle, 2006) and on interviews with both auditors and managers to make this translation from a general product/service to the specific service of auditing as accurate as possible.

Using questionnaire data combined with archival data of Belgian private firms, several of the underlying dimensions of CEO perception were found to be associated with audit *quality* and/or audit *quantity* demand, indicating that the CEO's perception towards auditing should be considered as an important additional driver of audit demand. More specifically, the perceived functional value of auditing was found to be significantly positively associated with audit *quantity* demand but not with audit *quality* demand. The perceived price value of auditing was found to be significantly negatively associated with audit *quantity* demand only. The perceived social value was found to be significantly positively associated with audit *quality* demand while being significantly negatively

associated with audit *quantity* demand. The perceived emotional value of auditing was not found to be significant in our model.

By this study, we answer the call of several accounting researchers to relate management to accounting and auditing outcomes as management is likely driving these outcomes (Carcello et al., 2011; Cohen et al., 2004). Moreover, by examining the influence of the CEO's perception towards auditing on audit demand and by directly measuring this CEO's perception instead of using proxies for it, we also assist in opening the black box of how management influences these audit outcomes and in moving forward to examine behaviors, processes and personality treats in an accounting context as proposed by Carcello et al. (2011). As we examine audit demand in the Belgian private firm context, we also answer the call to examine the non Anglo-American context to a larger extent (Carcello et al., 2011; Cohen et al., 2004; deZoort & Salterio, 2001). Furthermore, we take a more nuanced view on agency theory by taking into account that people do not always behave in a rational way but also make non-rational decisions, as suggested by upper echelons theory (Hambrick & Mason, 1984), and in this way answer the call of Cohen et al. (2008) to use different theories in accounting and auditing literature. Overall, we believe this study adds to the knowledge we have about what drives audit demand and we hope that legislators will take this added knowledge into account when evaluating the current governance regulations. Especially regarding the audit market, this study seems to indicate that the current organization of this market may lead to a discrepancy between need (the level of agency conflicts) and demand (the auditor that is hired and the amount of auditing that is demanded)

because of this important influence of management. More research on this issue, however, is needed.

This study proceeds as follows. In the next section, we elaborate on the potential influence of management's perception towards auditing on audit demand and develop testable hypotheses. In section 4.3, we describe our methodology. In section 4.4, we discuss our results and conclusions follow in section 4.5.

4.2 Theory and hypotheses

4.2.1 Audit demand

Agency theory considers auditing as one of the main devices to reduce agency conflicts. These conflicts arise when a shareholder (the principal) hires a manager (the agent) to take decisions on his/her behalf since this manager will not always act in the best interest of the principal and/or the firm (Jensen & Meckling, 1976). As this self-interested behavior by managers can decrease the welfare of the shareholders, these shareholders will try to monitor the agents in order to prevent this decrease in welfare. One of the most important monitoring tools are the financial statements of the company but these are generally prepared by management itself (Chow, 1982; Lennox, 2005). An audit is therefore often demanded since it increases the reliability of these financial statements and in this way increases the monitoring effectiveness of the shareholders and thus reduces the agency conflicts (Becker et al., 1998).

According to agency theory, this audit demand may both arise from the shareholders and the managers. In case of (potential) agency conflicts, the shareholders will demand an audit to be able to better monitor managers while the managers will demand an audit to avoid that shareholders will anticipate the managers' self-interested behavior and remunerate them accordingly (Jensen & Meckling, 1976). The fact that a qualitative study of Cohen et al. (2010) pointed out that "…management [is] … often the driving force behind auditor appointments and terminations" (p. 752), which is also supported by several other studies (Carcello et al., 2011; Cohen et al., 2010), does therefore not contravene the proposition of agency theory that agency conflicts lead to audit demand.

Most audit demand studies therefore hypothesize a direct positive association between the level of shareholder-manager agency conflicts and audit demand[22], in which audit demand can both mean the demand for a voluntary audit and the demand for a high quality audit, dependent on whether the sample firms are already required by law to have their financial statements audited. Moreover, besides *voluntary* audit demand or audit *quality* demand, some studies also examine audit *quantity* demand, in which the drivers of audit demand are related to the audit fee since the audit fee can be considered as a proxy for the amount of audit effort demanded (after controlling for supply-side effects) (e.g. Carcello et al., 2002; Knechel & Willekens, 2006).

[22] Several audit demand studies (e.g. Firth & Smith, 1992; Reed et al., 2000) also hypothesized and found a positive association between the level of shareholder-debtholder agency conflicts and audit demand. We will not focus on this type of agency conflicts in this study but we will control for its influence in our regressions.

Although the hypothesized positive association between the level of agency conflicts and audit demand is supported by several studies (e.g. DeFond, 1992; Firth & Smith, 1992; Francis et al., 2009; Hope et al., 2012), there are also a number of studies of which the results do not support this hypothesis (e.g. Chen & Jian, 2007; Francis & Wilson, 1988; Piot, 2001; Reed et al., 2000; Senkow, Rennie, Rennie, & Wong, 2001). This may indicate that the assumptions made by agency theory are not always met.

4.2.2 CEO perception

In this study, we consider the perception of the CEO as an additional driver of audit demand. Because of the assumption of rational behavior, agency theory would consider this perception to be fully dependent of the level of agency conflicts (in which the CEO would also perceive an audit as (un)necessary when the level of agency conflicts is high (low)), making CEO perception a redundant variable in the audit demand curve.

However, several authors (e.g. Radner, 1996) argue that people do not always act in a rational way, as assumed by agency theory, but rather behave in a bounded or even non-rational way. Even one of the founders of agency theory, Jensen (1994), agrees that people take both rational and non-rational decisions, leading to defensive and unchangeable behavior. Such behavior can be caused by incomplete information and limited capabilities to process the available information (Van den Berghe & Carchon, 2003). Translated to our context, this may mean that managers consider an audit as too expensive although it may in fact be a cost-effective way to reduce agency conflicts or that managers may

simply not be aware of the negative consequences of agency conflicts (e.g. a limited remuneration because shareholders expect them to behave opportunistically and will remunerate them accordingly). Moreover, non-rational behavior may also be caused by risk/pain avoidance (Gomez-Mejia et al., 2001; Jensen, 1994). Managers may, for example, not want to be monitored by an auditor because this could possibly reveal weaknesses of them (e.g. they may have behaved opportunistically or they may have performed below expectations) or they may just want to preserve the status quo.

This view is also in line with the upper echelons theory, which is built on the premise of bounded rationality as well (Cyert & March, 1963; March & Simon, 1958, in: Hambrick, 2007) caused by the natural limitations of human beings (Cyert & March, 1963, in: Nielsen, 2010). This theory argues that strategic choices are based on *managerial perceptions* (Hambrick, 2007; Hambrick & Mason, 1984), which in turn are determined both by the cognitive base of the manager and his/her values (Hambrick & Mason, 1984). More specifically, the manager's values and cognitive base will create a screen between the actual situation and the manager's perception of it (Hambrick & Mason, 1984). In the first place, they will influence to which the *attention* is directed, they will influence the *selected information* of certain phenomena to which the attention was directed and they will influence the *interpretation* of this information (Hambrick & Mason, 1984). Regarding the audit decision, a manager may for example not be interested in how an (high quality) audit would influence the relationship with the shareholders (attention). He/she may therefore only focus on the high fee of an audit and not take into account the potential gains of an audit (information selection) and accordingly consider it as too expensive

(interpretation), which will eventually lead to a negative perception towards auditing (managerial perception). Another manager could have a different perception towards auditing because he/she has a different cognitive base and different values, even if the organizational context is completely the same.

Introducing this upper echelons perspective in the audit demand literature, Cheng and Leung (2012) examined the influence of management characteristics (e.g. gender, tenure, age, education, etc.) on audit demand. The founders of upper echelons theory indeed postulate that organizational outcomes can partially be predicted from managerial backgrounds and demographics since they are considered to proxy the above mentioned psychological constructs such as values, cognitions and perceptions (Carpenter, Geletkanycz, & Sanders, 2004; Hambrick & Mason, 1984). Moreover, the use of these proxies is also accepted given the difficulty of obtaining data regarding managerial perceptions and its underlying psychological constructs (Carpenter et al., 2004; Hambrick, 2007). However, such demographics remain proxies and they may therefore engender the risk of spurious explanation (Lawrence, 1997).

Examining the audit retention decision of private Canadian corporations, Senkow et al. (2001) proposed that the positive association between the magnitude of fees and audit retention could also be a reflection of the demand effect of perception but they were not able to empirically test this. In this study, we will therefore directly measure the CEO's perception towards auditing using questionnaire data instead of archival data only and link it to audit demand.

We define the CEO's perception towards auditing in terms of perceived value, which is specified as "[t]he consumer's overall assessment of the utility of

a product [or service] based on a perception of what is received and what is given" (Zeithaml, Parasuraman, & Berry, 1988, in: Ulaga & Chacour, 2001, p. 529). It is considered to be subjective (Ulaga & Chacour, 2001) and "…highly personal, idiosyncratic and may vary widely from one customer to another" (Holbrook, 1994, in: Hu, Kandampully, & Juwaheer, 2009, p. 114). Moreover, in contrast to satisfaction, which is generally considered to be a post-purchase evaluation, perceived value can also be determined during the pre-purchase stage (Woodruff, 1997, in: Sweeney & Soutar, 2001). The more positive the perceived balance between what is received and what is given, the higher the probability that we acquire the product or service (Sheth, Newman, & Gross, 1991).

Translated to an auditing context, two exceptional studies of Collis et al. (2004) and Niemi et al. (2012) controlled for the influence of managerial perceptions about auditing on voluntary audit demand and indeed found a significant positive association. They considered these managerial perceptions as a unidimensional construct (the extent of agreement that the audit improves the quality of the financial statement information (Collis et al., 2004; Niemi et al., 2012)). However, recent literature about perceived value distinguishes among several dimensions (Sánchez-Fernández & Iniesta-Bonillo, 2007). More specifically, it is argued that the perception of what is received not only relates to the functional value of, in our case, the audit, but also relates to its emotional value and social value (what does it communicate to others) (Sweeney & Soutar, 2001). In this study, we therefore want to add to the studies of Collis et al. (2004) and Niemi et al. (2012) by examining the individual effects of these dimensions on audit demand. Moreover, since we examine firms that are already

legally required to hire an auditor, we will not link the CEO's perception towards auditing (i.e. the perceived value of auditing) to whether the firm hires an auditor or not (voluntary audit demand). As indicated by Sheth et al. (2005), however, perceived value is not only applicable to the 'buy versus do not buy' decision but can also be applied to, for example, brand choice and therefore we will link it to which type of auditor (audit *quality*) that is chosen and the amount of audit effort (audit *quantity*) that is demanded.

4.2.3 The dimensions of CEO perception

Sweeney and Soutar (2001) define four dimensions of perceived value, namely *functional* value regarding performance and/or quality, *functional* value in comparison to its price (to which we will further refer as *price* value to prevent confusion with the previous dimension), *social* value and *emotional* value.

Functional value is traditionally considered to be the primary driver of consumer choice and can be described as the perceived utility of the product or service regarding functional, utilitarian or physical performance, in which reliability will be an important driver (Woo & Ennew, 2005). *Price* value, often referred to as 'value for money', is sometimes considered as a part of *functional* value but Sweeney and Soutar (2001) consider it, in line with other recent value models (Sánchez-Fernández & Iniesta-Bonillo, 2007), as a separate dimension since *functional* value is closely related to quality but quality and price were found to have opposite influences on perceived value (e.g. Dodds, Monroe & Grewal, 1991, in: Sweeney & Soutar, 2001). *Social* value relates to the 'social image' that is acquired by purchasing a certain product or service and is found

to be especially important for highly visible goods and services (Woo & Ennew, 2005). Finally, *emotional* value relates to the feelings associated with the purchase of a certain good or service (Woo & Ennew, 2005) and can, especially in the case the purchase is legally required like in our context, both be positive and negative. Since the four dimensions may have different effects on audit *quality* and/or audit *quantity* demand, we will consider these dimensions as separate drivers in our audit demand models.

Since *functional value* is considered to be the primary driver of consumer choice (Woo & Ennew, 2005), we expect that CEOs with a negative functional value perception towards auditing will not want to further invest in a high quality audit. As the firms that we examine are all legally required to engage an auditor, these CEOs will already consider the balance between what is received and what is given to be negative. Investing in a higher quality audit would make this balance even more negative because of the increase in costs that is associated with demanding a high quality audit (Hay, Knechel, & Wong, 2006). We therefore do not expect them to prefer such a higher quality audit since they will only be concerned about fulfilling the legal requirement to hire an auditor. CEOs with a positive functional value perception towards auditing, on the other hand, may be more willing to invest in a high quality audit. Considering the service to be of high functional value, they may also want to make sure that the service is provided by a qualitative audit company. We therefore hypothesize a positive association between the perceived functional value of auditing and audit *quality* demand.

We expect a positive relationship between the CEO's perceived functional value of auditing and audit *quantity* demand as well. CEOs who have a negative

functional value perception towards auditing will not prefer more auditing since they already consider the current level of (legally required) audit *quantity* to be dysfunctional and therefore too high. CEOs who have a positive functional value perception towards auditing, on the other hand, may demand additional audit effort to maximize the functional benefits of an audit. Overall, we therefore hypothesize:

H1a: The CEO's perceived *functional* value of auditing is positively associated with audit *quality* demand.

H1b: The CEO's perceived *functional* value of auditing is positively associated with audit *quantity* demand.

The relationship between perceived *price value*, the extent to which a good or service is perceived to provide 'value for money', and audit *quality* demand is difficult to predict since the price of a good or service is considered both as "…an indicator of the amount of sacrifice needed to purchase a product and an indicator of the level of quality" (Astrachan, 2010, p. 308). However, since price value is closely related to the concept of perceived price (un)fairness and Sinha and Batra (1999) hypothesized and found that an overall perceived price unfairness will lead to an increased price consciousness, which in turn will lead to the purchase of lower priced private label brands, we hypothesize a positive association between the perceived price value of auditing and audit *quality* demand. In line with Sinha and Batra (1999), we expect that CEOs who consider the price value of an external audit to be low (high price unfairness) will prefer to engage less expensive second tier auditors instead of the more expensive first

tier auditors while CEOs who perceive the price value of auditing to be positive (high price fairness) will be more willing to engage these high quality auditors.

Regarding audit *quantity* demand, perceived price (un)fairness and a perceived positive (negative) price value are generally considered to lead to higher (lower) buying intentions (e.g. Bei & Chiao, 2001; Campbell, 1999; Fandos Roig, Garcia, & Moliner Tena, 2009; Xia, Monroe, & Cox, 2004). Fandos Roig (2009) also found empirical evidence for this association in a financial services market and we therefore also expect that when the cost of an audit is considered to be reasonable, more audit effort will be demanded. We thus hypothesize a positive association between the CEO's perceived price value of auditing and audit *quantity* demand. Formally, we therefore hypothesize:

H2a: The CEO's perceived *price* value of auditing is positively associated with audit *quality* demand.

H2b: The CEO's perceived *price* value of auditing is positively associated with audit *quantity* demand.

We also hypothesize a positive association between the perceived *social value* of auditing and both audit *quality* and audit *quantity* demand. If CEOs consider audits to have a high social value (i.e. they consider an audit to be able to increase their reputation towards customers, suppliers, banks, etc.), we expect them to be more likely to prefer a high quality auditor and to demand more audit effort. Since all firms in our sample were already legally required to have their financial statements audited, CEOs are not able to increase their social image by just complying with this requirement. If they want to increase their social image and they consider an audit to be able to assist in this, we expect

them to demand a high quality auditor in the first place because this can be easily observed by their peers. In fact, the name of the auditor seems almost the only noticeable difference among financial statements of companies since the practices of audit firms have become very similar (Han, 1994). Therefore, auditors are often considered to serve as symbols, in which not necessarily the content of the statement is important, but rather the reputation of the audit firm who signed it (Han, 1994). Since high quality auditors are considered to have a strong reputation, we expect a positive association between the CEO's perceived social value of auditing and audit *quality* demand.

We expect a similar association with audit *quantity* demand since the amount of audit effort (which can be proxied by the audit fee) is also observable in the financial statements of the companies within our sample, although it is less observable than the name of the auditor. Formally, we therefore hypothesize the following regarding the influence of social value:

H3a: The CEO's perceived *social* value of auditing is positively associated with audit *quality* demand.

H3b: The CEO's perceived *social* value of auditing is positively associated with audit *quantity* demand.

The hypotheses regarding the influence of *emotional value* can be developed rather intuitively. We expect CEOs who perceive the emotional value of an audit to be negative (e.g. they *feel* threatened by the control activities of an auditor, they *experience* it as a reduction of their flexibility, they *consider* it as a waste of their time, etc.) to invest as little as possible in an audit, leading to a lower demand for both audit *quality* and audit *quantity*. On the other hand, when CEOs

perceive the emotional value of an audit to be positive (e.g. it *reassures* them about the quality of the financial reports of the firm), we expect them to prefer higher investments in both audit *quality* and *quantity*. In line with the previous hypotheses, we therefore hypothesize a positive association between the CEO's perceived emotional value of auditing and both audit *quality* and audit *quantity* demand.

H4a: The CEO's perceived *emotional* value of auditing is positively associated with audit *quality* demand.

H4b: The CEO's perceived *emotional* value of auditing is positively associated with audit *quantity* demand.

4.3 Data and methodology

4.3.1 Data

We identified a population of all active Belgian private firms that are legally required to be audited and are not part of the financial services industry from the Bel-First database of Bureau Van Dijk, which contains comprehensive information (financials, ownership data, legal information, etc.) of both listed and private Belgian firms. We chose to examine this population and therefore to examine both audit *quality* and audit *quantity* demand because voluntary audit demand is rather rare in the Belgian context because of the relatively low thresholds that exist to be legally required to hire an auditor. More specifically, a Belgian firm is required to hire an auditor when the annual average workforce is higher than 100 or when at least two of the following thresholds are exceeded:

annual average workforce of 50 employees, balance sheet total of 3,650,000 EUR and turnover of 7,300,000 EUR (article 15 of the Belgian Company Legislation).

To the firms within our population (except those with insufficient contact details), we sent a structured questionnaire (see the appendix for the complete questionnaire) in February 2015 and asked the CEO to complete it (N = 8,662). 740 CEOs filled out the questionnaire, leading to a response rate of 8.5 percent. We performed t-tests between early and late respondents to check for potential response bias (cut-off points at 10, 20 and 30%) regarding the CEO's perception towards auditing but found no significant differences. We combined this dataset with publicly available accounting data (of 2014) from the Bel-First database and with data from the individual financial statements of our sample firms. We obtained a final sample of 586 firms after removing cases with incomplete data regarding the necessary items included in the questionnaire or the accounting data. We performed a dropout analysis by comparing the means regarding turnover, total assets and the number of employees of our sample firms with the population but found no significant differences.

As our dependent variables were collected directly from the Bel-First database and the sample firms' financial statements while the explanatory variables were collected by the questionnaire, there is no common method bias threat. In order to alleviate potential outlier problems, all continuous variables were winsorized at the 1st and 99th percentiles.

4.3.2 Model

4.3.2.1 Dependent variables

In order to proxy audit *quality* demand, we use a dummy variable coded 1 if the firm hired a Big4 auditor and 0 if it hired a non-Big4 auditor, which is in line with most audit demand studies (e.g. Fan & Wong, 2005; Firth & Smith, 1992; Hope et al., 2012; Lennox, 2005; Piot, 2001). This proxy is based on DeAngelo (1981), who states that larger audit firms have more to lose in case of an audit failure and will therefore provide a higher level of audit quality. More specifically, the larger the audit firm, the higher the level of reputational capital that is at risk in case of an audit failure and large audit firms will therefore require both a high level of independence and competence of their auditors (DeAngelo, 1981). Moreover, large audit firms will be less financially dependent on one client compared to smaller audit firms, reducing the incentive to behave opportunistically (i.e. reducing the level of audit quality to retain a client) even more (DeAngelo, 1981). Several studies also found empirical support for this view (e.g. Becker et al., 1998; Francis et al., 1999) and we therefore also use this audit quality proxy in our models.

In order to proxy audit *quantity* demand, we use the natural logarithm of the audit fee (AUDITFEE), in which a higher audit fee is associated with a higher level of audit *quantity*. This is also in line with most other studies that examine the amount of audit effort/assurance demanded (e.g. Abbott, Parker, Peters, & Raghunandan, 2003; Carcello et al., 2002; Knechel & Willekens, 2006). Since the audit fee will be influenced by both supply and demand effects (Hay et al., 2006), we will control for the supply-side effects by using additional control variables.

In line with Copley et al. (1994; 1995), Ireland and Lennox (2002) and Dao et al. (2012), we employ a simultaneous equations analysis to account for the fact that both the level of audit quality and the level of audit fees are "…mutually determined by the interaction of the client's demand for, and the audit firm's supply of, audit quality" (Copley et al., 1994, p. 244). "Audit quality appears as an explanatory variable in the fee model and fee appears as an explanatory variable in the quality model…" and failure to account for this endogeneity might lead to biased estimations and inferences (Copley et al., 1994, p. 247). We therefore specify the simultaneous equations model as follows:

$$BIG4 = \beta_0 + \beta_1 AUDITFEE + \beta_2 FUNCTIONAL\_VALUE + \beta_3 PRICE\_VALUE + \beta_4 SOCIAL\_VALUE + \beta_5 EMOTIONAL\_VALUE + control\ variables + \varepsilon$$

$$AUDITFEE = \beta_0 + \beta_1 BIG4 + \beta_2 FUNCTIONAL\_VALUE + \beta_3 PRICE\_VALUE + \beta_4 SOCIAL\_VALUE + \beta_5 EMOTIONAL\_VALUE + control\ variables + \varepsilon$$

We employ the two-stage probit least squares estimation method of Maddala (1983, in: Keshk, 2003) to estimate this model as it is specifically designed to simultaneous equations models in which one of the endogenous variables is continuous (in our case audit *quantity*) and the other endogenous variable is dichotomous (in our case audit *quality*).

4.3.2.2 Explanatory variables

In order to measure the perception of the CEO towards auditing, we relied on the four dimensions of perceived value and translated its items to an auditing

context. We relied on the roles of external audits as defined in the auditing literature (signaling information to stakeholders, reducing information asymmetries, etc.) (e.g. Dye, 1993; O'Reilly et al., 2006), including studies that specifically focus on the Belgian context (e.g. Sarens et al., 2012), and on interviews with both auditors and managers to be able to make the translation from a general product/service to the specific service of auditing as accurate as possible (see table 12 for an overview of all the items). Our respondents had to indicate to what extent they agree with 20 statements regarding auditing using a 5-point Likert scale. The final questionnaire was reviewed thoroughly by both academics and practitioners before it was sent out.

Before running regression models, we first had to examine whether the CEO's perception towards auditing indeed consists of the four expected dimensions. Since there are, to our knowledge, no previous studies that examined the dimensions of perception in the context of external auditing, we executed an exploratory factor analysis, more specifically a principal component analysis. We evaluated the appropriateness of our data for such an analysis based on the recommendations of Hair et al. (2006). All recommendations are met: our sample is sufficiently large (respondent-variable ratio of approximately 29:1, which is better than the recommended threshold of 10:1), there is sufficient intercorrelation according to the Bartlett test (the test rejects the null hypothesis 'variables are not intercorrelated' with a p-value of 0.000), the overall Kaiser-Meyer-Olkin measure (0.938) is considered to be meritorious and the individual measures of sampling adequacy (MSA) are all found to be higher than 0.83 (while it is advised to delete variables with an MSA value below 0.50) (Hair et al., 2006).

Based on both the latent root criterion (each factor should have a latent root or eigenvalue greater than 1) and the percentage of variance criterion (60 percent of the total variance should at least be extracted by all the factors together) (Hair et al., 2006), the factor results lead to a four-factor model, which is in line with our expectations. In line with Sweeney and Soutar (2001), we allowed the factors to be correlated and therefore we applied an oblique factor rotation.

The factor results we obtained after deleting two items with factor loadings below the threshold of 0.50 to be practically significant (Hair et al., 2006) can be found in table 12. This table also includes the Cronbach's alpha for each factor (which are all found to be higher than the proposed threshold of 0.70 to be considered internally consistent (Hair et al., 2006)), the cumulative percentage of variance explained, the Kaiser-Meyer-Olkin Measure of Sampling Adequacy and the result of the Bartlett test. Please remark that the order in which the items appear in the table is chosen to give a clear overview but is not the order in which they appeared in the questionnaire.

When taking a closer look at the items of each factor, the expected dimensions clearly emerge. The first factor clearly relates to the functional value of an audit while the second factor contains the items that relate to how an audit would affect the perception of other stakeholders (banks, the government, customers, suppliers, the public in general, etc.) and can therefore be associated with its social value. The third factor relates to the fee of an audit and thus its price value while the last factor contains items regarding how a CEO *feels* about an audit and can therefore be labeled as its perceived emotional value.

Table 12. Factor results

	Factor 1	Factor 2	Factor 3	Factor 4
	Functional value	*Social value*	*Price value*	*Emotional value*
1. An external audit increases the quality of the financial statements of our company.	**0.7631**	-0.0333	0.0342	0.0363
2. An external audit has a positive influence on the financial performance of our company.	**0.7306**	0.0174	0.0900	-0.0874
3. An external audit strengthens the corporate governance of our company.	**0.8213**	0.0911	-0.0829	-0.0425
4. An external audit provides us with useful advice.	**0.7726**	-0.0421	0.1237	-0.0147
5. An external audit improves the efficiency and reliability of our business processes/internal control.	**0.8267**	0.0752	-0.0802	-0.0844
6. I consider an external audit as a waste of time. (R)	**0.7048**	-0.0907	0.0953	0.3078
7. An external audit reassures me about the financial reporting of our results.	**0.7089**	0.1142	-0.0163	0.0090
8. An external audit provides no added value to an external accountant. (R)	**0.7816**	-0.1439	0.0285	0.2122
9. An external audit increases my personal credibility towards the board of directors and the shareholders.	**0.6953**	0.1044	-0.0169	-0.1210
10. An external audit increases the level of trust customers and suppliers have in our company.	0.2457	**0.5536**	0.0151	0.0865
11. An external audit facilitates the access to debt financing (bank loans).	0.1983	**0.6063**	-0.0915	-0.0414
12. An external audit increases the level of trust the treasury has in our company.	-0.1834	**0.8637**	0.0470	0.0389
13. An external audit confirms the good performance of a company to the public.	0.1224	**0.6966**	0.0657	0.0337
14. The price of an external audit is fair.	-0.0200	0.0701	**0.9618**	-0.0750
15. The fee an auditor charges for its services is too high compared to the service itself. (R)	0.0614	-0.0190	**0.8790**	0.0637
16. An external audit gives me the unpleasant feeling of being controlled as CEO. (R)	0.0307	0.0650	0.0025	**0.7821**
17. The attendance of an external audit disturbs me. (R)	0.2402	0.0356	-0.0076	**0.7329**
18. An external audit limits my flexibility as a CEO. (R)	-0.1700	0.0107	-0.0248	**0.8284**
19. An external audit is a useful service in comparison to its cost.	*Deleted*			
20. The advantages of an external audit exceed the costs (the time investments included)	*Deleted*			
Kaiser-Meyer-Olkin Measure of Sampling Adequacy: 0.924 — Cronbach's alpha:	0.9193	0.7377	0.8637	0.7285
Bartlett test of sphericity: 0.000 — Cumulative perc. of variance explained:	0.4256	0.5293	0.5965	0.6544

n = 586; R = Reverse coded

This table presents our factor results and includes the factor loadings of each item (except for item 19 and 20 since they did not reach the threshold of 0.50), the Cronbach's alpha for each factor, the cumulative percentage of variance explained, the Kaiser-Meyer-Olkin Measure of Sampling Adequacy and the result of the Bartlett test. The order in which the items appear in the table is chosen to give a clear overview but is not the order in which they appeared in the questionnaire.

In order to examine how the different dimensions affect audit demand, the factor scores of each factor are calculated and used as independent variables (Hair et al., 2006), which leads to the following variables: FUNCTIONAL_VALUE, PRICE_VALUE, SOCIAL_VALUE and EMOTIONAL_VALUE.

4.3.2.3 Control variables

In line with former audit demand studies (e.g. Allee & Yohn, 2009; Chen & Jian, 2007; Firth & Smith, 1992; Lennox, 2005; Reed et al., 2000), we include the variables MAN_OWN, LEVERAGE, SIZE and ROA in both the audit *quality* and audit *quantity* models to control for other audit demand effects.

We include MAN_OWN, defined as the percentage of shares that is owned by management, to control for the traditional shareholder-manager agency conflicts and LEVERAGE, defined as total debt to total assets, to proxy for the agency conflicts between shareholders and debtholders. SIZE, defined as the natural logarithm of total assets, is included to control for firm complexity as firm complexity may lead to higher audit demand to compensate for the loss of control (Abdel-Khalik, 1993) and ROA, defined as the ratio of annual net income to total assets, is included as profitable firms may have sufficient internally generated funds to finance investments and therefore do not need audited financial statements to attract external investors or banks (Lennox, 2005). We also control for industry effects using four dummy variables as industry may affect the choice of an auditor, the quantity of auditing demanded as well as the audit difficulty (supply effect) (Hay et al., 2006; Lennox, 2005).

We include GROUPCHOICE, coded 1 if the auditor choice was made by the parent company of the firm's group (if applicable) and 0 otherwise, in the audit *quality* model to control for this external demand effect. We did not include this variable in the audit *quantity* model since it theoretically only relates to the choice of the auditor but not necessarily to the audit fee of the individual firm.

In the audit *quantity* model, however, we also include some additional variables to control for additional supply effects that may influence the audit fee. The choice of these variables is based on the meta-analysis of Hay et al. (2006), which gives a very clear overview of the most important drivers of the audit fee.

More specifically, we include INV_REC_ASSETS, defined as inventory and receivables divided by total assets, since these accounts are generally considered to be difficult to audit and may therefore increase the audit fee (Dao et al., 2012; Hay et al., 2006). We also control for the busy season using a dummy variable BUSY which is coded 1 if the fiscal year-end is December 31 and 0 otherwise as an audit conducted during the busy season often requires staff working overtime and may therefore be more expensive (Hay et al., 2006; Johnstone, Chan, & Shuqing, 2014). Finally, we control for NONAUDITFEE, defined as the natural logarithm of the non-audit fees, as the provision of such services may lead to both fee cutting because of cross-subsidization or synergies between audit and non-audit services, and to fee increases because of monopoly power or required additional audit effort after organizational changes that are the result of the non-audit services (Hay et al., 2006).

4.4 Results

4.4.1 Descriptive statistics and correlations

The descriptive statistics of our sample (minima, maxima, medians, means and standard deviations) are presented in table 13. Approximately 39 percent of our sample firms hired a Big4 auditor and the average audit fee is found to be 18,221 EUR. Regarding the control variables, the average value of MAN_OWN is found to be approximately 42 percent, which is rather high but this is due to the private context in which we test our hypotheses and is in line with other audit demand studies that examine a similar context (e.g. Allee & Yohn, 2009; Lennox, 2005; Niskanen et al., 2011). The values regarding the other control variables are in line with the expectations as well.

Both the Pearson (below the diagonal) and the Spearman (above the diagonal) correlations are presented in table 14. In line with H1a and H3a, the correlations between FUNCTIONAL_VALUE as well as SOCIAL_VALUE and hiring a BIG4 auditor are significantly positive. The Pearson correlation coefficient between EMOTIONAL_VALUE and BIG4 is only marginally significant while the Spearman correlation between both variables is even not significant. PRICE_VALUE is found to be negatively correlated with both hiring a Big4 auditor and with the audit fee, indicating that CEOs who consider the price of an audit fair will also prefer auditors that provide the service at a lower (i.e. below average) cost. The correlations between FUNCTIONAL_VALUE, SOCIAL_VALUE as well as EMOTIONAL_VALUE and AUDITFEE are all found to be significantly positive, which is in line with H1b, H3b and H4b.

The correlations between the explanatory and control variables and among the control variables never exceed the critical value of 0.8 (the highest value is 0.67) and therefore there seems not to be a multicollinearity threat. This is also supported by the variance inflation factors, which are all found to be lower than the critical value of 10 (the highest value is 2.65).

Table 13. Descriptive statistics

Continuous variables	Min.	Max.	Median	Mean	s.d.
AUDITFEE†	2.70	147.60	9.53	18.22	23.71
FUNCTIONAL_VALUE	-2.67	1.99	0.21	0.00	1.00
PRICE_VALUE	-2.25	2.34	0.07	0.00	1.00
SOCIAL_VALUE	-3.13	2.30	0.10	0.00	1.00
EMOTIONAL_VALUE	-3.18	1.82	0.06	0.00	1.00
MAN_OWN	0.00	100.00	10.00	42.13	45.71
LEVERAGE	0.05	1.21	0.67	0.62	0.24
SIZE†	2,160.52	907,680.00	11,483.93	45,584.06	127,495.70
ROA	-0.26	0.43	0.05	0.07	0.10
INV_REC_ASSETS	0.01	0.96	0.49	0.48	0.24
NONAUDITFEE†	0.00	58.50	0.00	3.51	9.29
Dichotomous variables	Sum	Proportion			
BIG4	231	0.39			
GROUPCHOICE	218	0.37			
BUSY	491	0.84			
INDUSTRY_1	214	0.37			
INDUSTRY_2	60	0.10			
INDUSTRY_3	193	0.33			

n = 586; This table presents the descriptive statistics (means or proportions, medians, minima, maxima and standard deviations); † The natural logarithm of this variable is used in our statistical analysis. The value in this table is the nominal value in 1,000 EUR.

Variable definitions:

Dependent variables

BIG4: a dummy variable coded 1 if the firm hired a Big4 auditor and 0 if it hired a non-Big4 auditor

AUDITFEE†: the audit fee

Explanatory variables

FUNCTIONAL_VALUE: the factor score regarding the perceived functional value of external auditing

PRICE_VALUE: the factor score regarding the perceived 'value for money' of external auditing

SOCIAL_VALUE: the factor score regarding the perceived social value of external auditing

EMOTIONAL_VALUE: the factor score regarding the perceived emotional value of external auditing

Control variables

MAN_OWN: the percentage of shares that is owned by management

LEVERAGE: the ratio of total debt to total assets

SIZE†: total assets

ROA: the ratio of annual net income to total assets

INV_REC_ASSETS: inventory and receivables divided by total assets

NONAUDITFEE†: the non-audit fee

GROUPCHOICE: a dummy variable coded 1 if the auditor choice was made by the parent company of the firm's group (if applicable)

BUSY: a dummy variable coded 1 if the fiscal year-end is December 31

INDUSTRY_X: 3 dummy variables that control for industry

Table 14. Correlation matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. BIG4	1.00	0.56***	0.14***	-0.12***	0.20***	0.05	-0.52***	-0.08*	0.33***	-0.02	0.58***	-0.15***	0.03	0.20***
2. AUDITFEE	0.57***	1.00	0.22***	-0.14***	0.19***	0.12***	-0.50***	-0.01	0.56***	-0.01	0.47***	-0.13***	0.00	0.40***
3. FUNCTIONAL_VALUE	0.16***	0.24***	1.00	0.46***	0.48***	0.35***	-0.15***	0.00	0.20***	0.06	0.02	-0.14***	-0.03	0.14***
4. PRICE_VALUE	-0.11***	-0.13***	0.45***	1.00	0.20***	0.37***	0.04	-0.01	0.08*	0.09**	-0.15***	-0.07*	0.01	-0.02
5. SOCIAL_VALUE	0.20***	0.20***	0.52***	0.20***	1.00	0.16***	-0.11***	0.04	0.23***	0.02	0.06	-0.08*	0.03	0.07*
6. EMOTIONAL_VALUE	0.07*	0.12***	0.33***	0.38***	0.14***	1.00	-0.08*	0.02	0.19***	-0.02	0.00	-0.08*	0.06	0.11***
7. MAN_OWN	-0.54***	-0.50***	-0.18***	0.03	-0.14***	-0.11***	1.00	0.05	-0.26***	0.06	-0.61***	0.10**	-0.07*	-0.16***
8. LEVERAGE	-0.07	-0.03	0.03	0.00	0.06	0.01	0.04	1.00	-0.11***	-0.18***	-0.09**	0.26***	-0.01	-0.02
9. SIZE	0.37***	0.67***	0.21***	0.07	0.23***	0.16***	-0.31***	-0.12***	1.00	-0.06	0.23***	-0.26***	0.02	0.27***
10. ROA	-0.02	-0.05	0.04	0.09**	0.04	-0.06	0.05	-0.15***	-0.08**	1.00	0.00	-0.05	0.01	0.10**
11. GROUPCHOICE	0.58***	0.46***	0.04	-0.15***	0.07*	0.02	-0.60***	-0.08**	0.25***	-0.02	1.00	-0.08**	0.03	0.18***
12. INV_REC_ASSETS	-0.15***	-0.18***	-0.13***	-0.07*	-0.09**	-0.10**	0.11***	0.29***	-0.30***	-0.06	-0.08*	1.00	0.05	-0.08*
13. BUSY	0.03	-0.01	-0.02	0.01	0.03	0.06	-0.06	-0.02	0.02	0.03	0.03	0.05	1.00	-0.07
14. NONAUDITFEE	0.25***	0.45***	0.15***	-0.03	0.07*	0.14***	-0.22***	-0.03	0.36***	0.09**	0.22***	-0.11***	-0.05	1.00

n = 586; *, **, *** indicate significance at the 10%, 5% and 1% levels respectively (two-tailed). The Pearson correlations are reported below the diagonal, the Spearman correlations above the diagonal; Due to place constraints, the correlations with the INDUSTRY dummies are not reported but these are available from the authors on request; For variable definitions, please refer to table 13.

4.4.2 Regression results

The second stage regressions with corrected standard errors resulting from the two-stage probit least squares estimation are presented in table 15. Both the beta coefficients and the corrected standard errors are reported per variable for each model. All models are found to be significant ($p < 0.0001$) and the R^2 values are found to be 0.37 and 0.40 for the audit *quality* models (BIG4) and 0.60 and 0.63 for the audit *quantity* models (AUDITFEE).

Model 1 can be considered as benchmark model since it examines the influence of the traditional explanatory audit demand variables on hiring a Big4 auditor and the audit fee and does not yet include the influence of CEO perception. In line with former audit demand studies (e.g. Firth & Smith, 1992; Reed et al., 2000), MAN_OWN is found to be significantly negatively associated with hiring a BIG4 auditor, supporting the traditional view of agency theory that shareholder-manager agency conflicts lead to audit *quality* demand (BIG4), but was not found to be significantly associated with audit *quantity* demand (AUDITFEE). Oppositely, while agency theory also considers the level of shareholder-debtholder agency conflicts, proxied by LEVERAGE, as a determinant of audit demand (e.g. Chow, 1982; Firth & Smith, 1992; Reed et al., 2000), we only find support for this in the AUDITFEE model, indicating that debtholders require a higher level of audit *quantity* but not necessarily a higher level of audit *quality.* Moreover, GROUPCHOICE is found to be significantly positive in the audit *quality* model, indicating that parent companies often require their subsidiaries to hire a Big4 auditor (probably the same auditor in order to have one overall group auditor), and SIZE is found to be significantly positive in the audit *quantity* model, indicating that larger firms need more audit

effort, which is in line with prior literature (e.g. Knechel et al., 2008; Niskanen et al., 2011). NONAUDITFEE is found to be significantly positive in the audit *quantity* model as well, indicating that audits become more expensive when also engaging the auditor to perform non-audit services, which is probably due to the required additional audit effort after organizational changes that are the result of the non-audit services (Hay et al., 2006).

In model 2, the CEO perception variables are added. In line with our benchmark results regarding audit *quality* demand, the coefficient of MAN_OWN is found to be significant and negative while the coefficient of GROUPCHOICE is found to be significantly positive. In the audit *quantity* model, the coefficients of LEVERAGE, SIZE and NONAUDITFEE are all found to be significantly positive, which is completely in line with our benchmark results as well.

Regarding our explanatory variables, the coefficient of FUNCTIONAL_ VALUE is found to be significant in the audit *quantity* model only. CEOs who perceive an external audit as a useful service are therefore found to demand more audit *quantity* in the first place, supporting H1b, but we were not able to confirm the hypothesis that they will also demand more audit *quality* (H1a). This may indicate that private firm CEOs do not consider the audit quality of Big4 auditors to be higher than those of non-Big4 auditors and in this way support the findings of several recent studies that did not find a significant difference in audit quality between Big4 and non-Big4 audit firms (e.g. Boone et al., 2010; Lawrence et al., 2011). Moreover, although Boone et al. (2010) and Karjalainen (2011) find that Big4 audits are still considered to be of higher value than non-Big4 audits, our results suggest that this value may not necessarily relate to the functional aspects of an audit but for example to reputational aspects.

Table 15. Regression results

Model	**1**		**2**	
Dependent variable	BIG4 (audit *quality*)	AUDITFEE (audit *quantity*)	BIG4 (audit *quality*)	AUDITFEE (audit *quantity*)
Explanatory variables:				
BIG4		0.2836*** (0.0474)		0.2519*** (0.0455)
AUDITFEE	0.5962 (0.4050)		0.6494 (0.4786)	
FUNCTIONAL_VALUE			0.0580 (0.1112)	0.1013*** (0.0288)
PRICE_VALUE			-0.1201 (0.1151)	-0.1129*** (0.0283)
SOCIAL_VALUE			0.2262*** (0.0768)	-0.0697** (0.0273)
EMOTIONAL_VALUE			0.0179 (0.0710)	0.0074 (0.0238)
Control variables:				
MAN_OWN	-0.0073*** (0.0023)	-0.0010 (0.0009)	-0.0069*** (0.0024)	-0.0011 (0.0009)
LEVERAGE	-0.2660 (0.2827)	0.2541** (0.1013)	-0.3667 (0.2938)	0.2604*** (0.0970)
SIZE	0.0752 (0.1663)	0.2789*** (0.0252)	0.0216 (0.1922)	0.2972*** (0.0239)
ROA	0.2158 (0.6190)	-0.0152 (0.2338)	0.1146 (0.6555)	0.1229 (0.2239)
GROUPCHOICE	0.9378*** (0.1932)		0.9520*** (0.2016)	
INV_REC_ASSETS		0.1351 (0.1082)		0.1235 (0.1018)
NONAUDITFEE		0.1192*** (0.0232)		0.1036*** (0.0221)
BUSY		-0.0470 (0.0618)		-0.0404 (0.0582)
INDUSTRY_1	-0.0235 (0.1712)	0.0810 (0.0635)	-0.0527 (0.1732)	0.0737 (0.0599)
INDUSTRY_2	-0.1032 (0.2308)	-0.0709 (0.0894)	-0.1317 (0.2343)	-0.0664 (0.0841)
INDUSTRY_3	-0.2611 (0.1712)	0.0632 (0.0691)	-0.3180* (0.1740)	0.0655 (0.0659)
Intercept	-2.3614*** (0.8557)	-0.3711 (0.2604)	-1.9159** (0.9275)	-0.5550** (0.2459)
F-statistic		81.93***		68.63***
Chi-square	291.88***		311.50***	
Adjusted/pseudo R^2	0.37	0.60	0.40	0.63

n = 586; *, **, *** indicate significance at the 10%, 5% and 1% levels respectively (two-tailed); For variable definitions, please refer to table 13.

This table presents our two-stage probit least squares estimation results. Both the beta coefficients and the corrected standard errors (between brackets) are reported per variable for each model. In this table, also the F-statistic and the Chi-square statistic are reported for the AUDITFEE model and the BIG4 model respectively, as well as the adjusted (for the AUDITFEE models) and pseudo (for the BIG4 models) R^2 values. Due to place constraints, we only reported the final second stage regressions with corrected standard errors. The first stage and second stage regressions without corrected standard errors are available from the authors on request.

While the coefficient of PRICE_VALUE is found to be insignificant in the audit *quality* model, it is found to be significantly negative in the audit *quantity* model. This direction is opposite to what we initially hypothesized and therefore rejects hypothesis H2b. Since the marketing literature argues that perceptions of price fairness are influenced by information regarding the processes that lead to the observed prices and the buyer's general knowledge about the seller's practices (Xia et al., 2004), this negative coefficient may indicate, however, that CEOs who consider the price of an audit to be reasonable may have a better knowledge about how this price is set and they may therefore have invested more in their own control environment such that the control risk of their firm is significantly reduced, which will lead to less audit effort needed and therefore to a reduced audit fee.

SOCIAL_VALUE is found to be the only significant explanatory variable in the audit *quality* model, supporting H3a. In the audit *quantity* model, however, the coefficient of SOCIAL_VALUE is found to be significantly negative, in this way rejecting H3b. These results indicate that CEOs who perceive the social aspect of an audit to be valuable will have a stronger preference for a Big4 auditor (i.e. audit *quality*) but will demand the least audit effort (i.e. audit *quantity*) possible since they are mainly interested in the social image that is received when hiring a Big4 auditor but not necessarily in the actual audit service. This finding also supports our interpretation of the FUNCTIONAL_VALUE results that Big4 audits may still be considered to be of higher value merely because of reputational aspects and not necessarily because of a difference in actual audit quality.

EMOTIONAL_VALUE was not found to be significant in both models and we therefore did not find any support for H4a and H4b. We therefore find no

support that indicates that audit demand is driven by the perceived emotional value of auditing. This could indicate that the influence of the CEO on audit demand is not necessarily a direct influence but could be mediated by other bodies within the firm. As in most countries, the final auditor choice in our context (Belgium) is suggested by the board of directors and approved by the general shareholders' meeting. It is therefore possible that the CEO can only influence audit demand when being able to convince these bodies of why a certain level of audit *quality* or audit *quantity* should be demanded. The board of directors and/or the general shareholders' meeting may therefore only agree with the preferences of the CEO when these preferences are based on strong underpinned arguments (which the CEO is likely to have regarding the perceived FUNCTIONAL_VALUE, PRICE_VALUE and SOCIAL_VALUE of auditing but not necessarily regarding the perceived EMOTIONAL_VALUE).

4.4.3 Additional analyses

In order to examine the importance of the influence of CEO perception on audit demand, we calculated the standardized coefficients of our audit demand model to assess the magnitude of the CEO perception effects (model 1 of table 16). GROUPCHOICE is found to be the main driver of audit *quality* demand, followed by MAN_OWN. SOCIAL_VALUE is found to be the third main driver, supporting our thesis that CEO perception should be considered as an important driver of audit *quality* demand and that the upper echelons theory is a valuable additional theory to explain this demand. The audit *quantity* regression with standardized coefficients leads to a similar conclusion. SIZE is found to be the main driver of the audit fee, followed by the endogenous variable *BIG4*. The effect of

PRICE_VALUE is found to be the third largest, followed by NONAUDITFEE, FUNCTIONAL_VALUE and SOCIAL_VALUE.

In line with most prior audit demand studies (e.g. Firth & Smith, 1992; Lennox, 2005; Niskanen et al., 2011; Piot, 2001), we also employed multivariate logit regression analyses to test the hypotheses regarding audit *quality* demand, without controlling for a potential endogeneity threat to examine the robustness of our findings (model 2 of table 16). The results remained in line with our reported results: MAN_OWN and GROUPCHOICE were found to be significant at the 1% significance level while SOCIAL_VALUE is found to be significant at the 5% significance level. In contrast to our main results, AUDITFEE is also found to be significant but this is probably due to the fact that we did not control for endogeneity in this model. Similarly, we also ran a cross-sectional OLS regression model in line with most other audit fee studies (Hay et al., 2006) to test the robustness of our findings regarding audit *quantity* demand (model 3 of table 16). FUNCTIONAL_VALUE, PRICE_VALUE, SIZE, NONAUDITFEE and BIG4 were all found to be significant at the 1% significance level and LEVERAGE at the 5% significance level, which is in line with our reported results. Deviating from our main results, SOCIAL_VALUE was not found to be significant in this model while MAN_OWN was found to be strongly significant. This might, however, also be due to the fact that we did not control for endogeneity in this model.

Table 16. Additional regression results

Model	**1**		**2**	**3**	**4**		**5**	
Dependent variable:	BIG4	AUDITFEE	BIG4	AUDITFEE	BIG4	AUDITFEE	BIG4	AUDITFEE
Explanatory variables:								
BIG4		0.2962*** (0.0536)		0.3851*** (0.0536)		0.2204*** (0.0463)		0.2557*** (0.0464)
AUDITFEE	0.5522 (0.4070)		1.1884*** (0.2435)		0.4751 (0.4073)		0.6163 (0.4803)	
FUNCTIONAL_VALUE	0.0580 (0.1112)	0.1192*** (0.0339)	0.1332 (0.1693)	0.1226*** (0.0279)	0.0726 (0.1086)	0.1006*** (0.0288)	0.0632 (0.1113)	0.1002*** (0.0290)
PRICE_VALUE	-0.1201 (0.1151)	-0.1328*** (0.0332)	-0.2635 (0.1635)	-0.1580*** (0.0253)	-0.1488 (0.1090)	-0.1138*** (0.0288)	-0.1263 (0.1159)	-0.1116*** (0.0286)
SOCIAL_VALUE	0.2262*** (0.0768)	-0.0820** (0.0321)	0.3999** (0.1596)	-0.0286 (0.0251)	0.2362*** (0.0840)	-0.0578** (0.0282)	0.2252*** (0.0768)	-0.0715** (0.0276)
EMOTIONAL_VALUE	0.0179 (0.0710)	0.0087 (0.0280)	0.0354 (0.1380)	0.0109 (0.0235)	0.0044 (0.0778)	0.0126 (0.0243)	0.0187 (0.0716)	0.0075 (0.0241)
Control variables:								
MAN_OWN	-0.3135*** (0.1089)	-0.0586 (0.0468)	-0.0126*** (0.0035)	-0.0033*** (0.0006)	-0.0074*** (0.0024)	-0.0015* (0.0009)	-0.0070*** (0.0024)	-0.0011 (0.0009)
LEVERAGE	-0.0875 (0.0701)	0.0731 (0.0272)	-0.6178 (0.5266)	0.1981** (0.0962)	-0.1704 (0.3030)	0.1764* (0.0991)	-0.3570 (0.2951)	0.2576** (0.1007)
SIZE	0.0260 (0.2312)	0.4203*** (0.0338)	0.0809 (0.1533)	0.3379*** (0.0212)	0.0748 (0.1668)	0.2897*** (0.0247)	0.0343 (0.1928)	0.2968*** (0.0243)
ROA	0.0110 (0.0628)	0.0138*** (0.0252)	0.6629 (1.1637)	0.1493 (0.2272)	0.1278 (0.7213)	0.1942 (0.2304)	0.1294 (0.6540)	0.0985 (0.2550)
GROUPCHOICE	0.4605*** (0.0975)		1.7280*** (0.2782)		1.0353*** (0.1919)		0.9620*** (0.2025)	
INV_REC_ASSETS		0.0349 (0.0288)		0.1292 (0.1035)		0.1469 (0.1034)		0.1268 (0.1026)
NONAUDITFEE		0.1311*** (0.0279)		0.1233*** (0.0216)		0.1450*** (0.0229)		0.1042*** (0.0224)
BUSY		-0.0175 (0.0252)		-0.0397 (0.0573)		-0.0146 (0.0587)		-0.0329 (0.0590)
AUDIT_OPINION								0.2549 (0.1783)
LOSS								-0.0205 (0.0688)

INDUSTRY_1	-0.0254 (0.0835)	0.0418 (0.0339)	-0.1267 (0.3307)	0.0650 (0.0610)	0.0784 (0.1877)	0.0085 (0.0618)	-0.0495 (0.1739)	0.0674 (0.0604)
INDUSTRY_2	-0.0400 (0.0711)	-0.0237 (0.0300)	-0.1576 (0.4441)	-0.1078 (0.0845)	-0.2099 (0.2568)	-0.0715 (0.0851)	-0.1346 (0.2364)	-0.0726 (0.0850)
INDUSTRY_3	-0.1496* (0.0819)	0.0362 (0.0364)	-0.6444* (0.3343)	0.0063 (0.0646)	-0.2306 (0.1906)	0.0126 (0.0660)	-0.3165* (0.1751)	0.0618 (0.0663)
Intercept	-0.4046*** (0.0638)	0.1196*** (0.0331)	-3.8937*** (1.3744)	-1.0591*** (0.2319)	-2.2479** (0.8819)	-0.4502* (0.2575)	-1.9641** (0.9279)	-0.5535** (0.2493)
F-statistic		68.63***		73.20***		51.09***		60.36***
Chi-square	311.50***		181.05***		249.58***		311.35***	
(Adjusted/pseudo) R^2	0.40	0.63	0.43	0.65	0.38	0.60	0.40	0.63
n	586		586	586	501		586	

*, **, *** indicate significance at the 10%, 5% and 1% levels respectively (two-tailed); For variable definitions, please refer to table 13.

This table presents our additional two-stage probit least squares (model 1, 4 and 5), logit (model 2) and OLS (model 3) estimation results. Both the beta coefficients and the corrected standard errors (between brackets) are reported per variable for each model. In this table, also the F-statistic and the (adjusted) R^2 value are reported for every AUDITFEE model and the Chi-square statistic and the pseudo R^2 for every BIG4 model, as well as the number of cases included in each analysis. Due to place constraints, we only reported the final second stage regressions with corrected standard errors. The first stage and second stage regressions without corrected standard errors are available from the authors on request.

We also examined whether our results may be influenced by cases in which the CEO was appointed after the engagement of the auditor. We therefore ran a regression in which we only included firms of which the CEO has a tenure of more than 3 years (model 4 of table 16). This criterion is based on the fact that an auditor is generally appointed for a period of three years in Belgium. Although this is a very stringent criterion since not every audit engagement will be in its third year, the results remained completely in line with our main results.

Moreover, in order to make sure that the interpretation of our results within the AUDITFEE model is not distorted by additional supply-side effects, we further controlled for supply-side effects induced by risk and audit problems as they may influence the level of audit effort needed and therefore the audit fee (model 5 of table 16). More specifically, we included LOSS, a dummy variable coded 1 if the firm reported a loss in 2014 and 0 otherwise to further control for risk, and AUDIT_OPINION, a dummy variable coded 1 if the firm did not obtain an unqualified opinion and 0 otherwise to control for audit problems (Hay et al., 2006). The results remain completely in line with our main results while the coefficients of these additional variables were not found to be significant.

As mentioned previously, the upper echelons theory views strategic choices as a result of managerial perceptions and considers these managerial perceptions as a reflection of the management's cognitive base and values (Hambrick & Mason, 1984). Moreover, it is also argued that these cognitive base and values can be partly observed by management characteristics since these characteristics may shape or at least influence the cognitive base and values of management (Hambrick & Mason, 1984). As an additional analysis, we therefore

also examined which CEO characteristics influence the managerial perception towards auditing (table 17). We ran four additional regressions with FUNCTIONAL_VALUE, PRICE_VALUE, SOCIAL_VALUE and EMOTIONAL_VALUE as dependent variables and the following variables based on upper echelons literature (e.g. Carpenter et al., 2004; Hambrick & Mason, 1984) as independent variables: CEO_OWN (defined as the percentage of shares that is owned by the CEO), FOUNDER (indicating whether the CEO is the founder of the firm or not), TENURE (the natural logarithm of the number of years of being CEO of the firm), FUNCTIONS (the number of different functions the CEO executed before becoming CEO), FIN_BACKGROUND (indicating whether the CEO has functional financial experience), GENDER (indicating whether the CEO is a man or a woman), AGE (the natural logarithm of the age in years of the CEO), EDUCATION (indicating the highest level of education of the CEO) and EXT_BOARD (indicating whether the CEO is part of a board of directors of an external firm).

In the FUNCTIONAL_VALUE model (model 1 of table 17), the coefficient of FIN_BACKGROUND and CEO_OWN were both found to be significantly negative. The coefficient of FIN_BACKGROUND may indicate that CEOs with a financial background already have sufficient knowledge about the financial reporting themselves and do not need additional assurance from external auditors while the coefficient of CEO_OWN may indicate that CEOs with a high ownership percentage consider the functional value of an auditor to be lower because they are both principal and agent and therefore do not consider an audit as useful to reduce agency conflicts. In the model that examines CEO characteristics on the perceived PRICE_VALUE of auditing (model 2 of table 17), the coefficients of

EDUCATION and FOUNDER were found to be positive and significant, indicating that higher educated CEOs and CEOs who are the founder of the firm value the price performance ratio of external audits more positively.

Table 17. Additional regression results

Model	1	2	3	4
Dependent variable	FUNCTIONAL VALUE	PRICE VALUE	SOCIAL VALUE	EMOTIONAL VALUE
Explanatory variables:				
CEO_OWN	-0.0051** (0.0020)	0.0012 (0.0020)	-0.0044*** (0.0014)	-0.0025 (0.002)
FOUNDER	0.2006 (0.1603)	0.3256* (0.1689)	0.2583* (0.1313)	0.1440 (0.1735)
TENURE	-0.0054 (0.0797)	0.1057 (0.0934)	-0.0311 (0.0776)	0.0360 (0.0833)
FUNCTIONS	0.0395 (0.0312)	0.0139 (0.0339)	0.0520** (0.0252)	0.0106 (0.0329)
FIN_BACKGROUND	-0.2149* (0.1138)	-0.1032 (0.1295)	-0.0716 (0.1005)	-0.0449 (0.1167)
GENDER	0.1085 (0.2101)	0.2803 (0.2064)	-0.2830** (0.1244)	-0.1027 (0.1287)
AGE	0.4608 (0.3946)	0.0696 (0.4524)	0.2773 (0.3574)	-0.0169 (0.4116)
EDUCATION	0.0652 (0.0519)	0.1455** (0.0572)	0.0872** (0.0435)	0.0672 (0.0523)
EXT_BOARD	0.1087 (0.1110)	-0.0626 (0.1128)	0.1829** (0.0863)	0.1484 (0.1111)
Intercept	-1.8808 (1.4557)	-1.0745 (1.6330)	-0.9707 (1.3126)	-0.0105 (1.4883)
F-statistic	2.23**	1.93**	3.83***	0.73
R^2	0.07	0.05	0.08	0.02

N = 284; *, **, *** indicate significance at the 10%, 5% and 1% levels respectively (two-tailed); For variable definitions, please refer to table 13.

This table presents our additional OLS regression results. Both the beta coefficients and the robust standard errors (between brackets) are reported per variable for each model. In this table, also the F-statistic and the R^2 value are reported for each model.

SOCIAL_VALUE (model 3 of table 17) is found to be significantly positively associated with EXT_BOARD, EDUCATION, FUNCTIONS and FOUNDER, indicating that CEOs who are part of an external board, CEOs who are the founder of the firm, CEOs who are higher educated and CEOs who have an extensive functional background consider the social value of an audit higher. Moreover, the coefficient of GENDER and CEO_OWN is found to be significantly negative,

indicating that male CEOs and more powerful CEOs consider the social value of an audit lower. Finally, since the model with EMOTIONAL_VALUE as dependent variable (model 4 of table 17) is found to be insignificant, we are not able to relate our CEO characteristics to the perceived emotional value towards auditing.

This result, together with the overall small R^2 values (between 0.05 and 0.08) indicate that managerial perceptions remain very difficult to predict by demographic proxies and therefore also highlights the large contribution we made to the paper of Cheng and Leung (2012) by actually measuring CEO perception instead of using such demographic proxies to examine the influence of this perception on audit demand.

4.5 Conclusions

In this study, we examined the influence of the CEO's perception towards auditing on audit demand in a Belgian private firm context. In line with our hypotheses, we found that several of the underlying dimensions of CEO perception (functional value, price value, social value and emotional value) were associated with audit *quality* (whether a Big4 auditor is hired instead of a non-Big4 auditor) and/or audit *quantity* (the amount of audit effort that has to be performed) demand.

Using the two-stage probit least squares estimation analysis, the perceived functional value of auditing was found to be positively associated with audit *quantity* demand but not with audit *quality* demand, indicating that CEOs who praise the functional value of an audit will mainly prefer to invest in more audit effort rather than a more qualified auditor. However, this result may also

indicate that private firm CEOs do not consider the audit quality of Big4 auditors to be higher than those of non-Big4 auditors but this needs further examination.

The perceived price value of auditing was found to be significantly associated with audit *quantity* demand only as well but was found to have a negative effect. This might indicate that CEOs who consider the price of an audit to be reasonable may have a better knowledge about how this price is set and may therefore have invested more in their own control environment such that the control risk of their firm and therefore the needed audit effort and accordingly the audit fee is significantly reduced.

The perceived social value of auditing was found to be significantly positively related with audit *quality* demand but significantly negatively related with audit *quantity* demand, indicating that CEOs who only consider the social aspect of an audit to be valuable will prefer to invest in a reputed auditor to increase their social image while keeping the amount of audit effort needed as low as possible. Therefore, while private firm CEOs may not consider the actual audit quality of Big4 auditors to be higher than those of non-Big4 auditors, they seem to value the reputational gains of engaging a Big4 auditor. This interpretation sheds new light on recent audit quality literature, which found that Big4 audits are still considered to be of higher value than non-Big4 audits, even though a significant difference in actual audit quality was not found between both types of firms (e.g. Boone et al., 2010; Karjalainen, 2011; Lawrence et al., 2011). More specifically, our results suggest that especially the reputational capital of Big4 audit firms explains why these firms are still considered to provide more value compared to non-Big4 audit firms, rather than the potential

difference in actual audit quality. However, more research on this issue is needed.

Emotional value was not found to be significantly associated with audit demand in our analysis. While this is an optimistic result since it indicates that emotions may not influence actual audit demand, we hope future research will further examine the influence and role of emotions on audit demand as recent literature argues that emotions may have a significant influence on decision-making processes, such as strategic decision making in private firms (Kellermanns et al., 2014).

Moreover, our results as a whole also suggest that the CEO can only influence audit demand when being able to convince the board of directors and/or the general shareholders' meeting of why a certain level of audit *quality* or audit *quantity* should be demanded based on strong underpinned arguments while these bodies will not accept the CEO's preferences when they are mainly based on emotions. A closer examination of this mediating role of the board of directors and/or the general shareholders' meeting may therefore also be considered as a very interesting path for future research.

This study contributes to the audit demand literature in several ways. In the first place, we filled an important gap in this research stream by actually examining the influence of the CEO on audit demand (Carcello et al., 2011; Cohen et al., 2004). Although it is generally acknowledged that the CEO has a large influence on audit demand (Cohen et al., 2010), studies that examined this influence remained very scarce (Carcello et al., 2011; Cohen et al., 2004). This is probably due to the fact that most studies rely on agency theory to explain

audit demand, arguing that the level of agency conflicts is the main driver for demanding an (high quality) audit and considering CEOs as rational decision makers who will take into account the level of agency conflicts in their audit decision (Jensen & Meckling, 1976). These studies therefore examined the direct relationship between the level of agency conflicts and audit demand (e.g. Dedman et al., 2014; Hope et al., 2012; Lennox, 2005; Niskanen et al., 2011). However, since people are considered to make bounded or even non-rational decisions as well (e.g. Hambrick & Mason, 1984; Radner, 1996; Van den Berghe & Carchon, 2003), measuring and integrating the individual influence of management in the audit demand model could be valuable, which is also supported by our results.

Moreover, we relied on the upper echelons theory, which argues that strategic choices are often based on managerial perceptions instead of rational behavior (Hambrick, 2007; Hambrick & Mason, 1984), to explain the importance of integrating CEO perception within the audit demand models and in this way also answer the call of Cohen et al. (2008) to use different theories in accounting and auditing literature.

Since no multidimensional scale existed to our knowledge to measure this CEO perception towards auditing, we also believe that the development of our scale based on the work of Sweeney and Soutar (2001) is an important contribution. Moreover, the development of this scale and linking it to audit demand also answers the call of Carcello et al. (2011) to examine behaviors, processes and personality treats in an accounting context.

Our study has some limitations that have to be acknowledged, that also provide interesting research avenues for the future. First, when interpreting our results, one should take into account that very little was known about how management might influence audit demand and that we had to develop a new scale to examine this influence. We therefore hope that future studies will continue the examination of this topic in order to validate our results and to be able to further open the black box of how management precisely influences audit demand, for example by looking at interactions with the board of directors and the shareholders.

Secondly, we tested our hypotheses in the Belgian private firm context. While this could also be considered as a contribution since several researchers called for more studies that relate to the non Anglo-American context (Carcello et al., 2011; Cohen et al., 2004; deZoort & Salterio, 2001), this could also be considered as a limitation because one should be careful with generalizing these results to an Anglo-American context. Shareholders are for example considered to be better protected in the United States (Francis, Khurana, Martin, & Pereira, 2011), which may influence both the CEO's perception towards auditing and the influence of this perception on the actual audit decision. Moreover, the Belgian private firm context mainly exists of rather small firms compared to other settings and this should be taken into account as well. Belgian private firms may for example not be very important clients for Big4 auditors. The audit teams at these clients may therefore be less stable compared to the teams in listed or larger foreign private firms, which may influence both the actual and perceived level of audit quality and therefore also the demand effects. We therefore consider this limitation to be a very fruitful avenue for further research as well.

Finally, since our main results indicate that the CEO's perception towards auditing should be considered as an important additional driver for audit demand, examining the determinants of these perceptions would be very interesting to both theorists and practitioners. The results of our additional analyses indicated that the level of education and experience, the level of ownership and being part of another firm's board were found to have an effect on this perception but much more research is needed on this issue. Therefore we hope that this study encourages other researchers to examine how the board, corporate law, advertising, etc. may influence the CEO's perception towards auditing. This would enable the government and audit firms to manage these perceptions in order to reduce a potential discrepancy between the need (the level of agency conflicts) and demand (the auditor that is hired and the amount of auditing that is demanded), caused by this CEO's perception.

Chapter 5 –

Audit demand in private firms: an institutional theory perspective

5.1 Introduction

A large amount of studies have already focused on the potential drivers of audit demand, which can mean both the demand for a voluntary audit (e.g. Carey et al., 2000; Chow, 1982) and the demand for a high quality audit (e.g. Firth & Smith, 1992; Lennox, 2005; Piot, 2001), dependent on whether the firm is already required by law to have its financial statements audited. These studies generally rely on the agency theory to explain this demand. This theory considers auditing "…as a monitoring or bonding device dedicated to preventing and regulating conflicts of interests…" (Piot, 2005, p. 23) that can arise between the shareholders and managers and between the shareholders and debtholders of a company (Jensen & Meckling, 1976). Although the agency theory is widely accepted as the main theory to explain audit demand, empirical support of the underlying hypotheses remains mixed, especially in a private firm context (Allee & Yohn, 2009; Dedman et al., 2014; Lennox, 2005).

While we do not contest the value of agency theory in explaining audit demand in a private firm context, we argue that the inclusion of the institutional theory, additional to the agency theory, is able to provide us with a more complete view about the drivers of this demand. The institutional theory states that firms may become very similar to one another as a response to uncertainty,

pressures from stakeholders, external expectations, etc. (DiMaggio & Powell, 1983), which is called institutional isomorphism. Therefore, (high quality) auditors may not only be engaged to reduce agency conflicts but also because this would increase the firm's legitimacy towards its stakeholders. The study of Han (1994) already indicated the potential relevance of the institutional theory in explaining audit demand as it found that firms often hire the same (type of) auditor as the market leader within the industry. Since DiMaggio and Powell (1983, p. 154) argue that a position of dependence also leads to isomorphic change, our study adds to the study of Han (1994) by examining whether firms also hire the same type of auditor as their main customers or suppliers, in this way providing a more complete view about how institutional theory might explain audit demand.

Moreover, as boards and auditors are generally considered to be complements regarding the reduction of agency conflicts, they may also be considered as complements regarding attaining legitimacy and therefore we also examine the institutional role of the board of directors. While most studies that examined the complementary role of the board and auditors (e.g. Dedman et al., 2014; Lennox, 2005) focused on the monitoring effectiveness of the board, originating from agency theory, the board of directors is generally expected to provide both 'monitoring' and 'service' tasks (Minichilli et al., 2012). One of the main service tasks of the board consists of networking to secure the provision of resources and includes attaining legitimacy, communicating and lobbying (Daily, Dalton, & Cannella Jr, 2003; Huse, 2005; Minichilli et al., 2009). We argue that an effective network board may also call for the appointment of an (high quality) auditor because the reputation effects of this appointment will make the board

even more able to fulfill this network role. While we therefore expect a higher networking effectiveness to lead to an overall higher demand for (high quality) auditors, we also hypothesize that it will reduce the isomorphic behavior towards competitors, customers and suppliers regarding audit demand. Since effective service boards will recognize the legitimacy value of (high quality) auditors, they will less engage in isomorphic behavior and demand an (high quality) auditor in any case, even if the firm's main competitor, customer or supplier did not engage such an (high quality) auditor.

Using questionnaire data combined with archival data of Belgian private firms, our results reveal that the institutional theory should indeed be considered as an additional theory to explain audit demand. Especially suppliers seem important institutionally related drivers of audit demand. Moreover, our results also indicate that audit demand will be less influenced by their suppliers' auditor choice in firms with an effective network board because these boards are already more motivated to engage an (high quality) auditor to add to their service tasks of attaining legitimacy and communicating, irrespective of whether their firm's main supplier also hired an (high quality) auditor.

By this study and thus by further integrating the institutional theory in the audit demand literature, we answer the call of Cohen et al. (2008) to consider additional theories in explaining audit outcomes instead of relying on agency theory alone. By doing this, we also reveal that the role of auditors is not limited to reducing agency conflicts alone. Moreover, by focusing on the network role of the board of directors, we also shed light on the importance of this role within the accounting literature. While several accounting studies already focused on the monitoring role of the board of directors and its influence on audit outcomes,

which is again based on agency theory, our results indicate that the network role of the board may also influence audit demand.

This study is organized as follows. In the next section, we develop our hypotheses. In section 5.3, we elaborate on our methodology. Section 5.4 describes our results and conclusions follow in section 5.5.

5.2 Theory and hypotheses

5.2.1 Agency theory

The demand for both a voluntary and high quality audit is generally explained by agency theory, which considers auditing as a device to reduce agency costs (Jensen & Meckling, 1976). Since most managers of a company (the agents) are generally no or only small owners of the company they work in, they will not always act in the best interest of the owners (Jensen & Meckling, 1976). They may for example take too much risk, consume excessive perks, make suboptimal strategic choices, etc. The owners (the principals) will try to monitor managers or try to give them the right incentives through contracts (e.g. variable remuneration) to reduce this divergence of interest (i.e. agency conflicts). To monitor managers or contract with managers, however, owners generally have to rely on the financial statements, but these are often prepared by management itself and therefore cannot be considered as fully objective (Jensen & Meckling, 1976; Lennox, 2005). By verifying the validity of the financial statements, an auditor is considered to increase this objectivity and is therefore considered to increase the monitoring and contracting possibilities of the principals towards the agents (Becker et al., 1998; Lennox, 2005).

Accordingly, this will reduce the divergence of interests between these parties and therefore the related agency conflicts.

Similarly, agency conflicts may also arise between shareholders and debtholders since managers are generally considered to deem the interests of shareholders as more important than the interests of debtholders and may therefore have a strong incentive to invest in risky projects since the shareholders will capture most of the gains if the investment turns out successful while the debtholders will bear most of the costs if the project turns out unsuccessful (Francis & Wilson, 1988; Jensen & Meckling, 1976). Therefore, debtholders (the principals) often include restrictive covenants in their loan agreements but these are generally based on the financial statements as well. Consequently, also in the shareholder-debtholder agency relationship an auditor is considered to be able to reduce agency costs (DeFond, 1992). Taking this agency perspective into account, a large amount of studies hypothesized a positive association between the (potential) level of agency conflicts and audit demand.

Regarding the relationship between shareholders and managers, management ownership or CEO ownership is generally included as proxy for the 'shareholder-manager agency conflicts' since agency theory argues that the divergence of interests decreases as management ownership increases because managers will behave more like owners (Jensen & Meckling, 1976). Therefore, a negative association between management ownership and audit demand is generally hypothesized but support for this hypothesis is rather mixed in a private firm context. While some studies did find a significant negative association (e.g. Hope et al., 2012; Niskanen et al., 2011), some studies found a

non-linear relationship (e.g. Lennox, 2005) and several studies even did not find significant results regarding this hypothesis (e.g. Allee & Yohn, 2009).

Regarding the shareholder-debtholder agency relationship, leverage is generally hypothesized to be positively associated with audit demand since the amount of potential wealth extraction from lenders to shareholders is positively related to the level of debt. While this hypothesis is also supported by several studies in a private firm context (e.g. Carey et al., 2000; Niskanen et al., 2011), some studies found no support (e.g. Dedman et al., 2014; Fortin & Pittman, 2007; Lennox, 2005) and one study even found a significant negative relationship between leverage and audit demand (Hope et al., 2012).

Although the results supporting agency theoretical arguments to explain audit demand in a private firm context are rather inconclusive, most audit demand studies keep relying almost exclusively on the agency theory to explain this demand. In this study, we integrate an additional theory that may also partially explain this demand, complementary to the agency theory, namely the institutional theory. In contrast to the agency theory which is very internally oriented, the institutional theory takes into account external influences which may explain audit demand. More specifically, the institutional theory posits that structural decisions in firms are driven less by efficiency but more by the need for organizational legitimacy (DiMaggio & Powell, 1983; Liang, Saraf, Hu, & Xue, 2007).

Since the institutional theory is already considered to be able to (partly) explain the demand for other agency cost reducing devices such as CEO compensation plans, long-term incentive plans and independent boards of

directors (Lynall, Golden, & Hillman, 2003; Westphal & Zajac, 1998; Zajac & Westphal, 1995), we argue that it may also significantly add to our knowledge of audit demand. More specifically, an institutional theory perspective on audit demand would suggest that firms do not necessarily demand an (high quality) auditor to reduce the level of agency conflicts only (which would increase the efficiency of the firm) but also because this would increase their legitimacy.

5.2.2 Institutional theory

The institutional theory argues that organizations in the same line of business are largely influenced by their main stakeholders (suppliers, customers, regulatory agencies, etc.), which will lead them to become more similar to one another (DiMaggio & Powell, 1983). This process is generally referred to as isomorphism and can be described as "…a constraining process that forces one unit in a population to resemble other units that face the same set of environmental conditions" (Hawley, 1968, in: DiMaggio & Powell, 1983, p. 149). Overall, one distinguishes among three types of institutional isomorphism, namely *coercive* isomorphism, *normative* isomorphism and *mimetic* isomorphism (DiMaggio & Powell, 1983).

5.2.2.1 Coercive isomorphism

"Coercive isomorphism results from both formal and informal pressures exerted on organizations by other organizations upon which they are dependent" (DiMaggio & Powell, 1983, p. 150). Governmental regulations and procedures enforced by parent companies are potential sources of coercive isomorphism (DiMaggio & Powell, 1983).

Regarding audit demand, the regulatory requirement for listed companies to have their financial statements audited can be considered as an example of coercive isomorphism. In our context (Belgium), all private companies that exceed certain thresholds are required to have their financial statements audited as well so this can also be considered as coercive isomorphism. Since the sample of this study solely consists of firms that are already required by law to have their financial statements audited, we will not examine this type of coercive behavior.

Parent companies requiring their subsidiaries to hire the same auditor can also be considered as a form of coercive isomorphism. Although it was never referred to as coercive isomorphism, prior audit demand studies (e.g. Niskanen et al., 2011) already controlled for this influence and we will therefore not focus on this effect in this study although we will control for it as well.

Coercive isomorphism may also stem from dominant suppliers and customers on which firms are dependent (DiMaggio & Powell, 1983; Teo, Wei, & Benbasat, 2003). Dependence on customers arises "…when organizations rely heavily on customers that account for much of their sales and customers that have alternative suppliers" and dependence on suppliers "… when organizations are unable to switch to alternative suppliers, thereby relying on existing suppliers that account for much of their purchases" (Teo et al., 2003, p. 23). A dominant actor may demand its dependent organizations to comply with certain practices to secure their own survival (Pfeffer & Salancik, 1978, in: Teo et al., 2003). For example, Ford Motor Company required from their suppliers to use electronic data interchange to retain their business (Webster, 1995, in: Teo et al., 2003). Regarding audit demand, Ford Motor Company may also require

these suppliers to hire the same (type of) auditor in order that their internal control environment is secure and data confidentiality can be retained. Moreover, Ford Motor Company may also persuade its car dealers (i.e. its customers) to hire the same (type of) auditor for similar reasons. While this is an extreme example of coercive isomorphism, coercive pressures may also be more subtle and less direct and may therefore arise from every important supplier and/or customer.

5.2.2.2 Normative isomorphism

Normative isomorphism is considered to be a consequence of professionalization (DiMaggio & Powell, 1983). Since universities and professional training institutions are considered as "…important centers for the development of organizational norms among professional managers and their staff", organizations may often resemble each other because they hire managers that have similar educational backgrounds (DiMaggio & Powell, 1983, p. 152). Moreover, managers are often member of professional and trade associations and are often represented on the boards of other organizations, which may increase isomorphic behavior even further (DiMaggio & Powell, 1983). Overall, "[f]or a particular industry, it is argued that a pool of almost interchangeable employees [and managers] is created through formal education and professional networks… [which] possess similar orientation and disposition that override the variations in traditions and control mechanisms otherwise shaping distinctive organizational behavior" (Liang et al., 2007, p. 62).

While audit demand may therefore be highly dependent on the firm's industry, which is already accounted for by most audit demand studies, suppliers

and customers may also induce this normative behavior as Burt (1982, in: Teo et al., 2003, p. 24) posits that normative pressures also "…manifest themselves through dyadic interorganizational channels of firm-supplier and firm-customer". More specifically, organizations with ties to other organizations are expected to learn about the associated benefits and costs of in our case the engagement of an (high quality) auditor and are likely to be persuaded to behave similarly (Burt 1982, in: Teo et al., 2003).

5.2.2.3 Mimetic isomorphism

Not only do companies behave similar due to coercive or normative pressures, they also do so due to uncertainty, which is labeled mimetic isomorphism (DiMaggio & Powell, 1983). "Organizations tend to model themselves after similar organizations in their field that they perceive to be more legitimate or successful" (DiMaggio & Powell, 1983, p. 152). This kind of isomorphism therefore also has an important ritual aspect, they imitate other companies to enhance their own legitimacy (DiMaggio & Powell, 1983). Since stakeholders are considered to be bounded rational decision makers, they may also value such socially induced decisions (Westphal & Zajac, 1998). In this respect, it is important to note that "...the appearance rather than the fact of conformity is often presumed to be sufficient for the attainment of legitimacy" (Oliver, 1991, p. 155, in: Westphal & Zajac, 1998, p. 131).

Regarding audit demand, this suggests that stakeholders may value hiring a Big4 auditor because this indicates that potential agency costs are being addressed in a proper way, even if non Big4 auditors would in fact be equally effective in reducing agency costs or if there are in fact no or only a minimal

level of agency costs that can be mitigated. Since the opinions and practices of audit firms have become so similar (the only noticeable differences in audit reports generally relate to the name of the client and the auditor only) in which it is rather unclear what is actually bought, not the audit opinion itself is considered to be the most important but rather the reputation of the auditor who signed it (Han, 1994). As Big4 auditors are still perceived to provide the highest level of audit quality (Boone et al., 2010; Karjalainen, 2011), firms may imitate other firms that hired a Big4 auditor to increase their own legitimacy, even if this would (agency) theoretically (i.e. based on the level of agency costs in comparison to the audit fee) be a suboptimal decision.

Han (1994) already examined this specific type of isomorphism in an auditing context but only focused on mimicry towards competitors in listed firms. He finds that firms often imitate the leader of an industry by choosing the same auditor to increase their own legitimacy.

Moreover, besides imitating competitors, it may also be expected that the firm will imitate the stakeholder(s) to which it wants to increase its legitimacy. Regarding audit demand, firms may therefore also imitate their main customer or main supplier to increase their legitimacy towards those stakeholders.

5.2.2.4 Hypotheses

DiMaggio and Powell (1983) note that the different forms of isomorphism are not always empirically distinct and should therefore be considered as an analytical typology. Mizruchi and Fein (1999) closely examined 26 articles in which researchers did attempt to operationalize various components of this

typology and indeed found that measures used to capture one of the forms of isomorphism could be used as valid measures of another form as well. We therefore do not intend to analyze the influence of the different forms of isomorphism on audit demand separately. More specifically, the main aim of this study is to examine the potential role of the institutional theory in general on audit demand. As Han (1994) already showed the relevance of imitation behavior towards competitors regarding audit demand, we also hypothesize that the auditor choice of the main competitor of the firm influences audit demand. More specifically, we hypothesize:

H1: The main competitor being audited by a Big4 auditor is positively related with hiring a Big4 auditor.

However, we also want to add to this study by focusing on isomorphic effects towards suppliers and customers while controlling for other institutional and agency effects in order to get a more complete view about audit demand. Based on the previous paragraphs, we expect that a firm is likely to hire the same (type of) auditor as their main supplier and/or main customer as well due to both coercive, normative and mimetic pressures from those stakeholders. Formally, we therefore posit:

H2: The main customer being audited by a Big4 auditor is positively related with hiring a Big4 auditor.

H3: The main supplier being audited by a Big4 auditor is positively related with hiring a Big4 auditor.

5.2.3 The network role of the board

In the previous section we argue that the institutional theory should be considered as an important additional theory to explain audit demand. However, the relevance of institutional isomorphism on audit demand may depend on the board of directors. While prior audit demand studies already focused on the influence of the board of directors on audit demand (e.g. Dedman et al., 2014; Lennox, 2005), these studies focused on the monitoring role of the board of directors, originating from agency theory. However, the board of directors is generally expected to provide both 'monitoring' and 'service' tasks (Minichilli et al., 2012).

The service tasks of the board of directors originate from several theories such as the resource dependence theory, the stakeholder theory, the stewardship theory, etc. and include both advising management and networking (Daily et al., 2003; Hung, 1998; Huse, 2005; Minichilli et al., 2009). In contrast to the monitoring tasks of the board, which mainly focus on the internal environment of the firm, the service tasks and especially the network tasks of the board mainly relate to the external environment (Hung, 1998). From a resource dependence perspective, one of the board's main tasks regarding networking is to link the firm with its environment in order to provide access to resources from this environment, which involves attaining legitimacy, communicating and lobbying (Daily et al., 2003; Huse, 2005). Moreover, the stakeholder approach expects the board to negotiate and compromise with all stakeholders of the firm (Hung, 1998) and the institutional perspective expects boards to analyze the external environment and respond to institutional pressure (Hung, 1998).

A board of directors that effectively fulfills its network role may both positively and negatively influence audit demand, dependent on whether the board and an external auditor are considered as complements or rather as substitutes regarding attaining legitimacy. Most authors consider the board and the auditor as complements regarding monitoring, indicating that an effective board further increases the demand for an (high quality) audit in order to be better able to monitor management (e.g. Beasley & Petroni, 2001; Carcello et al., 2002; Carcello et al., 2011; Chen & Jian, 2007). We also expect that boards and auditors can be considered as complements regarding attaining legitimacy. More specifically, since a Big4 auditor may be able to increase the legitimacy of firms towards stakeholders, we argue that an effective network board will call for the appointment of such a Big4 auditor to be able to further increase its networking and communicating performance. Therefore, we hypothesize a positive direct effect between the network effectiveness of the board and hiring a Big4 auditor. Formally, we therefore posit:

H4: The network effectiveness of the board of directors is positively related with hiring a Big4 auditor.

Regarding the isomorphic behavior towards stakeholders, however, we argue that the network effectiveness of the board may have a negative moderating effect. More specifically, we argue that firms with an effective network board will to a lesser extent engage in imitating competitors, suppliers and customers because these effective network boards will in any case call for the appointment of a Big4 auditor to increase the reputation of the firm, irrespective of whether their main competitor, customer or supplier also hired a Big4 auditor. We therefore hypothesize that a high network effectiveness of the board reduces the

isomorphic behavior towards stakeholders regarding audit demand. Formally, we posit:

H5: The network effectiveness of the board negatively moderates the positive association between the main stakeholders being audited by a Big4 auditor and hiring a Big4 auditor.

5.3 Data & methodology

5.3.1 Data

In order to test our hypotheses, we identified a population of all active Belgian private firms that are legally required to be audited and are not part of the financial services industry from the Bel-First database of Bureau Van Dijk, which contains comprehensive information (financials, ownership data, legal information, etc.) of both listed and private Belgian firms. To the firms within our population (except those with insufficient contact details), we sent a structured online questionnaire (see the appendix for the complete questionnaire) in February 2015 and asked the CEO to complete it (N = 8,662). 740 CEOs filled out the questionnaire, leading to a response rate of 8.5 percent. We combined this dataset with publicly available accounting data (of 2014) from the Bel-First database and Orbis (which is comparable to the Bel-First database but contains information about companies worldwide) and with data from the individual financial statements of our sample firms. We obtained a final sample of 229 firms after removing cases with incomplete data regarding the necessary items included in the questionnaire or the accounting data. Since the explanatory variables and the moderating variable are collected from the

questionnaire while the dependent variable is collected from the individual financial statements of our sample firms, there is no common method bias threat.

5.3.2 Variables

5.3.2.1 Dependent variable

In line with several former audit demand studies (e.g. Fan & Wong, 2005; Firth & Smith, 1992; Lennox, 2005; Niskanen et al., 2011; Piot, 2001), our dependent variable, BIG4, is a dummy variable coded 1 if the firm hired a Big4 auditor and 0 otherwise. Although several studies question whether Big4 audit firms do indeed provide a higher level of quality and several studies indeed did not find a significant difference in audit quality between BigN[23] and non-BigN audit firms (e.g. Boone et al., 2010; Lawrence et al., 2011), this has no influence on the usefulness of this proxy regarding our research question. More specifically, not the actual level of audit quality is important to examine audit quality demand but rather the perceived level of audit quality and since Boone et al. (2010) and Karjalainen (2011) found that Big4 audit firms are still perceived to provide higher levels of audit quality, the BIG4 dummy remains a valuable proxy to measure audit quality demand.

5.3.2.2 Explanatory variables

In order to test whether the auditor choice of the firm's main competitor (H1), the main customer (H2) or the main supplier (H3) may also influence the firm's

[23] Due to the disappearance of Arthur Andersen and due to mergers between audit firms, the audit quality measure gradually evolved from Big8 to Big4.

auditor choice, we include the variables COMPETITOR_BIG4, CUSTOMER_BIG4 and SUPPLIER_BIG4. COMPETITOR_BIG4 is a dummy variable coded 1 if the main competitor of the firm hired a Big4 auditor and 0 otherwise. Similarly, CUSTOMER_BIG4 is a dummy variable coded 1 if the main customer of the firm hired a Big4 auditor and 0 otherwise and SUPPLIER_BIG4 is a dummy variable coded 1 if the main supplier of the firm hired a Big4 auditor and 0 otherwise. In order to obtain the data regarding these variables, our questionnaire asked the CEO to identify the main competitor, customer and supplier of the firm and to provide the city and the country in which these firms are located. Based on these data, we manually searched for these firms using the Orbis database and verified which auditor they engaged.

5.3.2.3 Moderating variable

While the effectiveness of the board of directors is generally proxied by compositional measures like board size, the percentage of outside directors, director shareholdings, CEO duality or the financial expertise of the board members (e.g. Beasley & Petroni, 2001; Chen & Jian, 2007; Ireland & Lennox, 2002), recent board literature (e.g. Finkelstein & Mooney, 2003; Gabrielsson & Winlund, 2000; Minichilli et al., 2012; Minichilli et al., 2009; Zona & Zattoni, 2007) argues that composition does not necessarily explain behavior such that these proxies do not adequately measure board effectiveness. In this study, we will therefore not rely on compositional measures for our moderating variable but use a direct measurement of the network effectiveness of the board. More specifically, we rely on the study of Minichilli et al. (2009) to measure this network effectiveness of the board. We asked our respondents to evaluate both

the network and monitoring effectiveness (for control purposes) of the board on a 5-point Likert scale. The items regarding the network effectiveness are the following: “The board provides linkages to important external stakeholders (banks, financial institutions, customers, public authorities...)” and “The board provides the firm with external legitimacy and reputation” (Minichilli et al., 2009, p. 71). For more information regarding the items of the monitoring effectiveness of the board, see section 3.3.2.2.

We conducted an exploratory factor analysis on the items that Minichilli et al. (2009) proposed as being able to measure the network role of the board and the items that relate to the monitoring tasks of the board of directors. Based on both the latent root criterion (each factor should have a latent root or eigenvalue greater than 1) and the percentage of variance criterion (60 percent of the total variance should at least be extracted by all the factors together) (Hair et al., 2006), we obtain a two-factor model. As Gabrielsson and Winlund (2000) finds that boards which are more effective in fulfilling one role also show more overall activity and consequently more effectiveness in the other roles, we allowed the factors to be correlated and therefore we applied an oblique factor rotation. The factors we obtained clearly distinguish between the network and the monitoring role of the board and therefore we included the related factor scores NETWORKING to test H4 and MONITORING for control purposes. Moreover, in order to examine the moderating effect of this network effectiveness regarding institutional isomorphism to test H5, we include the interaction variables COMPETITOR_BIG4*NETWORKING, CUSTOMER_BIG4*NETWORKING and SUPPLIER_BIG4*NETWORKING.

5.3.2.4 Control variables

We explicitly test for the coercive isomorphism of the parent company on audit demand by including the dummy variable GROUPCHOICE, coded 1 if the auditor choice was made by the parent company of the firm's group (if applicable) and 0 otherwise.

We also control for the agency theory related drivers of audit demand by MAN_OWN and LEVERAGE. MAN_OWN is defined as the percentage of stock ownership by the management team and is included to control for the influence of the level of shareholder-manager agency costs on audit demand (DeFond, 1992; Francis & Wilson, 1988; Reed et al., 2000). To control for the level of shareholder-debtholder agency costs on audit demand, we include LEVERAGE, defined as the ratio of total debt to total assets (Niskanen et al., 2011; Reed et al., 2000).

In line with former audit demand studies (e.g. Niskanen et al., 2011), we also control for SIZE, defined as the natural logarithm of total assets, and ROA, defined as the ratio of earnings before interest and taxes to total assets. Finally, we also control for industry by including four dummy variables, namely PRODUCTION, CONSTRUCTION, TRADE and SERVICES, as they might both grasp institutional and agency related effects.

5.3.3 Model

In order to test our hypotheses, we employ multivariate logit regression analyses, which is in line with prior audit demand studies (e.g. Firth & Smith,

1992; Lennox, 2005; Niskanen et al., 2010; Piot, 2001). While both logit and probit are used in the literature, we prefer logit as both methods are equally efficient but logit does not require normality of parameter distribution (Piot, 2001). More specifically, the model we use to test hypothesis 1, 2 and 3 is specified as follows:

$$\text{Prob(BIG4)} = \frac{1}{1+e^{-Z}}$$

where $Z = \beta_0 + \beta_1 \text{COMPETITOR\_BIG4} + \beta_2 \text{CUSTOMER\_BIG4} + \beta_3 \text{SUPPLIER\_BIG4} + \beta_4 \text{GROUPCHOICE} + \beta_5 \text{MAN\_OWN} + \beta_6 \text{LEVERAGE} + \beta_7 \text{SIZE} + \beta_8 \text{ROA} + \beta_9 \text{PRODUCTION} + \beta_{10} \text{CONSTRUCTION} + \beta_{11} \text{TRADE} + \varepsilon$

In order to test hypothesis 4 and 5, we specify the model as follows:

$$\text{Prob(BIG4)} = \frac{1}{1+e^{-Z}}$$

where $Z = \beta_0 + \beta_1 \text{NETWORKING} + \beta_2 \text{COMPETITOR\_BIG4} + \beta_3 \text{COMPETITOR\_BIG4*NETWORKING} + \beta_4 \text{CUSTOMER\_BIG4} + \beta_5 \text{CUSTOMER\_BIG4*NETWORKING} + \beta_6 \text{SUPPLIER\_BIG4} + \beta_7 \text{SUPPLIER\_BIG4*NETWORKING} + \beta_8 \text{MONITORING} + \beta_9 \text{GROUPCHOICE} + \beta_{10} \text{MAN\_OWN} + \beta_{11} \text{LEVERAGE} + \beta_{12} \text{SIZE} + \beta_{13} \text{ROA} + \beta_{14} \text{PRODUCTION} + \beta_{15} \text{CONSTRUCTION} + \beta_{16} \text{TRADE} + \varepsilon$

5.4 Results

5.4.1 Descriptive statistics and correlations

The descriptive statistics of our sample are presented in table 18. Approximately 37 percent of our sample firms, 41 percent of the identified main competitors, 45 percent of the identified main customers and 42 percent of the identified main suppliers hired a BIG4 auditor. For 38 percent of the firms within our sample the auditor choice was made by the parent company of the firm's group.

Table 18. Descriptive statistics

Dichotomous variables	Sum	Prop.	**Continuous variables**	Min	Max	Median	Mean	s.d.
Dependent variable								
BIG4	85	0.37						
Explanatory variables			***Moderating variable***					
COMPETITOR_BIG4	95	0.41	NETWORKING	-1.54	2.30	0.05	0.00	1.00
CUSTOMER_BIG4	102	0.45						
SUPPLIER_BIG4	97	0.42						
Control variables			***Control variables***					
GROUPCHOICE	88	0.38	MONITORING	-1.96	2.35	0.18	0.00	1.00
PRODUCTION	88	0.38	MAN_OWN	0.00	100.00	5.00	38.46	44.85
CONSTRUCTION	22	0.10	LEVERAGE	0.05	1.16	0.65	0.62	0.23
TRADE	76	0.33	SIZE[†]	2.16	907.68	11.54	37.19	107.68
SERVICES	43	0.19	ROA	-0.21	0.41	0.05	0.07	0.08

n = 229; This table presents the descriptive statistics (sum and proportions for the dichotomous variables; means, medians, minima, maxima and standard deviations for the continuous variables); [†] The natural logarithm of this variable is used in our statistical analysis, the value in this table is the nominal value in millions.

The Pearson (below the diagonal) and Spearman (above the diagonal) correlations are presented in table 19. While COMPETITOR_BIG4 and

CUSTOMER_BIG4 are not found to be significantly correlated with hiring a BIG4 auditor, the correlation coefficient between SUPPLIER_BIG4 and BIG4 is found to be significantly positive, which is in line with H3. GROUPCHOICE is also found to be significantly and positively correlated with hiring a BIG4 auditor and provides further support for the coercive pressures of parent companies regarding audit demand. According to the correlation table, agency theory also remains a highly valuable theory to explain audit demand as the correlation between MAN_OWN and BIG4 is found to be strongly significant although the correlation between LEVERAGE and BIG4 is, oppositely to what can be expected based on agency theory, found to be significantly negative. Regarding the control variables, both SIZE and TRADE are found to be significantly correlated with hiring a Big4 auditor as well.

The correlations between the explanatory and control variables and among the control variables never exceed the critical value of 0.8 (the highest value is 0.56) and therefore there seems not to be a multicollinearity threat. This is also supported by the variance inflation factors, which are all found to be lower than the critical value of 10 (the highest value is 3.40).

5.4.2 Regression results

Table 20 presents our logistic regression models. The table presents the beta coefficients of all explanatory and control variables, the robust standard errors, the Log likelihood statistic, the Chi-square statistic and the McFadden R^2. All models are found to be significant ($p \leq 0.0001$) and the R^2 values range from 37 to 59 percent.

Table 19. Correlations

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. BIG4		0.09	0.06	0.13*	-0.02	0.01	0.66***	-0.56***	-0.12*	0.29***	-0.05	0.08	-0.04	-0.12*	0.07
2. COMPETITOR_BIG4	0.09		-0.01	0.00	-0.02	0.06	0.23***	-0.21***	-0.03	0.11	-0.02	-0.06	-0.12*	0.10	0.05
3. CUSTOMER_BIG4	0.06	-0.01		0.01	-0.03	0.01	0.10	-0.05	0.08	0.06	0.10	0.00	-0.05	-0.05	0.11*
4. SUPPLIER_BIG4	0.13*	0.00	0.01		0.04	0.12*	0.03	0.08	-0.08	0.04	-0.07	-0.04	-0.16**	0.22***	-0.10
5. NETWORKING	-0.02	-0.03	-0.04	0.03		0.44***	-0.11	0.11*	0.06	-0.02	-0.03	-0.02	0.08	0.00	-0.03
6. MONITORING	0.00	0.06	0.01	0.12*	0.45***		0.02	0.16**	0.04	-0.09	-0.05	-0.02	-0.03	0.05	-0.01
7. GROUPCHOICE	0.66***	0.23***	0.10	0.03	-0.11*	0.00		-0.57***	-0.10	0.19***	-0.03	0.00	-0.01	-0.08	0.10
8. MAN_OWN	-0.59***	-0.24***	-0.06	0.05	0.11*	0.13**	-0.56***		0.09	-0.23***	0.00	0.02	0.02	0.04	-0.09
9. LEVERAGE	-0.12*	-0.06	0.11	-0.09	0.05	0.01	-0.09	0.09		-0.09	-0.23***	-0.25***	0.15**	-0.02	0.22***
10. SIZE	0.34***	0.09	0.07	0.08	0.00	-0.04	0.20***	-0.30***	-0.16**		-0.06	0.14**	-0.08	0.00	-0.11*
11. ROA	-0.06	0.06	0.08	-0.08	-0.01	0.02	-0.05	-0.03	-0.18***	-0.14**		-0.04	0.00	0.00	0.05
12. PRODUCTION	0.08	-0.06	0.00	-0.04	-0.02	-0.02	0.00	0.01	-0.24***	0.14**	-0.07		-0.26***	-0.56***	-0.38***
13. CONSTRUCTION	-0.04	-0.12*	-0.05	-0.16**	0.09	-0.03	-0.01	0.07	0.15**	-0.08	-0.02	-0.26***		-0.23***	-0.16**
14. TRADE	-0.12*	0.10	-0.05	0.22***	0.00	0.05	-0.08	0.04	-0.03	0.01	0.02	-0.56***	-0.23***		-0.34***
15. SERVICES	0.07	0.05	0.11*	-0.10	-0.04	-0.01	0.10	-0.11	0.22***	-0.13*	0.08	-0.38***	-0.16**	-0.34***	

n = 229; *, **, *** indicate significance at the 10%, 5% and 1% levels respectively (two-tailed); The Pearson correlations are reported below the diagonal, the Spearman correlations above the diagonal.

Model 1 can be considered as benchmark model since it consists of the traditional audit demand variables based on agency theory and does not yet include institutional effects. In line with several other studies (e.g. Firth & Smith, 1992; Reed et al., 2000), MAN_OWN is found to be significantly negatively associated with hiring a BIG4 auditor, supporting the traditional view of agency theory that shareholder-manager agency conflicts lead to audit demand. While the level of shareholders-debtholder agency conflicts is also considered as a driver of audit demand (e.g. Chow, 1982; Firth & Smith, 1992; Reed et al., 2000), this is not supported by our results since the coefficient of LEVERAGE is not found to be significant. Regarding the control variables, the coefficient of SIZE is found to be strongly significant and positive, which is in line with most other audit demand studies (e.g. Dedman et al., 2014; Reed et al., 2000).

In model 2, we include the variables COMPETITOR_BIG4, CUSTOMER_BIG4 and SUPPLIER_BIG4 to test H1 to H3 and also include GROUPCHOICE to control for the potential coercive pressures of parent companies. In contrast to H1, we found COMPETITOR_BIG4 to be significantly negatively associated with hiring a BIG4 auditor at the 10% significance level. While this seems to contrast the results of Han (1994) since he found that firms often hire the same auditor as the industry leader, he also found that some firms (i.e. firms that are also part of the top of the industry) try to differentiate themselves from their chief competitors, even if they are considered to be more legitimate, and this effect is in line with our results. Moreover, this result is also in line with the findings of Aobdia (2015), which suggested that rival firms are often reluctant to engage the same auditor due to information-spillover concerns. H2 is not supported by our results either since CUSTOMER_BIG4 is not

found to be significant. Our expectation that firms engage the same (type of) auditor as their main customer in order to increase their legitimacy is therefore not confirmed. Audit (quality) demand does seem to be influenced by the main supplier's auditor choice since the coefficient of SUPPLIER_BIG4 is found to be strongly significant and positive, in this way supporting H3. GROUPCHOICE is found to be strongly significant and positive as well and therefore confirms the coercive pressures of parent companies regarding audit demand. Regarding the other control variables, MAN_OWN remains strongly significant and negative while SIZE remains significantly positive. Moreover, firms being part of the retail and wholesale TRADE industry are found to be significantly less likely to hire a Big4 auditor than firms being part of the SERVICES industry.

We also calculated the standardized coefficients of model 2 in order to examine to what extent the institutional theory contributes in explaining audit demand in private firms (not tabulated). MAN_OWN is found to be the main predictor in this analysis and the agency theory therefore remains the dominant theory to explain audit demand. However, MAN_OWN is immediately followed by GROUPCHOICE and SUPPLIER_BIG4, indicating that the institutional theory should also be considered as an important theory, additional to the agency theory, to further explain this demand. SIZE is found to be the fourth main predictor, followed by TRADE and COMPETITOR_BIG4.

In model 3, we include NETWORKING and the interaction variables COMPETITOR_BIG4*NETWORKING, CUSTOMER_BIG4*NETWORKING and SUPPLIER_BIG4*NETWORKING to test H4 and H5. Moreover, we also include MONITORING to control for the monitoring effectiveness of the board of directors.

Table 20. Logistic regression results

Model	1	2	3
Explanatory variables:			
NETWORKING			1.4475***
			(0.4908)
COMPETITOR_BIG4		-0.9136*	-1.2509**
		(0.4741)	(0.5476)
COMPETITOR_BIG4*NETWORKING			-0.7904
			(0.5420)
CUSTOMER_BIG4		-0.2972	-0.3041
		(0.4667)	(0.5093)
CUSTOMER_BIG4*NETWORKING			0.3355
			(0.5272)
SUPPLIER_BIG4		1.4895***	1.4934***
		(0.4750)	(0.4887)
SUPPLIER_BIG4*NETWORKING			-1.9647***
			(0.5632)
Control variables:			
MONITORING			-0.0435
			(0.2710)
GROUPCHOICE		2.8521***	3.5319***
		(0.4765)	(0.6444)
MAN_OWN	-0.0473***	-0.0386***	-0.0417***
	(0.0084)	(0.0087)	(0.0078)
LEVERAGE	-1.1001	-0.9196	-1.1369
	(0.8785)	(1.0068)	(1.1114)
SIZE	0.4116***	0.5643**	0.5784**
	(0.1507)	(0.2228)	(0.2291)
ROA	-2.4294	-1.0111	-3.4148
	(1.9491)	(2.2624)	(2.8585)
PRODUCTION	-0.0384	0.1159	0.0004
	(0.5296)	(0.5738)	(0.6673)
CONSTRUCTION	-0.0781	-0.4264	-1.2580
	(0.7222)	(0.8664)	(0.7938)
TRADE	-0.8169	-1.2081**	-1.5378**
	(0.5423)	(0.5867)	(0.7177)
Intercept	-2.3285	-5.4887**	-5.2238*
	(1.6446)	(2.4465)	(2.6732)
Log likelihood	-93.8037	-68.6223	-60.5619
Chi-square	64.96***	73.50***	78.33***
McFadden R^2	0.3790	0.5457	0.5990

n = 229; *, **, *** indicate significance at the 10%, 5% and 1% levels respectively (two-tailed); This table presents our logistic (logit) regression results. Both the beta coefficients and the robust standard errors (between brackets) are reported per variable for each model. In this table, also the Log likelihood and the Chi-square statistics are reported for each model, as well as the McFadden R^2. The dependent variable is BIG4.

When including these variables, COMPETITOR_BIG4 remains to be significantly negative, further indicating that firms differentiate themselves from their main competitors. In line with our results in model 2 as well, the coefficient of SUPPLIER_BIG4 is found to be strongly significant and positive, further

supporting H3, while CUSTOMER_BIG4 remained insignificant. Our results also support H4 as the coefficient of NETWORKING is found to be significantly positive. Finally, we also find support for H5 regarding suppliers as the coefficient of SUPPLIER_BIG4*NETWORKING is found to be strongly significant and negative. This indicates that effective network boards will to a lesser extent engage in imitation behavior because they will already be highly motivated to hire a Big4 auditor to increase the reputation of the firm to be able to further increase their network effectiveness, irrespective of whether the firm's main supplier also hired a Big4 auditor.

5.4.3 Additional analyses

As Teo et al. (2003) suggest that coercive pressures may increase when the dominance of the firm's stakeholders is higher, we also run a regression in which we account for both supplier and customer dominance (tabulated in model 1 of table 21). More specifically, we include CUSTOMER_SALES, defined as the level of sales to the main customer divided by total sales, and SUPPLIER_PURCHASES, defined as the level of purchases from the main supplier divided by the total amount of purchases (these items were included in our questionnaire as well), and their associated interaction variables CUSTOMER_BIG4*CUSTOMER_SALES and SUPPLIER_BIG4*SUPPLIER_PURCHASES in model 2. When including these variables, both COMPETITOR_BIG4 and SUPPLIER_BIG4 remained significant but only at the 10% significance level. While CUSTOMER_BIG4 remained insignificant, CUSTOMER_SALES is found to be significantly positive, indicating that a higher level of dependence on a customer leads to an overall higher demand for a Big4 auditor, irrespective of whether this customer also hired a Big4 auditor.

SUPPLIER_PURCHASES and the interaction variables CUSTOMER_BIG4* CUSTOMER_SALES and SUPPLIER_BIG4*SUPPLIER_PURCHASES are found to be insignificant.

Since it could be argued that a firm's isomorphic behavior will be dependent on its need for legitimacy, we also ran a regression in which we include the standardized variable SECTOR_TOP, indicating the firm's position within the industry ranking, together with the moderating variables COMPETITOR_BIG4*SECTOR_TOP, CUSTOMER_BIG4*SECTOR_TOP and SUPPLIER_BIG4*SECTOR_TOP (model 2 of table 21). We argue that the firm's position within the industry ranking could be considered as a proxy for the need for legitimacy as the leaders of an industry probably already attained a high level of legitimacy while firms that close the industry ranking still need to develop this legitimacy. While the direct effect of SECTOR_TOP is not found to be significant, we do find a significant positive moderating effect of COMPETITOR_BIG4*SECTOR_TOP. Together with the coefficient of COMPETITOR_BIG4, which is significantly negative like in our main results, this indicates that the differentiating effect towards the main competitor does not apply for the weaker firms within an industry and even turns to an imitation effect. This further confirms the results of Han (1994), who found that "...the leaders in an industry seek to differentiate themselves from their chief competitors" while "...the firms of the middle stratum imitate the leaders in their industry extensively by choosing from the same set of auditors" (p. 637). The coefficients of CUSTOMER_BIG4*SECTOR_TOP and SUPPLIER_BIG4*SECTOR_ TOP were not found to be significant.

Table 21. Additional logistic regression results

Model	1	2	3	4
Dependent variable:	BIG4	BIG4	INDS	INDS
Explanatory variables:				
COMPETITOR_BIG4	-0.9264*	-0.7778*		
	(0.4844)	(0.4720)		
CUSTOMER_BIG4	0.0844	-0.2089		
	(0.6399)	(0.4775)		
SUPPLIER_BIG4	1.0227*	1.3635***		
	(0.6208)	(0.4700)		
CUSTOMER_SALES	0.0259**			
	(0.0131)			
CUSTOMER_BIG4*CUSTOMER_SALES	-0.0227			
	(0.0195)			
SUPPLIER_PURCHASES	0.0021			
	(0.0091)			
SUPPLIER_BIG4*SUPPLIER_PURCHASES	0.0178			
	(0.0154)			
SECTOR_TOP		-0.0884		
		(0.2924)		
COMPETITOR_BIG4*SECTOR_TOP		0.8621**		
		(0.3983)		
CUSTOMER_BIG4*SECTOR_TOP		0.0336		
		(0.4135)		
SUPPLIER_BIG4*SECTOR_TOP		-0.4468		
		(0.3969)		
NETWORKING				0.5717*
				(0.2943)
COMPETITOR_INDS			-0.4672	-0.5234
			(0.4205)	(0.4307)
COMPETITOR_INDS*NETWORKING				-0.2210
				(0.4826)
CUSTOMER_INDS			0.1422	0.2221
			(0.4034)	(0.4319)
CUSTOMER_INDS*NETWORKING				-0.2149
				(0.5017)
SUPPLIER_INDS			1.1902***	1.2896**
			(0.4335)	(0.5111)
SUPPLIER_INDS*NETWORKING				-0.8602*
				(0.4712)
Control variables:				
MONITORING				-0.2488
				(0.2063)
GROUPCHOICE	3.1040***	3.0394***	1.0284***	1.1512***
	(0.4986)	(0.4965)	(0.3758)	(0.3982)
MAN_OWN	-0.0409***	-0.0382***	-0.0179***	-0.0181***
	(0.0103)	(0.0086)	(0.0059)	(0.0059)
LEVERAGE	-0.4538	-0.9936	-1.2286	-1.1767
	(1.0396)	(1.0846)	(0.7781)	(0.8469)
SIZE	0.6203***	0.6569**	0.2259	0.2209
	(0.2285)	(0.2648)	(0.1564)	(0.1605)
ROA	-0.6870	-0.1903	-0.9398	-1.4784
	(2.2300)	(2.2476)	(1.9740)	(2.1524)
PRODUCTION	0.2541	0.3331	-0.8304*	-0.8264*
	(0.5871)	(0.5565)	(0.4521)	(0.4567)
CONSTRUCTION	-0.9503	-0.1756	-0.8593	-1.1111
	(0.9214)	(0.9271)	(0.7711)	(0.7703)
TRADE	-1.0104*	-0.9561*	-1.2337**	-1.1317**
	(0.5874)	(0.5791)	(0.5154)	(0.5371)
Intercept	-7.0380***	-6.6803**	-1.8150	-1.8215
	(2.4702)	(2.8170)	(1.7249)	(1.8201)
Log likelihood	-65.2718	-66.5576	-101.9983	-99.2251
Chi-square	70.08***	76.51***	45.00***	62.87***
McFadden R^2	0.5679	0.5564	0.2316	0.2524

n = 229 (model 1, 3 and 4) or 228 (model 2); *, **, *** indicate significance at the 10%, 5% and 1% levels respectively (two-tailed).

This table presents our additional logistic (logit) regression results. Both the beta coefficients and the robust standard errors (between brackets) are reported per variable for each model. In this table, also the Log likelihood, the Chi-square statistic and the McFadden R^2 are reported for each model.

Finally, it could also be argued that our findings may be the result of industry specialism by auditors. More specifically, firms may be more likely to appoint (or could only engage) auditors who have a specific knowledge about their industry, leading to the appointment of the same auditors within an industry. Although auditors are indeed likely to focus on specific industries, industry specialism itself may also be the result of isomorphic behavior by firms hiring a similar set of auditors (i.e. auditors may become industry specialists rather unintentionally due to isomorphic behavior by firms). Therefore it is very difficult to disentangle the effect that is the result of isomorphic behavior from the effect that is due to pure industry specialism by auditors. Despite being very complex, we performed an additional analysis that may give a first indication on this matter. More specifically, we identified industry specialists by the market share approach (based on audit fees) and used the Palmrose (1986, in: Neal & Riley, 2004) criterion that considers auditors that have a minimum of 15 percent within-industry market share to be industry specialists[24]. The dependent variable in this additional analysis, INDS, is therefore coded 1 if the firm hired an industry specialist and 0 otherwise. We also changed the variables COMPETITOR_BIG4, CUSTOMER_BIG4 and SUPPLIER_BIG4 of our main analyses to COMPETITOR_INDS, CUSTOMER_INDS and SUPPLIER_INDS (indicating whether the main competitor, customer and supplier also hired an industry

[24] This criterion seems still valid for our context as the mean market share of Big4 auditors is considered to be about 50% in Belgium (Francis, Michas, & Seavey, 2013). While the context that Palmrose (1986, in: Neal & Riley, 2004) studied was completely different, she considered audit firms to be specialists within an industry "…if they serviced a market share 20 percent greater than if the audit firms were to split the industry evenly among them" (p. 171). For our context, this would also lead to the criterion of 15%.

specialist). The same control variables were included in this additional analysis. If industry specialism would drive our results, a positive and significant coefficient of COMPETITOR_INDS could be expected as especially competitors, generally being part of the same industry, will have to choose among the same (industry specialist) auditors. COMPETITOR_INDS, however, is found to be insignificant in both models (model 3 and 4 of table 21), even with our rather low criterion for being considered as industry specialist. The results regarding the main supplier (SUPPLIER_INDS and SUPPLIER_INDS*NETWORKING) are in line with our main results. This indicates that isomorphic behavior also seems to affect the demand for industry specialists or may even 'create' industry specialists and that our main findings are thus not only a result of being part of a certain industry. More research, however, is needed to fully disentangle both effects.

5.5 Conclusions

In this study, we examined whether the institutional theory could be considered as an additional theory to explain audit demand. While most audit demand studies keep relying exclusively on agency theory to explain this demand, we argue that (high quality) auditors may not only be engaged to reduce agency conflicts but also to increase the firm's legitimacy towards its stakeholders, which is called institutional isomorphism.

Han (1994) already examined the specific role of mimetic isomorphism (in which firms conform to each other or take socially valued decisions to increase their own legitimacy) towards competitors in an auditing context and found that

firms often imitate the leader of an industry by choosing the same auditor. We add to this study by also examining isomorphic behavior towards suppliers and customers, which may arise when a firm wants to increase its legitimacy towards those stakeholders. However, isomorphism towards suppliers and customers may also arise because of a position of dependence (DiMaggio & Powell, 1983), which is called coercive isomorphism. More specifically, a dominant actor may demand its dependent organizations to comply with certain practices (Pfeffer & Salancik, 1978, in: Teo et al., 2003) and therefore also to comply with hiring the same (type of) auditor. Finally, organizations with ties to other organizations are also expected to learn about the associated benefits and costs of certain practices (Burt, 1982, in: Teo et al., 2003), which may also lead to isomorphic behavior towards customers and suppliers, which is labeled normative behavior. We therefore hypothesized that a firm is likely to hire the same auditor as their main supplier, customer and competitor due to the coercive, normative and mimetic pressures from those stakeholders. Our results supported this hypothesis regarding suppliers but we found no significant results regarding customers and even a differentiating effect towards competitors. This, however, is also partly in line with Han (1994) since his findings also indicated that some firms try to differentiate themselves from their chief competitors, even if they are considered to be more legitimate. Moreover, this result is also in line with the findings of Aobdia (2015), which suggested that rival firms are often reluctant to engage the same auditor due to information-spillover concerns.

Moreover, we also examined to what extent the relevance of institutional isomorphism towards customers, suppliers and competitors depends on the

network role of the board of directors, which consists of communicating, attaining legitimacy, etc. in order to provide access to resources (Daily et al., 2003; Huse, 2005). We hypothesized that the network effectiveness of the board negatively moderates the isomorphic behavior of firms since firms with an effective network board will to a lesser extent engage in imitation behavior because these boards will already be more motivated to hire a Big4 auditor to further increase the reputation of the firm and therefore their network effectiveness, irrespective of whether the firm's main competitor, customer or supplier also hired a Big4 auditor. This was also supported by our results.

This study contributes to the literature in several ways. First, we integrate the institutional theory in the audit demand literature and in this way answer the call of Cohen et al. (2008) to consider additional theories in explaining audit outcomes instead of relying on agency theory alone. Second, by focusing on the network role of the board of directors, we also shed light on the importance of this role within the accounting literature. While several accounting studies already focused on the monitoring role of the board of directors and its influence on audit outcomes, which is again based on agency theory, our results indicate that the network role of the board may also influence audit demand. By actually measuring this network effectiveness of the board of directors using questionnaire data, we also answer the call of Cohen et al. (2004) to examine board characteristics other than independence only and to use other methods than archival research to be better able to take into account actual functioning of the board as suggested by Carcello et al. (2011). Finally, by indicating that external auditing may also be used as a 'marketing' product towards stakeholders, this study raises questions about whether auditors will focus on

optimizing their actual level of audit quality or on optimizing their market reputation on the one hand and minimizing their actual audit effort on the other since firms may only be interested in a clean opinion to obtain the reputation effect towards stakeholders. Regulatory agencies should take this possible consequence into account in order to prevent a decline in the provided level of audit quality since this would reduce the main value of auditing in society.

There are of course some limitations associated with this study that can be considered as interesting possibilities for future research. First, our analysis remains restricted to whether firms also hired a Big4 auditor (and to a limited extent an industry specialist) while isomorphic behavior may also lead to the engagement of exactly the same audit firm, audit office and/or audit partner. Moreover, focusing on auditor switches and examining whether they are the result of an auditor switch at the main competitor, customer or supplier of the firm would even more clearly reveal isomorphic behavior. Secondly, we only examined the isomorphic influences of the firm's main competitor, supplier and customer on audit demand while a firm's auditor choice may also be influenced by other stakeholders like its employees (e.g. by the works council, the internal auditor, the accounting department, etc.), inspection bodies, consultants, etc. and examining their influence could therefore also yield very interesting results. Thirdly, we tested our hypotheses in the Belgian private firm context. While this could also be considered as a contribution since several researchers called for more studies that relate to the non Anglo-American context (Carcello et al., 2011; Cohen et al., 2004; deZoort & Salterio, 2001), this could also be considered as a limitation because one should be careful with generalizing these results to an Anglo-American context. Finally, we are aware that we were only

able to examine the influence of institutional isomorphism on audit demand at a very high level, without being able to distinguish between the different forms of isomorphism, and we therefore hope that future studies will integrate other processes and variables to further examine the role of the institutional theory in the accounting and auditing literature.

Chapter 6 – Conclusions

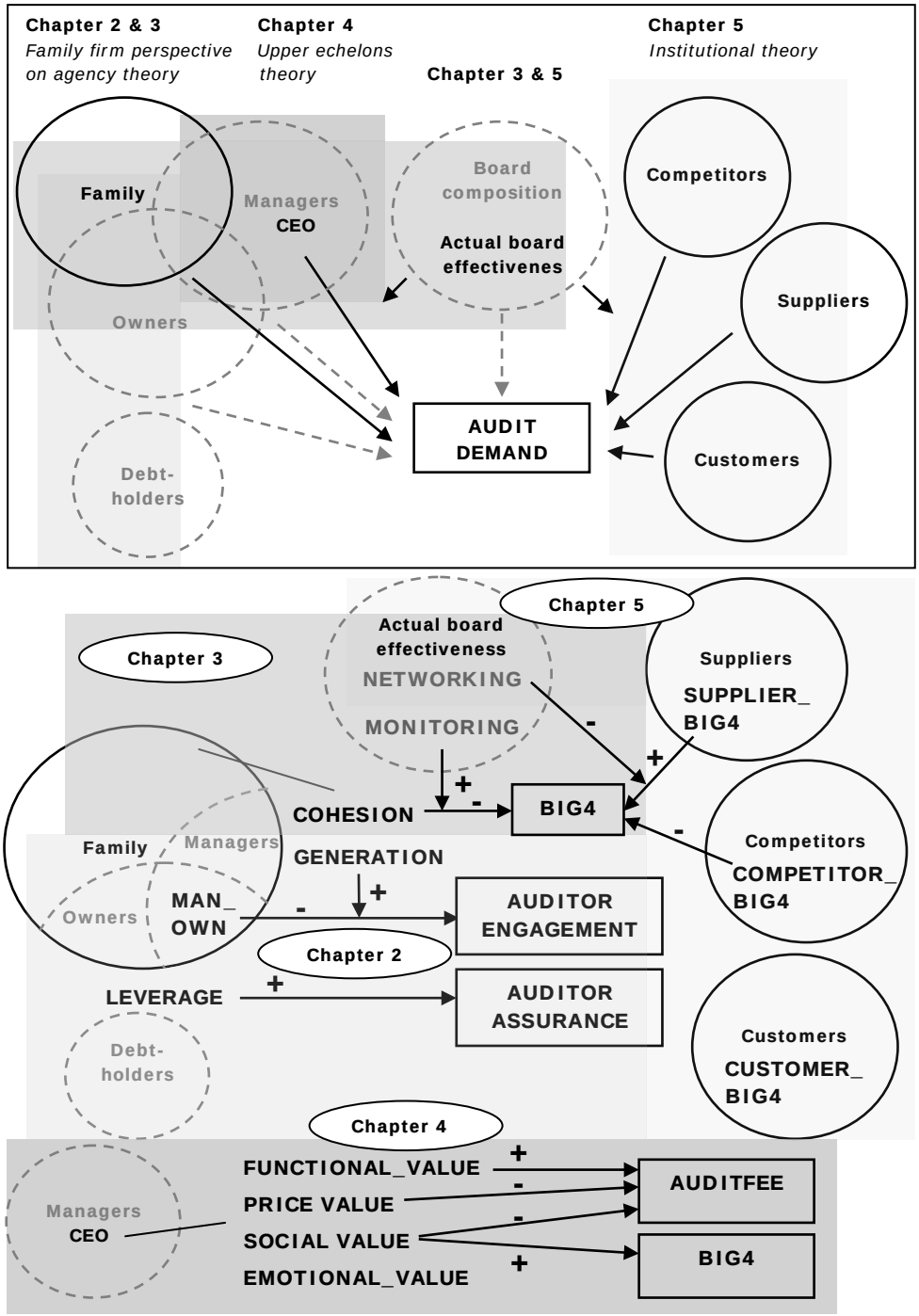
6.1 Outline

The purpose if this dissertation is to add to the current knowledge we have about the role of auditing in private firms by examining the **drivers of audit demand** in this context from several **nontraditional perspectives** and **theories**. In this way, we significantly contribute to the audit literature that keeps relying almost exclusively on the agency theory. Moreover, the identification of additional audit demand effects and the related roles of the auditor in the private firm context also has interesting practical implications. This final chapter summarizes the main findings of each of the four independent studies within this dissertation and elaborates on the theoretical and practical contributions. We close this chapter with providing several opportunities for future research.

6.2 Empirical findings

Our main empirical findings are depicted in figure 2. This figure is an extension of figure 1 showed in chapter 1, in which we portrayed our main contributions to the audit demand literature. It therefore shows the specific results related to each contribution we made to this literature stream.

Figure 2. Main empirical findings of this dissertation



In **chapter 2**, we examined the demand for auditor services in wholly (100%) family-owned private firms. While audit demand studies generally considered these wholly family-owned private firms as a homogeneous group of firms that incur a minimal level of agency costs, family firm literature argues that these firms can also incur a significant amount of agency costs. Taking this family firm literature perspective on agency theory into account, our results confirm that audit services are also demanded to reduce the agency conflicts between the active (part of the management team) and passive (not part of the management team) family shareholders on the one hand and between family shareholders (both active and passive) versus debtholders on the other in this wholly family-owned private firm context. Moreover, based on the family firm literature as well, we also examined the generational stage as moderator within the audit demand functions of these firms. While the founders' (first generation) altruistic feelings towards their family are expected to lead them to take into account the needs of all family members, descendants (subsequent generation) may prioritize the interests of their own immediate families (Blanco-Mazagatos et al., 2007) and may therefore be more inclined to mis(use) their discretion over the firm's assets to achieve their own (immediate family) goals while ignoring the interests of other family shareholders. This generational effect was indeed translated to audit demand as management ownership (which proxies for the agency conflicts between the active and passive family shareholders) was found to have an (based on agency theory) unexpected positive association with auditor services demand in subsequent generation private family firms.

In **chapter 3**, we further examined the audit demand effect of intrafamily agency conflicts in a non completely family-owned private firm context. As these

agency conflicts generally result from emotions instead of economically rational behavior as assumed by agency theory (Gomez-Mejia et al., 2001; Schulze et al., 2003a; Schulze et al., 2001), we measured them by the level of family cohesion, in which a high level of family cohesion corresponds to a low level of agency conflicts. Our results indicated that auditors are also demanded to 'de-emotionalize' these intrafamily agency conflicts by providing all family members with objective financial information that would enable them to make more rational business decisions again. Moreover, since an effective monitoring board could be considered as an alternative instrument to reduce the level of intrafamily agency conflicts, we also examined the moderating effect of the board of directors. Since privacy and confidentiality are considered to be two of the most important values for family firms (Lester & Cannella, 2006; Su & Dou, 2013), which will especially be the case regarding intrafamily agency conflicts, a family firm may consider the need for an (high quality) auditor to be lower when already having an effective board of directors that is able to reduce (the negative consequences of) these agency conflicts internally, which was also supported by our results.

Chapter 4 elaborated on whether the CEO's perception towards auditing is also a driver of audit demand, in this way taking an upper echelons perspective on audit demand. In contrast to agency theory, the upper echelons theory does not consider CEOs to behave fully rational and we therefore measured this perception in a multidimensional way (based on the marketing literature), also including social and emotional aspects. In line with our expectations, several of the dimensions of CEO perception were found to be significantly associated with audit demand, in which we examined both the

demand for audit *quality* (whether the firm hired a Big4 auditor or not) and audit *quantity* (the amount of audit effort that had to be performed). The perceived functional value of auditing was found to be positively associated with audit *quantity* demand but not with audit *quality* demand, indicating that CEOs who praise the functional value of an audit will mainly invest in more audit effort but not necessarily in a more reputed auditor. While we did not find significant results regarding the perceived emotional value of auditing, the perceived social value of auditing was found to be significantly positively related with audit *quality* demand but significantly negatively related with audit *quantity* demand, indicating that CEOs who only consider the social aspect of an audit to be valuable will invest in a reputed auditor to increase their social image while keeping the cost of this audit (and therefore the level of audit effort) as low as possible. We also found a significant negative association between the perceived price value of auditing and audit *quantity* demand, which may indicate that CEOs who consider the price of an audit to be reasonable may have a better knowledge about how this price is set and may therefore have invested more in their firm's control environment in order to reduce the control risk and therefore the needed audit effort and related audit fee.

In **chapter 5**, we integrated the institutional theory to further explain audit demand in a private firm context and argued that (high quality) auditors may not only be engaged to reduce agency conflicts but also to increase the firm's legitimacy towards its stakeholders due to uncertainty and/or coercive pressures. Our results also supported this expectation regarding suppliers as audit (quality) demand was found to be influenced by the auditor choice of the firm's main supplier. Moreover, we also examined whether the network

effectiveness of the board of directors weakened this influence since effective network boards may already be more motivated to hire a Big4 auditor to further increase the reputation of the firm and therefore their network effectiveness, irrespective of whether the firm's main stakeholders also hired a Big4 auditor. This was also supported by our results.

6.3 Theoretical contributions

The main contribution of this dissertation relates to the fact that we took a multi-theoretical view on audit demand and in this way revealed that auditors fulfil a much larger role in private firms than traditionally expected. Since most audit demand studies kept relying almost exclusively on the agency theory to explain the demand and therefore the role of external auditing, this role was considered to be less valuable for private and especially private family firms. Research on audit demand within these firms was therefore scarce, especially research that took into account the specific characteristics of private firms (the studies of Carey et al. (2000), Niskanen et al. (2010) and Collin et al. (2015) are notable exceptions). Relying on different theories and perspectives from different domains, this dissertation provides a more complete view about the demand for and the role of external auditing in a private and private family firm context. In this way, we also answered the call of Trotman and Trotman (2010) to focus more on this specific context in the accounting literature.

The main theoretical contribution of chapters 2 and 3 of this dissertation relates to the linkage between the family firm literature and the audit demand literature. Although the audit literature still generally considers family firms as a

homogeneous group of firms incurring a minimal level of agency conflicts, family firm literature clearly indicates that family firms should be studied as a heterogeneous group of ventures. Taking into account this heterogeneous perspective of private family firms by focusing on audit demand within first and subsequent generation wholly family-owned private firms (chapter 2) and the specific audit demand effects of the emotional based intrafamily agency conflicts (chapter 3), this linkage revealed that auditors are not only engaged to reduce the traditional economically rational shareholder-manager and shareholder-debtholder agency conflicts but also to 'de-emotionalize' and therefore reduce the family related agency conflicts.

Chapters 2 and 3 also contribute to the family firm literature, in the first place by highlighting a topic, audit demand, that has received little attention in this literature stream (Salvato & Moores, 2010; Songini et al., 2013). These chapters add to the paper of Niskanen et al. (2010), one of the most notable exceptions that did introduce this topic to the family firm literature. Niskanen et al. (2010) indicated that private family firms also demand (high quality) auditing to reduce family related agency conflicts between the family and non-family members. We added to this study by examining whether auditor services are also demanded to reduce the agency conflicts that arise among family members (intrafamily agency conflicts). By taking into account the generational stage of the family firm and especially by using family cohesion as measure for the level of intrafamily agency conflicts, we were also more able to take into account the heterogeneity of private family firms, which is considered to be a very important aspect within the family firm literature (e.g. Burkart et al., 2003; Chrisman et al., 2007; Gomez-Mejia et al., 2001; Schulze et al., 2003b; Schulze et al.,

2001). By relying on the family cohesion concept of Olson (2000) to measure the level of intrafamily agency conflicts, we also answered the call of Kellermanns et al. (2014) to integrate concepts of other fields in the family firm literature to get a better understanding about how emotions may influence decisions in private family firms.

Chapter 4 contributes to the audit and accounting literature by actually examining the influence of the CEO on audit demand. Although it is generally acknowledged that the CEO may have a large influence on audit demand (Cohen et al., 2010), studies that examined or controlled for this influence remained scarce (Carcello et al., 2011; Cohen et al., 2004). This is probably due to both the overreliance on agency theory again (which considers CEOs as rational decision makers who will take into account the level of agency conflicts in their audit decision as well (Jensen & Meckling, 1976)) and the fact that most accounting researchers keep using archival data and are therefore not able to take this influence into account. In this chapter, we therefore rely on the upper echelons theory, which argues that strategic choices are often based on managerial perceptions instead of rational behavior (Hambrick, 2007; Hambrick & Mason, 1984). Moreover, we also actually measured these perceptions using a multidimensional scale that takes into account social and emotional aspects as well. Therefore, the results of this chapter significantly add to the knowledge we had about the influence of the CEO on audit demand. The development of this scale based on the work of Sweeney and Soutar (2001) can also be considered as an important contribution as no other multidimensional scales existed to our knowledge to measure this CEO perception towards auditing. In this way, we

also answered the call of Carcello et al. (2011) to focus more on examining behaviors, processes and personality treats in an accounting context.

By integrating the institutional theory in the audit demand literature and by finding that firms do not only engage (high quality) auditors to reduce agency conflicts, as suggested by agency theory, but also to increase their legitimacy towards their main stakeholders, chapter 5 adds to the literature by showing that external auditing may also be used as a 'marketing' product towards outsiders. Moreover, by focusing on the network role of the board of directors, we also shed light on the importance of this role within the accounting literature while most prior accounting studies only focused on the monitoring role of the board of directors, which is again based on agency theory.

By actually measuring board effectiveness in both chapter 3 and 5 using questionnaire data, we also answered the call of Cohen et al. (2004) to examine board characteristics other than independence only and to use other methods than archival research to be better able to take into account actual functioning of the board as suggested by Carcello et al. (2011). The current board literature (e.g. Finkelstein & Mooney, 2003; Gabrielsson & Winlund, 2000; Minichilli et al., 2012; Minichilli et al., 2009; Zona & Zattoni, 2007) indeed argues that the often used compositional measures like board size, CEO duality and the percentage of outside directors are not able to adequately measure board effectiveness. The use of the scale of Minichilli et al. (2009) therefore provided us with a better view regarding how the board may influence audit demand.

Overall, by answering the call of Cohen et al. (2008) to consider additional theories in explaining audit outcomes instead of relying on agency theory alone,

we were able to detect some very interesting audit demand effects in the private firm setting, which enlarged our understanding about the additional roles that auditors may play within this context.

6.4 Practical contributions

The findings of this dissertation also have several practical implications. In the first place, this dissertation pointed out that auditors have other roles within private firms than reducing the traditional shareholder-manager and shareholder-debtholder agency conflicts only. The government should take this into account when revising the regulations of the audit market. An increase of the audit exemption thresholds, for example, seems justified based on the agency theory that expects a minimal level of agency conflicts in private and especially private family firms. Other research streams, however, argue that agency conflicts can be omnipresent in these firms as well, including intrafamily agency conflicts that are mainly based on emotions. Our findings showed that auditors are also considered to be able to de-emotionalize these intrafamily agency conflicts, which makes the justification regarding the increase of the audit exemption thresholds not that straightforward anymore. Nevertheless, chapter 2 also showed that when firms are not legally required to be audited anymore, other auditor services may be considered as cheaper substitutes for audits to tackle the intrafamily agency conflicts. Moreover, as auditors are also considered to be able to increase the legitimacy of a firm towards its stakeholders, a voluntary audit would give a stronger signaling value. Therefore, more research is needed on how the legitimacy value of audits and the demand

for substitutes would shift for firms that are not legally required to be audited anymore to make justified decisions regarding these thresholds. Overall, this dissertation reveals that the decision regarding these thresholds and regarding the audit market for private firms in general is more complex than traditionally expected based on agency theory.

The government should also take into account that the importance of the social and legitimacy value of auditing might shift the focus of audit firms away from providing a high level of audit quality. As chapter 4 pointed out that CEOs who only consider the social aspect of an audit to be valuable may demand a reputed auditor to increase their social image while keeping the cost of this audit as low as possible, this could trigger auditors to switch from maximizing actual audit quality to maximizing perceived audit quality, for example by investing in marketing instruments (to increase the reputation of the firm towards outsiders) instead of better audit procedures. Extra caution for such a threat is needed in a non Anglo-American private firm context since the probability that an audit failure is detected is already much lower in privately held companies compared to listed companies since private firms are less monitored by analysts, investors, stock markets, etc. (Lennox, 2005). Moreover, the related risk of litigation is considered to be extra low in the non Anglo-American private firm context and the enforcement effect of litigation to comply with auditing standards and regulations might therefore be significantly lower as well (Chaney, Jeter, & Shivakumar, 2004; Vander Bauwhede & Willekens, 2004). Such a context might therefore motivate auditors even more to focus on image building instead of actual quality and regulators should take this into account.

The findings of this dissertation may also be highly valuable for auditors as they may not have been aware of the additional roles they fulfill in a private firm context. Especially regarding the reduction of intrafamily agency conflicts, auditors could use the findings of this dissertation to better conform their services to the needs of their customers and in this way create more value for both themselves and their clients. Moreover, as private family firms were traditionally considered to incur a minimal level of agency conflicts and were therefore expected to have a low need for audited financial statements, our finding that auditors can be highly valuable for these firms reveals a high amount of potentially new clients for these auditors.

Finally, owners and managers of private firms and especially private family firms may also benefit from the results of this dissertation as they revealed that auditors may also be engaged to de-emotionalize intrafamily agency conflicts. While accountants and advisors could also be valuable alternatives to de-emotionalize relationships in private family firms, auditors may be even more appropriate for this role as they should act completely independent from management. Auditors could therefore also highly contribute to the family governance mechanisms that are often implemented in private family firms. These voluntary mechanisms are generally "...established by the business family with the primary aim of governing and strengthening relations between the family and the business, as well as the relationships between the members of the business family itself" (p. 139) and include family meetings, family councils and family constitutions (Suess, 2014). Family meetings and family councils are assemblies in which family members are able to discuss both business and family issues while a family constitution is "...a normative

agreement including fundamental principles and guidelines according to which the family organizes its relationship with the business" (Habbershon & Astrachan, 1997; Neubauer & Lank, 1998; Berent-Braun & Uhlaner, 2012, in: Suess, 2014, p. 140). Reliable key financial information is considered to be one of the basic requirements for these family governance mechanisms to succeed (Martin, 2001, in: Suess, 2014). By verifying the validity of the financial statements, auditors will contribute in fulfilling this requirement and may therefore increase the effectiveness of these mechanisms.

6.5 Suggestions for future research

The findings of this dissertation also revealed some additional research questions that can be considered as interesting pathways for future research. First, while our results indicated that auditors are also engaged to mitigate the intrafamily agency conflicts, we did not examine to what extent they are also effective in doing this. Moreover, it may also be interesting to examine what family members actually expect from an audit in this respect. While several studies already examined the expectation gap in auditing, the private family firm context might add a new dimension to it. Auditors may highly benefit from expectation gap research in this context as it could indicate to what extent they could conform their services to the needs of the owners of these firms. A third interesting research opportunity related to this topic is to examine how family governance practices may interfere with this specific role of auditors as it is currently unknown to what extent they serve a complementary role.

Regarding private firms in general (including non-family firms), further examining the influence of the board of directors on audit demand may also lead to interesting new insights. Moreover, although governance mechanisms are mostly examined in isolation, it might also be very interesting to examine interactions among these governance mechanisms, in which governance mechanisms should be regarded in a broad sense. Debtholders, for example, could also be considered as a governance mechanism since they reduce the free cash flow that is available to management's discretion and discourage this management to take value-decreasing decisions (Jensen, 1986; Grossman & Hart, 1982, in: Niskanen et al., 2010). Leverage could therefore also have a moderating effect on the relationship between management ownership and audit demand instead of the generally assumed positive direct effect. Other possible interactions that could further be examined are those between the board of directors, the CEO, management in general, the general shareholders' meeting, the internal auditor, etc. and we hope future studies will take such interactions into account.

Fifth, our results also highlighted the important role of the CEO in audit demand and in this way supported the qualitative findings of Cohen et al. (2010) that the CEO is often the driving force behind auditor appointments and terminations. This is actually quiet worrying since it indicates that the auditor, who is engaged to assist the shareholders and debtholders in monitoring the CEO, is actually engaged by the CEO itself, which might influence who the auditor views as 'the client' (Cohen et al., 2010). In order to fulfill their monitoring role, auditors should act completely independent from management to be able to ensure a high level of audit quality. This independence and

therefore the level of audit quality might be compromised in case the auditor is in the first place concerned with satisfying the *de facto* client (i.e. the CEO) instead of the *de jure* client (i.e. the shareholders). The potential threat that the CEO's influence on audit demand might reduce the provided level of audit quality has not been empirically examined yet and can therefore be considered as a fruitful avenue for future research as well.

Related to this, it may also be very interesting to further examine the determinants of the perceptions of the CEO towards auditing as they were found to have such a significant influence on audit demand. Examining how the board, corporate law, advertising, etc. may influence this CEO's perception towards auditing would enable the government and audit firms to manage these perceptions in order to reduce a potential discrepancy between the need and actual demand caused by this CEO's perception, which would already reduce the threat mentioned in the previous paragraph to a certain extent.

A seventh interesting future research possibility could relate to the institutional role of auditors. More specifically, while we found that firms also seem to hire Big4 auditors to increase their legitimacy towards their main stakeholders, it may also be interesting to examine whether isomorphic behavior may also lead to the engagement of exactly the same audit firm, office and/or partner as the firm's main stakeholder. Moreover, we only examined the isomorphic influences of the firm's main competitor, supplier and customer on audit demand while a firm's auditor choice may also be influenced by other stakeholders like its employees (e.g. by the works council, the internal auditor, the accounting department, etc.), inspection bodies, consultants, etc. and examining their influence could therefore also yield very interesting results.

Eighth, while we answered the call of several researchers to examine the non Anglo-American context to a further extent by focusing on private firms in Belgium (Carcello et al., 2011; Cohen et al., 2004; deZoort & Salterio, 2001), we are aware that this could also be considered as a limitation and we therefore encourage similar studies in other settings to clarify to what extent our findings can be generalized. The higher risk of litigation in the Anglo-American context may for example lead to additional legitimacy effects or a reduced influence of the CEO but this needs further examination. Moreover, the results we found in a voluntary audit demand context (chapter 2) cannot necessarily be generalized to a context in which firms are legally required to be audited (chapter 3, 4 and 5) and vice versa. As a preliminary examination on this matter, we replicated our analysis of chapter 2 (in which we examined private firms from the US) with the data we used in the other chapters (in which we examined private firms from Belgium). We used a similar sample (wholly family-owned private firms), included similar independent variables (some adjustments[25] had to be made to

[25] In line with chapter 2, we included MAN_OWN, GENERATION, MAN_OWN*GENERATION, LEVERAGE, LEVERAGE*GENERATION, ROA, QUICK and SIZE. The definition of MAN_OWN (the percentage of shares that is owned by management) used in this additional analysis slightly differs from the definition in chapter 2 (the percentage of shares that is owned by the top three owners of the firm who also manage it). We only included one INDUSTRY dummy (coded 1 if the firm is part of the manufacturing or construction industry and 0 otherwise) due to the small sample size, which is in line with chapter 3. Moreover, we also included GROUPCHOICE (coded 1 if the auditor choice was made by the parent company of the firm's group (if applicable) and 0 otherwise) to control for the external audit demand effect of a firm's group. Finally, in contrast to the analysis in chapter 2, LIMITED nor DISTRESS is included in this analysis since all firms within this sample are limited liability companies and no firm had negative equity.

make the model applicable to the Belgian private firm context) and examined, in line with chapters 3, 4 and 5, the demand for a BIG4 auditor (see table 22).

Table 22. Replication chapter 2 with Belgian data

Model	1	2
Dependent variable:	BIG4	BIG4
Independent variables:		
MAN_OWN	-0.0145 (0.0148)	-0.0303*** (0.0088)
GENERATION		-1.5788 (2.3922)
MAN_OWN*GENERATION		0.0284* (0.0161)
LEVERAGE	-0.0944 (3.3295)	0.0768 (1.6756)
LEVERAGE*GENERATION		-1.0489 (3.1731)
ROA	3.2996 (5.5696)	4.1053 (5.2718)
QUICK	-0.0638 (0.1792)	-0.0955 (0.1660)
SIZE	-0.3530 (0.5465)	-0.2310 (0.5569)
GROUPCHOICE	3.4944*** (1.2629)	3.7801*** (1.4444)
INDUSTRY	0.0114 (1.3460)	0.2063 (1.3093)
Intercept	0.6783 (5.1279)	0.4330 (5.9178)
Log likelihood	-16.37	-15.94
Chi-square	24.78***	36.48***
McFadden R^2	0.22	0.24

n = 125; *, **, *** indicate significance at the 10%, 5% and 1% levels respectively (two-tailed).

Notes: This table presents the logistic (logit) regression results of the replicated analysis of chapter 2 with Belgian data instead of US data. Both the beta coefficients and the robust standard errors (between brackets) are reported per variable for each model. In this table, also the Log likelihood, the Chi-square statistic and the McFadden R^2 value are reported for each model.

This additional analysis confirms the main finding of chapter 2 (the generational stage of the firm positively moderates the negative association between management ownership and audit demand), although the interaction effect is found to be weaker and the positive influence of LEVERAGE was not confirmed. While these weaker findings may be the result of the smaller sample

size, they may also indicate that a voluntary context reveals stronger and even additional audit demand effects compared to a more regulated context. While the results we found in chapters 3, 4 and 5 may therefore also be applicable in a less regulated audit market, additional research is needed to examine whether and to what extent this is the case.

Related to this, future research focusing on examining whether a voluntary audit context is preferable to a more regulated context would also be very interesting. As the voluntary context seems to show stronger audit demand effects, such a context seems to provide a stronger signal to stakeholders. However, one should be careful with concluding that a voluntary context would therefore also yield more advantages for both the firm and those stakeholders. As our results indicated that a CEO has a strong influence on audit demand and firm actors were also found to make bounded rational and emotional decisions, firms with a high need for auditing (i.e. a high level of agency conflicts) would not necessarily hire an auditor in a voluntary setting. Future research on this matter could therefore be highly valuable.

Finally, as we integrated three additional perspectives/theories in this dissertation to further explain audit demand and therefore the role of auditors in a private firm context, we also encourage the integration of other perspectives. This dissertation showed that combinations of research streams may lead to interesting findings and we are convinced that including and combining other perspectives in the audit literature may reveal other dynamics, roles or threats that would further increase our understanding about auditing and its value for society.

Appendix A – Online questionnaire (Dutch)

Introduction

Hartelijk dank dat u de tijd wil nemen om onze vragenlijst in te vullen.

Gelieve tijdens het invullen geen gebruik te maken van de 'terug-knop' in uw browser maar enkel de knoppen onderaan de vragen te gebruiken.

Bij de verwerking van de gegevens wordt een volledige anonimiteit gegarandeerd. De antwoorden op de vragen die peilen naar specifieke bedrijfskenmerken, de samenstelling van de raad van bestuur, leveranciers, etc. worden, in overeenstemming met de ethische richtlijnen van wetenschappelijk onderzoek, volledig geanonimiseerd alvorens we met onze dataverwerking starten.

Audit

Wordt de financiële rapportering van uw bedrijf jaarlijks geauditeerd door een externe auditor/commissaris?

- ❍ Ja (1)
- ❍ Neen (2)

Is uw bedrijf wettelijk verplicht om een externe auditor/commissaris aan te stellen?

- ❍ Ja (1)
- ❍ Neen (2)
- ❍ Weet niet (3)

Gelieve aan te geven in welke mate u akkoord bent met de volgende stellingen over een externe audit in het algemeen. (1/4)

	Niet akkoord (1)	Eerder niet akkoord (2)	Noch akkoord, noch niet akkoord (3)	Eerder akkoord (4)	Akkoord (5)
1. Een externe audit verbetert de kwaliteit van de jaarrekening van ons bedrijf.	❍	❍	❍	❍	❍
2. Een externe audit geeft me het vervelende gevoel dat ik als bedrijfsleider gecontroleerd wordt.	❍	❍	❍	❍	❍
3. De prijs van een externe audit is redelijk.	❍	❍	❍	❍	❍
4. Het laten uitvoeren van een externe audit schept vertrouwen bij onze klanten en leveranciers.	❍	❍	❍	❍	❍
5. Een externe audit heeft een positieve invloed op de prestaties van ons bedrijf.	❍	❍	❍	❍	❍

Vervolg (2/4)

	Niet akkoord (1)	Eerder niet akkoord (2)	Noch akkoord, noch niet akkoord (3)	Eerder akkoord (4)	Akkoord (5)
6. Ik vind een externe audit tijdverlies.	❍	❍	❍	❍	❍
7. Een externe audit biedt geen meerwaarde bovenop de externe boekhouder of accountant.	❍	❍	❍	❍	❍
8. Een externe audit vereenvoudigt de toegang tot schuldfinanciering (bankkredieten).	❍	❍	❍	❍	❍
9. Een externe audit versterkt het deugdelijk bestuur binnen ons bedrijf.	❍	❍	❍	❍	❍
10. Een externe audit stelt me gerust over de financiële rapportering van onze resultaten.	❍	❍	❍	❍	❍

Vervolg (3/4)

	Niet akkoord (1)	Eerder niet akkoord (2)	Noch akkoord, noch niet akkoord (3)	Eerder akkoord (4)	Akkoord (5)
11. De voordelen van het laten uitvoeren van een externe audit overstijgen de kosten ervan (inclusief de tijdsinvestering).	❍	❍	❍	❍	❍
12. Het laten uitvoeren van een externe audit verhoogt mijn persoonlijke geloofwaardigheid naar de raad van bestuur en de (andere) aandeelhouders.	❍	❍	❍	❍	❍
13. Een externe audit verschaft ons nuttig advies (bv. via de management letter of informeel).	❍	❍	❍	❍	❍
14. De aanwezigheid van een externe auditor stoort me.	❍	❍	❍	❍	❍
15. Een externe audit is een nuttige dienst in vergelijking met de kostprijs ervan.	❍	❍	❍	❍	❍

Vervolg (4/4)

	Niet akkoord (1)	Eerder niet akkoord (2)	Noch akkoord, noch niet akkoord (3)	Eerder akkoord (4)	Akkoord (5)
16. Een externe audit schept vertrouwen bij de fiscus.	❍	❍	❍	❍	❍
17. Een externe audit verbetert de efficiëntie en betrouwbaarheid van onze bedrijfsprocessen/interne controle.	❍	❍	❍	❍	❍
18. Een externe audit beperkt mijn flexibiliteit als bedrijfsleider.	❍	❍	❍	❍	❍
19. De fee die de externe auditor aanrekent voor zijn diensten is te hoog in verhouding tot de dienst zelf.	❍	❍	❍	❍	❍

20. Een externe audit bevestigt de goede prestaties van een bedrijf naar de buitenwereld toe.	❍	❍	❍	❍	❍
21. Als mijn bedrijf niet meer wettelijk verplicht zou zijn om een externe audit te laten uitvoeren, zou ik toch nog pleiten voor een vrijwillige jaarlijkse externe audit.	❍	❍	❍	❍	❍

Managementteam

Hoeveel leden telt het topmanagementteam (inclusief uzelf als bedrijfsleider) van uw bedrijf?

Een topmanagementteam wordt in dit onderzoek beschouwd als zijnde de bedrijfsleider en alle managers die rechtstreeks rapporteren aan de bedrijfsleider.

Hoeveel leden van het topmanagementteam (inclusief uzelf) zijn tevens aandeelhouder van uw bedrijf?

Hoeveel procent van de aandelen van uw bedrijf is in handen van het topmanagementteam (inclusief uzelf als bedrijfsleider)?

Is de vergoeding van het topmanagementteam (deels) afhankelijk van de prestaties van het bedrijf (variabele remuneratie)?

❍ Ja (1)
❍ Neen (2)

Firm characteristics

Heeft uw bedrijf een ondernemingsraad?

- ❍ Ja (1)
- ❍ Neen (2)

Maakt uw bedrijf deel uit van een groep van ondernemingen?

- ❍ Ja (1)
- ❍ Neen (2)

Gaat het om een nationale of internationale groep van ondernemingen?

- ❍ Nationaal (1)
- ❍ Internationaal (2)

Is minstens één onderneming uit de groep beursgenoteerd?

- ❍ Ja (1)
- ❍ Neen (2)

Is uw bedrijf de finale moederonderneming van de groep?

- ❍ Ja (1)
- ❍ Neen (2)

In welke mate kan uw bedrijf op autonome wijze haar eigen beleid uitstippelen?

- ❍ Volledig autonoom (1)
- ❍ Sterk autonoom (2)
- ❍ Redelijk autonoom (3)
- ❍ Weinig autonoom (4)
- ❍ Helemaal niet autonoom (5)

Wordt vanuit de groep opgelegd welk auditbedrijf aangesteld dient te worden om de externe audit uit te voeren?

- ❍ Ja (1)
- ❍ Neen (2)

Hoeveel procent van de omzet werd in 2014 (bij benadering) gerealiseerd in buitenlandse markten?

Hoeveel procent marktaandeel heeft uw bedrijf bij benadering in de sector waar uw bedrijf het meest actief is?

	% marktaandeel
In België	
In Europa (indien van toepassing)	
Buiten Europa (indien van toepassing)	

Hoe percipieert u in het algemeen de prestaties van uw bedrijf in vergelijking met gelijkaardige bedrijven in deze sector?

	Perceptie prestaties				
	Zwakste 20%	Mindere 20%	Middelste 20%	Betere 20%	Beste 20%
In België	❍	❍	❍	❍	❍
In Europa (indien van toepassing)	❍	❍	❍	❍	❍
Buiten Europa (indien van toepassing)	❍	❍	❍	❍	❍

Environment

Welk bedrijf beschouwt u als de belangrijkste klant van uw bedrijf?

Naam bedrijf	Stad en land waar het bedrijf gevestigd is		Hoeveel procent van de omzet realiseert uw bedrijf bij benadering via deze klant?
	Stad	Land	

Welk bedrijf beschouwt u als de belangrijkste leverancier van uw bedrijf?

Naam bedrijf	Stad en land waar het bedrijf gevestigd is		Hoeveel procent van de aankopen gebeurt bij benadering via deze leverancier?
	Stad	Land	

Welk bedrijf beschouwt u als de belangrijkste concurrent van uw bedrijf?

Naam bedrijf	Stad en land waar het bedrijf gevestigd is		Hoeveel procent marktaandeel heeft dit bedrijf bij benadering?
	Stad	Land	

Family firm

Hoeveel aandeelhouders telt uw bedrijf (inclusief uzelf indien van toepassing)?

Heeft uw bedrijf één of meerdere professionele investeerders (bv. venture capitalists, business angels, etc.) aangetrokken die op dit moment mee investeren en dus een aandeel in het kapitaal hebben?

- ❍ Ja (1)
- ❍ Neen (2)

Is er één persoon die meer dan 50% van de aandelen bezit?

- ❍ Ja (1)
- ❍ Neen (2)

Hoeveel procent van de aandelen van uw bedrijf is in handen van één familie?

Een familie wordt in dit onderzoek beschouwd als een groep mensen die door bloedverwantschap of het huwelijk met elkaar verbonden zijn.

Beschouwt u uw bedrijf als zijnde een familiebedrijf?

- ❍ Ja (1)
- ❍ Neen (2)

Maakt u, als bedrijfsleider, deel uit van de familie?

- ❍ Ja (1)
- ❍ Neen (2)

Gelieve onderstaande kolom in te vullen.

Hoeveel familieleden (inclusief uzelf) zijn aandeelhouder van het bedrijf? (1)	
Hoeveel familieleden (inclusief uzelf) zijn actief binnen het bedrijf (als werknemer, manager of bestuurder)? (2)	
Hoeveel familieleden (inclusief uzelf) maken deel uit van het topmanagementteam? (3)	
Hoeveel van deze familiale managers (inclusief uzelf) zijn tevens aandeelhouder van het bedrijf? (4)	
Hoeveel procent van de aandelen hebben deze familiale managers (inclusief uzelf) samen in handen? (5)	

Welke generatie heeft momenteel de meeste aandelen in handen?

- ❍ 1e generatie (1)
- ❍ 2e generatie (2)
- ❍ 3e generatie (3)
- ❍ 4e generatie (4)
- ❍ 5e of latere generatie (5)

Cohesion

Gelieve op een 5-punten schaal aan te geven in welke mate u akkoord of niet akkoord bent met de volgende stellingen. (1/3)

Al deze stellingen hebben enkel betrekking op familieleden die betrokken zijn bij uw bedrijf als aandeelhouder, manager, bestuurslid, werknemer,…

	Niet akkoord (1)	Eerder niet akkoord (2)	Noch akkoord, noch niet akkoord (3)	Eerder akkoord (4)	Akkoord (5)
1. Familieleden raadplegen elkaar bij belangrijke beslissingen.	❍	❍	❍	❍	❍
2. Onze familie doet zelden dingen samen.	❍	❍	❍	❍	❍
3. Familieleden voelen zich schuldig als ze tijd buiten de familie willen doorbrengen.	❍	❍	❍	❍	❍
4. Familieleden steunen elkaar in moeilijke tijden.	❍	❍	❍	❍	❍
5. Familieleden handelen voornamelijk onafhankelijk.	❍	❍	❍	❍	❍
6. We spenderen te veel tijd samen.	❍	❍	❍	❍	❍
7. In onze familie is er een goede balans aanwezig tussen ‘onafhankelijkheid’ en ‘verbondenheid’.	❍	❍	❍	❍	❍

Vervolg (2/3)

	Niet akkoord (1)	Eerder niet akkoord (2)	Noch akkoord, noch niet akkoord (3)	Eerder akkoord (4)	Akkoord (5)
8. Familieleden rekenen zelden op elkaar.	❍	❍	❍	❍	❍
9. Familieleden hebben weinig nood aan vrienden buiten de familie.	❍	❍	❍	❍	❍
10. Familieleden zijn betrokken in elkaars leven.	❍	❍	❍	❍	❍
11. Familieleden weten zeer weinig over de vrienden van andere familieleden.	❍	❍	❍	❍	❍
12. Familieleden zijn te afhankelijk van elkaar.	❍	❍	❍	❍	❍
13. Hoewel familieleden hun eigen interesses hebben, nemen ze toch ook deel aan familieactiviteiten.	❍	❍	❍	❍	❍
14. Ieder familielid staat er alleen voor wanneer er een probleem opgelost dient te worden.	❍	❍	❍	❍	❍

Vervolg (3/3)

	Niet akkoord (1)	Eerder niet akkoord (2)	Noch akkoord, noch niet akkoord (3)	Eerder akkoord (4)	Akkoord (5)
15. We storen ons aan familieleden die dingen buiten de familie doen.	❍	❍	❍	❍	❍
16. Familieleden voelen zich zeer ‘close’ met elkaar.	❍	❍	❍	❍	❍
17. Familieleden lijken contact te vermijden met elkaar wanneer ze thuis zijn.	❍	❍	❍	❍	❍
18. We voelen ons als familie te verbonden met elkaar.	❍	❍	❍	❍	❍

19. Familieleden vinden het fijn om een deel van hun vrije tijd met elkaar door te brengen.	❍	❍	❍	❍	❍
20. We kunnen beter opschieten met mensen buiten onze familie dan met familieleden.	❍	❍	❍	❍	❍
21. Familieleden voelen zich gedwongen om de meeste vrije tijd met elkaar te spenderen.	❍	❍	❍	❍	❍

Gelieve op een schaal van 1 tot 5 aan te duiden in welke mate de familieleden die betrokken zijn bij uw bedrijf...

	In minimale mate (1)	In beperkte mate (2)	In redelijke mate (3)	In grote mate (4)	In zeer grote mate (5)
1. Het goed met elkaar kunnen vinden.	❍	❍	❍	❍	❍
2. Elkaar helpen in het uitoefenen van hun job.	❍	❍	❍	❍	❍
3. Bereid zijn elkaar te verdedigen tegen kritiek van buitenstaanders.	❍	❍	❍	❍	❍
4. Samenhangen als een hechte groep.	❍	❍	❍	❍	❍

Characteristics CEO

Bent u de oprichter van het bedrijf?

- ❍ Ja (1)
- ❍ Neen (2)

Hoeveel jaar bent u reeds bedrijfsleider van dit bedrijf?

Gelieve aan te geven in welke functies u werkzaam bent geweest en voor hoeveel jaren, zowel binnen dit bedrijf als in andere bedrijven.

	Binnen dit bedrijf		In andere bedrijven	
		Aantal jaren		Aantal jaren
Marketing of verkoop (1)	❑		❑	
Financiën (2)	❑		❑	
Juridisch (3)	❑		❑	
Productie (4)	❑		❑	
Human resource management (5)	❑		❑	
Aankoop/logistiek (6)	❑		❑	
ICT (7)	❑		❑	
Onderzoek en ontwikkeling (8)	❑		❑	
Ander, namelijk (9)	❑		❑	

Wat is uw geslacht?

- ❍ Man (1)
- ❍ Vrouw (2)

Wat is uw leeftijd?

Wat is uw hoogst behaalde diploma?

- ❍ Lager of middelbaar onderwijs (1)
- ❍ Hoger onderwijs buiten de universiteit korte type (2)
- ❍ Hoger onderwijs buiten de universiteit lange type (3)
- ❍ Universitair onderwijs (4)

Hoeveel procent van de aandelen van uw bedrijf heeft u als bedrijfsleider in handen?

Bent u lid van een werkgeversorganisatie?

- ❍ Ja (1)
- ❍ Neen (2)

Bent u lid van één of meerdere raden van bestuur van externe bedrijven (bedrijven die geen deel uitmaken van dezelfde groep als uw bedrijf) of non-profit organisaties (bv. ziekenhuizen, universiteiten, etc.)?

- ❍ Ja (1)
- ❍ Neen (2)

In hoeveel raden van bestuur van non-profit organisaties (bv. ziekenhuizen, universiteiten, etc.) zetelt u?

- ❍ 0 (1)
- ❍ 1 (2)
- ❍ 2 (3)
- ❍ 3 (4)
- ❍ 4 (5)
- ❍ 5 (6)
- ❍ 6 (7)
- ❍ 7 (8)
- ❍ 8 (9)
- ❍ 9 (10)
- ❍ 10 of meer (11)

In hoeveel raden van bestuur van externe bedrijven (bedrijven die geen deel uitmaken van dezelfde groep als uw bedrijf) zetelt u?

- ❍ 0 (1)
- ❍ 1 (2)
- ❍ 2 (3)
- ❍ 3 (4)
- ❍ 4 (5)
- ❍ 5 (6)
- ❍ 6 (7)
- ❍ 7 (8)
- ❍ 8 (9)
- ❍ 9 (10)
- ❍ 10 of meer (11)

Van welk extern bedrijf zetelt u in de raad van bestuur?

Naam bedrijf	Stad waar het bedrijf gevestigd is

Welk is het grootste externe bedrijf waar u zetelt in de raad van bestuur?

Naam bedrijf	Stad waar het bedrijf gevestigd is

Introduction board of directors

Heeft uw bedrijf een raad van bestuur?

- ❍ Ja (1)
- ❍ Neen (2)

Maakt u zelf deel uit van de raad van bestuur van uw bedrijf?

- ❍ Ja (1)
- ❍ Neen (2)

Wie is de voorzitter van de raad van bestuur?

- ❍ Uzelf als huidige bedrijfsleider (1)
- ❍ De voormalige bedrijfsleider (2)
- ❍ Geen van voorgaande (3)

Uit hoeveel leden bestaat de raad van bestuur van uw bedrijf (inclusief uzelf als bedrijfsleider)?

Tasks board of directors

In de eerste kolom van de volgende tabellen worden een aantal mogelijke taken van de raad van bestuur opgesomd.

Gelieve in de tweede kolom aan te geven in welke mate er behoefte is in uw bedrijf dat deze taken uitgevoerd worden door een raad van bestuur.

Gelieve vervolgens in de laatste kolom aan te duiden in welke mate de raad van bestuur in uw bedrijf deze taken reeds vervult. (1/4)

	Behoefte aan deze taak (1 = zeer weinig, 5 = zeer veel)					Mate waarin de raad van bestuur deze taak uitvoert (1 = in minimale mate, 5 = in zeer grote mate)				
	1	2	3	4	5	1	2	3	4	5
1. Netwerkvorming (= contacten leggen met belangrijke belangengroepen, banken, consumenten, overheid, etc.).	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
2. Lobbyen en legitimeren, bv. belangrijke belangengroepen beïnvloeden.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
3. Advies geven over management gerelateerde kwesties.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
4. Advies geven over wettelijke kwesties.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
5. Advies geven over financiële kwesties.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
6. Advies geven over technische kwesties.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
7. Advies geven over marktgerelateerde kwesties.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍

Vervolg (2/4)

	Behoefte aan deze taak (1 = zeer weinig, 5 = zeer veel)					Mate waarin de raad van bestuur deze taak uitvoert (1 = in minimale mate, 5 = in zeer grote mate)				
	1	2	3	4	5	1	2	3	4	5
8. Hulp en advies bieden aan de bedrijfsleider bij de formulering van de bedrijfsstrategie.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
9. Actief initiëren van strategische voorstellen.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
10. Actief lange termijn strategische beslissingen nemen.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
11. Strategische beslissingen implementeren.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
12. Actief strategische beslissingen controleren/evalueren.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
13. Dienst doen als klankbord voor de bedrijfsleider bij strategische vraagstukken.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
14. Adviseren en bemiddelen bij discussies omtrent strategische topics buiten de reguliere vergaderingen van de raad van bestuur.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍

Vervolg (3/4)

	Behoefte aan deze taak (1 = zeer weinig, 5 = zeer veel)					Mate waarin de raad van bestuur deze taak uitvoert (1 = in minimale mate, 5 = in zeer grote mate)				
	1	2	3	4	5	1	2	3	4	5
15. Opvolgen en bijsturen van… …kostenbudgetten	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
…verkoopsbudgetten	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
…liquiditeit van het bedrijf	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
…investeringen	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
…de bijdrage en het functioneren van de bedrijfsleider	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
…kwaliteit van de producten/diensten	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
…personeelszaken	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
…een gezonde werkomgeving en veiligheid	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
…zaken gerelateerd aan het milieu en vervuiling	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
…aandeelhoudersrendement	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
…de sociale en maatschappelijke verantwoordelijkheden van het bedrijf	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍

Vervolg (4/4)

	Behoefte aan deze taak (1 = zeer weinig, 5 = zeer veel)					Mate waarin de raad van bestuur deze taak uitvoert (1 = in minimale mate, 5 = in zeer grote mate)				
	1	2	3	4	5	1	2	3	4	5
16. Ervoor zorgen dat de bedrijfsactiviteiten goed georganiseerd worden.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
17. Opstellen van plannen en budgetten voor bedrijfsactiviteiten.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
18. Opstellen van richtlijnen voor bedrijfsactiviteiten.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
19. Op de hoogte blijven van de financiële positie van het bedrijf.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
20. Ervoor zorgen dat de activiteiten goed gecontroleerd worden.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
21. Toezicht houden op de bedrijfsleider.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
22. Nooit handelen op een manier die sommige aandeelhouders voordelen oplevert ten koste van andere aandeelhouders.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
23. Bepalen van de vergoeding van de bedrijfsleider.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
24. De mening van de bedrijfsleider omtrent strategische zaken uitdagen.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
25. De prestaties van de bedrijfsleider formeel evalueren.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
26. De bedrijfsleider kritische vragen stellen omtrent strategische beslissingen.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍

General composition board of directors (non-family firm)

Gelieve onderstaande tabel over de samenstelling van de raad van bestuur van uw bedrijf te vervolledigen (inclusief uzelf).

	Aantal bestuurders	% aandelen van uw bedrijf dat elke categorie bestuurders samen in handen heeft
Bestuurders die tevens deel uitmaken van het managementteam van uw bedrijf.		
Bestuurders die geen deel uitmaken van het managementteam maar wel in het bezit zijn van aandelen van uw bedrijf.		
Bestuurders die geen deel uitmaken van het managementteam en ook niet in het bezit zijn van aandelen van uw bedrijf.		

General composition board of directors (family firm)

Gelieve onderstaande tabel over de samenstelling van de raad van bestuur van uw bedrijf te vervolledigen (inclusief uzelf).

	Aantal bestuurders	% aandelen van uw bedrijf dat elke categorie bestuurders samen in handen heeft
Bestuurders die tevens deel uitmaken van het managementteam...	///	///
- én tot de familie behoren		
- maar niet tot de familie behoren		
Bestuurders die geen deel uitmaken van het managementteam...	///	///
- maar wel tot de familie behoren		
- en niet tot de familie behoren maar wel in het bezit zijn van aandelen van uw bedrijf		
- en niet tot de familie behoren en ook niet in het bezit zijn van aandelen van uw bedrijf		0

Detailed composition board of directors (non-family firm)

Gelieve in onderstaande tabel de gedetailleerde samenstelling van de raad van bestuur van uw bedrijf weer te geven (inclusief uzelf).

	Naam (niet verplicht maar vergemakkelijkt mogelijk het invullen van de volgende kolommen)	Behoort tot uw management-team?		Heeft aandelen van uw bedrijf?		Indien ja, hoeveel procent van de aandelen?	Aantal jaar bestuur-der van dit bedrijf?	Is deze bestuurder zelf ook een bedrijfsleider? (geen managementvenn.)		Indien ja, van welk bedrijf?	
		Ja (1)	Neen (2)	Ja (1)	Neen (2)			Ja (1)	Neen (2)	Naam (1)	Stad (2)
Voorzitter		❍	❍	❍	❍			❍	❍		
Bestuurder 2		❍	❍	❍	❍			❍	❍		
Bestuurder 3		❍	❍	❍	❍			❍	❍		
Bestuurder 4		❍	❍	❍	❍			❍	❍		
Bestuurder 5		❍	❍	❍	❍			❍	❍		
Bestuurder 6		❍	❍	❍	❍			❍	❍		
Bestuurder 7		❍	❍	❍	❍			❍	❍		
Bestuurder 8		❍	❍	❍	❍			❍	❍		
Bestuurder 9		❍	❍	❍	❍			❍	❍		
Bestuurder 10		❍	❍	❍	❍			❍	❍		

Detailed composition board of directors (family firm)

Gelieve in onderstaande tabel de gedetailleerde samenstelling van de raad van bestuur van uw bedrijf weer te geven (inclusief uzelf).

	Naam (niet verplicht maar vergemakkelijkt mogelijk het invullen van de volgende kolommen)	Behoort tot uw management-team?		Heeft aandelen van uw bedrijf?		Indien ja, hoeveel procent van de aandelen?	Aantal jaar bestuurder van dit bedrijf?	Is deze bestuurder zelf ook een bedrijfsleider? (geen management-venn.)		Indien ja, van welk bedrijf?		Behoort tot de familie?	
		Ja (1)	Neen (2)	Ja (1)	Neen (2)			Ja (1)	Neen (2)	Naam (1)	Stad (2)	Ja (1)	Neen (2)
Voorzitter		❍	❍	❍	❍			❍	❍			❍	❍
Bestuurder 2		❍	❍	❍	❍			❍	❍			❍	❍
Bestuurder 3		❍	❍	❍	❍			❍	❍			❍	❍
Bestuurder 4		❍	❍	❍	❍			❍	❍			❍	❍
Bestuurder 5		❍	❍	❍	❍			❍	❍			❍	❍
Bestuurder 6		❍	❍	❍	❍			❍	❍			❍	❍
Bestuurder 7		❍	❍	❍	❍			❍	❍			❍	❍
Bestuurder 8		❍	❍	❍	❍			❍	❍			❍	❍
Bestuurder 9		❍	❍	❍	❍			❍	❍			❍	❍
Bestuurder 10		❍	❍	❍	❍			❍	❍			❍	❍

Closing

Indien u nog bijkomende vragen of opmerkingen heeft met betrekking tot dit onderzoek, kan u deze hieronder weergeven.

Appendix B – Online questionnaire (French)

Introduction

Nous vous remercions cordialement pour votre effort de remplir notre questionnaire.

En remplissant le questionnaire, veuillez ne pas utiliser la touche ‘retour’ dans votre navigateur mais seulement les touches situées au bas des questions. L’anonymat complet est garanti lors du traitement des données.

En conformité avec les principes éthiques de la recherche scientifique, les réponses aux questions liées aux caractéristiques spécifiques des entreprises, à la composition du conseil d'administration, aux fournisseurs, etc. seront complètement anonymisées avant le traitement des données.

Audit

Est-ce que l'information financière de votre entreprise est annuellement auditée par un auditeur externe/commissaire?

- ❍ Oui (1)
- ❍ Non (2)

Est-ce que votre entreprise est obligée (légalement) de nommer un auditeur externe/commissaire?

- ❍ Oui (1)
- ❍ Non (2)
- ❍ Je ne sais pas (3)

Veuillez indiquer dans quelle mesure vous êtes d'accord avec les thèses suivantes concernant l'audit externe en générale. (1/4)

	Pas d'accord (1)	Plutôt pas d'accord (2)	Ni d'accord, ni pas d'accord (3)	Plutôt d'accord (4)	D'accord (5)
1. Un audit externe améliore la qualité des comptes annuels de notre entreprise.	❍	❍	❍	❍	❍
2. Un audit externe me donne le sentiment désagréable d'être contrôlé comme directeur général.	❍	❍	❍	❍	❍
3. Le prix d'un audit externe est raisonnable.	❍	❍	❍	❍	❍
4. Un audit externe inspire confiance aux clients et fournisseurs.	❍	❍	❍	❍	❍
5. Un audit externe a un impact positif sur la performance de notre entreprise.	❍	❍	❍	❍	❍

Suite (2/4)

	Pas d'accord (1)	Plutôt pas d'accord (2)	Ni d'accord, ni pas d'accord (3)	Plutôt d'accord (4)	D'accord (5)
6. Je trouve qu'un audit externe est une perte de temps.	❍	❍	❍	❍	❍
7. Un audit externe n'offre pas de valeur ajoutée par rapport à l'expert-comptable.	❍	❍	❍	❍	❍
8. Un audit externe facilite l'accès au financement par emprunt (crédits bancaires).	❍	❍	❍	❍	❍
9. Un audit externe améliore le corporate governance dans notre entreprise.	❍	❍	❍	❍	❍
10. Un audit externe me rassure concernant le rapport financier de nos résultats.	❍	❍	❍	❍	❍

Suite (3/4)

	Pas d'accord (1)	Plutôt pas d'accord (2)	Ni d'accord, ni pas d'accord (3)	Plutôt d'accord (4)	D'accord (5)
11. Les avantages de faire effectuer un audit dépassent les coûts (y inclus l'investissement de temps).	❍	❍	❍	❍	❍
12. En effectuant un audit externe, j'augmente ma crédibilité personnelle vis-à-vis du conseil d'administration et des autres actionnaires.	❍	❍	❍	❍	❍
13. Un audit externe nous fournit des conseils utiles (p.ex. dans la lettre adressée à la direction ou de manière informelle).	❍	❍	❍	❍	❍
14. La présence d'un auditeur externe me dérange.	❍	❍	❍	❍	❍
15. Un audit externe est un service utile par rapport au prix de l'audit.	❍	❍	❍	❍	❍

Suite (4/4)

	Pas d'accord (1)	Plutôt pas d'accord (2)	Ni d'accord, ni pas d'accord (3)	Plutôt d'accord (4)	D'accord (5)
16. Un audit externe inspire confiance à l'administration fiscale (le fisc).	❍	❍	❍	❍	❍
17. Un audit externe augmente l'efficacité et la fiabilité de nos contrôles internes.	❍	❍	❍	❍	❍
18. Un audit externe limite ma flexibilité comme directeur général.	❍	❍	❍	❍	❍
19. Les honoraires d'un auditeur externe pour ses services sont trop élevés par rapport aux services rendus.	❍	❍	❍	❍	❍

20. Un audit externe confirme les bonnes prestations d'une entreprise au monde extérieur.	❍	❍	❍	❍	❍
21. Si mon entreprise n'était plus légalement obligée de faire effectuer un audit externe, je recommanderais quand même un audit externe sur base volontaire.	❍	❍	❍	❍	❍

Managementteam

Votre équipe de management/direction est composée de combien de membres (y inclus vous-même comme directeur général)?

Dans cette recherche, une équipe de management/direction est considérée comme le directeur général et tous les managers qui rapportent directement au directeur général.

Combien de membres de l'équipe de management/direction (y inclus vous-même) sont actionnaires de votre entreprise?

Quel pourcentage des actions de votre entreprise est détenu par votre équipe de management/direction (y inclus vous-même comme directeur général)?

Est-ce que la rémunération de l'équipe de management/direction est (partiellement) dépendante des prestations de l'entreprise (rémunération variable)?

❍ Oui (1)
❍ Non (2)

Firm characteristics

Est-ce que votre entreprise a un conseil d'entreprise?

- ❍ Oui (1)
- ❍ Non (2)

Est-ce que votre entreprise fait partie d'un groupe d'entreprises?

- ❍ Oui (1)
- ❍ Non (2)

Est-ce qu'il s'agit d'un groupe national ou international?

- ❍ National (1)
- ❍ International (2)

Est-ce qu'au moins une entreprise du groupe est cotée en bourse?

- ❍ Oui (1)
- ❍ Non (2)

Est-ce que votre entreprise est l'entreprise mère finale du groupe?

- ❍ Oui (1)
- ❍ Non (2)

Dans quelle mesure est-ce que votre entreprise a la liberté de définir sa propre gestion?

- ❍ Complètement autonome (1)
- ❍ Fortement autonome (2)
- ❍ Assez autonome (3)
- ❍ Peu autonome (4)
- ❍ Pas du tout autonome (5)

Le groupe impose-t-il la société d'audit qui devrait être désignée pour effectuer l'audit externe?

- ❍ Oui (1)
- ❍ Non (2)

Quel pourcentage du chiffre d'affaires a été réalisé en 2014 (approximativement) sur des marchés étrangers?

Quel pourcentage de la part du marché est-ce que votre entreprise détient (approximativement) dans le secteur où votre entreprise est la plus active?

	% de la part du marché
En Belgique	
En Europe (le cas échéant)	
Hors Europe (le cas échéant)	

Veuillez indiquer la performance de votre entreprise par rapport à des entreprises comparables dans ce secteur.

	Perception de la performance				
	Les 20% les plus faibles	Les 20% qui suivent	Les 20% au milieu	Les meilleurs 20%	Les 20% les meilleurs
En Belgique	❍	❍	❍	❍	❍
En Europe (le cas échéant)	❍	❍	❍	❍	❍
Hors Europe (le cas échéant)	❍	❍	❍	❍	❍

Environment

Quelle entreprise considérez-vous comme étant le client le plus important de votre entreprise?

Nom entreprise	Ville et pays où se situe l'entreprise		Quel pourcentage de votre chiffre d'affaires est réalisé avec ce client (approximativement)?
	Ville	Pays	

Quelle entreprise considérez-vous comme étant le fournisseur le plus important de votre entreprise?

Nom entreprise	Ville et pays où se situe l'entreprise		Quel pourcentage des achats vous faites auprès de ce fournisseur (approximativement)?
	Ville	Pays	

Quelle entreprise considérez-vous comme étant le concurrent le plus important de votre entreprise?

Nom entreprise	Ville et pays où se situe l'entreprise		Quel pourcentage de la part du marché est-ce que cette entreprise détient (approximativement)?
	Ville	Pays	

Family firm

Combien d'actionnaires votre entreprise compte-t-elle (y inclus vous-même le cas échéant)?

Est-ce que votre entreprise a attiré des investisseurs professionnels (p.ex. des capital-risqueurs, business angels, etc.) qui investissent en ce moment et qui ont donc une part dans le capital?

- ❍ Oui (1)
- ❍ Non (2)

Est-ce qu'il y a une seule personne qui détient plus de 50 % des actions?

- ❍ Oui (1)
- ❍ Non (2)

Quel pourcentage des actions de votre entreprise est détenu par une seule famille?

Dans cette étude, une famille est considérée comme un groupe de personnes qui ont des liens de parenté par le sang ou par le mariage.

Est-ce que vous considérez votre entreprise comme une entreprise familiale?

- ❍ Oui (1)
- ❍ Non (2)

En tant que directeur général, faites-vous partie de la famille?

- ❍ Oui (1)
- ❍ Non (2)

Veuillez remplir la colonne suivante.

Combien de membres de la famille (y inclus vous-même) sont actionnaires de votre entreprise? (1)	
Combien de membres de la famille (y inclus vous-même) sont actifs dans votre entreprise (comme employé, manager ou administrateur)? (2)	
Combien de membres de la famille (y inclus vous-même) font partie de l'équipe de management/direction? (3)	
Combien de ces managers familiaux (y compris vous-même) sont aussi actionnaires de l'entreprise? (4)	
Quel pourcentage des actions de votre entreprise est détenu par la totalité de ces managers familiaux (y inclus vous-même)? (5)	

Quelle génération détient actuellement la majorité des actions?

- ❍ 1ière génération (1)
- ❍ 2ième génération (2)
- ❍ 3ième génération (3)
- ❍ 4ième génération (4)
- ❍ 5ième ou ultérieure génération (5)

Cohesion

Veuillez indiquer sur une échelle de 1 à 5 dans quelle mesure vous êtes d'accord avec les thèses suivantes. (1/3)

Toutes ces thèses se rapportent uniquement à des membres de la famille concernés par votre entreprise étant actionnaire, manager, administrateur, employé,…

	Pas d'accord (1)	Plutôt pas d'accord (2)	Ni d'accord, ni pas d'accord (3)	Plutôt d'accord (4)	D'accord (5)
1. Les membres de la famille se consultent pour des décisions importantes.	❍	❍	❍	❍	❍
2. Notre famille fait rarement des choses ensemble.	❍	❍	❍	❍	❍
3. Les membres de la famille se sentent coupables s'ils veulent faire des choses hors de la famille.	❍	❍	❍	❍	❍
4. Les membres de la famille se soutiennent dans des périodes difficiles.	❍	❍	❍	❍	❍
5. Les membres de la famille agissent principalement de façon indépendante.	❍	❍	❍	❍	❍
6. On consacre trop de temps ensemble.	❍	❍	❍	❍	❍
7. Notre famille se caractérise par un bon équilibre entre 'autonomie' et 'solidarité'.	❍	❍	❍	❍	❍

Suite (2/3)

	Pas d'accord (1)	Plutôt pas d'accord (2)	Ni d'accord, ni pas d'accord (3)	Plutôt d'accord (4)	D'accord (5)
8. Les membres de la famille comptent rarement l'un sur l'autre.	❍	❍	❍	❍	❍
9. Les membres de la famille ont peu besoin d'amis en dehors de la famille.	❍	❍	❍	❍	❍
10. Les membres de la famille participent à la vie les uns des autres.	❍	❍	❍	❍	❍
11. Les membres de la famille savent très peu des amis des autres membres de la famille.	❍	❍	❍	❍	❍
12. Les membres de la famille sont trop dépendants les uns des autres.	❍	❍	❍	❍	❍
13. Bien que les membres de la famille aient leurs propres intérêts, ils participent quand même à des activités de famille.	❍	❍	❍	❍	❍
14. Chaque membre de la famille se retrouve tout seul quand il doit résoudre un problème.	❍	❍	❍	❍	❍

Suite (3/3)

	Pas d'accord (1)	Plutôt pas d'accord (2)	Ni d'accord, ni pas d'accord (3)	Plutôt d'accord (4)	D'accord (5)
15. Cela nous dérange que les membres de la famille fassent des choses hors de la famille.	❍	❍	❍	❍	❍
16. Les membres de la famille se sentent très proches les uns des autres.	❍	❍	❍	❍	❍
17. Les membres de la famille semblent éviter le contact quand ils sont à la maison.	❍	❍	❍	❍	❍
18. Nous nous sentons trop connectés entre nous.	❍	❍	❍	❍	❍
19. Les membres de la famille trouvent que c'est agréable de passer leur temps libre ensemble.	❍	❍	❍	❍	❍
20. On s'entend mieux avec des personnes externes qu'avec les membres de la famille.	❍	❍	❍	❍	❍
21. Les membres de la famille se sentent obligés de passer ensemble la plus grande partie de leur temps libre.	❍	❍	❍	❍	❍

Veuillez indiquer sur une échelle de 1 à 5 dans quelle mesure les membres de la famille qui sont concernés par votre entreprise...

	Très peu (1)	Peu (2)	Plus ou moins (3)	Beaucoup (4)	Enormément (5)
1. S'entendent bien.	❍	❍	❍	❍	❍
2. S'entraident dans l'exercice de leur fonction.	❍	❍	❍	❍	❍
3. Sont prêts à se défendre réciproquement contre la critique d'externes.	❍	❍	❍	❍	❍
4. Sont très proches entre eux, comme un vrai groupe.	❍	❍	❍	❍	❍

Characteristics CEO

Est-ce que vous êtes le fondateur de votre entreprise?

- ❍ Oui (1)
- ❍ Non (2)

Combien d'années êtes-vous déjà directeur général de cette entreprise?

Veuillez indiquer dans quelles fonctions vous avez travaillé et pour combien d'années, aussi bien dans cette entreprise que dans d'autres entreprises.

	Dans cette entreprise		Dans d'autres entreprises	
		Nombre d'années		Nombre d'années
Marketing ou vente (1)	❑		❑	
Finances (2)	❑		❑	
Département juridique (3)	❑		❑	
Production (4)	❑		❑	
Gestion des ressources humaines (5)	❑		❑	
Achat/logistique (6)	❑		❑	
IT (7)	❑		❑	
Recherche et développement (8)	❑		❑	
Autre, à savoir (9)	❑		❑	

Quel est votre sexe?

- ❍ Homme (1)
- ❍ Femme (2)

Quel âge avez-vous?

Quel est votre diplôme le plus élevé?

- ❍ L'enseignement primaire ou secondaire (1)
- ❍ L'enseignement supérieur en dehors de l'université, de type court (2)
- ❍ L'enseignement supérieur en dehors de l'université, de type long (3)
- ❍ L'enseignement universitaire (4)

Quel pourcentage des actions de votre entreprise détenez-vous?

Êtes-vous membre d'une organisation patronale?

- ❍ Oui (1)
- ❍ Non (2)

Êtes-vous membre d'un ou de plusieurs conseils d'administration d'entreprises externes (des entreprises qui ne font pas partie du même groupe que votre entreprise) ou d'organisations sans but lucratif (p.ex. des hôpitaux, des universités, etc.)?

- ❍ Oui (1)
- ❍ Non (2)

Dans combien de conseils d'administration d'organisations sans but lucratif (p.ex. des hôpitaux, des universités, etc.) siégez-vous?

- ❍ 0 (1)
- ❍ 1 (2)
- ❍ 2 (3)
- ❍ 3 (4)
- ❍ 4 (5)
- ❍ 5 (6)
- ❍ 6 (7)
- ❍ 7 (8)
- ❍ 8 (9)
- ❍ 9 (10)
- ❍ 10 ou plus (11)

Dans combien de conseils d'administration d'entreprises externes (des entreprises qui ne font pas partie du même groupe que votre entreprise) siégez-vous?

- ❍ 0 (1)
- ❍ 1 (2)
- ❍ 2 (3)
- ❍ 3 (4)
- ❍ 4 (5)
- ❍ 5 (6)
- ❍ 6 (7)
- ❍ 7 (8)
- ❍ 8 (9)
- ❍ 9 (10)
- ❍ 10 ou plus (11)

Vous faites partie du conseil d'administration de quelle entreprise externe?

Nom entreprise	Ville où se trouve l'entreprise

Quelle est la plus grande entreprise externe où vous faites partie du conseil d'administration?

Nom entreprise	Ville où se trouve l'entreprise

Introduction board of directors

Est-ce que votre entreprise a un conseil d'administration?

- ❍ Oui (1)
- ❍ Non (2)

Faites-vous partie du conseil d'administration de votre entreprise?

- ❍ Oui (1)
- ❍ Non (2)

Qui est le président du conseil d'administration de votre entreprise?

- ❍ Vous-même comme directeur général (1)
- ❍ L'ancien directeur général (2)
- ❍ un autre administrateur (3)

Votre conseil d'administration est composé de combien de membres (y inclus vous-même comme directeur général)?

Tasks board of directors

Certaines tâches d'un conseil d'administration sont mentionnées dans la première colonne des tableaux suivants.

Veuillez indiquer, dans la seconde colonne, dans quelle mesure il y a un besoin dans votre entreprise que ces tâches sont effectuées par un conseil d'administration.

Indiquez ensuite, dans la dernière colonne, dans quelle mesure le conseil d'administration dans votre entreprise effectue déjà ces tâches. (1/4)

	Besoin de cette tâche(1 = très peu, 5 = énormément)					Mesure dans laquelle le conseil d'administration effectue ces tâches (1 = très peu, 5= énormément)				
	1	2	3	4	5	1	2	3	4	5
1. Développer un réseau social (prendre contact et maintenir une bonne relation avec des groupes d'intérêt importants, banques, clients, gouvernement, etc.).	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
2. Le lobbying et légitimer, p.ex. influencer des groupes d'intérêt importants.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
3. Conseiller quant aux affaires relatives au management.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
4. Conseiller quant aux affaires légales.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
5. Conseiller quant aux affaires financières.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
6. Conseiller quant aux affaires techniques.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
7. Conseiller quant aux affaires relatives au marché.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍

Suite (2/4)

	Besoin de cette tâche(1 = très peu, 5 = énormément)					Mesure dans laquelle le conseil d'administration effectue ces tâches (1 = très peu, 5= énormément)				
	1	2	3	4	5	1	2	3	4	5
8. Conseiller et aider le directeur général avec la détermination de la stratégie de l'entreprise.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
9. Initier activement des propositions stratégiques.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
10. Prendre activement des décisions stratégiques à long terme.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
11. Implémenter des décisions stratégiques.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
12. Contrôler/évaluer activement des décisions stratégiques.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
13. Servir de 'caisse de résonance' pour le directeur général pour des questions stratégiques.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
14. Conseiller et jouer un rôle de médiateur dans des discussions concernant des sujets stratégiques en dehors des réunions régulières du conseil d'administration.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍

Suite (3/4)

	Besoin de cette tâche (1 = très peu, 5 = énormément)					Mesure dans laquelle le conseil d'administration effectue ces tâches (1 = très peu, 5= énormément)				
	1	2	3	4	5	1	2	3	4	5
15. Suivre et diriger… …les budgets de coûts	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
…les budgets de ventes	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
…la liquidité de l'entreprise	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
…les investissements	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
…la contribution et le fonctionnement du directeur général	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
…la qualité des produits/services	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
…la gestion des ressources humaines	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
…un environnement de travail sain et la sécurité	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
…les affaires relatives à l'environnement et à la pollution	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
…le rendement de l'actionnariat	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
…les responsabilités sociales de l'entreprise	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍

Suite (4/4)

	Besoin de cette tâche(1 = très peu, 5 = énormément)					Mesure dans laquelle le conseil d'administration effectue ces tâches (1 = très peu, 5= énormément)				
	1	2	3	4	5	1	2	3	4	5
16. Veiller à ce que les activités de l'entreprise soient bien organisées.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
17. Etablir des budgets et rédiger des projets pour les activités de l'entreprise.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
18. Rédiger des directives pour les activités de l'entreprise.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
19. Rester au courant de la position financière de l'entreprise.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
20. Veiller à ce que les activités soient bien contrôlées.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
21. Surveiller le directeur général.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
22. Ne jamais faire quelque chose en sorte que certains actionnaires soient avantagés au détriment d'autres.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
23. Fixer la rémunération du directeur général.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
24. Mettre en question l'opinion du directeur général concernant des affaires stratégiques.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
25. Evaluer formellement les prestations du directeur général.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
26. Poser des questions critiques au directeur général concernant des décisions stratégiques.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍

General composition board of directors (non-family firm)

Veuillez compléter le tableau ci-dessous concernant la composition du conseil d'administration de votre entreprise (y inclus vous-même comme directeur général).

	Nombre d'administrateurs	% total des actions de votre entreprise détenues par chacun de ces catégories d'administrateurs
Les administrateurs qui font partie du management.		
Les administrateurs qui ne font pas partie du management mais qui détiennent des actions de votre entreprise.		
Les administrateurs qui ne font pas partie du management et qui ne détiennent pas d'actions de votre entreprise.		

General composition board of directors (family firm)

Veuillez compléter le tableau ci-dessous concernant la composition du conseil d'administration de votre entreprise (y inclus vous-même comme directeur général).

	Nombre d'administrateurs	% total des actions de votre entreprise détenues par chacun de ces catégories d'administrateurs
Les administrateurs qui font partie du management...	///	///
- et qui font partie de la famille		
- mais qui ne font pas partie de la famille		
Les administrateurs qui ne font pas partie du management...	///	///
- mais qui font partie de la famille		
- et qui ne font pas partie de la famille, mais qui détiennent des actions de votre entreprise.		
- et qui ne font pas partie de la famille et qui ne détiennent pas d'actions de votre entreprise.		0

Detailed composition board of directors (non-family firm)

Veuillez indiquer dans le tableau ci-dessous la composition détaillée du conseil d'administration de votre entreprise (y inclus vous-même comme directeur général).

	Nom (pas obligatoire mais facilite peut-être le remplissement des colonnes suivantes)	Fait partie du management?		Détient des actions de votre entreprise?		Si oui, quel pourcentage des actions?	Nombre d'années administrateur de cette entreprise?	Cet administrateur est-il, lui aussi, directeur général? (pas des sociétés de gestion)		Si oui, de quelle entreprise?	
		Oui (1)	Non (2)	Oui (1)	Non (2)			Oui (1)	Non (2)	Nom (1)	Ville (2)
Président		❍	❍	❍	❍			❍	❍		
Administrateur 2		❍	❍	❍	❍			❍	❍		
Administrateur 3		❍	❍	❍	❍			❍	❍		
Administrateur 4		❍	❍	❍	❍			❍	❍		
Administrateur 5		❍	❍	❍	❍			❍	❍		
Administrateur 6		❍	❍	❍	❍			❍	❍		
Administrateur 7		❍	❍	❍	❍			❍	❍		
Administrateur 8		❍	❍	❍	❍			❍	❍		
Administrateur 9		❍	❍	❍	❍			❍	❍		
Administrateur 10		❍	❍	❍	❍			❍	❍		

Detailed composition board of directors (family firm)

Veuillez indiquer dans le tableau ci-dessous la composition détaillée du conseil d'administration de votre entreprise (y inclus vous-même comme directeur général).

	Nom (pas obligatoire mais facilite peut-être le remplissement des colonnes suivantes)	Fait partie du manage-ment?		Détient des actions de votre entreprise?		Si oui, quel pour-centage des actions?	Nombre d'années administrateur de cette entreprise?	Cet admini-strateur est-il, lui aussi, directeur général? (pas des sociétés de gestion)		Si oui, de quelle entreprise?		Fait partie de la famille?	
		Oui (1)	Non (2)	Oui (1)	Non (2)			Oui (1)	Non (2)	Nom (1)	Ville (2)	Oui (1)	Non (2)
Président		❍	❍	❍	❍			❍	❍			❍	❍
Administrateur 2		❍	❍	❍	❍			❍	❍			❍	❍
Administrateur 3		❍	❍	❍	❍			❍	❍			❍	❍
Administrateur 4		❍	❍	❍	❍			❍	❍			❍	❍
Administrateur 5		❍	❍	❍	❍			❍	❍			❍	❍
Administrateur 6		❍	❍	❍	❍			❍	❍			❍	❍
Administrateur 7		❍	❍	❍	❍			❍	❍			❍	❍
Administrateur 8		❍	❍	❍	❍			❍	❍			❍	❍
Administrateur 9		❍	❍	❍	❍			❍	❍			❍	❍
Administrateur 10		❍	❍	❍	❍			❍	❍			❍	❍

Closing

Si vous avez encore des questions ou des remarques supplémentaires concernant cette recherche, veuillez les mentionner ci-dessous.

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