

Does Auditors' Reputation 'Discourage' Related Party Transactions? The French Case

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SUMMARY: Regulators, standard setters and market participants consider related party transactions a major problem in financial markets. The quality of external auditing may be proposed as an important governance mechanism to alleviate the propensity of insiders to use related party transactions. We test the prevalence of audit quality to reduce the number of these transactions. We consider that audit quality is positively correlated with audit reputation. We use a unique data set with a sample of 85 French firms over the period 2002-2005. The French legal system allows us to concentrate on the reputation dimension of audit firms, as a motivation that mitigates the propensity of insiders to initiate related-party transactions. The results show that high quality external audit firms reduce significantly the frequency of related-party transactions. The effect of audit quality seems to be the most important variable explaining the frequency of related-party transactions. These results are obtained after controlling for the selection bias related to the choice of external auditors, using a two-step Heckman procedure.

JEL classification: G34; G38; K33; M42

Keywords: Related party transaction; Audit; Reputation; Corporate governance; Ownership structure.

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INTRODUCTION

Related party transactions (RPTs hereafter) are commonly defined as transactions conducted between a firm and its own managers, directors, principal shareholders or affiliated firms and subsidiaries. Both direct and indirect transactions (through firms affiliated to officers and principal shareholders, or their family members) are considered RPTs. Recent corporate scandals around the world, in the US (Enron, Adelphia), in Europe (Schneider Rundfunwerke, Parmalat, Bremer Vulkan) and in Asia (Kangsai group, Baan Company) have brought RPTs under the spotlight. Although such transactions may sometimes be initiated for genuine business purposes, they are also viewed as instruments for financial frauds and shareholder expropriation (Jones 2011). Regulators and standard setters reacted to increasing concern about the existence of these transactions by tightening the rules about their use and disclosure. In the U.S., the Sarbane-Oxley Act prohibited some of these transactions (McDermott et al. 2006). Several new rules were implemented in other countries to restrain the use of these transactions, and to enhance public reporting procedures. Recently, the IFAC published a standard, the ISA 550, which provides guidance for the audit of RPTs (IFAC, June 2009).

Since the paper by Gordon et al. (2004), a growing academic literature has paid more attention to RPTs. Several papers have analyzed the links between RPTs' presence and fraudulent behavior by managers (Gordon et al. 2006; Henry et al. 2007). This negative perception of RPTs drives negative reactions to firms' performance, and to their reporting (Kohlbeck and Mahyew 2010; Cheung et al. 2006; Ge et al. 2010). Another strand of the literature studies the determinants of RPT proliferation. Since RPTs are seen as a way to expropriate minority shareholders, the mechanisms identified to monitor their occurrence are generally based on corporate governance mechanisms. Djankov et al. (2008) focus on the way in which the legal system affects the occurrence of RPTs. Ownership concentration (Cheung et al. 2006), the independence of directors, and of the audit committee (Gordon et al. 2006; Lo et al. 2010) are examples of corporate mechanisms on which minority shareholders can rely to reduce the prevalence of RPTs.

In our paper, we focus on the role of external audit as a mechanism to reduce the occurrence of RPTs. Since RPTs are diverse and complex, we argue that the quality of the external auditors decreases the propensity of managers to use RPTs. As argued by Gordon et al. (2006), internal corporate governance mechanisms generally fail to control RPTs, and external auditing may be considered a better alternative. External auditors indeed play a

disciplinary role regarding managers (Francis and Wang 2008) and enhance the degree of investor protection (Newman et al. 2005). The reactions of regulators and standards setters to recent scandals make clear the importance of the role of the audit process in informing outsiders fairly about RPTs.¹

We use French firms' data to study the links between auditor's quality and the frequency of RPTs. This choice is motivated by several reasons. First, the ownership structure of firms in France is characterized by ownership concentration, and by separation between ownership and control (Faccio et al. 2003). Second, it is widely known that the French legal system does not favour minority shareholders' protection (La Porta et al. 1998 and 1999). These features increase the propensity to use RPTs, and they strengthen the role of external auditors as a mechanism to monitor managers' actions. Third, in France auditors are not legally responsible for potential frauds. More precisely, it is very difficult to show their responsibilities regarding French legislation. The motivation of external auditors to provide high quality reports is thus an interesting case to study. Fourth, French public firms are compelled to undergo a joint auditing process. Annual reports must be approved by two independent audit firms, and this gives rise to interesting strategic behaviour. Finally, French regulation treats the disclosure of RPTs by giving auditors a pivotal role. Indeed, they must publish a special report on such transactions.

Under French regulations, external auditors are not required to make extensive investigation of RPTs. They are required only to disclose those advised by the board of directors. Thus external auditors do not need to employ substantial resources, or to have special competencies that can identify and examine undisclosed RPTs. Therefore, the potential impact of auditing on the occurrence of RPTs is related mainly to the reputation of the auditors, rather than to their competence or independence. Reputation, as an economic concept dealing with moral hazard and/or adverse selection problems, has been extensively studied (Mailath and Samuelson 2001). In a principal-agent setup, the principal's willingness to pay depends on the agent's past performance, as measured by reputation. As in the French case, where litigation has no role, Skinner and Srinivasan (2009) and Weber et al. (2008) find that auditors' reputation is a driver of audit quality in the Japanese and German contexts,

¹ In the US, a recent survey by the Center for Audit Quality (CFAQ 2010) argues that auditors are still perceived as the best instrument for investors' protection. The European Commission also recognizes the importance of external auditing. Its recent green paper, entitled "*Audit Policy: Lessons from the Crisis*", aims to understand how the audit function could be enhanced in order to contribute to increased financial stability (European Commission 2010).

respectively. These authors use Big 4 cases to justify their assertion. Following these papers, we use the membership of Big 4 audit firms as a proxy for audit reputation. Because of their international activities, and to preserve their reputation as an intangible asset, the Big 4 auditors will pay attention to the frequency of RPTs. However, for second-tier firms (non Big 4 firms), whose international activities are less important, their reputation asset becomes less valuable, thus providing them with fewer incentives to pay close attention to RPTs.

On the other hand, managers are aware of the importance of this reputation asset, and they may choose their external auditors in order to signal their quality as firms avoiding expropriation through RPTs. Therefore, the choice of auditor is a strategic decision by the managers. We run a Heckman-two-step model in order to control for the bias related to the selection of auditors. In the first step, we explain the choice of auditors by firms. The explanatory variables are related to the board of directors, the ownership structure and other control variables (Carcello et al. 2002; Lennox 2005). The second step of our model explains the number of RPTs. This includes, besides several control variables, two binary variables explaining the choice of one "Big" auditor (1BIG) and two "Big" (2BIG) auditors. The dependant variable is the number of RPTs, which is by definition non-negative, and contains only integer values. As the econometric literature suggests, we use count data regression rather than simple linear regression, in order to avoid biased and inconsistent coefficients (Rock et al. 2000).

In line with the existing literature, we find that the existence of one Big 4 auditor reduces the number of RPTs. More interestingly, hiring a second Big 4 auditor has a negative effect on the frequency of RPTs, for French firms. The impact of the reputation of auditors seems to be the most important factor affecting the frequency of RPTs.

The remainder of this paper is organized in six additional sections. The second section presents a French environment, and the third section presents a review of the literature and our testable hypothesis. The fourth section then describes the sample, and the way different variables are constructed. The fifth section presents the descriptive statistics, as an introduction to the multivariate model presented in the sixth section. Finally, the seventh section concludes. All tables are in the appendix.

SETTING AND INSTITUTIONAL BACKGROUND OF THE RESEARCH

The objective of this paper is to study the relationship between the frequency of RPTs and the external auditors' reputation. RPTs are considered the main device available to managers

and controlling shareholders for expropriating minority shareholders' wealth. On the other hand, external auditing is considered a mechanism that should reduce the information asymmetries between minority shareholders and both the managers and the controlling shareholders.

The French setting offers an interesting laboratory in which to undertake this analysis, thanks to several of its legal and institutional features. First, French firms are characterized by concentrated ownership, and by the prevalence of pyramidal structures (Boubaker and Labégorre 2008). This reinforces the conflicts of interest between controlling and minority shareholders, and consequently increases the propensity to instigate RPTs. Second, as a civil-law system, French legislation offers weak protection to minority shareholders, and the enforcement system of the existing rules is inefficient (La Porta et al. 1998). This affects both the way in which minority shareholders perceive the role of external auditors, and the frequency of RPTs. For insiders, the permissiveness of the civil-law system will generally stimulate the proliferation of RPTs. For minority shareholders, the role of the external auditor becomes very important, as part of the mechanism monitoring managers and controlling shareholders. Also, because class actions against managers and/or auditors are relatively rare, the auditors' motivation to provide a high quality audit report is related mainly to concern about their reputation (Piot 2005). The reputation argument is strongest for Big 4 auditors. Contrary to (more local) second-tier firms, Big 4 auditors have international activities. Thus deficiencies in their French activities may negatively influence their reputation, and their activities abroad. Third, the existing regulation concerning the disclosure of RPTs in France involves the auditors formally. The auditors' role in the process of reporting these transactions is very important, unlike in the U.S. (McDermott et al. 2006) or Hong-Kong's (Cheung et al. 2006) rules, by which the reporting process is executed directly by the managers.

Another interesting feature of the French accounting system is the obligation to employ joint auditing (which is different from dual auditing). In a joint audit, two different auditors produce the firm's report and share the legal responsibility (Francis et al. 2009). Originally, the idea of two auditors was related to the requirement for financial institutions (receiving public savings) to use two auditors. The practice was then extended and legally enforced in 1966. For the purpose of our study, the existence of two audit firms may create several forms of strategic behaviour by these firms. For example, in the case of deficiencies, we might think that the reputation argument would be mitigated by a transfer of default from Big 4 firms to their second-tier partners. We think that this represents another interesting feature of the analysis of the French case.

The way RPTs should be reported is regulated by several rules in the French Commercial Code. Regulated agreements and commitments (called ‘*conventions réglementées*’) are the transactions that come closest to the usual definition of RPTs. The French Commercial Code defines them as follows: “*every agreement involving directly, or through an intermediary, the company and its CEO, one of its directors, one of its shareholders holding a fraction of the voting rights above 10% (5% between 2001 and 2003), or, in case of corporate shareholder, the company controlling as defined in article R 233-3, shall be subject to prior approval of the Board of Directors*” (R 233-38, Commercial Code). These transactions must be authorized by the board of directors. Subsequently, they should be ratified by the Shareholders’ General Assembly. The increase, from 5% to 10% of voting rights as the threshold defining controlling shareholders is one of the consequences of the application of the Financial Security Act of 2003, in place of the 2001 NER (*New Economic Regulations*). Besides this restriction, the new 2003 rules broaden the scope of related party transactions, so that more types of financial transactions between a company and its executive officers, directors, large shareholders and their immediate family members became subject to disclosure.

The managers and the president of the board are required to inform the auditors about these regulated agreements and commitments. The auditors must establish a special report, distinct from the audit report, listing these transactions. It is then submitted to the shareholders’ General Assembly for approval. It is important to note that the auditors are not required to evaluate or provide their judgment about the adequacy and the usefulness of these transactions. Also, under the French regulations, auditors are not supposed to make any systematic search for hidden RPTs (those with the highest probability of being fraudulent), but to limit them to only those approved by the board of directors. The last IFAC rules, published in 2009, are obliged to go further. They are required only to pay attention to their usual control operations. This favours our reputation argument, since French legislation does not necessarily oblige auditors to make a greater effort to detect fraudulent RPTs.

The content of the special report depends on the temporal nature of the agreement. Only, new agreements and commitments are subject to extensive disclosure. Each of these agreements contains the names of the related parties, the nature and objective of the agreement, the terms/modalities as mentioned in the Commercial Code and the amounts paid or received during the year. The information in the special report is generally less precise, as we mention below. For renewed agreements, the auditor only reminds the parties of the importance of the services and goods delivered, and the amounts paid or received during the year.

Therefore, the only agreements that appear in the report are those that have been, or should have been, ratified by the shareholders. Nevertheless, the managers have an obligation to provide a piece of information about other agreements – those that are not necessarily under the umbrella of the ratification process, but have knowledge that permits the auditors to detect possible prevarication. However, to be legally covered, auditors generally remind readers of special reports and their limited liability. A classic disclaimer in the beginning of special reports reads as follows: *“Our responsibility does not include identifying any non disclosed agreements or commitments. We are required to report to shareholders based on the information provided, about the main terms and conditions of the agreements and commitments that have been disclosed to us, without commenting on their relevance or substance. Under the provision of the article R. 225-31 of the Commercial Code, it is the responsibility of shareholders to determine whether the agreements and commitments are appropriate and should be approved”* (Bouygues Annual report, 2009 page 257).

LITERATURE REVIEW AND HYPOTHESIS

Our study is linked to two different strands of the literature. First, we assume that the existence of RPTs transmits information to the market. Second, we link auditor reputation to their quality. We briefly summarize the literature about RPTs and auditing, and we then derive our empirical hypothesis in the remainder of this section.

RPTs as an expropriation mechanism

Since the seminal paper by Johnson et al. (2000), several studies have addressed the question of tunneling related to RPTs. The literature has concentrated on the understanding of these transactions, on their effect on firms’ performances and behaviors, and on their determinants. For the first strand, Johnson et al. (2000) analyze the links between law systems and the occurrence of RPTs, and find that courts in civil-law countries accommodate more tunnelling than courts in common-law countries. Using a questionnaire addressed to lawyers at an international law company, Djankov et al. (2008) construct anti-self dealing indices for 72 countries, to measure how different countries deal with RPTs. Atanasov et al. (2008) provide a typology of RPTs, and their potential impact on firms.

There is in general a consensus on the fact that outsiders usually perceive RPTs as an unfair mechanism that is used by controlling shareholders and managers to manage earnings, and to hide the true financial conditions of the company (Henry et al. 2007). Beasley et al. (2001) point out that RPTs are among the top ten prevaricators. Several corporate scandals have been associated with such transactions. Using data from Hong Kong, Cheung et al.

(2009) show that RPTs are associated with unfavourable prices, compared to similar arms' length deals. Indeed, firms acquire (sell) assets from (to) related parties at higher (lower) prices than in similar arms' length deals. This suggests that RPTs allow the transfer of resources away from the minority shareholders, and to the controlling shareholders and those officers who appear to benefit directly from these deals. Several studies show that the occurrence of RPTs negatively affects the valuation of public firms (Cheung et al. 2006; Kohlbeck and Mahyew 2010; Dahya et al. 2008). It is also argued that RPTs are generally associated with earnings management and window-dressing. The case of the Italian company PARMALAT is a representative example of such manipulations (Enriques and Volpin 2007).

Several other studies focus on the determinants of RPTs. A common question in this literature is: which corporate governance mechanisms could decrease the propensity of officers and controlling shareholders to initiate RPTs? Using U.S. data, Kohlbeck and Mayhew (2004) find that RPTs are associated with weaker corporate governance, and with the existence of stock option based remuneration for CEOs. Lo et al. (2010) use Chinese firms' data to study the impact of governance structure on related party transactions. They show that the presence of independent directors, and of financial experts on the audit committee, decreases the use of RPTs as a mechanism to manage earnings. Using international data for 22 countries, Dahya et al. (2008) examine the occurrence of RPT, and show that a higher proportion of independent directors is associated with a lower likelihood of using RPTs.

These results suggest that insiders use RPTs as a mechanism to divert corporate resources. However, these transactions may reduce the value of the firm and so may also affect the value of the controlling shareholder's portfolio. If the gains from RPTs are less than the costs related to their existence on the value of the firm, the controlling shareholder may prefer to signal to the market that (s)he will refrain from diverting resources, by establishing strong corporate governance standards, such as independent directors, an independent audit committee and expert members on the audit committee.

Nowadays the detection and disclosure of RPTs accounts for a large part of the auditing of financial statements (Beasley et al. 2001; Gordon et al. 2007). Louwers et al. (2008) suggest that the non-detection of RPTs is not the result of deficiencies in auditing standards (which nowadays are the same all over the world: the CNCC standards are similar to those proposed by the IFAC), but more a question of skepticism (professional skepticism and due professional care). Thus, the reputation of auditors may be seen as a complement to

regulation, as a mechanism that increases the efficiency of detection, and the reporting of RPTs. There is no formal process in the internal auditing of companies that explains the way in which they control and monitor RPTs. Consequently external auditing may be suggested as a natural solution to monitor the occurrence and the reporting of RPTs (Gordon et al. 2006).

Our paper is related to this literature because it regards the reputation of external auditors as a governance mechanism used by insiders to signal a lower propensity to expropriate minority shareholders.

Audit reputation

Many studies argue that a Big 4 audit opinion is a more effective label of quality compared to second-tier firms (non-Big 4). This link between audit firm size and audit quality is generally related to two distinct hypotheses. The first hypothesis, the so-called “deep pocket/insurance hypothesis”, links audit quality to the insurance coverage offered by the auditors in the case of litigation (Simunic 1980; Dye 1993). Wealthier audit firms have incentives to be diligent, as their greater wealth may result in a riskier lawsuit. The second hypothesis, the reputation hypothesis, holds that audit firms provide high quality because they then earn substantial quasi-rent that discourages them from the temptation to cheat by lowering quality (De Angelo 1981; Watkins et al. 2004).

The quality of the auditor is priced into the client’s share price (e.g., Teoh and Wong 1993). In the three days following Andersen’s admission that a significant number of documents had been shredded, Chaney and Philipich (2002) find that Andersen’s other clients experienced a statistically negative market reaction, suggesting that investors had downgraded the quality of Andersen’s audits. Krishnamurthy et al. (2006) study the significance of auditors’ reputation by examining how the stock prices of former Andersen’s clients reacted to the replacement of their external auditor after its failure. They find a negative relation between the new external auditor’s quality and firms’ returns, and argue that this was mainly linked to reputational concerns. In Japan, a low-litigation country in which the insurance hypothesis does not matter, Numata and Takeda (2010) test the impact of the loss of an auditor’s reputation, and find that the announcements of poor audit quality by ChuoAoyama (PWC) have significantly decreased the stock prices of its clients.

Managers’ choice of their external auditors reflects their understanding of the importance of this choice on their firm’s value. Barton (2005) tests whether the timing of client defections and the choice of a new auditor are consistent with managers’ incentives to mitigate costly agency problems. By analysing the defection timing of firms after the collapse of Arthur

Andersen, he finds that firms with higher visibility in financial markets, *i.e.*, with higher press and analysts' coverage, defected sooner and hired highly reputable auditors. This is consistent with such firms trying to build and preserve their own reputation for credible financial reporting. The impact of external audit quality was extensively studied during IPO, an environment featuring a high degree of asymmetric information. Empirically, mixed results were found regarding the link between the riskiness of IPO firms and the quality of their auditors (Firth and Smith 1995).

Thus the literature suggests that the auditors' choice and acceptance of an auditing mission follows a double selection process, and is driven by strategic considerations. Managers choose their external auditors in order to signal the quality of their reported results to the market, and to mitigate information asymmetries. On the other hand, auditors play a disciplinary role over managers (Francis and Wang 2008), and they may constrain the management's choice of accounting procedures. The effectiveness of this constraint depends on the audit quality (Becker et al. 1998; Francis et al. 1999; Krishnan 2003). In the French context, Piot and Janin (2007) find that the presence of a Big 5 auditor does not affect the magnitude of abnormal earnings. They argue that auditors in France are less exposed to auditing the "*deep pocket hypothesis*". This suggests that the insurance hypothesis is less likely because the auditor's third party liability is limited, compared to the U.S. system. In this context reputation becomes the only disciplinary mechanism that guarantees the quality of the external audit report.

As for RPTs, their negative impact on firm valuation strengthens the importance of their treatment by auditors. Since outsiders perceive RPTs as fraudulent behaviour by insiders, the external auditor will agree to auditing missions for only those firms with a lower propensity to initiate RPTs (Corona and Randhava 2010). The main consequence of this argument is that high quality auditors should decrease their frequency of RPTs. This is our first hypothesis.

Hypothesis 1: *Hiring a Big 4 firm as an external auditor decreases the frequency of RPTs.*

The French context is characterised by joint auditing. In France, all publicly listed firms' consolidated financial statements are jointly signed by two independent auditors. The joint audit can be linked to an increase in the quality of the audit, and to an efficient way of detecting accounting malpractices.² Francis et al. (2009) find that companies with one or two Big 4 auditors are less likely to have income-increasing abnormal accruals than other firms.

² Anecdotally, in the Vivendy/BskyB Case, Arthur Andersen did not challenge the accounting policy concerning the disposal of investments in BskyB. But the accounting error/irregularity has been detected thanks to the tenacity of the Doctrine boss of the second auditor with the help of the COB. See, *La Tribune*, September 11, 2002.

Furthermore, if two Big 4 accounting firms audit the financial statements, then the firms are even less likely to have income-increasing accruals, compared to firms audited by only one Big 4 auditor. In line with these results, we argue that the presence of two Big 4 auditors will even decrease the frequency of RPTs, compared to the case where only one Big 4 auditor is hired.

Hypothesis 2: *Firms hiring two Big 4s report less RPTs than firms with only one Big 4.*

We test these hypotheses by controlling for the audit firms' selection effect. Technically this would help to distinguish the selection criteria of external auditors from the impact of auditors' reputation on the frequency of RPTs.

DATA AND METHODOLOGY

Data selection

Our sample contains data about companies in the French SBF 120 index,³ from which we exclude financials (6 companies). We manually collect data from the companies' annual reports for the period from 2002 to 2005. Collection of information about ownership structure is tedious, and annual reports do not necessarily disclose appropriate information. Some companies were also excluded from our final sample because of missing or inconsistent data. The final sample consists of 85 companies, totalling 340 observations.

There are several challenges related to RPT data collection. It is generally difficult to identify, examine and disclose these transactions. In France, special reports published by auditors contain information about RPTs as defined by French legislation. It is important to mention here that the transactions in the special report stem directly from management reporting of these transactions. In the special report, and for each RPT, we can find information about the counter-parties to the transaction, and a brief description of the conditions of the transaction.

However, we are not always able to distinguish each transaction's amount, nor the nature of the relation between the firm and the announced related party. Indeed, we find in the report only the names of the entities involved in the transaction with the firm. When this entity is a person, we verify whether it has any relation with the directors, the managers or the principal shareholder of the firm. When it is a company, we begin by setting its flow chart and its ownership structure, and investigate all potential relations between the two companies. We

³ Created in 1993, this index contains the 120 largest companies in the French market.

can have different combinations of potential relations that undertook this transaction that is deemed as an RPT.

As discussed above, the transactions disclosed in the special report contain all transactions with the managers, the directors or the controlling shareholders, and with firms affiliated to them. However, for transactions with subsidiaries and firms affiliated to the company, the 2003 FSL (Financial Security Law) requires that only transactions with conditions different from “normal” market conditions should be disclosed in the special report. This affects negatively the number of RPTs, and also the quality of the information disclosed in the special report. The information about RPTs collected from special reports is also difficult to collect. Usually, special reports do not have a predefined format, and transactions are not necessarily presented in a comprehensive way. This makes the information collection process tedious, and requires going through the whole report in order to collect all possible information.

Related parties transaction classification

In our analysis, we explore different types of transactions deemed as RPTs. Generally these transactions lead to a wealth transfer between the firm and its counterpart in the transaction. This transfer can profit the managers, the directors or the large shareholders.⁴ However, some of these transactions are not necessarily intended to expropriate minority shareholders. Indeed, some of these transactions can be considered a way to remunerate managers, to help financially and operationally a subsidiary or, more generally, as a strategic move aimed at profiting the firm and its shareholders (Kohlbeck and Mahyew 2010). To control for this diversity, we classify related transaction parties in different categories. We define two levels of classification. In the first level we employ a classification based on the time persistence of the transaction. We divide our sample of transactions into two categories. The first category contains renewed transactions, i.e., those that were announced the year before (RRPT hereafter). The second category contains only newly announced transactions (NRPT hereafter). The first category is supposed to be less desirable to Big 4 auditors, because they may convey a higher degree of permissiveness that might harm their reputation.

In the second classification level, we base our classification on the identities of the counterparties in the transaction. This allows us to see the importance of different types of RPTs from the point of view of the auditor. We distinguish between the RPTs between the

⁴ As mentioned above, the legal threshold defining large shareholders increased from 5% to 10% in the 2003 FSL. Since this change occurs within our sample period, we controlled for the total number of RPTs each year. The legal change does not significantly changes the number of RPTs.

firm and its subsidiaries or affiliated firms (TSAF hereafter), and those with all other related parties, i.e., managers, directors and controlling shareholders (TMDS hereafter). Several of these latter transactions are the most likely to exacerbate the perception of markets regarding the existence of potential misbehaviour, leading to transferring out the company's cash flow or assets, to the profit of related parties. However, it is difficult to detect whether the former transactions are intended to expropriate minority shareholders, or are initiated for strategic reasons.

Details about the transactions are generally not available from the special reports published by auditors. In particular the amounts of transactions do not generally refer to individual transactions. In our analysis we consider the number of RPTs announced in the special report. Gordon et al. (2006) find that better results can be achieved using the number of transactions rather than their amounts. They argue that the mere existence of these transactions affects the value of the firm, since financial markets react to their existence. The alternative is to consider a dummy variable that signals companies announcing RPTs, as in Kohlbeck and Mayhew (2004) and Cheung et al. (2006 and 2009). In our analysis, this variable would not capture our idea, since our objective is to focus on the importance of the signal that some classes of RPTs transmit concerning the audit process quality. Also, since we distinguish different categories of RPTs, the variations in the number of transactions that may be important between categories may be better explained by using the number of these transactions, rather than their mere existence. A second alternative is to consider the total value of transactions. Apart from the impossibility of having this information for all transactions in our sample, we argue that the value of transactions varied widely within our specified classes. This would create a bias for some classes, and also deviate from the purpose of our analysis, which is the study of the audit process of RPTs, independently of their values.⁵ Finally, using the value of a transaction may have no significance. Assume a \$10M transaction by a firm after a purchase from an affiliated company. The potential loss related to this transaction will be difficult to detect, since we need to know the normal market conditions for this transaction. In this case the use of the number of transactions seems a better alternative.

Note also that our classification of RPTs departs from that used in Cheung et al. (2006). In that paper, the authors define RPTs in three categories: those that are *a priori* likely to result in expropriation, those that are likely to benefit the listed firm's minority shareholders and those that could have strategic rationales, and perhaps are not intended to expropriate minority

⁵ Note also that, in French legislation, RPTs are not restricted to transactions with a minimum amount.

shareholders. This classification is mainly based on the type of each transaction (assets sales, assets acquisitions, cash receipts, etc...). However, in our case the transaction classification is based on the identity of the counterparty in each transaction. This choice is motivated by two main reasons. First, since we are not using the values of transactions, we consider that markets pay more attention to the identity of the counterparty involved in the transaction than to its category. Second, our sample already contains some transactions deemed as conditions different from “normal” market conditions. These are mainly transactions with firms affiliated to the company. This makes our classification more in line with the French definition of RPTs.⁶

Ownership structure

Since we are interested in double auditing as a governance tool, we should control for the different corporate governance variables that may affect the occurrence of RPTs. The main issue related to RPTs’ occurrence is that managers, directors or controlling shareholders may initiate them in order to expropriate minority shareholders. As a matter of fact, we collect data about the ownership structure of firms as well as the voting rights structure, in order to detect both large shareholders and large holders of voting rights.

French companies are generally widely held (Faccio et al. 2002; La Porta et al. 1999), which increases the likelihood of minority shareholders’ expropriation. Furthermore, there is in general a difference between ownership structure (cash flow rights) and the voting rights structure, and this may minimize the expropriation costs, as suggested by Fama and Jensen (1983). Faccio and Lang (2002) find a large difference between ownership and voting rights percentages for majority shareholders in French firms. As this difference increases, expropriation costs would decrease and the number of RPTs would increase (Claessens et al. 2006). In our analysis we consider both the voting rights (VOTE) in order to estimate the occurrence of RPTs, and also a variable capturing the existence of a difference between cash-flow rights and voting rights. In order to measure these variables, we construct the ultimate control and ownership structure, using the methodologies suggested by Faccio and Lang (2002). This latter variable is measured by the ratio of the voting rights over the cash-flow rights of the controlling shareholder (SEP), as in Boubaker and Labégorre (2008). The difference between control and cash-flow rights is supposed to provide information on the ability and incentives of controlling shareholders to expropriate firm resources (Claessens et

⁶ Atanasov et al. (2008) suggest another classification: tunneling RPTs. They divide tunneling into three categories depending on their impact on firm value: cash flow tunneling, asset tunneling and equity tunneling.

al. 2002; Laeven and Levine 2008). If we find more than one controlling shareholder, we calculate this variable for the shareholder with the highest voting rights proportion.

Corporate governance variables

Several empirical studies show that several corporate governance variables affect both the occurrence and the frequency of RPTs. The size of the governance board may affect positively the occurrence of RPTs, because of the higher probability of collusion (Gordon et al. 2006). Dahya et al. (2008) focus on the independence of the board of directors. Directors in our analysis are considered independent if they have no business or personal relations with the managers, and/or the main shareholders of the company. This classification of independent directors increases the negative impact of the independence of the board of directors on RPTs (Kohlbeck and Mayhew 2004; Gordon et al. 2006; Cheung et al. 2006).

The audit committee plays an important role in the prevention of RPTs, since it facilitates the monitoring of information disclosure. As suggested in Klein (2002), the audit committee plays a key intermediation role between auditors and managers. It is also intended to enhance the quality of the audit. In the French case, several studies find a positive correlation between the independence of the audit committee and the probability of hiring a Big 4 auditor (e.g., Francis et al. 2009). As discussed above, this is supposed to deliver a better audit report. The independence of the audit committee should reduce the number of RPTs (Cheung et al. 2009). This should be the case either directly, or be undertaken by auditors who are able to prevent these transactions. Note however that the impact of the audit committee is only post-transaction, i.e., when the transaction is already completed, contrary to the role of the governance board, which is pre-transaction. We consider the independence of the audit committee as a variable affecting RPTs occurrence because, for our sample period, the existence and independence of the audit committee is not required by existing legislation in France (the 2001 NER and the 2003 FSL). Only in June 2008 did the European legislator oblige firms to have an audit committee with several constraints on its composition.

Other variables

Several other variables may affect the occurrence of RPTs, as suggested in the literature. One of these is the fact that the firm is cross-listed on the US markets. For firms originating from countries with less stringent rules about information diffusion, being listed on one of the U.S. markets is a way to enhance the quality of the announced information, which favours minority shareholders' protection. Wójcik et al. (2005) and Klapper and Love (2004) find that foreign firms cross-listed in U.S. markets rank higher in terms of the quality of their

announced information. RPTs for firms may also represent an additional cost for cross-listed firms, because of the possibility of being pursued legally by U.S. minority shareholders. As a matter of fact, we should expect being cross-listed in U.S. markets to reduce the number of RPTs. We control for firms cross-listed in one of the U.S. stock markets, by considering both direct listings and American Depository Receipt (ADR) issuances. This information is collected from the Bank of New York and JP Morgan ADR/cross-listing databases.

Debt, especially bank debt, is considered a way of monitoring managers. Therefore we can argue that the existence of debt should allow a decrease in RPTs, as suggested by Gordon et al. (2006). However, McConnell and Servaes (1995) argue that debt may be associated with minority expropriation behaviour. Faccio and Lang (2003) find that debt contracted by controlled firms may favour controlling shareholders. In our study, we control for the impact of debt ratio on the number of RPTs.

We use other control variables that are supposed to affect the number of RPTs, and/or the choice of auditors. Such variables are the *book-to-Market* ratio, Return on assets (ROA), the annual variation of sales (Δ SALES) and the intensity of investment in R&D (R&D). An increase in the financial, economic or commercial performances of firms can affect the decisions of directors when they choose auditors, and when they initiate RPTs. R&D investment intensity is a proxy for the level of asymmetric information and potential conflicts of interest between managers and shareholders, as suggested in Francis et al. (2009).

The size of the firm, measured by its market capitalization, increases the visibility of the firm and its coverage by financial analysts, which should enhance the quality of the information available to shareholders, and consequently affect the number of RPTs (Cheung et al. 2006). Firm size is also supposed to affect the choice of auditors, since bigger auditors are generally associated with higher audit fees, and also because of reputation effects, as discussed above. We also consider the dividend yield as a control variable. As La Porta et al. (2000) suggest, dividend yield is positively correlated with minority shareholders protection, and so may affect the occurrence of RPTs. Finally, because of the legislative change in 2003, with the adoption of the FSL affecting both the auditing choice process, and the implementation of new requirements concerning RPT announcements, we introduce a dummy variable equal to 1 for data after the application of this act. Table 1 in Appendix defines the different variables used, and the way they are measured.

DESCRIPTIVE STATISTICS

Our sample contains 1,186 transactions deemed as RPTs by auditors in 340 published special reports. The number of RPTs in these reports lies between 0 and 25, with an average of 3.48 transactions per report. Table 2 displays the distribution of reported transactions by their occurrence in special reports. For our sample period, 80.59% of the special reports contain at least one RPT, with 6.76% containing more than 10 transactions. Among the 1,186 transactions, 538 were new deals, while 648 were renewed transactions. Using the other classification levels, 68.71% of the reported transactions were made with subsidiaries or affiliated firms, while 31.29% were conducted with controlling shareholders, managers, and directors, or with firms affiliated to them.

[Please insert Table 2 here]

Table 3 summarizes the descriptive statistics of our sample by analyzing the relation between the quality of auditors and the number of RPTs. More specifically, we consider the number of Big auditors as a discrimination variable. We can see that 53.53% of firm-years in our sample have no Big auditor, 39.12% have two Big auditors and only 7.35% have only one Big auditor.

[Please insert Table 3 here]

At the first classification level, Table 3 shows that new RPTs are almost evenly distributed between firms with at least one Big auditor and firms with no Big auditor. However, using the variable 2Big as a discrimination variable, the number of new RPTs is significantly lower for reports with two Big auditors. The results are comparable for renewed RPTs. This suggests the higher efficiency of Big auditors in preventing both NRPTs and RRPTs. This may however reflect some double selection phenomena. Firms with a lower propensity to initiate RPTs hire Big auditors, and Big auditors prefer to audit only those firms. For the second classification level, we see 371 transactions with controlling shareholders, directors and managers or firms affiliated to them (TMDS), with a maximum of 8 transactions for a single special report. The largest number of transactions made with subsidiaries and affiliated companies (TSAF) is 25 transactions.

With respect to the presence of Big auditors in our sample, tests for differences of means show that firms audited by the two Big are those with the lowest number of RPTs. This result occurs for all classes. Note also that the presence of at least one Big does not necessarily

decrease the number of RPTs. We even find a significantly positive impact for some TMDS. This should be considered cautiously, since the proportion of firms having only one Big auditor is relatively low, compared to those having two big or no big.

For the other variables, Table 4 and Table 5 present descriptive statistics for the total sample, once again by making distinctions based on the number of big auditors. Table 4 displays the statistics for continuous variables, and Table 5 presents the proportion statistics for dummy variables.

Table 4 shows that the degree of independence of the audit committees of our sample firms is relatively low, with only 54.53% of independent members on average. The principal shareholder controls an average of 33.52% of voting rights, and the ratio of voting rights to cash flows rights for these controlling shareholders is on average equal to 1.226. Firms in our sample are also characterized by a board of directors composed of 11 members with approximately 45.66% of independent members. They are also characterized by: an average dividend yield (DIV) equal to 1.95, a rate of return (ROA) of 3.14% and a growth rate of sales (Δ SALES) of 5.13 %. The Market-to-book ratio (MTB) is equal to 2.096 on average. Finally, firms have a high debt ratio, with an average ratio equal to 63.89%. Tests for differences of means show that firms audited by one Big have more independent boards, and that firms audited by two Big are characterized by a rather large degree of independence of their audit committee. They are also larger, and invest more intensively in R&D. The size effect should be considered cautiously here, since it can be correlated with other variables. There are no significant differences for the other variables.

[Please insert Table 4 here]

Table 5 reports the frequencies of binary variables included in our model, and the results of the tests for differences in proportions between firms audited by one Big auditor (1BIG = 1), and those audited by others. Then, between firms audited by two Big (2BIG = 1) and others, we see that 75.29% of year-firms in our sample have an audit committee. Discrimination of these observations using 1Big and 2Big variables shows that year-firms having an audit committee do not necessarily hire more or less Big auditors. However, year-firms without an audit committee are less likely to hire two Big auditors. This is consistent with data about the independence of the audit committee, and suggests lower governance standards for these year-firms. Finally, 35.53% of year-firms in our sample are cross-listed in the U.S. markets.

[Please insert Table 5 here]

Finally, to consider potential multi-collinearity problems, we test the Pearson correlations between different variables. Table 6 in Appendix displays the matrix correlation and VIF of independent variables. We consider that correlation is significantly high if it is above a critical threshold equal to 0.6. As expected, the SIZE variable is highly correlated with the size of the board of directors (BOARD). Also, there is a large correlation between the presence of an audit committee (AUDC) and its degree of independence (INDCAUD). To avoid problems of endogeneity, the independent variables correlated with one another will not be introduced simultaneously in the same equation. The VIF values were also computed to check the existence of this problem. They range between 1.05 and 3.83, far below the critical value of 10 (Neter et al. 1989).

[Please insert Table 6 here]

MULTIVARIATE ANALYSIS

Our main research question concerns the existence of a relationship between the quality of auditors and the frequency of RPTs. We argue that the existence of two Big auditors decreases the occurrence of RPTs. This occurs because Big auditors, with their international activities, pay more attention to the impact of RPT related scandals than other auditors. Therefore, Big auditors would discourage firms from initiating RPTs, because of their reputation asset. Firms also prefer dealing with Big auditors, rather than being audited by less reputable auditors, in order to signal the quality of their governance process (Newman et al. 2005).

To answer our question, we develop a Heckman-two-step model. The choice of this methodology is due to the existence of an endogeneity problem in the relationship between the variable Big and the variable RPT. Since the choice of auditors by firms is not random, in the first step we consider a selection model in which we find the determinants of choosing one Big (1BIG) or two Big (2BIG) auditors by firms. Ireland and Lennox (2002) show that the auditor's selection bias is very large and creates significant distortions. Indeed, firms select their auditors according to their needs, sizes and characteristics. So, the decision to select (or not) one or two Big auditors may affect the decision to limit or proliferate RPTs. There is therefore a risk of co-determination, and an endogeneity between the choice of the auditor and the frequency of RPTs. This risk cannot be eliminated by a simple OLS regression: it requires the use of the Heckman model (1979), which distinguishes RPT frequency from the auditor choice decision.

In the first step, we run an ordinal Probit model in order to explain the choice of 0, 1 or 2 Big auditors by firms. The explanatory variables we use are related to the board of directors, the ownership structure and other control variables. Carcello et al. (2002), Lennox (2005) and Goodwin-Stewart and Kent (2006) find a positive relation between the presence of independent directors on the board of directors and the selection of Big auditors. Using French data, Francis et al. (2009) find that the existence of an audit committee and the selection of a Big auditor are not significantly related. We also consider the independence of the audit committee members, as a determinant of the choice of auditors, as in Abbott and Parker (2000), O'Sullivan (2000) and Carcello et al. (2002). For ownership structure, Fan and Wong (2005) find that the agency problems associated with the presence of controlling shareholders, and the separation of ownership and control, affect the choice of auditors in emerging countries. Several empirical studies generally find a significant positive link between indebtedness and the presence of a Big auditor (Chow 1982; DeFond 1992; Pittman and Fortin 2004). Piot (2005) and Francis et al. (2009) find a similar relation in the French market. Given the higher standards of minority shareholder protection in U.S. stock markets, and the need for foreign firms to comply with higher standards of information quality, we can expect that French firms listed on U.S. markets are encouraged to hire Big auditors (see Francis et al. 2003). Using French data, Francis et al. (2009) finds that the debt ratio significantly affects the choice of auditors. This is related to agency problems between shareholders and creditors. With a higher debt ratio, the presence of Big auditors is strongly desired, to arbitrate between the relevance of accounting choices and the reliability of the information provided to creditors. The first equation of our model is:

$$\text{BIG} = \alpha_0 + \alpha_1 \text{VOTE} + \alpha_2 \text{SEP} + \alpha_3 \text{BOARD} + \alpha_4 \text{INDBOARD} + \alpha_5 \text{INDAUDC} + \alpha_6 \text{CROSS} + \alpha_7 \text{DEBT} + \alpha_8 \text{MTB} + \alpha_9 \text{ROA} + \alpha_{10} \Delta \text{SALES} + \alpha_{11} \text{R\&D} + \alpha_{12} \text{SIZE} + \varepsilon$$

The second step of our model is to explain the number of RPTs. This includes, besides the control variables, two binary variables explaining the choice of one "Big" auditor (1BIG) or two "Big" (2BIG) auditors, and the Inverse Mills Ratios (*Lambda1* and *Lambda2*) derived from the first equation of the model. These Mills Ratios take into account the unobservable characteristics associated with the choice of the auditors. This may be, for example, the existence of informal transactions between the firm and the auditor, or between the auditors. This second equation can then adjust for the self-selection problem of auditors, which challenges the endogeneity of the auditors' choice by firms. If the coefficients for the Inverse Mills Ratios are significant, this signals an endogeneity of the auditor choice in the model.

The fact that we have inter-temporal data for individual firms requires the use of panel data techniques to control for the fixed effect in error terms. The second equation in our model is:

$$TPL = \beta_0 + \beta_1 1BIG + \beta_2 2BIG + \beta_3 VOTE + \beta_4 SEP + \beta_5 BOARD + \beta_6 INDBOARD + \beta_7 INDAUDC + \beta_8 CROSS + \beta_9 DEBT + \beta_{10} DIV + \beta_{11} SIZE + \beta_{12} \textit{Lambda1} + \beta_{13} \textit{Lambda2} + \varepsilon$$

Our dependent variable is the number of RPTs, which is by definition non-negative and contains only integer values. The econometric literature suggests using count data regression instead of simple linear regression, in order to avoid biased and inconsistent coefficients (Rock et al. 2001). Two alternative models are generally suggested: the negative Binomial model and the Poisson model. In order to apply this latter model, we should first test the mean-variance assumption related to the Poisson distribution. The results of different tests (Cameron and Trivedi 1990) reject the equality between the mean and the variance of the distribution of the variable RPT. This favours the use of the negative Binomial model.⁷

Auditors' selection

Table 7 presents the results of the model explaining the choice of external auditor. In the characteristics of ownership and control, the concentration of voting rights for the controlling shareholder favors the selection of big audit firms. This can be interpreted as a way to signal to minority shareholders the higher quality of the information transmitted, since Big auditors are associated with higher audit quality (Becker et al. 1998; Chang et al. 2009) or perceived audit quality (Boone et al. 2010). The degree of separation between cash flow rights and voting rights does not influence the choice of external auditor.

For corporate governance variables, the larger the proportion of independent members on the board, the higher is the probability of hiring Big auditors, but this effect is not significant. However, the degree of independence of the audit committee is a critical variable in the selection of auditors. Indeed, the coefficient for this variable is positive (0.529) and statistically significant at 1%. This result is consistent with O'Sullivan (2000) for British firms, and with Abbott and Parker (2000) and Carcello et al. (2002) for U.S. firms. This is because of the desire of the independent audit committee to opt for a more rigorous external audit, by appointing Big auditors. For the other variables, the intensity of investment in R&D affects the selection of Big auditors positively and significantly. Intensive investment in R&D is generally related to larger information asymmetries between managers and shareholders. A big auditor would signal for these firms the higher quality of their accounting information.

⁷ See Cameron and Trivedi (1990) and Boubaker and Labégorre (2008) (in a corporate governance analysis) for more details about the rationale behind using count data models.

Another interpretation is that higher R&D investment is associated with operations that are more complex, and thus require more specialized auditors. Intensive R&D companies hire specialized auditors (Godfrey and Hamilton 2005) and specialized auditors are Big 4 (Ettredge et al. 2009). Furthermore, consistent with Chang et al. (2009), and contrary to previous findings in the French context (Piot 2005), the debt ratio decreases the probability of hiring Big auditors. This may be because of the fact that debt may also play an alternative role of controlling managers, or the higher costs of hiring Big auditors for more leveraged firms. Finally, as suggested in the literature, larger firms are more likely to hire Big auditors (Chow 1982; DeFond 1992; Pittman and Fortin 2004).

[Please insert Table 7 here]

RPT and auditor quality

The results of the first model determine the probability of choosing one or two Big auditors. Besides the interesting results discussed above, this model allows the calculation of the *Inverse Mills Ratios* (λ_1 and λ_2), which will be introduced in the second model, and is intended to explain the occurrence of RPTs. The results of the second equation, using a negative Binomial regression model, are displayed in Table 8. Note that the coefficients for λ_1 and λ_2 are not significantly different from zero. This suggests that the endogeneity problem related to the auditors' choice is corrected for. In order to make comparisons, we run negative Binomial regressions without considering the Heckman two-stage.

[Please insert Table 8 here]

Table 8 shows that the existence of BIG auditors affects negatively the number of RPTs, and that firms that hire a second Big firm will have a higher marginal impact on the number of RPTs. Almost all the other variables in the regression do not significantly affect the number of RPTs. This suggests the predominance of audit quality as a way of controlling related parties transactions, rather than the other corporate governance variables. In our French context, the reputation explanation seems to have higher explanatory power on RPTs' frequency than the usual corporate governance criteria. This is in line with Gordon et al. (2006), where it is argued that "*internal auditing systems failed and consequently external auditing is a natural solution*". Using the first classification level, Table 9 displays the results of the negative Binomial model for new and renewed transactions. Results are similar to the total number of RPTs, although in that case having only one Big auditor does not reduce

significantly the number of new RPTs. Note, however, that for these new transactions, Lambda1 and Lambda 2 (columns 2 and 3) are statistically significant, which raises questions about the relevance of the endogeneity problem of auditor selection.

[Please insert Table 9 here]

Table 10 displays the results of the regression, using the classification based on the identity of the counterparty in the transactions. The number of transactions with directors, managers and controlling shareholders is not affected by the quality of the auditors. For transactions with subsidiaries and affiliated firms, hiring 1 Big or 2 Big auditors significantly affects the number of these transactions. Therefore, hiring Big auditors contributes to decreasing the number of those transactions that are perceived by financial markets as prejudicial to the minority shareholders of the group (i.e., the shareholders of the subsidiaries and affiliates, who may be different from those of the parent company).

/[Please insert Table 10 here]

Comparing coefficients for 1 Big and 2 Big variables, for all regressions, shows that the marginal impact of hiring a second Big auditor is very large. It is about 2 times higher than that for the presence of the first Big. This difference is the same for almost all regressions. The existence of only one BIG auditor affects the frequency of those transactions that are supposed to be prejudicial to minority shareholders. A joint auditing executed by one BIG and one non-BIG auditor does not necessarily affect the reputation of the BIG auditor, since any potential error will be attributed to the less reputable auditor. However, with two BIG, both auditors are concerned about their reputation, and so will endeavor to make fewer errors. With 2 BIG, reporting errors can signal to the market some misbehavior that may be costly to their global market strategy.

The results of the regressions applied to the second classification level can be related to the specific features of the auditing process. The auditors may detect the TSAF more easily because the auditors deal with counterparties (the subsidiaries and associate companies) during the audit process of consolidated financial statements. They may also give an opinion about the true and fair view of the subsidiaries and associated firms' financial statements. This is not the case for transactions with managers, directors or controlling shareholders. Indeed this may explain our results. Big auditors are better able to detect the TSAF, although not the

TMDS. Since they care about their reputation, they focus on the TSAF, which are more easily detectable, and are supposed to have higher values.

For the ownership structure variables, we find that the concentration of voting rights in the hands of major shareholders (VOTE), and the separation between cash-flow and voting rights (SEP), do not affect the total number of RPTs significantly. Only for renewed RPTs is the positive effect of VOTE significant. This result may be due to special features of the French market. Indeed, both concentration of voting rights, and separation between cash flow and voting rights, are very common features of large French companies. This makes these variables less important for auditors and minority shareholders, as indicators of the higher probability of misbehavior aimed at expropriating minority shareholders, except for transactions renewed over years.

The corporate governance variables do not significantly affect the total number of RPTs, or those using the first classification levels. For TDMDS, we even find that the independence of the Board increases the number of such RPTs.

Our results show that the degree of independence of the audit committee as a governance mechanism is not sufficient to limit the number of RPTs in French companies. This can be attributed to the poor governance role attributed to the audit committees of European companies. As suggested by a survey published by Ernst & Young in 2007, audit committees in Europe are almost always not involved in the pre-transaction process. According to the same survey, European audit committees intervene mainly during the post-transaction period, by working on the "reporting" process, and studying the impact of these transactions on the financial statements. Our result is in line with this report, and contributes to the debate on the effectiveness of the audit committee as a governance mechanism. Mainly, therefore, as indicated by the results of the first equation of the model, the audit committee plays an important role only in the selection process of the auditors. The quality of auditors affects the occurrence of RPTs for French companies. So, of the three corporate governance variables used in our model, the quality of auditors is the most important variable that affects the occurrence of RPTs.

Gordon et al. (2006) argue that a firm's indebtedness can be used as a way to discipline managers, and so leads to the reduction of transactions prejudicial to minority shareholders. In our case, indebtedness (DEBT) does not affect the total number of RPTs, and may even have a significantly positive effect on the number of TDMDS. The dividend yield affects significantly positively the total number of RPTs, the number of renewed RPTs and the number of transactions with subsidiaries and affiliated firms. This may be explained as the

strategic use of dividends by managers, in order to have more leeway to initiate RPTs. Finally, the size of the firm and the CROSS variables do not seem to affect the number of RPTs. Using the results of the first equation in our model confirms that firm size is important only for the auditor selection decision, but not for RPT initiation.

CONCLUSION

Using data from large French companies, our study shows that audit quality plays an important role in the reduction of the number of RPTs. Given the particular features of French regulation with respect to related parties' transactions, our result may be explained by the reputation cost for Big auditors related to these transactions. French regulations do not constrain auditors to make more efforts to detect and report these transactions. However, because misbehavior or errors can affect the activities of Big auditors in countries where minority shareholders are better protected, they pay more attention to their reporting about RPTs in the French market. The marginal impact of hiring a second Big auditor confirms our reputation argument. With only one Big and one non-Big auditor, a potential error can be attributed to the presence of the non-Big auditor. French regulations with respect to RPTs require the issuance of a special report, in which transactions are disclosed. However, auditors are not required to make any detection effort. This means that auditors should report only the information about these RPTs that is collected directly from managers. Reputation is then the only explanation of the negative effect related to the presence of Big auditors on the number of RPTs.

To obtain our results, we develop a Heckman-two-step model. This procedure is intended to control for the endogenous nature of the auditors' choice of decision. In the first step, we run a selection model in which we look for the determinants of choosing one Big (1BIG) or two Big (2BIG) auditors by firms. Firms select their auditors according to their needs, size and characteristics. Therefore the decision to select (or not) one or two Big auditors may affect the decision to limit or proliferate RPTs. The results of this first equation are in line with the existing literature regarding the positive effect of the independence of the audit committee (Carcello et al. 2002), and the effect of the concentration of voting rights (Fan and Wong 2005). However, we find that neither cross-listing nor the independence of the board of directors affect the probability of hiring Big auditors. The debt ratio decreases this probability. This latter result confirms our reputation story, since we tend to think that auditors are not necessarily interested in riskier firms.

The relative effect of Big auditors' joint auditing on the number of announced RPTs should be considered with caution, for two reasons. First, in their special reports, auditors in France do not necessarily mention those "routine" transactions of the firm with its subsidiaries that are considered "normal" conditions. There is, moreover, no clear definition of the concepts of "normal" and "routine" operations. This enables managers and auditors to use open interpretations of these concepts. This in turn allows the managers and the auditor subjectively to decide not to classify the transactions being conducted as normal market conditions. Also, it is not clear that the concept of joint auditing tends to reduce this subjectivity, since both auditors may choose to select the same criteria to define routine transactions and normal market conditions. This of course creates a negative bias on the number of RPTs we consider in this paper. Second, auditors in France are not required to make further investigations to detect and highlight new transactions not reported voluntarily by management. If, in their normal control, the auditors detect RPTs not revealed in a special report, they can only inform managers (or the board of directors) about this irregularity, without necessarily having the obligation to publish another special report. This again creates a negative bias regarding the true number of RPTs realized by firms.

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Table 1: Definition of different variables

Variable	Definition	Measure
BIG	Audit performed by one the four biggest auditing companies (KPMG, Ernst & Young, Deloitte and PricewaterhouseCoopers)	A cardinal variable equal to 0 if no “big” is auditing the company, 1 if only one the two auditors is “big” and 2 if both auditors are “big”.
<i>Related parties transactions</i>		
RPT	Transactions with related parties.	Number of related parties’ transactions available in the special report provided by auditors.
RRPT	Renewed related party transactions	Number of transactions that were renewed from the year before
NRPT	New related party transactions	The number of new transactions with respect to the year before
TMDS	Transactions with the managers, the directors or the controlling shareholders or with firms linked to them.	The number of transactions between the firm and its managers, directors or controlling shareholders and their relatives.
TSAF	Transactions with subsidiaries or affiliated firms.	The number of transactions between the firm and its subsidiaries or affiliated firms
<i>Governance and shareholding variables</i>		
VOTE	Voting rights of the controlling shareholder	Percentage of voting rights detained by the principal shareholder (by considering the percentage detained in other subsidiaries in the case of holdings)
SEP	Separation between ownership and control	Ratio of the voting rights over the cash-flow rights of the controlling shareholder
BOARD	Size of the board of directors	Number of directors
INDBOARD	Degree of independence of the board of directors	Ratio of the number of non-executive independent directors to the size of the board of directors. Independence of directors is verified by looking for potential links between the director and managers or principal shareholders.
AUDC	Existence of audit committee	A dummy variable equal to 1 if an audit committee exists and 0 otherwise.
INDCAUD	Degree of independence of the audit committee	Ratio of the number of non-executive independent members of audit committee to the total number of the members of the audit committee. Independence of the members is defined like for all directors.
CROSS	Cross-listing in U.S. markets	A dummy variable equal to 1 if the firm is listed in one of the U.S. markets (direct listing or through ADRs) and 0 otherwise.
DEBT	Debt ratio	Ratio of total financial debt to the total value of assets
<i>Other control variables</i>		
MTB	Market-to-book	Ratio of market value to the book value of equity
ROA	Return on assets	Ratio of EBITDA to total value of equity.
ΔSALES	Percentage variation of sales	Ratio of the difference of sales between T and T-1 to the value of sales at T-1
R&D	Intensity of investment in R&D	Ratio of investments in R&D and total sales
DIV	Dividend yield.	Ratio of dividends to share price
SIZE	Size of the firm	Logarithm of the total value of equity

Table 2: Descriptive statistics: distribution of classes of RPTs in special reports

This Table reports descriptive statistics about the distribution of different classes of RPTs, disclosed in special reports by 85 large French companies between 2002 and 2005. The first two columns display information about the distribution special reports and the other column display information about RPTs. NRPT is the number of newly announced related party transactions. RRPT is the number of renewed related party transactions. TMDS is the number of transactions between the firm and its managers, directors and controlling shareholders. TSAF is the number of RPTs between the firm and its affiliated firms and subsidiaries.

Number of RPTs per special report	Total RPT		First classification level		Second classification level			
	Reports		NRPT		TMDS		TSAF	
	Number	Prop.	Number	Prop.	Number	Prop.	Number	Prop.
0	66	19.41	0	0	0	0	0	0
1	74	21.76	74	6.24	42	7.81	32	4.94
2	38	11.18	76	6.41	36	6.69	40	6.17
3	50	14.71	150	12.65	42	7.81	108	16.67
4	20	5.88	80	6.75	35	6.51	45	6.94
5	21	6.18	105	8.85	37	6.88	68	10.49
6	14	4.12	84	7.08	37	6.88	47	7.25
7	10	2.94	70	5.90	34	6.32	36	5.56
8	15	4.41	120	10.12	56	10.41	64	9.88
9	9	2.65	81	6.83	40	7.43	41	6.33
≥ 10	23	6.76	346	29.17	179	33.27	167	25.77
Total	340	100	1 186	100	538	100	648	100
							371	100
							815	100

Table 3: Descriptive statistics of RPTs as a function of the auditors' selection

This Table reports descriptive statistics about RPTs, disclosed in special reports by 85 large French companies between 2002 and 2005, as a function of the number of big auditors. Big auditors are KPMG, Ernst & Young, Deloitte and PricewaterhouseCoopers. TMDS is number of transactions between the firm and its managers, directors or controlling shareholders. TSAF is the number of RPTs between the firm and its affiliated firms and subsidiaries. 1BIG is a dummy variable equal to 1 if the firm has at least one big auditor and 0 otherwise. 2BIG is a dummy variable equal to 1 if the firm has two big auditors and 0 otherwise. t-statistics are related to two-tailed equality of means tests. *, ** and *** indicate significance at 10%, 5% and 1% levels, respectively.

Variable		Total sample	1BIG		t-statistic	2BIG		t-statistic
			0	1		0	1	
Number of observations		340	182	158		207	133	
RPT	<i>Mean</i>	3.488	3.280	3.728	- 1.007	4.256	2.293	4.438 ***
	<i>S. dev.</i>	4.088	4.404	3.690		4.284	3.450	
	<i>Min.</i>	0	0	0		0	0	
	<i>Max.</i>	25	25	20		23	25	
	<i>Freq.</i>	1186	597	589		881	305	
First classification level NRPT	<i>Mean</i>	1.582	1.456	1.728	- 0.979	2.048	0.857	4.305 ***
	<i>S. dev.</i>	2.554	2.911	2.059		2.951	1.513	
	<i>Min.</i>	0	0	0		0	0	
	<i>Max.</i>	22	22	10		22	9	
	<i>Freq.</i>	538	265	273		424	114	
First classification level RRPT	<i>Mean</i>	1.906	1.824	2.000	- 0.651	2.208	1.436	2.827 ***
	<i>S. dev.</i>	2.481	2.611	2.327		2.371	2.583	
	<i>Min.</i>	0	0	0		0	0	
	<i>Max.</i>	17	17	14		9	17	
	<i>Freq.</i>	648	332	316		457	191	
Second classification level TMDS	<i>Mean</i>	1.091	0.835	1.386	- 3.190 ***	1.261	0.827	2.443 **
	<i>S. dev.</i>	1.609	1.344	1.829		1.740	1.346	
	<i>Min.</i>	0	0	0		0	0	
	<i>Max.</i>	8	7	8		8	7	
	<i>Freq.</i>	371	152	219		261	110	
Second classification level TSAF	<i>Mean</i>	2.397	2.445	2.342	0.261	2.996	1.466	3.866 ***
	<i>S. dev.</i>	3.631	4.170	2.901		3.818	3.110	
	<i>Min.</i>	0	0	0		0	0	
	<i>Max.</i>	25	25	14		23	25	
	<i>Freq.</i>	815	544	370		620	195	

Table 4: Descriptive statistics for continuous variables as function of the audit quality

This Table reports descriptive statistics for different continuous variables characterizing our sample containing 85 large French companies for the period between 2002 and 2005. These variables are displayed as function of the number of big auditors. Big auditors are KPMG, Ernst & Young, Deloitte and PricewaterhouseCoopers. 1BIG is a dummy variable equal to 1 if the firm has at least one big auditor and 0 otherwise. 2BIG is a dummy variable equal to 1 if the firm has two big auditors and 0 otherwise. VOTE is the proportion of voting rights detained by the controlling shareholder and SEP is the ratio of voting rights to cash flow rights for the controlling shareholder. BOARD is the number of members of the board of directors. INDBOARD is the proportion of independent directors in the board as defined by the French regulators. INDCAUD is the proportion of independent members in the audit committee. DEBT is the ratio of total debt to the total value of assets. MTB is the market to book ratio measured as market value to the book value of equity and ROA is the return over assets of the firm measured by the ratio of EBITDA to total value of equity. Δ SALES is the ratio the difference of sales between T and T-1 to the value of sales at T-1. R&D is the ratio of investments in R&D over total sales. DIV is the dividend payout ratio and SIZE is the total value of equity of the firm (in millions Euros). t-statistics are related to two-tailed equality of means tests. *, ** and *** indicate significance at 10%, 5% and 1% levels, respectively.

Variable		Total sample	1BIG		t-statistic	2BIG		t-statistic
			0	1		0	1	
Number of observations		340	182	158		207	133	
SEP	Mean	1.2265	1.2110	1.2443	- 1.064	1.2219	1.2335	- 0.362
	S. dev.	0.0156	0.0211	0.0233		0.0187	0.0275	
	Min.	0.3476	0.6939	0.3476		0.3476	0.6939	
	Max.	2.5329	2.5329	2.0099		2.0100	2.5329	
VOTE	Mean	0.3352	0.3528	0.3149	1.359	0.3290	0.3449	- 0.559
	S. dev.	0.1394	0.0182	0.0214		0.0183	0.0214	
	Min.	0	0.0059	0.0000		0.0000	0.0181	
	Max.	1.0000	1.000	1.0000		0.9508	1.0000	
BOARD	Mean	10.7912	10.9835	10.5696	0.975	10.0387	11.9624	- 4.563 ***
	S. dev.	0.2120	0.3076	0.2863		0.2797	0.2951	
	Min.	3	3	3		3	4	
	Max.	21	21	18		20	21	
INDBOARD	Mean	0.4566	0.4311	0.4861	- 2.329 **	0.4483	0.4697	- 0.881
	S. dev.	0.0119	0.0166	0.0167		0.0163	0.0166	
	Min.	0.0000	0.0000	0.0000		0.0000	0.0000	
	Max.	1.0000	1.0000	1.0000		1.0000	0.8889	
INDCAUD	Mean	0.5453	0.5495	0.5404	0.212	0.4737	0.6568	- 4.268 ***
	S. dev.	0.0215	0.0294	0.0315		0.0287	0.0298	
	Min.	0.0000	0.0000	0.0000		0.0000	0.0000	
	Max.	1.0000	1.0000	1.0000		1.0000	1.0000	
DEBT	Mean	0.6389	0.6353	0.6430	- 0.459	0.6446	0.6300	0.844
	S. dev.	0.0084	0.0129	0.0106		0.0099	0.0151	
	Min.	0.0328	0.0328	0.2373		0.0328	0.2645	
	Max.	0.9279	0.9279	0.9011		0.8891	0.9279	
MTB	Mean	2.4014	2.4461	2.3500	1.173	1.8689	2.4507	- 0.887
	S. dev.	0.0974	0.1343	0.1417		0.5146	0.1669	
	Min.	0.4120	0.4901	0.4120		0.4521	0.4901	
	Max.	12.9763	11.8093	12.9763		11.8093	12.9763	
ROA	Mean	0.0314	0.0343	0.0280	0.932	0.0333	0.0283	0.727
	S. dev.	0.0034	0.0047	0.0048		0.0041	0.0047	
	Min.	- 0.4243	- 0.259	- 0.424		- 0.424	- 0.259	
	Max.	0.2130	0.2130	0.1700		0.1758	0.2130	
ΔSALES	Mean	0.0513	0.0540	0.0482	0.322	0.0552	0.0453	0.546
	S. dev.	0.0089	0.0110	0.0144		0.0118	0.0133	
	Min.	- 0.6723	- 0.347	- 0.672		- 0.672	- 0.347	
	Max.	1.1588	0.8692	1.1588		1.1588	0.8692	
R&D	Mean	0.0276	0.0374	0.0163	3.965 ***	0.0184	0.0419	- 4.339 ***
	S. dev.	0.0027	0.0046	0.0020		0.0021	0.0059	
	Min.	0.0000	0.0000	0.0000		0.0000	0.0000	
	Max.	0.2860	0.2860	0.1280		0.2195	0.2860	
DIV	Mean	0.0195	0.0178	0.0214	- 1.918 *	0.0199	0.0188	0.566
	S. dev.	0.0009	0.0010	0.0016		0.0013	0.0012	
	Min.	0.0000	0.0000	0.0000		0.0000	0.0000	
	Max.	0.2000	0.0520	0.2000		0.2000	0.0520	
SIZE	Mean	13,680	16,813	10,072	3.013 ***	8,793	21,287	- 5.641 ***
	S. dev.	1,129.07	1,874	1,049		857	2,421	
	Min.	165.502	200	165		165	294	
	Max.	109,350	109,350	69,175		69,175	109,350	

Table 5: Descriptive statistics for dummy variables as function of the audit quality and tests of equality of proportions

This Table reports descriptive statistics for different continuous variables characterizing our sample containing 85 large French companies for the period between 2002 and 2005. These variables are displayed as function of the number of big auditors. Big auditors are KPMG, Ernst & Young, Deloitte and PricewaterhouseCoopers.. 1BIG is a dummy variable equal to 1 if the firm has at least one big auditor and 0 otherwise. 2BIG is a dummy variable equal to 1 if the firm has two big auditors and 0 otherwise. AUDC is a dummy variable equal to 1 if the firm has an audit committee and 0 otherwise. CROSS identifies firms listed in U.S. stock markets directly or through ADRs. Proportions are in parentheses. Chi- squares are related to two-tailed equality of proportions tests. *, ** and *** indicate significance at 10%, 5% and 1% levels, respectively.

Variable	Total sample	1BIG		Chi-square	2BIG		Chi-square
		0	1		0	1	
Number of observations	340	182	158		207	133	
	(100%)	(53.53%)	(46.47%)		(60.88%)	(39.12%)	
AUDC				0.999			28.885 ***
0	84	41	43		72	12	
	(24.71)	(12.06%)	(12.65%)		(21.18%)	(3.53%)	
1	256	141	115		135	121	
	(75.29)	(41.47%)	(33.82%)		(39.70%)	(35.59%)	
CROSS				10.363 ***			23.073 ***
0	226	107	119		158	68	
	(66.47%)	(31.47%)	(35.00%)		(46.47%)	(20.00%)	
1	114	75	39		49	65	
	(33.53%)	(22.06%)	(11.47%)		(14.41%)	(19.12%)	

Table 6: Pearson correlation matrix and VIF

This Table reports correlation matrix for different variables characterizing our sample containing 85 large French companies for the period between 2002 and 2005. VOTE is the proportion of voting rights detained by the controlling shareholder and SEP is the ratio of voting rights to cash flow rights for the controlling shareholder. BOARD is the number of members of the board of directors. INDBOARD is the proportion of independent directors in the board as defined by the French regulators. AUDC is a dummy variable equal to 1 if the firm has an audit committee and 0 otherwise. INDAUDC is the proportion of independent members in the audit committee. CROSS identifies firms listed in U.S. stock markets directly or through ADRs. DEBT is the ratio of total debt to the total value of assets. MTB is the market to book ratio measured as market value to the book value of equity and ROA is the return over assets of the firm measured by the ratio of EBITDA to total value of equity. ΔSALES is the ratio the difference of sales between T and T-1 to the value of sales at T-1. R&D is the ratio of investments in R&D over total sales. DIV is the dividend payout ratio and SIZE is the total value of equity of the firm (in millions Euros). P-values for Pearson correlation tests are in parentheses. * indicates significance at 1% level.

	VOTE	SEP	BOARD	INDBOARD	AUDC	INDAUDC	CROSS	DEBT	MTB	ROA	ΔSALES	R&D	DIV	SIZE
VOTE	1.000													
SEP	- 0.086 (0.115)	1.000												
BOARD	- 0.119 * (0.028)	0.082 (0.132)	1.000											
INDBOARD	- 0.516 * (0.000)	- 0.032 (0.561)	0.099 (0.068)	1.000										
AUDC	- 0.015 (0.780)	0.059 (0.279)	0.302 * (0.000)	0.179 * (0.001)	1.000									
INDAUDC	- 0.130 * (0.016)	0.075 (0.169)	0.101 (0.063)	0.311 * (0.000)	0.790 * (0.000)	1.000								
CROSS	- 0.293 * (0.000)	0.023 (0.668)	0.256 * (0.000)	0.262 * (0.000)	0.176 * (0.001)	0.349 * (0.000)	1.000							
DEBT	- 0.065 (0.235)	- 0.064 (0.241)	0.238 * (0.000)	- 0.082 (0.129)	- 0.024 (0.659)	- 0.105 (0.054)	0.101 (0.064)	1.000						
MTB	0.081 (0.137)	0.027 (0.626)	0.039 (0.474)	- 0.072 (0.185)	0.100 (0.066)	0.091 (0.095)	0.028 (0.608)	- 0.024 (0.656)	1.000					
ROA	0.120 * (0.027)	0.128 * (0.018)	- 0.035 (0.525)	- 0.048 (0.378)	- 0.099 (0.069)	- 0.141 * (0.009)	- 0.181 * (0.001)	- 0.337 * (0.000)	- 0.003 (0.961)	1.000				
ΔSALES	0.022 (0.689)	0.103 (0.058)	- 0.128 * (0.018)	- 0.089 (0.101)	- 0.115 * (0.034)	- 0.086 (0.112)	- 0.049 (0.367)	- 0.086 (0.112)	0.027 (0.621)	0.227 * (0.000)	1.000			
R&D	- 0.123 * (0.023)	0.039 (0.476)	- 0.062 (0.254)	0.080 (0.142)	0.049 (0.370)	0.191 * (0.000)	0.250 * (0.000)	- 0.325 * (0.000)	0.036 (0.503)	- 0.008 (0.882)	0.100 (0.066)	1.000		
DIV	0.031 (0.566)	- 0.015 (0.784)	0.247 * (0.000)	0.006 (0.907)	0.139 * (0.010)	0.015 (0.790)	- 0.049 (0.372)	0.031 (0.563)	0.065 (0.234)	0.139 * (0.010)	- 0.051 (0.353)	- 0.205 * (0.000)	1.000	
SIZE	- 0.163 * (0.003)	0.098 (0.071)	0.661 * (0.000)	0.223 * (0.000)	0.303 * (0.000)	0.241 * (0.000)	0.355 * (0.000)	0.363 * (0.000)	0.014 (0.792)	- 0.146 * (0.007)	- 0.124 (0.022)	- 0.065 (0.234)	0.217 * (0.000)	1.000
VIF	1.56	1.23	2.16	1.62	3.50	3.83	1.52	1.60	1.05	1.30	1.12	1.33	1.18	2.37

Table 7: A nominal Probit model for auditor's selection (BIG = 0, 1, 2)

This Table reports the results of the following nominal Probit model:

$$\text{BIG} = \alpha_0 + \alpha_1 \text{VOTE} + \alpha_2 \text{SEP} + \alpha_3 \text{BOARD} + \alpha_4 \text{INDBOARD} + \alpha_5 \text{INDAUDC} + \alpha_6 \text{CROSS} + \alpha_7 \text{DEBT} + \alpha_8 \text{MTB} + \alpha_9 \text{ROA} + \alpha_{10} \Delta \text{SALES} + \alpha_{11} \text{R\&D} + \alpha_{12} \text{SIZE} + \varepsilon$$

VOTE is the proportion of voting rights detained by the controlling shareholder and SEP is the ratio of voting rights to cash flow rights for the controlling shareholder. BOARD is the number of members of the board of directors; INDBOARD is the proportion of independent directors in the board as defined by the French regulators. INDAUDC is the proportion of independent members in the audit committee. CROSS identifies firms listed in U.S. stock markets directly or through ADRs. DEBT is the ratio of total debt to the total value of assets. MTB is the market to book ratio measured as market value to the book value of equity and ROA is the return over assets of the firm measured by the ratio of EBITDA to total value of equity. Δ SALES is the ratio the difference of sales between T and T-1 to the value of sales at T-1. R&D is the ratio of investments in R&D over total sales. DIV is the dividend payout ratio and SIZE is the total value of equity of the firm (in millions Euros). *, ** and *** indicate significance at 10%, 5% and 1% levels, respectively.

<i>Variables</i>	<i>Coefficient</i>	<i>t-stat</i>
VOTE	0.737 **	2.39
SEP	0.135	0.63
BOARD	0.054 **	2.27
INDBOARD	0.460	1.28
INDAUDC	0.529 ***	3.36
DEBT	- 1.191 **	- 2.09
CROSS	0.163	0.92
MTB	- 0.022	- 0.61
ROA	- 1.694	- 1.21
Δ SALES	0.167	0.53
R&D	4.018 ***	2.62
SIZE	0.196 ***	3.44
Constant 1	1.175 *	1.92
Constant 2	2.785 ***	4.44
N		340
Chi ²		118.96
Prob > Chi ²		0.0000
Pseudo R ²		13.78%

Table 8: Determinants of the number of total related parties' transactions

This Table reports the results of the following regression:

$$RPT = \beta_0 + \beta_1 1BIG + \beta_2 2BIG + \beta_3 VOTE + \beta_4 SEP + \beta_5 BOARD + \beta_6 INDBOARD + \beta_7 INDAUDC + \beta_8 CROSS + \beta_9 DEBT + \beta_{10} DIV + \beta_{11} SIZE + \beta_{12} \textit{Lambda1} + \beta_{13} \textit{Lambda2} + \varepsilon$$

In this table, we present the results of the Negative Binomial regression. This regression is conducted after clustering at the firm level. We show the results of two equations with and without the correction for the bias in the Heckman first-stage model of audit selection. We consider variables defining the number of big auditors. Big auditors are KPMG, Ernst & Young, Deloitte and PricewaterhouseCoopers. 1BIG is a dummy variable equal to 1 if the firm has at least one big auditor and 0 otherwise. 2BIG is a dummy variable equal to 1 if the firm has two big auditors and 0 otherwise. VOTE is the proportion of voting rights detained by the controlling shareholder and SEP is the ratio of voting rights to cash flow rights for the controlling shareholder. BOARD is the number of members of the board of directors. INDBOARD is the proportion of independent directors in the board as defined by the French regulators. INDAUDC is the proportion of independent members in the audit committee. DEBT is the ratio of total debt to the total value of assets. CROSS identifies firms listed in U.S. stock markets directly or through ADRs. DIV is the dividend payout ratio and SIZE is the total value of equity of the firm (in millions Euros). *Lambda1* and *Lambda2* are the Inverse Mills Ratios resulting from the first equation of the model. *, ** and *** indicate significance at 10%, 5% and 1% levels, respectively.

Variables	Negative Binomial regression			
	Coef.	t-stat	Coef.	t-stat
1BIG	- 0.593 **	- 2.47	- 0.670 **	- 2.48
2BIG	- 1.341 ***	- 4.58	- 1.336 ***	- 4.33
VOTE	- 0.015	- 0.03	0.251	0.66
SEP	0.025	0.08	0.059	0.18
BOARD	0.004	0.09	0.029	0.81
INDBOARD	- 0.307	- 0.65	- 0.202	- 0.43
INDAUDC	- 0.342	- 0.90	0.002	0.01
DEBT	0.597	0.63	- 0.269	- 0.33
CROSS	0.044	0.18	0.225	0.93
DIV	8.030**	2.01	6.407	1.63
SIZE	- 0.017	- 0.15	0.098	0.99
CONS	1.766	1.05	0.755	0.86
<i>Lambda1</i>	- 0.236	- 1.63		
<i>Lambda2</i>	0.165	1.19		
N		340		340
Chi2		43.64		36.40
Prob > Chi2		0.0000		0.0001

Table 9: Determinants of the number of related parties' transactions as defined in the first classification level: NRPT (New RPT) versus RRPT (Renewed RPT)

This Table reports the results of the following regression:

$$X = \beta_0 + \beta_1 \text{1BIG} + \beta_2 \text{2BIG} + \beta_3 \text{VOTE} + \beta_4 \text{SEP} + \beta_5 \text{BOARD} + \beta_6 \text{INDBOARD} + \beta_7 \text{INDAUDC} + \beta_8 \text{CROSS} + \beta_9 \text{DEBT} + \beta_{10} \text{DIV} + \beta_{11} \text{SIZE} + \beta_{12} \text{Lambda1} + \beta_{13} \text{Lambda2} + \varepsilon$$

With X equal to NRPT or RRPT. All equations in this table are run using Binomial Negative model after clustering at the firm level. For each category of RPT, we show the results of two separate equations, with and without the correction for the bias in the Heckman first-stage model of audit selection. We consider variables defining the number of big auditors. Big auditors are KPMG, Ernst & Young, Deloitte and PricewaterhouseCoopers. 1BIG is a dummy variable equal to 1 if the firm has at least one big auditor and 0 otherwise. 2BIG is a dummy variable equal to 1 if the firm has two big auditors and 0 otherwise. VOTE is the proportion of voting rights detained by the controlling shareholder and SEP is the ratio of voting rights to cash flow rights for the controlling shareholder. BOARD is the number of members of the board of directors. INDBOARD is the proportion of independent directors in the board as defined by the French regulators. INDAUDC is the proportion of independent members in the audit committee. DEBT is the ratio of total debt to the total value of assets. CROSS identifies firms listed in U.S. stock markets directly or through ADRs. DIV is the dividend payout ratio and SIZE is the total value of equity of the firm (in millions Euros). *Lambda1* and *Lambda2* are the Inverse Mills Ratios resulting from the first equation of the model. *, ** and *** indicate significance at 10%, 5% and 1% levels, respectively.

Variables	NRPT				RRPT			
	Coef.	t-stat	Coef.	t-stat	Coef.	t-stat	Coef.	t-stat
1BIG	- 0.481	- 1.28	- 0.534	- 1.13	- 0.651 ***	- 2.71	- 0.677 ***	- 2.85
2BIG	- 1.452 ***	- 3.91	- 1.412 ***	- 3.53	- 1.189 ***	- 3.56	- 1.179 ***	- 3.67
VOTE	- 0.630	- 1.15	- 0.196	- 0.40	0.930 **	2.12	0.826 **	2.24
SEP	- 0.242	- 0.59	- 0.172	- 0.45	0.185	0.53	0.195	0.54
BOARD	- 0.022	- 0.46	0.021	0.52	0.045	1.00	0.035	0.95
INDBOARD	- 0.869	- 1.38	- 0.722	- 1.06	0.533	1.24	0.406	0.93
INDAUDC	- 0.682	- 1.49	- 0.047	- 0.15	0.102	0.25	0.035	0.13
DEBT	0.849	0.84	- 0.656	- 0.77	0.312	0.31	0.245	0.29
CROSS	- 0.035	- 0.11	0.202	0.62	0.192	0.77	0.258	1.04
DIV	- 1.061	- 0.21	- 3.714	- 0.73	13.229 ***	2.91	13.099 ***	2.78
SIZE	- 0.098	- 0.70	0.120	1.04	0.108	0.81	0.101	0.94
CONS	3.337	1.53	0.951	0.97	- 2.183	- 1.38	- 1.157	- 1.26
Lambda1	- 0.264 *	- 1.67			- 0.194	- 1.01		
Lambda2	0.329 *	1.79			- 0.069	- 0.48		
N	340		340		340		340	
Chi2	37.15		24.98		41.41		37.36	
Prob > Chi2	0.0004		0.0092		0.0001		0.0001	

Table 10: Determinants of the number of related parties' transactions as defined in the second classification level: TMDS versus TSAF

This Table reports the results of the following regression:

$$X = \beta_0 + \beta_1 \text{1BIG} + \beta_2 \text{2BIG} + \beta_3 \text{VOTE} + \beta_4 \text{SEP} + \beta_5 \text{BOARD} + \beta_6 \text{INDBOARD} + \beta_7 \text{INDAUDC} + \beta_8 \text{CROSS} + \beta_9 \text{DEBT} + \beta_{10} \text{DIV} + \beta_{11} \text{SIZE} + \beta_{12} \text{Lambda1} + \beta_{13} \text{Lambda2} + \varepsilon$$

with X equal to TMDS or TSAF. All equations in this table are run using Binomial Negative model after clustering at the firm level. For each category of RPT, we show the results of two separate equations, with and without the correction for the bias in the Heckman first-stage model of audit selection. We consider variables defining the number of big auditors. Big auditors are KPMG, Ernst & Young, Deloitte and PricewaterhouseCoopers. 1BIG is a dummy variable equal to 1 if the firm has at least one big auditor and 0 otherwise. 2BIG is a dummy variable equal to 1 if the firm has two big auditors and 0 otherwise. VOTE is the proportion of voting rights detained by the controlling shareholder and SEP is the ratio of voting rights to cash flow rights for the controlling shareholder. BOARD is the number of members of the board of directors. INDBOARD is the proportion of independent directors in the board as defined by the French regulators. INDAUDC is the proportion of independent members in the audit committee. DEBT is the ratio of total debt to the total value of assets. CROSS identifies firms listed in U.S. stock markets directly or through ADRs. DIV is the dividend payout ratio and SIZE is the total value of equity of the firm (in millions Euros). Lambda1 and Lambda2 are the Inverse Mills Ratios resulting from the first equation of the model. *, ** and *** indicate significance at 10%, 5% and 1% levels, respectively.

Variables	TMDS				TSAF			
	Coef.	t-stat	Coef.	t-stat	Coef.	t-stat	Coef.	t-stat
1BIG	0.112	0.31	0.142	0.39	- 0.849 ***	- 3.00	- 0.884 ***	- 3.05
2BIG	- 0.423	- 1.14	- 0.325	- 0.82	- 1.673 ***	- 4.64	- 1.661 ***	- 4.58
VOTE	0.413	0.61	0.846 *	1.65	0.132	0.25	0.280	0.61
SEP	- 0.375	- 1.27	- 0.317	- 1.10	0.182	0.43	0.204	0.47
BOARD	0.047	0.92	0.084 **	2.00	- 0.003	- 0.05	0.009	0.21
INDBOARD	1.413 *	1.83	1.703 **	2.33	- 0.734	- 1.37	- 0.716	- 1.38
INDAUDC	- 0.196	- 0.50	0.240	0.78	- 0.435	- 0.84	- 0.236	- 0.70
DEBT	1.987 **	1.97	1.055	1.34	- 0.249	- 0.21	- 0.808	- 0.79
CROSS	- 0.333	- 0.97	- 0.150	- 0.48	0.310	1.10	0.468 *	1.65
DIV	4.797	1.14	3.423	0.87	9.517 **	1.96	8.642 *	1.70
SIZE	0.198	0.09	- 0.059	- 0.53	0.105	0.77	0.178	1.46
CONS	- 1.660	- 0.80	- 1.866 **	- 2.00	0.683	0.36	0.462	0.41
Lambda1	- 0.137	- 0.80			- 0.250	- 1.31		
Lambda2	0.242	1.16			0.077	0.46		
N	340		340		340		340	
Chi2	30.98		26.08		41.62		38.35	
Prob > Chi2	0.0034		0.0063		0.0001		0.0001	