Audit tenure and audit Qualifications in a low litigation risk setting: An analysis of the Spanish market*

Tenencia de auditorías y calificaciones de auditorías en un ambiente de bajo riesgo de litigios. Un análisis del mercado español

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Abstract

The main role of the external auditor in the classical corporate governance scheme is to verify the accounting information provided by the firms' managers. Lengthy audit engagements are viewed as a main threat to preserve auditor independence, and therefore regulators have established mandatory rotation rules in many countries worldwide. Researchers, however, have addressed the analysis of audit independence mainly by evaluating the role of the auditor not as an accounting verifier but as a substitute of bankruptcy prediction models. Our results show that the likelihood of audit qualifications decreases with audit tenure. This result is robust to the inclusion in the model of a proxy of accounting quality. Therefore, the potential explanation for this finding based on higher accounting quality associated to lengthy audit engagements is rejected. This threat to the independence of the external auditor has not been considered in the mandatory rotation rules established in most countries that only requires the rotation of the audit partner.

Key words: *Auditor independence; qualified opinion; auditor tenure; audit quality.*

JEL Classification: *G38, L15, M4.*

Resumen

La principal función del auditor externo en el esquema de gobierno corporativo clásico es el de verificar la información contable proporcionada por los gerentes de las empresas. Las relaciones largas de auditoría se consideran una amenaza importante para preservar la independencia del auditor. En consecuencia, los reguladores han establecido normas de rotación obligatoria en muchos países del mundo. Los investigadores, sin embargo, han abordado el análisis de la

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independencia del auditor, principalmente mediante la evaluación de su función no como un verificador de la contabilidad de la empresa, sino como un sustituto de los modelos de predicción de quiebra. Nuestros resultados muestran que la probabilidad recibir informes de auditoría con salvedades disminuye en función del número de años que el auditor lleva auditando a la empresa. Este resultado es robusto a la inclusión en el modelo de una proxy de la calidad de la contabilidad. Por lo tanto, se rechaza la posible explicación de este resultado a partir de la mayor calidad de la contabilidad que se logra en relaciones largas de auditoría. Esta amenaza a la independencia del auditor externo no ha sido considerada en las reglas de rotación obligatoria establecidas en la mayoría de los países que solo requieren la rotación del socio pero no de la firma de auditoría.

Palabras clave: *Independencia del auditor, salvedades, duración de la relación de auditoría, calidad de la auditoría.*

Clasificación JEL: *G38, L15, M4.*

1. Introduction

Research about the quality of financial statements has increased dramatically over the last years. Several factors can explain this fact, among them, the growing importance of corporate governance matters, particularly after the dot-com bubble and more recently the contemporaneous financial crisis. The proliferation of corporate scandals as Enron, WorldCom, Parmalat and Lemahn Brothers have posed serious concerns about the reliability of financial statements, since in none of these cases they showed the real situation of the firm.

The external auditor is the key figure to guarantee the quality of financial statements, and thus its role is crucial in the corporate governance scheme. When these statements have an unqualified opinion, participants in the financial markets assume that they reflect the current situation of the firm. Nevertheless, the external auditor faces potential conflict of interests regarding the relationship with the audited company that may undermine its credibility when judging its clients' financial statements. The Sarbanes-Oxley Act, passed largely as a reaction to corporate financial scandals of the dot-com era, attempted to improve the quality of financial statements for public companies in the U.S., with provisions to strengthen auditor independence. Similarly, corporate governance codes approved in numerous countries worldwide have included recommendations to guarantee auditor independence.

The length of the auditor-client relationship constitutes a major issue in the auditor conflict of interest, because long auditor-client relationships may cause auditor complacency about management decisions regarding the firm's financial statements. Following this view, the mandatory rotation of the external auditor has long been suggested as a mean to improve auditor independence. With this aim, the Sarbanes-Oxley Act required a study about the potential effects of imposing the mandatory rotation of auditors. Although the results of the study did not support that auditor rotation increased the quality of financial reports, and therefore, it did not recommend mandatory rotation, regulators finally established that the lead audit partner and the concurring partner could not perform audit services for the same client for more than five consecutive fiscal years. In addition, they also require a minimum five-year time-out period before a partner may return to audit a client. Similarly to the situation in the U.S., the mandatory rotation of the audit partner is nowadays required in many countries. By the year 2008, the 27 States Members of the European Union (E.U.) were required to adapt national law systems to the revised 8th Directive. One important feature of this Directive was to establish audit partner rotation. Nevertheless, each State Member can voluntarily establish the maximum length of the auditor-client relationship. Countries within the E.U. have established different periods: five years in the United Kingdom, six years in France and seven in Germany and Spain. While many countries require the rotation of the lead audit partner, only a few ones have enforced a mandatory rotation rule for the audit company. In Italy, periodical rotation of auditing firms was established in 1974 for public companies, which cannot be audited by the same company for more than nine years. In addition, a minimum lag of three years is required before the previous auditor can be reappointed. Similarly, listed companies in Brazil and South Korea are required to rotate their independent auditor firm every five and six years respectively. In Austria, Canada and Spain, a mandatory company rotation rule was enforced but subsequently abandoned.

Previous research has addressed the relationship between audit tenure and the nature of the audit report by focusing on audit qualifications for reasons of going concern and analyzing financially distressed companies [Menon and Schwartz, 1985; Carcello and Neal, 2000; Vanstraelen, 2000; Vanstraelen, 2002; Ruiz-Barbadillo *et al.*, 2004; Carey and Simnett, 2006; Knechel and Vanstraelen, 2007; Lim and Tan, 2010; Gul *et al.*, 2011]. Such approach faces some advantages and disadvantages. Among the former, it can be posed that the universe examined is relatively homogenous, and that qualifications for reasons of going concern are particularly meaningful for investors and policy makers. Nevertheless, financially distressed firms represent just a very small share of the total population of audited firms and the same situation occurs regarding audit qualifications due to reasons of going concern with respect to the whole universe of audit qualifications. Within our dataset, for example, they represent less than 15% of the total number of audit qualifications. Any analysis of the auditor-client relationship limited just to a very particular type of companies (distressed companies), not representative of the whole population of firms and on one very particular type of audit qualifications (for reasons of going-concern), necessarily will suffer from a problem of generalization. When some of the aforementioned papers [*e.g.* Vanstraelen, 2000] report a negative effect of audit tenure on the likelihood of issuing a qualified report, we must consider that this finding refers only to financially distressed firms and to audit qualifications for reasons of going concern. Therefore, such a result cannot be generalized to the whole population of firms or to the whole universe of audit qualifications.

Although the function of the auditor is nowadays under discussion, its traditional role in the corporate governance scheme has been associated to verify the information produced by managers and therefore to be a substitute in control production [Simunic, 1984]. Nevertheless, when the auditor issues a qualified report for reasons of going concern, (s)he is not performing the information verifier role but acting as substitutes of models for bankruptcy prediction. Although, according to Louwers (1998), auditors' accuracy in predicting imminent client insolvency does not appear to approach the levels achieved by the premier bankruptcy prediction models. In the same line, Asare [1990, p. 50] concludes that most of the studies indicate model superiority over auditors in assessing a client's going-concern status. Therefore, those papers analyzing audit quality just through the exam of going-concern opinions to financially distressed clients, do not only ignore the main role of the external auditor in the corporate governance scheme as information verifiers, but also evaluate a dimension of the audit activity in which auditors are not particularly efficient.

The 2009 Report on the review of the annual financial reports of the regulator of the Spanish financial markets (CNMV, 2009, p.14) states that the new standard applicable to the audit reports for the coming years establishes that the auditor's opinion will not be affected by significant uncertainties, provided that such circumstances are properly informed in the report. Thus it implicitly recognizes that predicting client insolvency is beyond the role of the external auditor.

In this paper, we examine the effects of audit tenure on the likelihood of qualified opinions with a sample of public Spanish companies for the period: 2001-2009. Unlike previous research, we do not limit the analysis to audit qualifications for reasons of going concern, but consider all types of audit qualifications. In addition, our sample of companies is formed by all the nonfinancial firms listed in the Spanish stock market (SIBE market). Our results show that the likelihood of receiving a qualified audit report decreases with tenure. This result could be explained either by auditors' complacency, lack of innovation, less rigorous audit procedures and a learned confidence in the client in long-term engagements [Shockley, 1982] or alternatively be the result of higher accounting quality when the same auditor is auditing the company for many years. It is important to note that the practical implications of the two situations are completely opposite. Nevertheless, our results reject the explanation that the negative association between tenure and audit qualifications is the increase in accounting quality in long-term audit relationships.

We make several contributions to the literature on the association between audit tenure and audit qualifications. Firstly and most importantly, we do not limit our research either to audit qualifications for reasons of going concern or to financially distressed companies. Thus, compared with previous research, our results provide a better illustration of the general effects of tenure on the relationship between the auditor and the audited firm, thus providing a better guide for policy makers when regulating the auditor-client relationship. When regulators approve a mandatory rotation rule, it will affect not only to financially distressed firms but to the whole population of firms. We, therefore, do not limit the analysis to the role of the auditor as an inefficient substitute of a bankruptcy prediction model, but include its role as an information verifier. Secondly, the lack of consensus about the effects of tenure on the likelihood of qualified reports jointly with the relevance of the issue, not only for researchers but also for policy makers, encourages additional research. In addition, we analyze the auditor tenure-qualified opinion relationship in a low litigation risk setting. Nearly all published studies on the auditor's reporting decision have mostly focused on the U.S. Since Hopwood *et al.* (1994) stressed the importance of carrying out research on the auditor's reporting decision in contexts different than the

Anglo-American setting; research accomplished in other countries should be particularly welcome. Finally, since we control for accounting quality, we can reject that the explanation of the relatively low levels of qualified opinions in long-term audit engagements is the increase in the quality of financial statements.

The remainder of the paper is organized as follows. In section two we review the literature on the association between tenure and auditor independence. Section three summarizes the regulation of the auditor-client relationship in Spanish. In section four we define our model and describe our dataset. Results are discussed in sections five and six. Finally, conclusions are presented in the section seven.

2. Audit Tenure and Auditor Independence

The decision of issuing a qualified opinion may be influenced by the auditor's perceived consequences in the economic trade-off between the expected cost of the potential loss of a client, on the one hand, and the probability of being exposed to third-party lawsuits and loss of reputation, on the other. The available evidence [*e.g.*, Craswell, 1988; Krishnan, 1994; Lennox, 2000] indicates that the probability of switching the audit firm increases after a qualified report, and the results by Krishnan and Krishnan (1996) with a sample of U.S. companies support litigation risk as one of the important factors in the auditor's opinion decision. In high litigation risk countries, where reputation constitutes a major asset for the audit firm, we can expect greater levels of auditor independence as defined by Levinthal and Fichman (1988): the auditor's ability to provide an unbiased opinion of the quality of the financial statement. Since audit opinions reflect on the performance of the management that has hired the auditor, the ability of the auditor to render an independent opinion is threatened. The major threats to auditor independence are the fees perceived by the auditor for audit and non-audit services and length of the auditor-client relationship.

There is no consensus about the effects of tenure on auditor independence. While most authors agree that audit qualifications are less likely during the earlier years of engagement, they provided contradictory results about the relationship between tenure and audit qualifications after the initial period. From an organizational behaviour approach, Levinthal and Fichman (1988) found that the likelihood of a qualified opinion increased just after the first years of engagement (the so-called honeymoon period), but decreased in continuing relationships.

The results by Louwers (1998) and Carcello and Neal (2000) with samples of U.S. financially stressed firms did not support a significant effect of audit tenure on the auditors' going-concern disclosure decision. A similar conclusion was reached by Vanstraelen (2002) who investigated the Belgian audit market. Nevertheless, Vanstraelen's (2002) methodological approach was different from the former, because its sample was formed by bankrupt companies, financially stressed non-bankrupt companies and financially non-stressed non-bankrupt companies, all three categories with the same weight. Geiger and Raghunadan (2002) defined audit reporting failures as the inability of the auditor to issue a going-concern opinion to a company entering bankruptcy. They observed significantly more audit reporting failures in the earlier years of the auditor-client relationship than when auditors had served these clients for longer tenures. However, Knechel and Vanstraelen (2007) came to a different conclusion with a sample of Belgian firms, their results showing that the decision of the auditor to issue a going-concern opinion to a company entering bankruptcy was not affected by tenure. They also addressed type I errors defined as issuing a going-concern opinion to a company that did not file bankruptcy in the following year. In this case, the authors observed that type I errors appeared to be lower when auditor tenure was longer. Without limiting the analysis to going-concern audit qualifications and using a sample of Belgian firms over the period 1992-96, Vanstraelen (2000) observed that long-term auditor client relationships significantly increased the likelihood of the auditor to issue an unqualified audit report. As Levinthal and Fichman (1988), she also found that auditors were more willing to issue unqualified reports in the first two years of engagement.

Focusing on auditor partner tenure instead of auditor firm tenure Carey and Simnett's (2006) study suggested a positive relationship between tenure and audit failure in Australia. For long tenure observations, the authors found a lower propensity to issue a going-concern opinion and some evidence of just beating earnings benchmarks, consistent with deterioration in audit quality associated with long audit partner tenure.

More recently, Gul *et al.* (2007) and (2011), and Lim and Tan (2010) have attempted to test the joint effect of auditor tenure and non-audit fees on auditor independence and audit quality, respectively. Gul *et al.* (2007) found that high non-audit fees and short auditor tenure were associated with relatively high levels of accruals, thus indicating low auditor independence. Later on, Gul *et al.* (2011) acknowledged that the auditor's reporting decision to issue a going-concern opinion provided a more direct test of auditor independence than research using other indirect proxies of auditor independence, such as accruals. They found that auditors were willing to forgo their independence by issuing fewer going-concern reports when non-audit fees were high and auditor tenure was long. Finally, Lim and Tan (2010) addressed the triangle formed by tenure, the specialization of the audit firm and fees. Their results showed that firms audited by specialists had higher audit quality with extended auditor tenure, this relation being negatively moderated by auditors' fee dependence. This conclusion was robust to the indicator used as a proxy of audit quality: accruals, going-concern audit reports and the market's response to quarterly earnings surprises.

Surprisingly, we have only found a previous research not limiting the attention to going-concern opinions. Vanstraelen (2000) did find evidence that auditors in Belgium were less willing to qualify audit reports in general (not specifically going-concern qualifications) in case of long tenure. Our research shares both Vanstraelen's general view of audit qualifications and the analysis of a low litigation risk country. Nevertheless, there are two main differences between both papers. Vanstraelen (2000) used two samples of firms: the first sample contained financially stressed non-bankrupt large companies and the second sample was formed by financially non-stressed non-bankrupt large companies. In our view, differentiation between financial and nonfinancial distressed firms is meaningful if the research is focused on going-concern qualifications. On the contrary, when the analysis includes the whole universe of audit qualifications (in most cases having nothing to do with near-bankrupt situations), the analysis through subsamples is hardly justifiable. Besides, once the financial situation of the audited company has been already included in the model through control variables, the analysis with subsamples created according to the firm's financial situation may be redundant. The second difference is that Vanstraelen (2000) did not control for accounting quality. The author found a negative association between tenure and the likelihood of audit qualifications. As we pointed out in the introductory sections, this finding has two possible explanations with completely opposite practical implications. Lower levels of audit qualification in lengthy auditor-client relationships might be explained, either by a loss of auditor independence or by an increase in accounting quality associated to long-term audit engagements. It should be emphasized, however, that from a regulator's point of view, the implications of each situation are contradictory. Therefore, unlike Vanstraelen (2000) our sample is formed by all the companies quoted in the Spanish stock market (SIBE segment) and we control for accounting quality, measured through the firm's levels of accruals.

3. Audit Regulation in Spain

The market for audit services in Spain started with the implementation of the Eighth EC Directive on Company Law. With the main goal of increasing the reliability of the company's financial statements, the Spanish Audit Law was enforced in 1988, establishing the obligation for those companies above a certain size to appoint an external auditor to issue a report about the company's financial statements. In 1997, a change in the legislation increased the minimum size for a company to be obliged to audit its financial statements, thus reducing, approximately by a 20% the number of companies subject to audit [Garcia Benau *et al.*, 1999].

To ensure the independence of the auditor, the Spanish Audit Law established a set of criteria to regulate the auditor-client relationship. A multi-year contract was established with a length ranging between a minimum of three years and a maximum of nine years. In addition, independently of the duration of the initial contract, it was not allowed the reelection of the audit firm. The imposition of a limit in the number of years that a company could be audited by the same firm was equivalent to establish a mandatory auditor rotation rule. Nevertheless, both the limit in the maximum number of years to be audited by the same firm and the prohibition to renew the audit contract were abolished after a legal reform in 1995. After the reform, auditors would be contracted for an initial period ranging between a minimum of three and a maximum of nine years. However, after the expiration of the initial contract the company could renew the contract with the same auditor on a yearly basis. A consensus exists that Spanish legislation has not been particularly strict in specifying safeguards to strength auditor independence [Gonzalo, 1995; Paz-Ares, 1996; Ruiz-Barbadillo *et al.*, 2004]. Although, from a legal point of view a company can break its audit contract only if a 'just cause' exists, since the Law does not clarify what this just cause may be [Gomez and Ruiz-Barbadillo, 2000], a company can, therefore, hire and fire its auditor without any time limitation.

Following the revised Eighth E.C. Directive, the 27 states members of the European Union were required to adapt national law systems. One important feature of this Directive was to establish audit partner rotation, although each State Member could voluntarily fix the maximum length of the auditor-client relationship. Therefore, in 2010 a new Spanish Audit Law was enforced establishing, among other issues, the mandatory rotation of the leading audit partner after seven years. In addition, a minimum period of two years is required to be allowed to re-audit the same firm. This reform, however, will not affect our results, since our research period ends in 2009.

4. Methodology

4.1. Model

We have proposed a logistic model to address the effects of tenure on the likelihood of audit qualifications. The dependent binary variable is the auditor's opinion, coded 1 in case of a qualified opinion, adverse opinion or disclaimer of opinion, and coded 0 in case of an unqualified opinion. Among the independent variables we have included the control variables suggested in the literature as determinants of the auditor's reporting behavior, while our main interest is in the length of the auditor-client relationship (tenure).

Accordingly, model 1 has been proposed to carry out the multivariate logistic analysis.

Model 1:

$$OPINION = f\,(SIZE,\ LEVERAGE,\ LIQUIDITY,\ STOCKS,\ LOSSES,\ LOSSES_{t-1},\ NONBIG4,\ TENURE)$$

where:

- *OPINION* is a binary variable indicating whether the audit report is unqualified (score 0) or 'unclean' (score 1).
- *SIZE* is the natural log of the firm's total assets at the end of the year, as a proxy for size.
- *LEVERAGE* is the firm's level of financial leverage calculated as total debt divided by total equity, both in book values.
- *LIQUIDITY* is a measure of the firm's liquidity at the end of the year, calculated as the sum of its cash positions divided between its current liabilities.
- *STOCKS* is computed as the firm's inventories divided by total assets at the end of the year.
- *LOSSES* is a binary variable with score 1 if the company's net profit on year t is negative and 0 otherwise.
- $LOSSES_{t-1}$ is the variable *LOSSES* one year lagged.
- *NONBIG4* is a binary variable with score 1 if the company is audited by a non-Big 4 firm and zero otherwise.
- *TENURE* is the natural log of the number of years the company has been audited by the same firm.

Following the litigation risk framework, previous research has documented a positive relationship between the size of the audited firm and litigation cost [*e.g.*, Lys and Watts, 1994; Shu, 2000]. Accordingly, the likelihood of audit qualifications should increase with size. Nevertheless, DeAngelo (1981) posed that auditors' incentives to compromise their independence was a function of client importance, noting that auditors could be less independent when auditing large clients and, therefore, less willing to issue a qualified report to large than to small clients. In the same vein, Palmrose (1986) highlighted the role of non-audit services, provided by audit companies, in auditors' independence and the fact that large clients purchase non-audit services more frequently than small clients. Available evidence has provided mixed results. Bartov et al (2000) did not report any significant relationship between the size of the firm and the likelihood of receiving a qualified opinion. On the contrary, Francis and Krishnan (1999) and Butler *et al.* (2004) supported a negative relationship between both variables. Finally, Reynols and Francis (2000), Bradshaw *et al.* (2001), and Johl *et al.* (2007) observed a positive effect of company size on the probability of a receiving a qualified report.

High levels of debt increase the probability of bankruptcy, and consequently increase litigation risk. Accordingly, we expect a positive effect of *LEVERAGE* on the likelihood of audit qualifications. Nevertheless, the available evidence is not conclusive. Although Francis and Krishnan (1999), Bartov *et al.* (2000) and Butler *et al.* (2004) concluded that financial leverage increased the likelihood of a qualified audit report, Bradshaw *et al.* (2001) and Johl *et al.* (2007) failed to report a significant relationship between financial leverage and audit qualifications.

Liquidity has been found a significant determinant in predicting bankruptcy [*e.g.*, Lennox, 1999]. Poor liquidity is expected to increase the likelihood of qualified reports since it increases the auditor's litigation risk. In addition, firms with liquidity problems might be more willing to manipulate financial statements [*e.g.*, Butler *et al.*, 2004].

The auditing of the company's inventories may represent serious difficulties, because they involve two audit assertions: valuation and completeness [McDaniel, 1990]. Consequently, as posed by Simunic (1980), audit fees tend to be higher for those firms with relatively large amounts of inventories. In addition, audit errors are frequently caused by inventories [Firth, 2002], while lawsuits against auditors often have the origin in inventories [St. Pierre and Anderson, 1984]. Accordingly, we hypothesize a positive effect of inventories on the probability of receiving a qualified report, and therefore a positive coefficient associated to *STOCKS*.

Following previous research [*e.g.*, Dopuch *et al.*, 1987; Defond and Jiambalvo, 1993; Firth, 2002] we expect that companies experiencing losses will face a higher probability of receiving a qualified report. The explanation is quite straightforward and similar to the one proposed to justify the association between liquidity and audit qualifications. Firms with losses will more likely incur in earnings management activities. In addition, from the auditor's point of view, since litigation risk is higher for those firms with losses, so it should be the probability of audit qualifications.

Finally, recent studies have highlighted the role played by career concerns of audit firms in their auditing effort and independence [see for instance, Portilla 2009]. Accordingly, Big 4 auditors will have incentives to provide higher quality audits consistent with their brand name reputation, and thus are expected to show a higher propensity to issue qualified reports [*e.g.*, Carey and Simnett, 2006].

4.2. Sample and dataset

Our sample is formed by all the companies quoted in the Spanish Stock Exchange (SIBE market) during the research period: 2001-2009. Data about the independent variables in the model has been provided by Thomson Reuters Knowledge. On the other hand, information about the nature of the audit report has been obtained from the *Comisión Nacional del Mercado de Valores* (CNMV). Since control variables in our model include liquidity and debt ratios, banks and financial companies have been removed from the sample. We have finally worked with 110 companies. While 91 of these companies have been quoted in the Spanish market during the whole research period, the remaining 19 companies joined the stock market after the year 2001. Our data source provides information only for quoted companies, thus for 19 companies in our dataset we do not have information for the whole research period. As a result, our dataset was initially formed by 937 firm-year observations. Nevertheless, in 56 firm-year observations information about all the variables included in the analysis was not available. Consequently, our dataset has been finally formed by 881 firm-year observations.

Following the Spanish law, the audit report should include the opinion of the auditor which can be: unqualified, qualified, unfavorable or disclaimer of opinion. Nevertheless, audit reports either with unfavorable or disclaimer of opinion are in practice very unusual, at least for quoted companies. In this research, we have examined 937 audit reports, 803 of them with an unqualified opinion, and 134 with a qualified opinion. None of them, however, had either an unfavorable or disclaimer of opinion. Therefore, qualified audit reports represent the 14% of the total reports examined.

In Table 1 we show the 937 audit reports classified by year and type of auditor opinion (unqualified or qualified).

TABLE 1
CLASSIFICATION OF AUDIT REPORTS BY YEAR AND AUDITOR OPINION

	2001	2002	2003	2004	2005	2006	2007	2008	2009
Unqualified	71	77	83	94	97	101	99	90	91
Qualified	20	18	14	13	10	9	11	20	19
Total	91	95	97	107	107	110	110	110	110

As shown by Table 1, the number of firms with qualified audit reports decreases systematically during the subperiod 2001-2006, and increases after the year 2006, being particularly meaningful the situation in 2008, at the beginning of the international financial crisis, showing an almost 100% increase in the number of firms with qualified reports. The number of qualified reports expressed in percentage of total reports ranges between a maximum of 22% the year 2001 and a minimum of 8% the year 2006.

Graph 1 shows the histogram of audit tenure in our dataset. As it can be seen the distribution is far from normal. Our sample is characterized by a high number of firms with relatively short audit tenures.

GRAPH 1
HISTOGRAM OF AUDIT *TENURE*

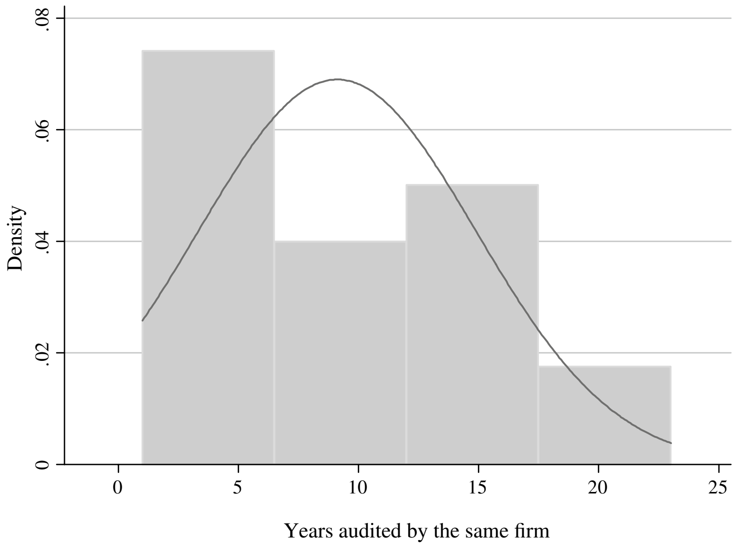

Table 2 shows some descriptive statistics about the independent variables used in the multivariate logistic regression. The statistics for variable *LEVERAGE* indicate that for the companies in our sample, on mean terms, the amount of debt is four times the amount of equity. The mean value of 0.17 for variable *LOSSES* shows that companies with negative net income accounts for the 17% of our dataset. The table also shows a dramatic level of concentration of the Spanish audit market by Big 4 firms, since they audit more of the 90 percent of the quoted companies. Regarding our main variable of interest, *TENURE*, the mean value of 1.92, corresponds to an average duration of almost seven years in the auditor-client relationship.

TABLE 2
DESCRIPTIVE STATISTICS

Variable	Mean	Median	St. Dev.
SIZE	2.92	2.83	0.84
LEVERAGE	4.03	1.94	30.65
LIQUIDITY	0.19	0.86	0.40
STOCKS	0.16	0.11	0.17
LOSSES	0.17	0.00	0.38
$LOSSES_{t-1}$	0.13	0.00	0.33
NONBIG4	0.09	0.00	0.28
TENURE	1.92	2.08	0.86

TABLE 3
PEARSON CORRELATIONS BETWEEN INDEPENDENT VARIABLES

	SIZE	*LEVERAGE*	*LIQUIDITY*	*STOCKS*	*LOSSES*	*LOSSES* $_{t-1}$	*NONBIG4*
SIZE	1.00						
LEVERAGE	0.0097	1.00					
LIQUIDITY	–0.0788*	–0.0226	1.00				
STOCKS	–0.2576**	0.0049	–0.1659**	1.00			
LOSSES	–0.1591**	0.0085	0.0213	0.1488**	1.00		
LOSSES $_{t-1}$	–0.1990**	0.1004**	0.0666	0.1069**	0.5501**	1.00	
NONBIG4	0.0135	0.0004	0.0950**	0.2260**	0.0758*	0.0566	1.00
TENURE	0.1777**	–0.0295	0.0073	–01321**	–0.1278**	–0.1455**	–0.2404**

* P < 0.05; ** P < 0.01.

Table 3 shows Pearson's correlation coefficients, together with significance levels, for the independent variables used in the multivariate logistic regression. Interestingly, the positive and significant correlation between *TENURE* and *SIZE* shows that big companies tend to have lengthy relations with the audit firm. Besides, the negative and significant correlation between *TENURE* and *LOSSES* suggests that profitable firms tend to show relatively long-term relationships with the audit firm. In the same line, Big 4 firms tend to show relatively longer engagements compared with non-Big 4 firms Since correlation coefficients between independent variables are rather low (the maximum correlation coefficient, in absolute values, is 0.55), multicollinearity will hardly affect our estimation results. Nevertheless, we have calculated the variance inflation factors (VIF), in order to rule out the negative potential effects of multicollinearity in our estimation results. As expected VIF show very low values (the maximum value is 2.58 for variable *TENURE*), thus indicating that multicollinearity will not affect our results.

5. Results

Before the estimation of the multivariate logistic regression, we have performed a univariate analysis of differences of means for the subsamples of firms with qualified and with unqualified audit reports. As expected, the Shapiro-Wilk test reveals that the hypothesis of normality is rejected for all independent variables, thus we have performed the Mann-Whitney test of differences of medians in order to assess about the statistical significance of these differences. Median values of the independent variables for the two subsamples, jointly with the results of the Mann-Whitney test for the continuous variables and the Chi-Square test for the dichotomous variables *LOSSES*, $LOSSES_{t-1}$ and *NONBIG4* are shown in Table 4. As expected, firms with qualified audit reports are relatively small, show high levels of financial leverage and stocks and are relatively less profitable compared with firms with unqualified audit reports. In addition, firms with qualified reports are engaged in relatively short term engagements with the audit firm. With the exceptions of *LEVERAGE*, *STOCKS* and *NONBIG4*, the differences between firms with qualified and unqualified reports are statistically significant at the usual levels. Therefore, focusing the attention on audit tenure, the results provided by the univariate analysis suggest a negative effect of tenure on the likelihood of audit qualifications.

The analysis of the joint effect of audit tenure and the proposed control variables on the likelihood of audit qualifications has been performed through a multivariate logistic regression. Significance tests have been performed with robust standard errors. It should be noted that as we have included the lagged variable $LOSSES_{t-1}$ among the regressors, we have lost all the observations corresponding to year 2001. The post-estimation analyses carried out after a first estimation of the model has revealed four influential observations (with Pregibon dbeta higher than 0.2). The results provided by Table 5 correspond to the re-estimation of the model without these influential observations. Estimation results and some indicators of the model's goodness of fit are shown in Table 5. The model's Chi-square value is statistically significant at the usual levels, thus indicating that the observations are well fitted by the proposed model. Two

TABLE 4
MEDIAN VALUES OF INDEPENDENT VARIABLES ACCORDING WITH AUDITOR OPINION. FOR QUALITATIVE VARIABLES, MEAN VALUES ARE PROVIDED

	Qualified	Unqualified	Significance Test
SIZE	2.74	2.93	2.88**
LEVERAGE	11.68	2.73	–1.63
LIQUIDITY	0.08	0.21	5.77**
STOCKS	0.20	0.15	–1.31
LOSSES	0.36	0.14	39.84**
$LOSSES_{t-1}$	0.33	0.10	49.45**
NONBIG4	0.10	0.09	0.17
TENURE	1.57	1.98	4.94**

* P < 0.05; ** P < 0.01.

other indicators of the goodness of fit are the pseudo R^2 and the Hosmer and Lemeshow's test. The pseudo R^2 provides a measure of the proportion (in terms of the log likelihood) of the variance explained by the model. Our model explains the 22% of the total variance. The idea behind the Hosmer and Lemeshow's goodness-of-fit test is that predicted and observed frequencies should match closely. In our case, the Hosmer and Lemeshow test (not provided) supports that there are not significantly differences between predicted frequency and observed frequency. Finally, our proposed model correctly classifies 88% of the cases.

When developing a logistic regression model, we implicitly assume that the logit of the outcome variable is a linear combination of the independent variables. This involves, firstly the assumption that the logit function is the correct function to use; and secondly that we have included all the relevant variables, that we have not included any variables that should not be in the model and that the logit function is a linear combination of the predictors. As the implications of misspecification of the link function are usually not too severe, we are more concerned with whether our model has all the relevant predictors and if the linear combination of them is sufficient. Therefore, after the logistic regression, we have performed a linktest. The rational for this test is that if the model is properly specified, we should not be able to find any additional predictors that are statistically significant. The results of the linktest (not provided) do not suggest any specification problems associated to our proposed model.

As shown by Table 5, the results of the multivariate analysis strongly support our previous findings from the univariate approach. The only difference between both approaches refers to variables *LEVERAGE* and *NONBIG4*. While none of these variables show statistically significant results in the univariate analysis, in both cases, the results of the multivariate analysis indicate significance in the predicted direction.

With the only exception of *STOCKS*, all the independent variables have a significant effect on the probability of receiving a qualified report. It should be noted that in all cases, significance is reported in the predicted direction. The likelihood of audit qualifications decreases with the size of the company

TABLE 5
ESTIMATES OF THE LOGISTIC REGRESSION

Variable	Expected sign	Coefficient	Z-value
SIZE	–	–0.732	–2.87**
LEVERAGE	+	0.073	2.71**
LIQUIDITY	–	–6.061	–3.59**
STOCKS	+	–0.594	–0.72
LOSSES	+	1.084	3.59**
$LOSSES_{t-1}$	+	0.872	2.72**
NONBIG4	–	–1.454	–2.78**
TENURE	–	–0.485	–2.91**
INTERCEPT		1.315	1.34
N: 799 Chi-Square: 63.56 Pseudo R^2: 22.38% % correctly predicted: 87.73			

* P < 0.05; ** P < 0.01.

(P-value < 0.01). This result suggests that the economic incentives of the auditor with the audited company more than offset the potential increased in litigation costs faced with large clients. Since Spain is a low litigation risk country, this result is far from surprising. As expected, the higher the firm's financial leverage, the higher the likelihood of audit qualifications. The associated coefficient to *LEVERAGE* is positive and statistically significant (P-value < 0.01). Due to the difficulties usually involving the valuation of stocks, we had hypothesized a positive effect of the level of stocks on the likelihood of audit qualifications. However, the associated coefficient to variable *STOCKS* is not statistically significant at the usual levels. As expected, companies suffering or having suffered losses have a higher probability of receiving a qualified audit report compared with profitable firms. Variables LOSSES and $LOSSES_{t-1}$ present positive and statistically significant associated coefficients (P-value < 0.01). As hypothesized, the likelihood of qualified reports is lower for companies enjoying high levels of liquidity. The coefficient associated to *LIQUIDITY* is negative and statistically significant (P-value < 0.01). We had predicted a negative coefficient associated to variable *NONBIG4*, as Big 4 firms have relatively stronger incentives to issue qualified opinions. Our results support this hypothesis, since being audited by a Big 4 firm increases the likelihood of audit qualifications (P-value < 0.01).

As for the effects of auditor tenure on the likelihood of audit qualification, our results show that qualified opinions are less likely in lengthy auditor-client relationships. The coefficient associated to variable *TENURE* is negative and statistically significant (P-value < 0.01).

Following the discussion carried out in section 2, neither theoretical models nor the available empirical evidence have led to a unanimous effect of audit tenure on the probability of qualified reports. Auditor independence might be impaired in long-term auditor-client relationships. Similarly to Vanstraelen (2000), Carey and Simnett (2006) and Gul *et al.* (2011), our results show a negative effect of tenure on the likelihood of audit qualifications. While this result is usually interpreted as indicative of a loss of independence associated to longer tenures, it could also be explained according to principal-agent models based on implicit incentives or career concerns. According to this alternative view, agents with lesser career concerns (perhaps also those holding lengthy contracts) have lower reputational incentives to exert effort and meet their duties with diligence [Portilla, 2009].

As we discussed in the introductory section, it should be emphasized that our approach departs to the one usually adopted in previous research, including the aforementioned papers. The standard approach restrains the analysis to financially distressed companies and to audit qualifications for reasons of going concern. Nevertheless, financially distressed firms represent just a small share of the total population of firms, and the same situation occurs regarding audit qualifications for reasons of going concern regarding the total number of audit qualifications. In addition, we should also consider that the main role of the external auditor is not to predict a company's bankruptcy, but to verify that the company's financial statements show its current situation. Any analysis of the auditor-client relationship limited just to a very particular type of companies (distressed companies), not representative of the whole population of firms and focused on one particular type of audit qualifications (for reasons of going-concern), necessarily presents a problem of lack of generalization. When Gul *et al.* (2011) reported a negative effect of audit tenure on the likelihood of issuing a qualified report, it should be emphasized that this finding refers only to financially distressed firms and to audit qualifications for reasons of going concern. This result cannot be generalized either to the whole population of firms or to the whole universe of audit qualifications. The problem of lack of generalization is particularly meaningful when this evidence is used to support regulations on mandatory rotation that will affect the whole population of firms. Conversely, since we include all types of audit qualifications and firms in the analysis, our results do not suffer from lack of generalization problems and can therefore provide a better guide to policy-makers to establish regulations regarding the rotation of auditors.

We have performed various analyses to check the robustness of our results. First, a problem could arise from a potential double causality between *OPINION* and *TENURE*, as we cannot rule out that the class of audit opinion (favorable or adverse) affects the client firm's decision about renewing or not its relationship with the audit firm, and thereby, the length of the engagement. Therefore, we have included a sensitivity analysis to control for the potential problems of endogeneity in our data. We have modeled audit firm tenure as shown by the following model:

$$AUDSWITCH = f\,(SIZE,\ LOSSES_{t-1},\ NONBIG4,\ OPINION_{t-1})$$

Where *AUDSWITCH* is defined as 1 if the company has changed its auditor in year t, and 0 otherwise. Our main interest is with the statistical significance of variable $OPINION_{t-1}$, and the selection of control variables is based on prior research. The estimation of the model has been performed with robust standard errors. Results, reported in Table 6, show that the coefficient associated to

$OPINION_{t-1}$ is nonsignificant. We, therefore, rule out that endogeneity problems can affect our results.

TABLE 6
RESULTS OF THE ANALYSIS OF ENDOGENEITY

	Expected sign	Coefficient (z Value)	Sig. Level
SIZE	+	–0.20 (–1.02)	
$LOSSES_{t-1}$	–	0.37 (1.13)	
NONBIG4	+	0.84 (2.28)	*
$OPINION_{(t-1)}$	?	0.45 (1.41)	
N		855	
Chi-Square		12.98	*

* $P < 0.05$; ** $P < 0.01$.

We have also checked for the fact that the relationship between tenure and the likelihood of audit qualifications could be nonmonotonic, due to a trade-off between the auditors learning curve versus independence. Thus, we have re-estimated our prosed model including the square of *TENURE* (*SQTENURE*) as an additional explanatory variable. Results (not reported) show that the coefficient associated to *SQTENURE* is nonsignificant. Similarly, we have performed a reestimation of the model including the square of *SIZE* (*SQSIZE*) as an additional explanatory variable. As in the previous case, the new variable has not a significant effect on the likelihood of audit qualifications (results not reported).

6. Some Additional Results

In this section we focus on two relevant issues for this research: the so-called honeymoon period in the auditor-client relationship and the robustness of our results to the inclusion of accounting quality in the analysis.

6.1. Does a "honeymoon period" exist in the Spanish market?

Levinthal and Fichman (1988) and Vanstraelen (2002) observed that the likelihood of qualified opinions increased just after the first years of engagement. The former authors named this effect a honeymoon period in the auditor-client relationship. The suggested explanation is that a qualified opinion is an indicator of conflict within the auditor-client relationship and that shortly after the initiation of an auditor-client relationship, both auditors and clients attempt to avoid such conflicts.

To test the existence of a honeymoon effect in the Spanish market we have estimated model 2.

Model 2:

$$OPINION = f\,(SIZE,\ LEVERAGE,\ LIQUIDITY,\ STOCKS,\ LOSSES,\ LOSSES_{t-1},\ NONBIG4,\ TENURE,\ HONEYMOON)$$

This model is similar to model 1 but we have included *HONEYMOON*, a dichotomous variable with the score 1 the first and second year of the auditor-client relationship and 0 otherwise. If a honeymoon effect exists in the Spanish audit market, the associated coefficient to variable *HONEYMOON* should be negative and statistically significant. Results of the estimation of model 2 are shown in Table 7. The coefficient associated to *HONEYMOON*, although negative, it is not statistically significant at the usual levels, thus not supporting a honeymoon effect in the Spanish market. All other results remain largely unchanged from those shown in Table 5.

TABLE 7
ESTIMATES OF MODEL 2

Variable	Expected sign	Coefficient	Z-value
SIZE	–	–0.724	–2.80**
LEVERAGE	+	0.072	2.62**
LIQUIDITY	–	–6.129	–3.84**
STOCKS	+	–0.630	–0.77
LOSSES	+	1.092	3.62**
$LOSSES_{t-1}$	+	0.873	2.70**
NONBIG4	–	–1.476	–2.80**
TENURE	–	–0.754	–2.63**
HONEYMOON	–	–0.742	–1.62
INTERCEPT		1.921	1.63
N: 799			
Chi-Square: 65.09			
Pseudo R^2: 22.79%			
% correctly predicted: 88.36			

* P < 0.05; ** P < 0.01.

6.2. Controlling for accounting quality

From the estimation of model 1 we have concluded that the likelihood of audit qualifications decreases with tenure. This finding is traditionally explained in terms of a loss of auditor independence in long-term audit engagements. Following Shockley's (1982) view: complacency, lack of innovation, less rigorous audit procedures and a learned confidence in the client may arise after long association with the client. The implications for policy makers are thus quite straightforward: in order to preserve auditor independence, rotation of the audit firm should be mandatory. Nevertheless, there is an alternative explanation for the reported negative relationship between tenure and audit qualifications. DeAngelo (1981) defined audit quality as the joint probability that an auditor will both detect and report material misstatements. Accordingly, audit quality is a function of the ability of the auditor to detect material misstatements (expertise) and report the detected misstatements (independence). As the ability to detect misstatements is higher when the auditor has a better knowledge of the client, and given that this knowledge increases with tenure, it could be argued that the reported negative effect of tenure on audit qualifications is not the result of a decline in auditor independence but it is explained by the increase in accounting quality achieved as a consequence of lengthy audit engagements. If the latter interpretation prevails, the implications for policy makers will be now completely different: mandatory rotation should be abolished because it impoverishes the quality of accounting.

From the review of an extensive prior literature, we conclude that accounting accruals measures are plausible descriptors of audit quality. Numerous researchers have analyzed the association between various measures of accruals as proxies of accounting quality and auditor litigation [Heninger, 2001], auditor changes [DeFond and Subramanyam, 1998] and qualified opinions [Bartov *et al.*, 2000]. Since Healy (1985) and DeAngelo (1986), many studies have used total accruals as a measure of management discretion. High levels of accruals have been associated to high levels of earnings management and therefore to poor accounting quality. In the investigation of the relationship between accounting quality and audit qualifications, Francis and Krishnan (1999) and Bradshaw *et al.* (2001) use the firm's total accruals as the proxy of accounting quality. Similarly, Myers *et al.'s* (2003) research about the effects of audit tenure on accounting quality uses total accruals as an indicator of the quality of accounting.

We have computed the firm's total accruals (*ACCRUALS*) as the difference between operating income minus cash flows from operations, scaled by lagged total assets. The Pearson's correlation coefficient between *ACCRUALS* and *TENURE* is –0.125 and it is statistically significant (P-value < 0.01), thus suggesting that accounting quality increases with audit tenure. We have included the new variable *ACCRUALS* in model 1 to obtain model 3.

Model 3:

$$OPINION = f\,(SIZE,\ LEVERAGE,\ LIQUIDITY,\ STOCKS,\ LOSSES,\ LOSSES_{t-1},\ NONBIG4,\ TENURE,\ ACCRUALS)$$

If the negative relationship between audit tenure and the likelihood of qualified reports is because accounting quality increases with tenure, once we introduce *ACCRUALS* in the model and thus control for audit quality, tenure should not significantly affect the likelihood of audit qualifications. On the contrary, if the effect of tenure remains negative and significant after controlling for accounting quality, we will conclude that the negative relationship between audit tenure and qualified opinions cannot be explained by an increase in accounting quality, and thus, the explanation of a loss of independence in long-term audit engagements prevails.

Table 8 shows the estimates of model 3. After the removal of those observations without data for the new variable *ACRRUALS*, the sample size drops to 600 firm-year observations. As a proof of the robustness of our models, results do not change much with this sample compared with our initial sample. The model's pseudo R^2 increases from 22% to 24% and the coefficients and significance levels for the control variables remain unchanged in most cases. The coefficient associated to *TENURE* remains negative and statistically significant (P-value < 0.05) while the coefficient of *ACCRUALS* is negative but nonsignificant. This result indicates that our main previous finding that the likelihood of audit qualifications decreases with tenure is robust to the inclusion of accounting quality into the model. Thus, we rule out that the explanation of the relatively lower probability of audit qualifications associated to long-term audit engagements is the increase in accounting quality. Therefore, the most plausible alternative explanation is that auditor independence is impaired in lengthy auditor-client relationships.

TABLE 8
ESTIMATES OF MODEL 3

Variable	Expected sign	Coefficient	Z-value
SIZE	–	–0.629	–1.91
LEVERAGE	+	0.089	2.92**
LIQUIDITY	–	–6.886	–3.45**
STOCKS	+	0.065	0.06
LOSSES	+	1.331	3.88**
$LOSSES_{t-1}$	+	0.352	0.76
NONBIG4	–	–1.008	–2.05*
TENURE	–	–0.461	–2.24*
ACCRUALS	?	–0.514	–0.62
INTERCEPT		0.905	0.72
N: 600 Chi-Square: 66.69 Pseudo R^2: 24.32% % correctly predicted: 90.00			

* P < 0.05; ** P < 0.01.

7. Conclusions

External auditors perform a major role in the corporate governance scheme guaranteeing the quality of accounting. To perform this function adequately they must be completely independent of their clients. As lengthy audit engagements constitute a potential threat for auditor independence, the Sarbanes-Oxley Act and numerous national corporate governance codes have included measures to favour audit rotation. Previous research does not fully agree about the effects of tenure on audit quality. In addition, it has been focused on financial distressed firms and on audit qualifications for reasons of going concern. However, the main role of the external auditor is not to warn about the likely insolvency of the firm but to verify that financial statements show the current situation of the firm. Therefore, researchers addressing the effects of tenure on audit quality only through the analysis of qualified opinions for reasons of going concern are missing the main role of the external auditor, which is not to predict imminent insolvency but to verify the company's financial statements. In addition, as their results have been obtained with samples of financially distressed firms, they cannot be generalized to the whole universe of firms. Therefore, such evidence will have only a limited usefulness in the discussion about the establishing of a mandatory audit rotation rule.

Our results reveal that audit qualifications are less likely in lengthy auditor-client relationships. Nevertheless, since one possible explanation of the lower probability of receiving a qualified report is that accounting quality is higher in lengthy audit engagements, we have reestimated our model controlling for accounting quality. Our main result is robust to the inclusion of accounting quality, and thus we have finally concluded that long-term audit engagements seem to impair auditor independence. Therefore, the rotation of the audit firm could favor auditor independence and audit quality. The fact that we have measured accounting quality only through the firm's total accruals constitutes a limitation of our research. It would be interesting, however, to test the robustness of this result to more sophisticated measures of accounting quality. A second limitation of this research, because of data availability, is that we have not controlled for the fact that very often, auditors provide both audit and non-audit services to the same clients. The lack of independence of external auditors might come from the conflict of interests emerged when an audit firm provides a pool of services to the client.

Finally, it is important to stress that this research has examined the rotation of the audit firm. Nevertheless, with just a few exceptions, mandatory auditor rotation rules have been established at a partner level. Our results indicate that the rotation of the lead partner auditor could not adequately guarantee auditor independence.

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