Journal of Finance and Business Studies, Vol. 1, 2024, 115-142

Determinants of Auditor Switching in Private Failing Firms: Evidence from the UK

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Abstract
This paper aims to examine the determinants of auditor switching among the UK failing firms three years prior to failure. The determinants examined are auditor quality (competence) and independence (auditor size, opinion and fees), corporate governance (management change, gender diversity and board size), changing environment (change in the absolute size of the firm and growth of the firm) and financial condition (leverage, the variability of income and return on assets). The study uses a matched sample of 2912 UK failing and non-failing private firms and applies logistic regression analysis. The findings show that the change in the top management, board size and absolute size of the firm increases the likelihood of the auditor switch, while the presence of female directors on the board and the auditor size (Big4 auditors) decrease the likelihood of auditor switch. In addition, firms approaching failure were more likely to switch auditors. Return on asset, growth of the firm, the variability of income, audit fees and qualified opinion were not statistically significant. The practical implication is that policymakers should strengthen corporate governance and use auditing as a control mechanism in the financial reporting process in the private firms. They should regulate the private audit market, reduce the number of auditors by merging small audit firms and setting a minimum requirement for audit partners and clients. In addition, policymakers should develop and publish a database on the number of audit failures for each audit firm on a public website. To safeguard their reputation, auditors will increase the quality of their audit and their independence.

Keywords: Auditor switch, Failing firm, Private firm, Corporate governance

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Introduction

Auditing has a comparable role to that of governance mechanisms of both monitoring and scrutinising the financial reporting process (Ashbaugh and Warfield, 2003; Fan and Wong, 2005). As a monitoring (Jensen and Meckling, 1976) and bonding mechanism, auditing reduce agency problems in organisations (Watts and Zimmerman, 1983). A firm with strong governance mechanisms is more likely to be audited by large audit firm (BigN), which is perceived as providing a higher audit quality (Lin and Liu, 2009). In contrast, weak governance structures allow management to manipulate earnings (Tangjitprom, 2013) and choose a low-quality auditor (Guedhami et al., 2009) to delay the flow of information to minority shareholders and debt holders (Kluger and Shields, 1989). The management believes that switching auditors will help them convincingly conceal unfavourable information (Kluger and Shields, 1991).

In a private firm setting, the market is characterised by a high number of small audit firms, an excess supply of audit services, an absence of capital market pressure and closely held firms. A weak institutional setting may weaken the internal governance mechanism resulting in a weak audit process. All of these potentially affect the behaviour of both firms and auditors. On the contrary, implementing strong governance mechanisms may guide the audit process and enhance audit quality. Therefore, corporate governance (CG) aspects provide new insights into auditor switching behaviour.

Although the majority of previous studies have examined the determinants of auditor switching behaviour (see, for example, Aghaei et al., 2011; Schwartz and Menon 1985; Williams, 1988), little attention has been paid to CG mechanisms and few studies have been conducted in a private firm setting. Therefore, this study examines the determinants of auditor switching in failing private firms using a larger sample of 2912 firms. Specifically, the study focuses on audit quality (competency) and independence, CG, changing environment and financial condition. The findings show that changes in top management, board size and in the absolute size of the firm increase the likelihood of the auditor switch, while the presence of female directors on the board and the auditor size (Big4 auditor) decrease the likelihood of auditor switch. Moreover, the findings reveal that firms approaching failure were more likely to switch auditors. Return on asset (ROA), growth of the firm, variability of income, audit fees and qualified opinion variables were not statistically significant.

The study contributes to the auditor switching literature by investigating potential determinants of auditor switching in a private firm's setting and incorporating CG mechanism. Practically, the study suggests that policymakers should strengthen CG and use auditing as a control mechanism in the financial reporting process in the private firms, regulate the private audit market, reduce the number of auditors by merging small audit firms and set a minimum requirement for audit partners and clients. They should also develop and publish a database on the number of audit failures for each audit firm on a public website. Auditors should increase the quality of their audit and their independence to safeguard their reputation.

The rest of the study is organised as follows: the next section, section two reviews the theoretical literature and empirical literature on auditor switching; section three provides hypothesis development; section four presents methodology, data, sample selection and matching approach employed in this study; section five reports the results and discussion of the study while section six provides the conclusion of the study, including policy implications and areas for future studies.

Literature Review

Theoretical Literature

This paper employs agency theory and information theory to investigate the determinants of auditor switching in failing private firms. It is argued that higher agency costs are caused by the separation of ownership and control (Jensen and Meckling, 1976; Fama, 1980). The shareholders and/or debt holders are concerned that managers' interests are unaligned with shareholders'/debt holders' interest and that managers may attempt to utilise firm's benefits for their personal interests. These theoretical arguments are supported by empirical studies as findings show that agency costs increase because agents (managers) who control the firms act in their own self-interest and not in the interest of their principals (shareholders/debt holders). For example, Ang et al. (2000) found higher agency costs when the manager is an outsider. They observed a negative relationship between agency cost and managers' share of ownership. They also discovered that agency costs increased with less participation of non-manager shareholders.

The demand for auditing information is closely linked to principal/agent problems. Managers are incentivised to produce favourable accounting numbers, within the bounds of Generally Accepted Accounting Principles (GAAP). Poor performance can result in a loss of employment, or alternatively reduced compensation as performance related component of their salary would not be granted if their annual performance were below a set target. Private firms going to be public switch to a high-quality auditor for the following reasons: to verify the credibility of financial information to investment bankers who are managing the Initial Public Offering (IPO) (Menon and Williams, 1991); to signal the value of the firm to investors (Menon and Williams, 1991; Willenborg, 1999); and to reduce the monitoring costs of investors once a firm is listed on the stock exchange (Menon and Williams, 1991). The information asymmetry gives managers an advantage over the information in the firm and therefore the managers may make irrational decisions to shift the wealth of shareholders and debt holders to themselves (Willenborg, 1999). Therefore, the function of auditing is crucial for the reporting of credible financial information to shareholders and debt holders and decreasing information asymmetry, as well as acting as a monitoring mechanism to minimise agency costs (Dopuch and Simunic, 1980; Beattie and Fearnley, 1995).

This paper investigates audit quality (competency) and independence, CG, changing environment and financial condition as determinants of auditor switching in private failing firms. Agency theory and demand for information theory are appropriate in investigating these determinants of auditor switching as most of the determinants relate to the protection of shareholders thus addressing the conflict of interest between the managers and shareholders.

Empirical Literature

Previous literature has highlighted several reasons for switching auditor, such as conservatism, litigation risk, receipt of audit opinion and governance mechanism. There are mixed findings regarding audit opinion. It is argued that clients are more likely to switch auditors when there is a lower probability of being issued with a going concern audit opinion from the successor auditor (Matsumura et al., 1997). Clients switch auditors to exercise more power over their reported income (Matsumura et al., 1997; Weiss and Kalbers, 2008). In contrast, it is argued that firms switch auditors more because of their conservatism than audit opinion (Krishnan, 1994).

Regarding conservatism, it is argued that it may lead to disagreements between the auditors and the management around reported earnings and this may drive a change of an auditor (DeFond and Jiambalvo, 1993). Managers prefer to report higher earnings by using income-increasing accounting procedures, such as real and accrual earnings management (García Lara et al., 2009). It is the auditors' responsibility to verify and sign off on the reliability of the financial statements. Firms audited by BigN auditors are more likely to switch auditors because they are conservative (see, for example, McConnell, 1984). This suggests that clients switch auditors to exercise more power over their reported income (Weiss and Kalbers, 2008; Matsumura et al., 1997). For example, Davidson et al. (2006) found evidence of the increase in earnings management when the auditor switch was from a BigN to a non-BigN auditor.

It is also argued that auditor conservatism is associated with minimising litigation risk. For instance, DeFond and Subramanyam (1998) found that lower discretionary accruals prior to the auditor switching were because of a fear of litigation. BigN auditors with a strong reputation would like to protect themselves from litigation risk (Krishnan and Krishnan, 1997) and therefore manage their client portfolio by resigning from their riskiest clients and take on lower-risk clients. BigN auditors are less likely to audit financially distressed firms relative to non-BigN auditors during periods of increased litigation risk (Jones and Raghunandan, 1998).

An effective audit committee as a part of CG is associated with fewer auditor changes (resignations) and may attract higher-quality auditors. It is argued that the higher expertise of the audit committee members improves audit committee and board independence resulting in fewer auditor changes (Lee et al., 2004). It is also argued that an audit committee characterised by independence, governance expertise, financial expertise and low ownership is more likely to impede auditor dismissal following the receipt of the modified audit opinion (Carcello and Neal, 2003). Empirical studies show that effective audit committee qualities such as independence, expertise and size are associated with an early dismissal of Andersen and that an active audit committee and an independent board of directors are associated with selecting a BigN auditor after the dismissal (Chen and Zhou, 2007).

Among the client size, financial distress, change in management, audit opinion, fees and size, auditor size was found to be the only factor that determined auditor switching in Tehran stock exchange (Aghaei et al., 2011). Williams (1988) found auditor expertise in a specific industry, auditor tenure and negative publicity as the key factors that influence auditor change in large US public companies. More closely related to the present study is the work of Schwartz and Menon (1985) who examined auditor switching in the US stock exchange for a matched sample of 132 firms. They found that failing firms have a higher tendency to switch auditors. Unlike previous studies, this paper examines determinants of the auditor switching by incorporating a CG mechanism in private failing firms using a larger sample of 2912 firms.

Hypothesis Development

Financial Condition

Prior literature shows that failed firms are more likely to change auditors than non-failed firms (Schwartz and Soo, 1995). It shows that financially distressed firms are more likely to switch auditors (Haskins and Williams, 1990) when their incumbent auditors are more likely to issue an unfavourable opinion (Keasey and Watson, 1991). Firms with poor financial condition in a form of leverage ratio, high variability of income and ROA are more likely to switch auditors.

Variability of Income (ΔNI)

Financially weak firms tend to change auditors to delay or avoid unfavourable information reaching external parties (Schwartz and Soo, 1995). Firms that change auditors following a disagreement have declining earnings (DeFond and Jiambalvo, 1993). Keasey and Watson (1991) hypothesised that changes in earnings reflect the financial position of a firm. They argue that the declining financial performance of a firm prompts management to change auditors to delay the adverse financial information reaching debt holders.

Leverage (LEV)

It is argued that highly leveraged firms are more likely to engage an effective auditor to protect their interests (Jensen and Meckling, 1976) as a change in leverage is associated with a demand for higher audit quality (Knechel, Niemi and Sundgren, 2008). In countries with lower auditor liability exposure, leveraged firms prefer BigN auditors (Broye and Weill, 2008). However, BigN auditors prefer to avoid risky firms with high levels of leverage (Citron and

Manalis, 2001) hence a switch to a low-quality auditor in small and medium firms (Niskanen et al., 2011).

Return on Assets (ROA)

Woo and Koh (2001) argued that auditors resigns when the financial position of a firm is poor to manage their client portfolio. Similarly, Weiss and Kalbers (2008) found ROA to be significantly lower for switched firms relative to non-switched firms and risky firms. Empirical studies show that significant changes in ROA occur one year prior to the auditor change (Johnson and Lys, 1990). Following the above arguments, the study hypothesises as follows:

Hypothesis 1: *Firms with poor financial conditions (high leverage ratio, high variability of income and low ROA) are more likely to switch auditors.*

Changing Environment

Johnson and Lys (1990) argued that auditor-client realignment is not an isolated event, rather it is influenced by a change in the client's characteristics, including absolute change in firm size and percentage change in sales. A change in these circumstances prompts client–auditor realignment. Empirical studies show mixed results.

Absolute Change in Firm Size (ABSSSIZE)

Empirical studies have measured the influence of a change in firm size on auditor switching (Haskins and Williams, 1990; Keasey and Watson, 1991). Scholars, such as Woo and Koh (2001) hypothesised that a change in a firm's size increases the number of agency relationships. The monitoring role becomes highly complex for the shareholders and debt holders, creating a need for more independent auditor to help them with the monitoring role. However, other scholars did not find evidence that absolute change in total assets influences auditor switching in small private firms (Keasey and Watson, 1991).

Percentage Change in Sales (GROWTH)

Percentage change in sales (GROWTH) determines a switch of an auditors (Johnson and Lys, 1990). On the contrary, when investigating a sample that was based on firms that expand by acquiring new firms and by expanding their market share in a new segment, Williams (1988) did not find evidence that growth determines the change of auditors. Following the above arguments, the study hypothesises as follows:

Hypothesis 2: *Firms with a changing environment (absolute change in firm size or growth rate) are more likely to switch auditors.*

Corporate Governance
Board Size (BOARD)

The literature on board size shows mixed results. Firms with a larger and more independent board are more likely to switch auditors when the given auditor's image has been tarnished–the case of Andersen (Chen and Zhou, 2007). However, Sulistyorini and Bangsa (2017) found no evidence that board size determines auditor switching. In addition, poorly performing firms (failing firms) are more likely to have a smaller board size relative to non-failing firms (Chaganti et al., 1985). It is expected that firms with smaller boards are more likely to switch auditors.

Board Diversity (FEMALE)

Female directors on boards are more likely to demand higher audit quality (Lai et al., 2017) and improved firm performance (Campbell and Mínguez-vera, 2008). The presence of female directors on the board improves performance because female appointments are very competitive (Brammer et al., 2007). Therefore, firms with a small proportion of female directors are more likely to switch auditors.

Management Change (MGTCHN)

The literature on the influence of management turnover on auditor switching reveals mixed results. Management turnover has been associated with the change of auditors. Keasey and Watson (1991) argued that a change of directors is one of the factors that can influence a change in the principal-agent relationship contract. This is consistent with the findings of Beattie and Fearnley (1995). They observed that management turnover influences auditor change. New management usually wishes to detach itself from the previous management and prefers to work with audit firms they are familiar with (Beattie and Fearnley, 1995). However, other studies did not find evidence that management turnover influences auditor switching (Chow and Rice, 1982; Williams, 1988). Following the above arguments, the study hypothesises as follows:

Hypothesis 3: *Firms with a weak CG mechanism (smaller board size or absence of female directors, management turnover) are more likely to switch auditors.*

Auditor Quality (Competency) and Independence

Empirical studies on auditor quality (competence) and independence show mixed results. In his study on the potential determinants of auditors change in large public firms in the US, Williams (1988) found that auditor's quality (competency) and independence determined the auditor change. However, Keasey and Watson (1991) did not find any evidence that auditor's quality (competency) and independence can influence auditor switching in small private firms.

Auditor Size (AUDSIZE)

Firms with principals (debt holders and shareholders) demanding a higher level of audit quality are more likely to switch to a BigN auditor (DeFond, 1992). Once BigN auditors detect earnings management, their clients are more likely to adjust the reported earnings than clients of non-BigN auditors (Kinney and Martin, 1994) because of conservatism (Chung et al., 2003). This may lead to disagreements between auditors and management on the level of reported earnings (DeFond and Jiambalvo, 1993) and hence causing auditor switching (Krishnan and Krishnan, 1997). On the contrary, non-BigN auditors are more sensitive to client size and the revenue contribution of a client to their portfolio (Carcello et al., 2000). They are less likely to demand adjustments relating to income-increasing accounting practices and mainly focus on retaining clients (Trompeter, 1994).

Qualified Opinion (QUAL)

A qualified audit opinion is often associated with deceptive reporting behaviour (Lys and Watts, 1994) and accurate adverse opinion, which can predict next period bankruptcy (Francis and Yu, 2009) in pre-bankruptcy firms (Arnedo et al., 2008). Craswell (1988) and Chow and Rice (1982) found that firms often switched auditors after receiving a qualified audit opinion. They linked issuing of an adverse opinion to client characteristics such as distress, client-auditor dispute (Citron and Taffler, 1992) and audit environmental change (Fargher and Liwei, 2008).

Audit Fees (AUDFEE)

Beattie and Fearnley (1995) discovered audit fees as one of the important reasons to consider the auditor change. Similarly, it was found that switching was positively related to higher audit fees (Kallunki et al., 2007) which can be up to

25% higher in incumbent auditors relative to new auditors (Ettredge and Greenberg, 1990). In addition, financially distressed firms which are BigN clients are more likely to switch to an auditor who charges less audit fee (Haskins and Williams, 1990). Therefore, poor performing firms will switch to cheaper or more accommodating auditors who are less independent than the incumbent auditor. Following the above arguments, the study hypothesises as follows:

Hypothesis 4: *Firms with quality and independent auditor (Big4, Qualified opinion and audit fees) are more likely to switch auditors.*

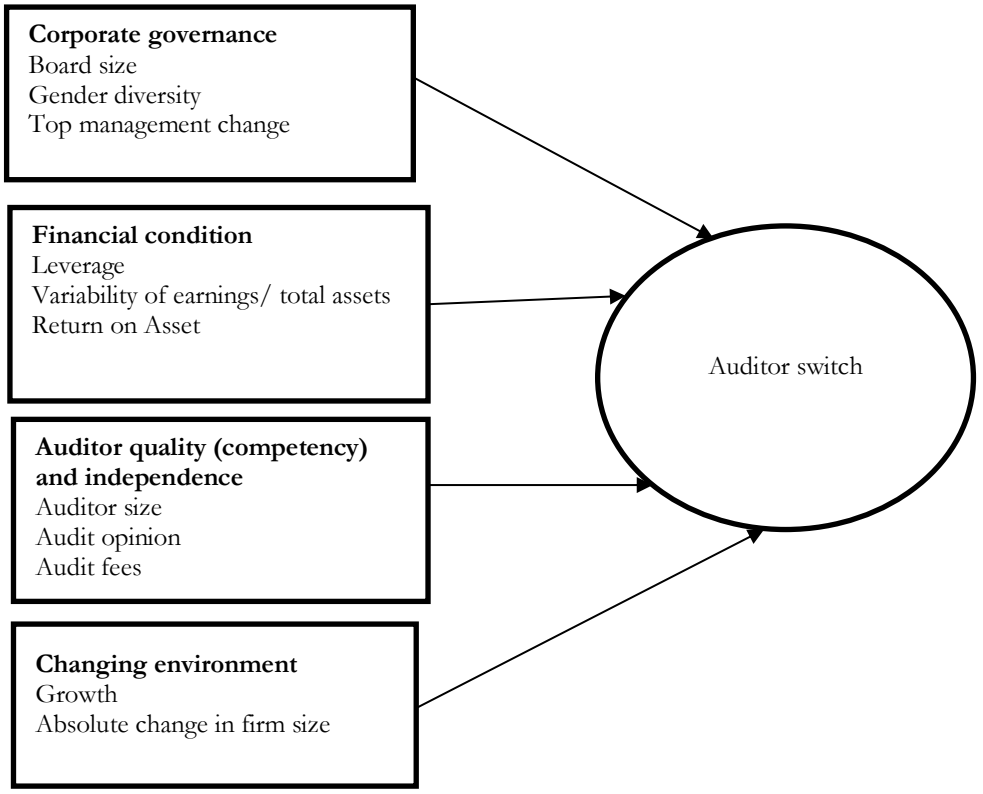

Figure 1: Conceptual Framework

Methodology

The study used logistic regression to determine the factors affecting auditor switching in the UK-based large and small private firms.

Logistic Regression Model

Prediction models estimate the probability of an event occurring and are widely used in economic contexts. Logistic regression is a suitable method to estimate the probability of an event occurring. Previous research has applied logistic regression to model the probability of failure, switching on prediction of failure (Altman and Sabato, 2007; Altman et al., 2010; Tinoco and Wilson, 2013; Wilson et al., 1999), as well as determinants of auditor switching (Lin and Liu, 2010; Williams, 1988). Logistic regressions estimate the relationship between the set of attributable variables describing an entity and the probability that the entity will be in a given final state. This is an appropriate framework of analysis for the current study as the dependent variable is dichotomous, one if a firm switches auditors and 0 if a firm does not switch auditors.

Logistic regression was conducted to predict the probability of auditor switching among the UK failing firms three years prior to failure. The model included the variables that measure corporate governance (management change, gender diversity and board size) and changing environment (change in the absolute size of the firm and growth of the firm). Moreover, the model included the following variables that measure the financial condition of the firm: leverage, ROA and change in net income. In addition, the model used auditor quality (competency) and independence as a predictor, measured by auditor size, opinion and fees. Logistic regression Switching model is presented as follows:

$$Y = \text{f(ABSSIZE, LEV, GROWTH, } \Delta\text{NI, ROA, AUDFEE, AUDSIZE, MGTCHN, FEMALE, BOARD, QUAL, FAIL, QRT DUMMIES, INDUSTRY DUMMIES)}$$

The variables are employed as follows: Y is a binary variable that takes 1 when a firm switches auditors and 0 when otherwise; ABSSIZE is an absolute change in total assets; LEV is the ratio of debt-to-total assets; GROWTH is the percentage change in sales; ΔNI is the change in NIAT scaled by total assets; ROA is a return on assets; AUDFEE is audit fees scaled by total assets; AUDSIZE is an indicator variable for auditor size, taking the value of 1 if the auditor is a Big4 and 0 when otherwise; MGTCHN captures management change where the chairperson or CEO changes; FEMALE is the proportion of female directors on the board, BOARD is the board size of the firm, FAIL is a dummy variable that is equal to 1 if the firms are failing firms and 0 for healthy

firms; QUAL is a dummy variable that is equal to 1 if the firm's auditor issues a qualified opinion and 0 when otherwise; QRT is the size of the firm in four quartiles; QRT1 small firms to QRT4 for the large firms in the sample; and INDUSTRY is a dummy variable for the industry.

Data, Sampling Procedure and Matching Approach

The analysis focuses on UK-based large and small private firms with total assets of more than £500,000 that failed during the period between 2004 and 2007. The UK was selected for the analysis because of its rich database on private firms.

Both financial and non-financial data have been acquired from the FAME database using UK Standard Industrial Classification (SIC) code 2003. The information includes private limited firms in the UK and Ireland (Clatworthy and Peel, 2007). The study covers a duration of ten years from 2001 to 2010. It therefore matches the firms up to three years prior to failure to alleviate issues concerning data availability in FAME. Restricting the study to five years prior to failure would significantly reduce the sample size. For example, a firm that failed in 2006 will require data going back to 2001, while a firm that failed in 2005 will require data going back to 2000. However, data from the year 2000 will be unavailable. As a result, this would limit the analysis period to two years, as firms that failed before 2006 would not have a full five years of data. Matching using three years prior to failure, therefore, aids the overall objective of the current research as it increases the number of years that can be analysed and results in a larger sample of firms. In addition, selecting firms beyond 2006 is not appropriate because of the financial crisis period of 2007-2008.

When downloading the data, firms with the following criteria were excluded as shown in Table 1: total assets of less than £500,000, failed before 2003 and after 2007, publicly quoted and unquoted firms, inactive firms and financial firms with SIC code 60-67 and utilities 40-49. In addition, any subsidiaries of the firms in the sample were excluded to avoid duplication of data. The final sample in the study comprises a matched sample of 2,912 failed and non-failed UK private firms.

Table 1: Sample Selection Procedure

Downloaded data from FAME: failed firms from 2003 – 2010	6590
Less:	
Financial firms with SIC code 60-67 and utilities 40-49	1077
Firms with audit exemption during the sample period	1331
Firms with missing primary SIC code	42
Matched firm with total asset greater than 30% of case firm	5
Firms without a match	6
Firms with auditor missing data during the sample period	1217
Final sample matched	2912

Source: FAME Database

The sample of failed firms was matched to a sample of non-failed firms, based on the following three characteristics as shown in Table 2: first, by industry using a two-digit SIC code, as firms have a higher probability of switching because of industry-related pressures (DeAngelo, 1982); second, a size of the firm, measured as the amount of total assets three years prior to failure; and lastly, the year of failure. This matching procedure manages the size of the dataset and it ensures that unique characteristics among firms are caused by the financial condition of the firm and not by the firms' business operations, size or prevailing economic conditions (Eck, 1982).

Table 2: Descriptive Statistics for Failed Firms

	No. of Firms	**Proportion %**
Panel A: Type of Failure Distribution		
Receivership	53	1.82
Liquidation	2735	93.92
Administration	124	4.26
Total	**2912**	**100**
Panel B: Year of Failure Distribution		
2004	536	18.4
2005	697	23.9
2006	776	26.6
2007	903	31.0

	No. of Firms	Proportion %
Panel A: Type of Failure Distribution		
Total	**2912**	**100**
Panel C: Industry (UK SIC 2003) Distribution		
Agriculture, hunting and forestry	35	1.2
Mining and quarrying	22	0.8
Manufacturing	753	25.8
Wholesale and retail trade	594	20.4
Hotels and Restaurants	81	2.8
Real estate, renting and business activities	1242	42.7
Public administration and defence	2	0.1
Education	12	0.4
Health and social work	25	0.9
Other community, social and personal service activities	141	4.9
Activities of private households as employers	5	0.2
Total	**2912**	**100**

Source: FAME Database

Results and Discussion

Descriptive Statistics

Descriptive statistics of governance, auditor's quality (competency) and independence, changing environment and financial condition variables for failed and non-failed firms for a pooled sample are presented in Table 3. The variables tested are management change (MGTCHN), the proportion of female directors (FEMALE), board size (BOARD), qualified opinion (QUAL), auditor size (AUDSIZE), leverage (LEV), variability of earnings (ΔNI), return on asset (ROA), absolute change in firm size (ABSSIZE) and percentage change in sales (GROWTH).

The results show significant differences between failed and non-failed firms. FEMALE and BOARD are significantly lower in failed firms than in non-failed firms. These results are consistent with previous findings that the firm's performance is positively related to the proportion of female directors (Campbell and Mínguez-vera, 2008) and board size (Jackling and Johl, 2009). In addition, MGTCHN is significantly lower in failed firms relative to non-failed firms. Similarly, the auditor's quality (competency) and independence variable show significant differences between failed and non-failed firms. QUAL is

significantly lower in failed firms relative to non-failed firms contrary to the previous research that pre-bankruptcy firms are more likely to be issued with a qualified audit opinion (Citron and Taffler, 1992) to warn investors of imminent firm failure (Connor, 1985).

Similar to the previous findings, less than 1 per cent of private failed firms receiving a qualified opinion compared to 30 per cent of public failed firms were preceded by adverse audit opinion (Carcello and Palmrose, 1994). These results support the argument that the issuing of a qualified opinion depends not only on firm characteristics but also on the presence/absence of a capital market, the auditor's professional environment, such as the level of media scrutiny and the state of the regulatory environment (Geiger et al., 2005, 2006). The results show a slight difference in the means of AUDFEE between failed and non-failed firms. However, the means are statistically different.

Table 3: Difference of Means between All Non-failed and Failed Firms

Variable	Non-Failed (N=10432)			Failed (N=10700)			Difference of Means		
	Mean	Median	Std Dev	Mean	Median	Std Dev	t Value	t-test Pr > |t|	Wilcoxon Test Two-Sided
ABSSIZE	19.06	10.44	25.38	21.22	11.67	27.43	-4.38	<.0001	<.0001
LEV	97.43	43.65	137.94	123.35	61.98	160.31	9.29	<.0001	<.0001
GROWTH	9.81	4.79	38.56	5.23	0.01	45.11	13.48	<.0001	<.0001
ΔNI	0.87	0.21	13.40	0.33	-0.01	19.61	5.66	0.0378	<.0001
ROA	0.04	0.04	0.32	0.03	0.02	1.64	20.72	0.4727	<.0001
AUDFEE	2.36	2.30	0.95	2.30	2.30	0.94	2.17	0.0001	0.0304
MGTCHN	0.16	0.00	0.36	0.07	0.00	0.25	21.54	<.0001	<.0001
FEMALE	0.20	0.14	0.24	0.15	0.00	0.23	15.84	<.0001	<.0001
BOARD	4.06	4.00	2.02	3.80	3.00	1.87	13.25	<.0001	<.0001
QUAL	0.02	0.00	0.12	0.01	0.00	0.10	2.39	0.0166	0.0167
AUDSIZE	0.31	0.00	0.46	0.38	0.00	0.49	-12.13	<.0001	<.0001

The descriptive statistics on the financial condition and changing environment between failing and non-failing firms are shown in Table 3. On average, ABSSIZE and LEV are significantly higher, while GROWTH, ΔNI and ROA are statistically lower in failed firms compared to non-failed firms. These results suggest that failed firms are financially weaker compared to non-failed firms.

Table 4: Difference of Means between Switched Non-failed and Failed Firms

Variable	Non failed N=3572			Failed N=4364			Difference of means		
	Mean	Median	Std Dev	Mean	Median	Std Dev	t Value	t-test Pr > |t|	Wilcoxon test two-Sided
ABSSIZE	20.35	11.33	26.54	23.00	13.22	28.70	-3.93	<.0001	<.0001
LEV	99.30	43.37	141.01	127.02	63.55	164.16	-6.25	<.0001	<.0001
GROWTH	11.02	5.07	40.29	5.54	0.00	45.34	8.63	<.0001	<.0001
ΔNI	0.83	0.23	14.03	0.32	0.00	20.86	3.20	0.2463	0.0014
ROA	0.03	0.04	0.31	-0.01	0.02	0.77	11.84	0.0048	<.0001
AUDFEE	2.38	2.38	0.95	2.29	2.30	0.89	2.96	0.0003	0.0031
MGTCHN	0.17	0.00	0.37	0.08	0.00	0.28	11.59	<.0001	<.0001
FEMALE	0.19	0.11	0.24	0.15	0.00	0.23	7.54	<.0001	<.0001
BOARD	3.91	3.00	2.20	3.54	3.00	1.98	7.88	<.0001	<.0001
QUAL	0.01	0.00	0.11	0.01	0.00	0.11	0.12	0.9044	0.9043
AUDSIZE	0.28	0.00	0.45	0.32	0.00	0.47	-3.77	0.0002	0.0002

The descriptive statistics of switching firms between non-failed and failed firms are shown in Table 4. The findings are similar to the results of all non-failed and failed firms in Table 3. ABSSIZE and LEV are higher in failed firms than in non-failed firms and the results for the difference of means are significantly different between failed and non-failed firms. Moreover, non-failed firms show higher GROWTH, ΔNI and ROA relative to failed firms and the means of these variables are significantly different. In addition, the mean of ROA in failed firms is negative. On average, the mean of AUDFEE is higher in non-failed relative to failed firms. These preliminary results show significant differences among the variables in failed and non-failed firms.

Table 5: Correlation Coefficient

	BOARD	**FEMALE**	**AUDSIZE**	**FAIL**	**QUAL**	**SWITCH**	**MNGCHN**	**ABSSIZE**	**GROWTH**	**ΔNI**	**LEV**	**ROA**
BOARD	1											
FEMALE	-.058**	1										
AUDSIZE	.089	-.171**	1									
FAIL	-.099	-.111**	.073**	1								
QUAL	.002	.032**	-.043**	-.020**	1							
SWITCH	.025**	-.012	-.054**	.034**	-.006	1						
MNGCHN	.133**	-.045	.165**	-.141**	-.011	.003	1					
ABSSIZE	-.034**	-.020*	.029**	.046**	-.023**	.052**	.020*	1				
GROWTH	-.003	.012	-.024**	-.051**	.002	.006	.035**	.181**	1			
ΔNI	.001	-.016	.023**	-.029**	-.012	.006	.039**	.071**	.120**	1		
LEV	-.009	-.071**	.023*	.101**	-.010	.008	.002	.085**	.049**	-.027**	1	
ROA	-.004	.042**	-.041**	-.121**	-.012	-.010	.014	.011	.047**	.391**	-.165*	1
AUDFEE	-.043	.028**	.009	.089**	-.015	.007	.001	.056**	-.022*	-.020*	-.038*	-.261*

**. Correlation is significant at the 0.01 level (2-tailed)

*. Correlation is significant at the 0.05 level (2-tailed)

The correlation coefficient matrix of the variables is shown in Table 5. The results suggest that firms with large boards (BOARD), failing firms (FAIL) and has changed in size (ABSSIZE) are positively correlated with auditor switching. In addition, auditor size (AUDSIZE) is negatively correlated with auditor switching, which suggests that firm audited by non-Big4 (Big4) are more likely to switch auditors. These results are contrary to the hypothesis that non-Big4 are less likely to switch. Other variables relating to auditing switching are not statistically significant.

In addition, multicollinearity diagnostic was conducted to test for the Variance Inflation Factor (VIF). The results showed that VIF was below 1.5. This suggests that there is no multicollinearity among the variables.

Switching Model Results

The results of the model are reported in Table 6. The model is statistically significant, showing that the predictors are a set of variables to distinguish between switchers and non-switchers. Panel B of Table 6 shows the overall performance of the model. The Chi-square test reveals significant results, suggesting that at least one variable in the model is a good predictor of failure. Another important result of the analysis is the Hosmer & Lemeshow (H-L) test, which measures the Goodness-of-fit. The results show that the p-value is insignificant, which leads us to accept the alternative hypothesis that the model fits the data. In addition, the Goodness-of-fit test measured by Cox & Snell R square and Nagelkerke R square is 19% and 14%, respectively. This suggests that variables on the model can explain the reasons for auditor switching. Other important information is regarding the overall model performance with and without the predictors. The model without predictors shows it can accurately predict failure at 55.3%; by including the predictors in the model, the prediction of the model improved to 65.4%. The additional predictors have therefore added useful information to the model.

Panel A of Table 6 presents the switching model results. The results show four main reasons for switching: CG variable, auditor quality (competency) as well as independence variable and variables relating to the financial condition of the firm and its operating environment. On CG variables, the results reveal that a one-unit change in top management (MGTCHN) increases the likelihood of

auditor switching by 1.298 and therefore supports the hypothesis that management turnover (dismissal, resignation or retirement) changes the client-auditor relationship as new management prefers to work with familiar audit firms, consistent with the previous research (Beattie and Fearnley, 1998; Woo and Koh, 2001).

A one-unit increase in the proportion of female directors on the board (FEMALE) decreases the likelihood of auditors change by 0.680. These results are consistent with the hypothesis that a higher proportion of female directors on the board decreases the probability of auditor switching. The change in the proportion of female directors on the board decreases the probability of auditor switching. These results are statistically significant and consistent with Beattie and Fearnley (1998). Female directors' demand for higher audit quality (Lai et al., 2017) encourages auditor's independence. As a result, the auditor will not fear a dismissal by the management. Therefore, a high proportion of female board members decreases the likelihood of auditor switching.

Moreover, an increase in the board size (BOARD) by 1 member increases the odds of auditor switching by 1.028. These results suggest that an increase in board size increases the chances of auditor switching contrary to the hypothesis of this study and the previous research of Sulistyorini and Bangsa (2017) and J. W. Lin and Hwang (2010) which did not find any evidence that board size determines auditor switching. These results suggest that an increase in the board size can invite members that are more independent and therefore they will demand quality and independent audit (Big4), hence switching the auditor.

The auditor's quality (competency) and independence reveal that firms audited by Big4 auditor (AUDSIZE) are less likely to switch auditors and these results are statistically significant. However, for auditor's fees and qualified opinion results are not statistically significant.

In addition, poor-performing firms (FAIL) are more likely to switch auditors, the odds of switching increase by 1.218. This is consistent with the hypothesis of this study that failing firms are more likely to switch auditors than the healthy ones. The findings are also similar to Schwartz and Menon (1985) who found that firms that are distressed or failing are more likely to shop for a more

accommodating auditors. The change in the firm's size (ABSSIZE) is also significant, showing that for a one-unit increase in the size of the firms, the likelihood of auditor switching increases by 1.003, consistent to Haskins and Williams (1990) who found that the change in firms size influences auditor switching.

Table 6: Auditor Switching Prediction Model

Prediction of Probability of Switching

Panel A: Analysis of Maximum Likelihood Estimates

Predictors	df	β	*SE*β	Wald's χ^2	p	e^{β} (odds ratio)
Constant	1	-.695	.144	23.372	.000	.499
MGTCHN	1	.261	.072	13.024	.000	1.298
FEMALE	1	-.386	.110	12.408	.000	.680
BOARD	1	.027	.011	5.954	.015	1.028
QUAL	1	-.088	.201	.193	.660	.916
AUDSIZE	1	-.232	.056	16.956	.000	.793
ABSSIZE	1	.003	.001	7.369	.007	1.003
GROWTH	1	.000	.001	.155	.693	1.000
ΔNI	1	.001	.002	.069	.793	1.001
LEV	1	.000	.000	1.867	.172	1.000
ROA	1	.068	.234	.085	.771	1.070
AUDFEES	1	-3.882	9.485	.167	.682	.021
FAIL	1	.197	.050	15.454	.000	1.218
qtr	3			9.853	.020	
qtr 2 vs1	1	.027	.082	.106	.744	1.027
qtr 3 vs1	1	.192	.071	7.337	.007	1.211
qtr 4 vs 1	1	.118	.064	3.392	.066	1.125
mid	1	.054	.074	.536	.464	1.056
Industry	10			22.273	.014	
Industry 2 vs 1	1	-.081	.121	.450	.503	.922
Industry 4 vs 1	1	-.111	.153	.529	.467	.895
Industry 5 vs 1	1	-.365	.156	5.454	.020	.694
Industry 7 vs 1	1	-.141	.130	1.171	.279	.869

Predictors	df	β	*SE*β	Wald's χ^2	p	e^{β} (odds ratio)
Industry 8 vs 1	1	-.278	.203	1.868	.172	.758
Industry 10 vs 1	1	-.316	.171	3.425	.064	.729
Industry 11 vs 1	1	-.124	.206	.366	.545	.883
Industry 12 vs 1	1	-.487	.165	8.696	.003	.615
Industry 13 vs 1	1	-.046	.125	.136	.712	.955
Industry 15 vs 1	1	-.151	.198	.578	.447	.860

Panel B: Overall model evaluation

	χ^2	*df*	*p*
Step	108.445	26	<.0001
Block	108.445	26	<.0001
Model	108.445	26	<.0001
Goodness -of-fit test			
Hosmer & Lemeshow	4.916	8	.766
Nagelkerke R Square	.014		
Cox & Snell R Square	.019		

Other variable relating to the financial condition of the firm such as ROA, GROWTH and ΔNI increase the odds ratio of auditor switching but only marginally and these variables are not statistically significant. Similar to Schwartz and Soo (1995), financial condition results were not consistent with the expected results and were not statistically significant except for the firms that were failing (FAIL).

Conclusion

The study analysed the determinants of auditor switching using multivariate logistic regression. Variables relating to auditor switching were included in the model to test for prediction and the goodness of fitness of the model. The general results suggest the model fits the data and at least one predictor is a good predictor of auditor switching. The variables included in the model were CG, auditor quality, changing environment and financial condition of the firms.

The results of the switching prediction model show that CG is a good predictor of auditor switching than financial condition variables. Financial condition results contradicted the expected results and were not statistically significant except for the firms that are failing (FAIL), suggesting that a firm that is failing is more likely to switch auditors than a healthy firm. Changing environment variable shows that a change in the firm's size increases the probability of auditor switching and the results are statistically significant. Similarly, a unit change in growth decreased the probability of auditor switching. However, the results are not statistically significant. Auditor quality (competency) and independence variables (auditor size, opinion and fees) decrease the odds of auditor switching. However, only auditor size results are statistically significant. The results show firms audited by BigN auditors have a lower probability of switching auditors than firms audited by non-BigN auditors.

Overall, the study concludes that the change in the top management, board size and absolute size of the firm increases the likelihood of the auditor switching, while the presence of female directors on the board and the auditor size (Big4 auditors) decrease the likelihood of auditor switching. In addition, firms approaching failure were more likely to switch auditors.

Given that private companies provided employment opportunities for up to 22.7 million people in the UK in 2009 (Department for Business Innovation and Skills, 2010), it is important for the regulators and policymakers to understand the significance of auditing in private firms for setting policy and standards to improve monitoring mechanisms. A better understanding of this could reduce firm failures and help to support the economic growth. The study suggests three main areas to be considered. First, there is a need to improve and encourage CG. The study shows that firms with good CG are less likely to switch auditors. Therefore, encouraging private companies to improve on CG–such as having larger boards and increasing the number of female board members–can strengthen auditing as a control mechanism in the financial reporting process. Second, policymakers should regulate the private audit market and reduce the number of auditors in it. They should merge small audit firms and set minimum requirements on the number of audit partners and clients. Third, policymakers should develop and publish statistics on audit failures for each audit firm on a

public website. To safeguard their reputation, auditors will increase the quality of their audit and their independence.

The study has highlighted that CG mechanisms are important determinants of auditors switching in private firms. Future research may use listed firms to explore whether CG mechanisms have the same effect on auditor switching.

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