DETERMINANTS OF ACCOUNTING QUALITY: EMPIRICAL EVIDENCE FROM THE
EUROPEAN UNION AFTER IFRS ADOPTION

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Abstract

This paper reports the results of the empirical research of firm’s incentives that determine accounting quality of firms applying IFRS. In particular, we examine earnings management constructs often used to assess accounting standards quality. We perform a multivariate regression analysis on firms accounting data from 2006 to 2008. Our results provide evidence that large firms have lower cross-sectional absolute discretionary accruals or less earnings management. Further, we find that firms with debt issuing would have higher cross-sectional absolute discretionary accruals or more earnings management. Also, firms whose financial statements are audited by a “Big 4” do not appear to have a clear impact on accounting quality. The different overall results for countries like UK and France indicate that different firms accounting incentives dominate accounting standards in determining accounting quality. These findings contribute to the literature by analysing the determinants of accounting quality in one setting where high level accounting standards are already in use.
1. Introduction

This paper investigates the determinants of accounting quality of listed firms after the compulsory adoption of IFRS by 2005. Following the recent adoption of IFRS in many regions of the world, much attention is being given to the association between accounting standards and accounting quality. International standards have been usually associated to higher accounting quality (e.g. Barth et al., 2008). However, firms and institutional incentives should also affect this feature of accounting numbers (Soderstrom and Sun, 2007; Burgstahler et al., 2006). We analyze firm’s characteristics influencing accounting quality in a stable context where a set of high level accounting standards are used.

We focus on the level of earnings management as one dimension of accounting quality that is particularly responsive to firm’s reporting incentives (e.g. Vantendeloo and Vanstraelenm 2005; Barth et al., 2006; Hung and Subramanyam, 2007; Burgstahler et al, 2006 ). This construct is especially relevant to our research because this relies on managerial discretion and is therefore likely to be influenced by the incentives and characteristics of companies preparing the financial statements.

The analysis relies on private and public firms in the European Union, listed in the stock market that adopted IFRS compulsory by 2005. The information source is the Worldscope Database. The analysis is based on 1084 UK firm-year and 1147 French observations including the years 2006, 2007 and 2008.

Our results provide evidence show that accounting quality is higher in UK for big firms and firms with greater cash flow from operation and in the French for big firms and for firms listing in the EU. In the both of countries empirical analysis evidence accounting
quality is lower for debt issuing firms. Also, firms whose financial statements are audited by a “Big 4” do not appear to have a clear impact on accounting quality.

The different overall results for countries like UK and France indicate that different firms accounting incentives dominate accounting standards in determining accounting quality.

These findings contribute to the literature by analysing the determinants of accounting quality in one setting where high level accounting standards are already in use. Additionally, contribute to the regulatory issue of accounting harmonization and the debate on accounting convergence.

The remainder of the paper is organized as follows. Section 2 reviews previous literature. Section 3 describes the research design and Section 4 analyses the empirical results. Finally, Section 5 presents the summary and concluding remarks.

2. Previous literature

Two streams of literature are relevant to our research: studies investigating the characteristics of the firms applying voluntarily IFRS, and studies on the association between IFRS and accounting quality.

**The characteristics of the firms applying voluntarily IFRS**

Several studies provide evidence on the characteristics of firms applying IFRS voluntarily. Al-Basteki (1995) demonstrates that audit firm and the line of business are
explanatory variables that influence Bahrain firms’ decision of voluntary adoption of IFRS. Dumontier and Rafiounier (1998) found that financial markets, internationalisation, company’s size, type of property and the auditor are explanatory variables of Swiss companies’ decision to apply voluntarily IFRS. Garcia and Zorio (2002) confirm that size, internationalisation and type of auditing influence the decision of voluntary adoption of IFRS.

In all the studies mentioned above, the type of auditing is the factor that has been pointed out as determinant for the voluntary adoption of IFRS. In the second place, the internationalization and the company’s size appear to be the most referred.

**Studies on the association between IFRS adoption and accounting quality**

It is generally accepted that the quality of IFRS is higher than most domestic accounting standards (e.g., Leuz and Verrecchia 2000; Leuz 2003; Ashbaugh and Pincus 2001; Barth et al. 2006, 2008). That is why we expect accounting quality to be higher after the adoption of IFRS.

Several studies provide evidence on the association between IFRS adoption and accounting quality. Tendenloo and Vanstraelen (2005) analyses earnings management of German firms that have adopted IFRS voluntarily, providing evidence that for firms audited by Big-4, earning management decreases significantly. They conclude that the mere adoption of IFRS is not sufficient to guarantee a better quality of accounting information. Glaum *et al.* (2008) show that German firms applying IFRS present lower intensity in the smoothing through provisions when comparing with firms applying German GAAP. Christensen *et al.* (2008) investigate the impact of incentives on
accounting quality changes around IFRS adoption by German firms. They found that
improvements in accounting quality are confined to firms applying IFRS voluntarily.

These empirical results lead us to conclude that even in the presence of high-quality
accounting standards (IFRS), the financial information presented by firms remains a
manipulation target. A possible explanation for these findings is that accounting quality
is moulded by various factors, such as, by one hand, the strength of the execution
system (audit), firms’ size, companies’ indebtedness, market competition, firms’
compensation and, by the other hand, the regulation of the capital market, the taxation
system and the regulation structure of the country, with its functioning characteristics.

In the theoretical study worked out by Soderstrom and Sun (2007), the model of
determinants for accounting quality after the adoption of IFRS in the European Union is
debated. These authors highlight the importance of both institutional and firms factors
that could influence accounting quality. Moreover, Soderstrom and Sun (2007) refer
that empirical studies of determinants of accounting quality has now a relevant
importance, due to the fact that, as all the countries of the European Union are going to
have a group of consistent accounting rules, the future improvement of the accounting
quality will depend on the change of the political and legal system from one country to
the other and incentives of the financial report of each company.

Hail et al. (2009) also provide a theoretical revision of the analysis of economic and
political factors due to the adoption of IFRS. They highlight firms’ incentives as the
determinant keys for accounting quality, and argue that, accounting quality can change
between companies and between countries. To get to these conclusions, the authors
drew on empirical studies performed by Ball et al. (2000), Ball and Shivakumar (2006),
Lang et al. (2006). Leuz and Wysocki (2008) also develop a theoretical analysis of the
consequences of the implementation of the IFRS. They conclude that the specific characteristics of firms are relevant to determine discrepancies in financial reports.

3. Research design

The sample

Our analysis relies on UK and French firms listed in the stock market that adopted IFRS compulsory by 2005. The information source is the Worldscope Database. The analysis is based on 1084 firm-year and 1147 firm-year observations including the years 2006, 2007 and 2008.

Measurement of Accounting Quality

In order to measure accounting quality, we apply the most widely used Modified Jones Model suggested by Dechow et al. (1995). To determine the accruals quality, Dechow et al. (1995) uses the calculation of total accruals:

\[
TCA_{i,t} = \frac{\Delta CA_{i,t} - \Delta CL_{i,t} - \Delta Cash_{i,t} + \Delta DEBT_{i,t} - DEPN_{i,t}}{A_{i,t-1}}
\]

where \( \Delta CA_{i,t} \) is the change of current assets for firm \( i \) year \( t \); \( \Delta CL_{i,t} \) is the change of current liabilities for firm \( i \) year \( t \); \( \Delta Cash_{i,t} \) is the change in cash for firm \( i \) year \( t \); \( \Delta DEBT_{i,t} \) is the change in short-term debt in current liabilities for firm \( i \) year \( t \); \( DEPN_{i,t} \) is the depreciation; \( A_{i,t-1} \) is total of assets in year \( t-1 \).

Thus, by applying formula (1) to each firm, in each year, we determine the metric – accruals quality (TCA). The total of accruals can be subdivided in (i) non discretionary
accruals (NAAC), which correspond to the component resulting from the real performance of firms and (ii) discretionary accruals (DACC) that correspond to the component that does not derive from the real firm business, thus being interpreted as earnings management action. Therefore, in algebraic terms:

\[ TCA = NAAC + DACC \]  

(2)

In the literature, when it is necessary to measure the earnings management, we use discretionary accruals (DACC) for such effect. In fact, when there is a connection between accruals and earnings management, implicitly the studies refer to discretionary accruals (DACC), that is, the higher the discretionary accruals (DACC), the more intense the practical of earnings management.

Thus, once the total accruals are calculated, we use the division of TCA according to formula (2) using for this effect the assessment, from the model called *Modified Jones Model*, suggested by Dechow *et al.* (1995).

\[ TCA_i = \alpha_1 \frac{1}{A_{t-1}} + \alpha_2 \frac{\Delta REV_t - \Delta REC_t}{A_{t-1}} + \alpha_3 \frac{PPE_{i,t}}{A_{t-1}} + \epsilon_i \]  

(3)

where \( \Delta REV_{i,t} \) is the change in Sales for firm i year t; \( \Delta REC_{i,t} \) is the change in accounts receivable for firm i year t; \( PPE_{i,t} \) is the gross amount of properties, plants and equipment for firm i year t.

Accruals quality is measured as the standard deviation of a firm’s residuals. The NACC arises from formula (3), according to the following equation:
Finally, the measure for the calculation of the earnings management level that are
discretionary accruals (DACC), results from the difference between the TCA and the
assessed NACC.

A higher magnitude of cross-sectional absolute discretionary accruals indicates a
greater level of earnings management, or lower accounting quality. A larger standard
deviation of the firm's residuals indicates poorer accruals quality, or lower accounting
quality.

Consequently, as proxy of the levels of earnings manipulation the sign of accruals is
indifferent. According to the methodology applied by Bartov et al. (2005); Cohen et al.
(2005); Cready and Demirkan (2009), the proxy of absolute discretionary accruals level
(ABSDACC) results from absolute value of variable DACC.

**The empirical model**

Prior studies (e.g., Bartov et al. 2001; Lang et al. 2003, 2006; van Tendeloo and
Vanstraelen 2005) document that firms’ discretionary accruals are affected by
business environmental factors such as firm size, financial leverage, sales growth,
auditors and other factors.
The literature shows that the company’s size can influence the levels of earnings management and consequently, the quality of accounting information (van Tendeloo and Vandstralen, 2005; Lang et al., 2006; Barth et al., 2008; Cready and Demirkan, 2009). Thus, we are going to consider the natural logarithm of the firm assets as proxy of size (SIZE).

According to the reasoning that the firm’s financial profit/loss statement audited by “BIG – 4” show a bigger flexibility of the accounting information, we consider the variable dummy, that assumes the value one, if the auditor is “BIG – 4” and zero, otherwise – AUD (Barth et al. 2008; Glaum et al., 2008).

According to Lang et al. (2006), firms with a high intensity of capital regularly need external capital. This suggests that firms with high intensity of capital are driven to a higher earnings management. Thus, in the model the turnover variable will be considered, calculated as total sales divided by the total assets of the company – TURN.

Firms of each financial market may have had a different behavior from others, so we are going to introduce in the model a variable called XLIST, that assumes value one, when a determined firm will be listed in a Stock Exchange of another country and zero, when this won’t happen (Barth et al. 2008).

For issuer firms, the higher the quotation when raising new capital the better, since they manage to maximize the respective financial collection. Therefore, the managers can benefit in managing results so that the shares price increases. We introduced the EISSUE variable, which is the annual percentage change in common stock and
DISSUE, which is the annual percentage change in total liabilities (Barth et al, 2008, Christensen et al, 2008).

The firms’ debt is usually formalised in written contracts for its regulation and which, in many cases, set some kind of terms for the firm – covenants. The linking of these clauses is connected to the financial information, since these are based on financial ratios. Therefore, managers can be encouraged to manage the results in order to avoid the penalties considered in the covenants. The obvious fact that firms manage the results so as to fulfill the covenants when they show financial difficulties is mixed. DeAngelo et al. (1994) did not detect any sign of this practice. However, Dichev and Skinner (2002), Barth et al. (2007), Christensen et al, (2007) report the management of results for the fulfilment of the covenants. Thus, we introduced the LEV variable, which is the total debt divided by total of capital.

In order to test hypothesis described in Section 3, this study constructs the multiple regression model expressed in equation (5) to explore the relationship between the effects of IFRS adoption and cross-sectional absolute discretionary accruals:

$$AQ = \beta_0 + \beta_1 SIZE_{i,t} + \beta_2 AUD_{i,t} + \beta_3 LEV_{i,t} + \beta_4 EISSUE_{i,t} + \beta_5 DISSUE_{i,t} + \beta_6 XLIST_{i,t} + \beta_7 TURN_{i,t} + \beta_8 GROWTH_{i,t} + \beta_9 CFO_{i,t} + \beta_{10} INDUSTRY_{i,t} + \epsilon_i$$

(5)

where $SIZE_{i,t}$ is the natural logarithm of end of year total assets; $AUD_{i,t}$ is an indicator variable that equals one if the firm’s auditor is PwC, KPMG; Arthur and Andersen and E&Y and zero otherwise for firm year t; $LEV_{i,t}$ is the total debt divided by total equity; $EISSUE_{i,t}$ is the annual percentage change in common stock for firm i year t; $DISSUE_{i,t}$ is the annual percentage change in total liabilities for firm i year t; $XLIST_{i,t}$ is an indicator variable that equals one if the firm is also listed on any E.U. stock exchange for
firm $i$ year $t$; $\text{TURN}_{i,t}$ is the sales divided by end of year total assets for firm $i$ year $t$; $\text{GROWTH}_{i,t}$ is net sales divided by revenues growth for firm $i$ year $t$; CFO is cash flow from operation divided by end of year total assets for firm $i$ year $t$.

4. Empirical results

Descriptive analysis

Table 1 presents descriptive statistics on all variables used in the analysis.

Table 1

Multivariate analysis

Tables 2 and 3 presents the OLS regression results. We control the heteroskedasticity and autocorrelation of variables by Newey-West test.

Table 2 and Table 3

We find that in France and UK, accounting quality are negatively and significantly related to firm size (SIZE) at the 1% level which indicates that firms with larger size have lower cross-sectional absolute discretionary accruals or less earnings management.

Additionally, we find that in France and UK, accounting quality are positively and significantly related to debt issuing (DISSUE) at the 1% and 5% level, which indicates that firms with changes in total liabilities have increase cross-sectional absolute discretionary accruals or high earnings management.
We find that in France and UK firms whose financial statements are audited by a “Big 4” (AUD) and firms whose sales is growth (GROWTH) do not appear to have a clear impact on absolute discretionary accruals, probably because the impact of absolute discretionary accruals on accounting quality varies with the governance infrastructure on the reporting firm. We do not find a significant relation between equity issues (EISSUE) and the financial leverage (LEV).

Regarding UK firms, we find a negatively and significantly connection to cash-flow from operations (CFO) at the 10% level, which indicated that firms with greater cash flow from operation have lower cross-sectional absolute discretionary accruals or less earnings management.

Regarding French firms, the link between cross-listing in the EU (XLIST) and absolute discretionary accruals on accounting quality is significantly positive at the 10% level, while that between asset turnover rates (TURN) and absolute discretionary accruals on accounting quality is significantly negative at the 5% level.

5. Conclusions

Using empirical analysis, we investigate the determinants of accounting quality of UK and French listed firms after the compulsory adoption of IFRS by 2005. We analyze firm’s characteristics influencing accounting quality in a stable context where a set of high level accounting standards are used.

The analysis relies on UK and French firms listed in the stock market that adopted IFRS compulsory by 2005. Our results provide evidence show that accounting quality is
higher in UK for big firms and firms with greater cash flow from operation and in the
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In the both of countries empirical analysis evidence accounting quality is lower for debt
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The different overall results for countries like UK and France indicate that different firms
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quality.

These findings contribute to the literature by analysing the determinants of accounting
quality in one setting where high level accounting standards are already in use.

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### Summary Statistics

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AQ = estimation cross-sectional absolute discretionary accruals
SIZE is the natural logarithm of end of year total assets; AUD = 1 if the firm’s auditor is PwC, KPMG; Arthur and Andersen and E&Y, and AUD=0 otherwise; LEV= is the total debt divided by total equity; EISSUE is the annual percentage change in common stock; DISSUE is the annual percentage change in total liabilities; XLIST = 1 if the firm is also listed on any E.U. stock exchange and XLIST = 0 otherwise; TURN is the sales divided by end of year total assets; GROWTH is net sales divided by revenues growth; CFO is cash flow from operation divided by end of year total assets.
TABLE 2

Regression Results of IFRS Adoption on Cross-Sectional Absolute Discretionary Accruals for France

\[
AQ = \beta_0 + \beta_1 SIZE_{it} + \beta_2 AUD_{it} + \beta_3 LEV_{it} + \beta_4 EISSUE_{it} + \beta_5 DISSUE_{it} + \beta_6 XLIST_{it} + \beta_7 TURN_{it} + \beta_8 GROWTH_{it} + \beta_9 CFO_{it} + \beta_{10} INDUSTRY_{it} + \epsilon_t
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<td>0.011</td>
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<td>0.020**</td>
<td>0.018**</td>
<td>0.026**</td>
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<td>Utilities</td>
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<td>0.041**</td>
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<tr>
<td>Retail Trade</td>
<td>0.019**</td>
<td>0.019**</td>
<td>0.019**</td>
<td>0.019**</td>
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<td>0.017**</td>
<td>0.030**</td>
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<tr>
<td>Finance, Ins.</td>
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<td>0.028</td>
<td>0.022</td>
<td>0.022</td>
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</table>

| R²   | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| N    | 1147 | 0.074 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |

AQ= regression estimation cross-sectional absolute discretionary accruals
SIZE is the natural logarithm of end of year total assets; AUD = 1 if the firm's auditor is PwC, KPMG, Arthur and Andersen and EY, and AUD=0 otherwise; LEV= the total debt divided by total equity; EISSUE is the annual percentage change in common stock; DISSUE is the annual percentage change in total liabilities; XLIST = 1 if the firm is also listed on any E.U. stock exchange and XLIST = 0 otherwise; TURN is the sales divided by end of year total assets; GROWTH is not sales divided by revenues growth; CFO is cash flow from operation divided by end of year total assets.

* ** Significant at 0.10, 0.05 and 0.01 level, respectively (two tailed).
TABLE 3

Regression Results of IFRS Adoption on Cross-Sectional Absolute Discretionary Accruals for UK

\[ AQ = \beta_0 + \beta_1 SIZE_{ij} + \beta_2 AUD_{i,t} + \beta_3 LEV_{i,t} + \beta_4 EISSUE_{i,t} + \beta_5 DISSUE_{i,t} + \beta_6 XLIST_{i,t} + \beta_7 TURN_{i,t} + \beta_8 GROWTH_{i,t} + \beta_9 CFO_{i,t} + \beta_{10} INDUSTRY_{i,t} + \epsilon_{it} \]

|            | C1  | C2  | C3  | C4  | C5  | C6  | C7  | C8  | C9  | C10 | C11 | C12 | C13 | C14 | C15 | C16 | C17 | C18 | C19 |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Intercept  | 0.12 | 0.068 | 0.058 | 0.128 | 0.119 | 0.136 | 0.127 | 0.193 | 0.194 | 0.138 | 0.139 | 0.099 | 0.10 | 0.069 | 0.06 | 0.062 | 0.069 | 0.057 | 0.063 | 0.072 |
| SIZE       | 0.006 | 0.006 | 0.007 | 0.006 | 0.007 | 0.006 | 0.008 | 0.007 | 0.007 | 0.006 | 0.007 | 0.011 |       |     |     |     |     |     |     |
| AUD        | -0.010 | -0.025 | -0.010 | -0.010 | -0.021 | -0.010 | -0.010 | -0.009 | -0.011 | -0.010 | -0.010 |       |     |     |     |     |     |     |
| LEV        | -0.000 | -0.000 | -0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |       |     |     |     |     |     |     |
| EISSUE     | +0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |       |     |     |     |     |     |     |
| DISSUE     | -0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |       |     |     |     |     |     |     |
| XLIST      | 0.004 | 0.004 | 0.005 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 |       |     |     |     |     |     |     |
| TURN       | +0.005 | 0.007 | 0.005 | 0.005 | 0.013 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 |       |     |     |     |     |     |     |
| GROWTH     | +0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |       |     |     |     |     |     |     |
| CFO        | 0.002 | 0.002 | 0.028 | 0.027 | 0.027 | 0.030 | 0.027 | 0.027 | 0.027 | 0.027 | 0.027 | 0.027 | 0.027 | 0.027 | 0.027 | 0.027 | 0.027 | 0.027 |
| Mining     | 0.004 | 0.015 | 0.047 | 0.047 | 0.047 | 0.047 | 0.047 | 0.047 | 0.047 | 0.047 | 0.047 | 0.047 | 0.047 | 0.047 | 0.047 | 0.047 | 0.047 | 0.047 |
| Manufacturing | 0.000 | 0.002 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |       |     |     |     |     |     |     |
| Utilities  | 0.009 | 0.002 | 0.009 | 0.009 | 0.009 | 0.009 | 0.009 | 0.009 | 0.009 | 0.009 | 0.009 |       |     |     |     |     |     |     |
| Retail Trade | 0.038 | 0.043 | 0.037 | 0.038 | 0.038 | 0.038 | 0.038 | 0.038 | 0.038 | 0.038 | 0.038 |       |     |     |     |     |     |     |
| Finance, Ins. | 0.046 | 0.049 | 0.045 | 0.045 | 0.045 | 0.045 | 0.045 | 0.045 | 0.045 | 0.045 | 0.045 |       |     |     |     |     |     |     |

\( R^2 = 0.12 \quad 0.10 \quad 0.114 \quad 0.116 \quad 0.114 \quad 0.105 \quad 0.11 \quad 0.109 \quad 0.113 \quad 0.111 \quad 0.06 \quad 0.04 \quad 0.001 \quad 0.000 \quad 0.023 \quad 0.001 \quad 0.006 \quad 0.013 \quad 0.004 \)

\( N = 1084 \)

\( \hat{\beta} \) regression estimation cross-sectional absolute discretionary accruals

\( SIZE \) is the natural logarithm of end of year total assets; \( AUD = 1 \) if the firm’s auditor is PwC, KPMG, Arthur and Andersen and EY and \( AUD = 0 \) otherwise; \( LEV \) is the total debt divided by total equity; \( EISSUE \) is the annual percentage change in total liabilities; \( XLIST = 1 \) if the firm is also listed on any E.U. stock exchange and \( XLIST = 0 \) otherwise; \( TURN \) is the sales divided by end of year total assets; \( GROWTH \) is net sales divided by revenues growth; \( CFO \) is cash flow from operation divided by end of year total assets.

\( * * * * \) Significant at 0.10, 0.05 and 0.01 level, respectively (two-tailed).