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## **The effect of Financial Reports' Quality on Firm's Performance**

**Abstract:** We analyse whether the quality of firms' Financial Reports (FRQ) produces any effect on their performance. Bradshaw et al. (2004) and Gelos and Wei (2005) call attention to the fact that the international capital movements is affected by FRQ. Following Schipper and Vicent (2003) we use the abnormal accruals to access earnings quality. For seventeen European countries, we found evidence that FRQ produces a positive impact on firm's performance. This finding indicates that managers are not opportunists and tends to make decisions to defend the firm's best interests. This result is robust since it does not depend on the accounting firms' performance proxy (ROA/ROE). In addition, it is also consistent when we use data in time series and in cross-sectional and when we estimate regression with lagged or the current year information about abnormal accruals.

**Key words:** Financial Report Quality; Firm Performance; Abnormal Accruals.

## **Introduction**

We investigate whether the quality of firms' Financial Reports (FRQ) affects their accounting performance.

Financial Reports are used by several economic agents in their decisions- making processes. Investors decide whether to purchase a firm's stocks by analysing its financial reports. As Fields *et al.* (2001) wrote accounting reports is needed since the capital market is not efficient in a strong way. Even in international capital movements, the financial reports are crucial (Bradshaw *et al.* [2004] and Gelos and Wey [2005]).

Creditors decide to lend or not and they establish contractual conditions, namely interest rates, considering accounting numbers, as shown by Gopalakrishnan (1994) and Betty and Weber (2003).

Schipper and Vicent (2003) also emphasised the usefulness of financial reporting and underlined that Financial Accounting Standards Board (FASB) Conceptual Framework has included it in Concepts Statement no. 1, para.34.

Therefore, in literature, several methodologies have been developed to investigate earnings quality: a) **accounting choice** followed by Bradshaw *et al.* (2004) and Astami and Tower (2006). This consists of creating a ratio from the manager's accounting choice in a way that allows conformity with the Generally Accepted Accounting Principles (GAAP) to be analysed; b) **income increasing/ decreasing** using a binary dependent variable and a *logit* model as Christy and Zimmerman (1994) and Betty and Weber (2003) did; c) **abnormal accruals** are the residuals from a regression of total accruals depending on investments and sales. This methodology was introduced by Jones (1991) and modified Jones by Dechow *et al.* (1995); d) **accruals map cash** from Dechow and Dichev (2002) and Schipper and Vicent (2003). The assumption is that a high quality accrual is eventually realised as cash flow. Abnormal Accrual driven from errors in estimation or earning management will not turn into cash; e) and finally **earnings persistence** referred to by Shipper and Vicent (2003) and Dermerjian *et al.* (2006). This approach consists of estimating a regression of earnings as a function of past earnings.

In this work we use abnormal accruals methodology for two reasons: a) data collection reasons, since we do not have the accounting choice database and because some countries in the sample did not issue cash flows in the period considered; b) abnormal accruals have been intensively used for a time which means this methodology is preferable to others.

Empirical research has been developed to investigate what factors affect firm's performance. As Fields *et al.* (2001) wrote Financial information quality will be more accurate if we understand the managers' motivations and their influence on firm performance. These authors emphasise the importance of regulating managers' behaviour, but notice the impossibility of eliminating the existence of accounting choices. Thus, many studies have been developed and there is one consensual question - there are several factors that influence manager behaviour.

About firms' performance in capital market, Christie and Zimmerman (1994) stated that an accounting choice is efficient when it maximizes firm's value and this efficiency varies across industries and years.

Warfield et al. (1995), using the capital market information, analyzed the effects of accounting choice on stock returns. They arrived to the evidence that the accounting choices, given by abnormal accruals, are inverse related to stock returns.

This work's contributions consist of analysing whether FRQ is a relevant factor of firm's performance for a large sample of European countries (seventeen) and industries (forty) and it also includes a long period of seventeen years. In addition, we use a fundamental approach since the firm's performance is assessed directly by the Financial Reports and not from returns on stock market (technical approach). Finally, we investigate the robustness of our results. Therefore we use two accounting proxies for firm's performance and current year and lagged information.

The remainder of this study proceeds as follows. In the first section, we have the definition of the hypotheses to test. We identify the data and methodology used in the empirical work. Several statistics are included and the econometric models are defined. In the second section, we show the evidence found in the empirical tests, which are then analysed. Some tests are done to verify the robustness of the results in order to assure that they are not driven by some statistical problems. In the last section, some conclusions are drawn from the results obtained.

## **Section 1: Methodology, Sample and Descriptive Statistics**

In this section, we defined the null hypotheses which are going to be tested in section 2. Then we have the models used, their variables definitions and signs expected. Finally, some statistics are analysed.

### **1.1. Methodology**

#### **1.1.1. Hypotheses to test**

Warfield et al (1995) found evidence that abnormal accruals produced a negative effect on the firm's stock return, in a way that investors could understand the FRQ and adapt their investment strategy. As we use a fundamental methodology we consider an accounting indicator of firm's performance- the ROE. Here, we consider that manager (as the investors) also react to FRQ. Firm's performance increases when the quality of accounting improves since managers are efficient as Christie and Zimmerman (1994) found. Managers defend the best interests of the firm they represent. Our goal is to clarify whether financial reports'

quality is significant for firm performance or if the effects of other factors are bigger and they reduce or eliminated the accounting choice importance. Additionally, if FRQ matter to firm performance we examine whether they are positively or negatively related.

Then we have equation (1):

$$ROE_{it} = \alpha_1 + \alpha_2 AA_{it} + \alpha_3 (\text{control variables}) \quad (1)$$

The ROA is also used to test if results are not driven by the firm's performance proxy equation (2).

$$ROA_{it} = \beta_1 + \beta_2 AAA_{it} + \beta_3 (\text{control variables}) \quad (2)$$

We also analyse the lagged effects of AA in ROE (and ROA). This is because managers make decisions considering that the information of previous year is more accurate. So we have the equations (3) and (4).

$$ROE_{it} = \alpha_1 + \alpha_2 AAA_{it-1} + \alpha_3 (\text{control variables}) \quad (3)$$

$$ROA_{it} = \beta_1 + \beta_2 AAA_{it-1} + \beta_3 (\text{control variables}) \quad (4)$$

### 1.1.2. Econometric models, variables definitions and signs expected

The relation between firm's performance and accounting information quality is estimated using an econometric model, where we have the Abnormal Accruals (AA) and others explanatory variables as it is in regression (1):

$$ROE_{it} = \gamma_1 + \gamma_2 AAA_{it} + \lambda_3 DE_{it} + \lambda_4 BigA_{it} + \lambda_5 Siz_{it} + \epsilon_{it} \quad (1)$$

Where,

$ROE_{it}$ : Return on equity (wc08301);

$AAA_{it}$ : Absolute Value of Abnormal Accruals estimated;

$Size_{it}$ :	Log of total assets of firm i at year t (total assets-key item-wc02999);
$DE_{it}$	Total debt to common equity (wc08231);
$Big4_{it}$	Dummy=1 when firm i is audited by one of the biggest and international auditing firms at year t and 0 otherwise (wc07800);
$\varepsilon_{it}$ :	Error term for firm i at year t.

This model is also tested with ROA as dependent variable and with the lagged AAA as explanatory variable in the second section.

As in prior research, the Absolute Value of Abnormal Accruals (AAA) is a proxy of earnings quality [e.g. Larcker and Richardson (2004) and Warfield *et al.* (1995)], which are estimated by total accruals using the cross-sectional modified Jones indicated by Dechow (1995). We first computed Total Accrual (TA) by balance sheet approach since some countries do not disclose cash flow for all the period considered using equation (5):

$$TA = \Delta Rec + \Delta Inv + \Delta OCA - \Delta AP - Dep \quad (5)$$

Where:

$\Delta Rec$ :	Change in receivables (wc02051);
$\Delta Inv$ :	Change in inventories (wc02101);
$\Delta OCA$ :	Change in other current assets (wc02149);
$\Delta AP$ :	Change in accounts payables (wc03040);
Dep:	Depreciation and amortization (wc01151).

We estimate the regression below (2) to get the Abnormal Accruals (AA) by residuals. For time series we have 819 regressions (number of firms considered) with seventeen observations (number of years). This approach assumes stationary of parameter estimates.

For the cross-section, we have 400 regressions (40 industries in a 10-year period). The number of observations is different per industry but with a minimum of 9 observations (firms

per year). This approach assumes that AA is homogeneous in each industry, as stated by Larcker and Richardson (2004).

The variable AA contains the residuals of that regression i.e. they are the part that is not explained by the explanatory variables included (Investment and cash sales):

$$TA_{it} = \gamma_1 + \gamma_2(\Delta Sal_{it} - \Delta Rec_{it}) + \gamma_3 PPE_{it} + u_{it}$$

(2)

Where:

- $TA_{it}$  : Total Accruals computed by equation (5);
- $\Delta Sal_{it}$  : Change in sales for firm i between year t and t-1 (wc01001);
- $\Delta Rec_{it}$  : Change in receivables for firm i between year t and t-1 (wc02051);
- $PPE_{it}$  : Property, plant and equipment- gross for firm i at year t (wc02301);
- $u_{it}$  : Error term for firm i at year t.

Therefore, in this model it is assumed that changes in revenues less changes in receivables, as well as capital intensity create normal accruals. The credit sales are supposed to be abnormal.

All variables are scaled by mean of total assets in the end of the current year and in the end of the previous year. This is to reduce heteroskedasticity problems since the sample includes firms with very different sizes.

Nevertheless the improvements, accruals are still incomplete since subsists imprecision associated to classification of normal and abnormal accruals as Phillips et al. (2003), Larcker and Richardson (2004) wrote. Several developments introduce more variables into Total Accruals regression to explain the accruals that emerge from the normal activity of firms such as cash flow and return on assets. However, the model suggested by Dechow (1995) is still the most accurate.

An important issue is that the abnormal accruals are analysed by their absolute value. We don't aim to analyse abnormal accruals sign (positive or negative) but its total amount. The highest absolute value of AA is the less quality Financial Information has.

We included other explanatory variables that are expected to affect firm performance:

**Size** is the logarithm of a firm's total assets of on year t. The sign expect is positive since the bigger is the firm the better is its performance as stated by Bradshaw *et al.* (2004) Betty and Weber (2002), Mitton (2002), DeFond et al (1997);

**DE**, capital structure given by the ratio debt to assets, the expected sign is positive since high leverage means high risk and so higher cost with creditors and shareholders ask for more return as referred by Bradshaw *et al.* (2004), Warfield et al. (1995) and Christie and Zimmerman (1994). In addition, managers aim to avoid bad credit covenants [Betty and Weber (2002) and Gopalakrishnan (1994)];

Finally, the third control variable is **Big4** which is expected to be positively related with firm's performance, since a firm audited by one of the biggest international audit firm will present more accurate accounting information since firm must report all the earnings as stated by Bradshaw *et al.* (2004) and Mitton (2002).

For all countries, these variables were in Euros. Therefore we could not use local currency for five countries: Denmark, Norway, Sweden, Switzerland and the United Kingdom.

## 1.2. Sample and Descriptive Statistics

### 1.2.1. Sample

We collect accounting data from Worldscope for seventeen European Countries. In the empirical work we use data in time series and in cross-sectional. This situation drives us to have two limits in our sample:

1. Data in time series consists of 819 firms. In lagged AA we made regression estimations with a total of 13,104 firm-years observations, corresponding to a period of sixteen years which is from 1990 to 2005. Regressing with current AA we have 13,923 firms/years observations, a seventeen years period (from 1990 to 2006);
2. Data in cross-sectional has 1,406 firms. In lagged AA we made regression estimations with a total of 12,654 firm-years observations with a nine-year period, from 1997 to 2006. Regressing with current AA we have 14,060 firms/years observation, a ten years period (from 1990 to 2006).

In both cases, we only consider firms that have accounting information available in Worldscope for all years considered. This condition was imposed just to compute the abnormal accruals, our proxy for FRQ.

Nevertheless, for the determinants estimations, some accounting data may miss but we use unbalanced panel technique. This gives us 825 and 1,490 firms with 14,025 and 14,900 firms-years observations respectively.

However, firms with SIC code 6000 to 6999 were excluded since Financial Institutions have specific regulations. It reduces the sample to 819 and 1,477 firms in time series and cross-sectional, respectively.

In addition, for data in cross-section, we also have to exclude firms in industries with fewer than 9 firms. This a condition to estimate the determinants model since we have 8 explanatory variables. This restriction reduces our sample in 19 firms. In the end, we made cross-sectional analysis with 1,406 firms and 40 industries.

### **1.2.2. Descriptive statistics**

The sample we collect presents a heterogeneous structure, since the number of firms of each country varies considerably.

In the time series sample, the United Kingdom (UK) shows the highest number of firms 294 which is nearly 36% of the total sample.

The second and third most represented countries are Germany and France. Together they have close to 30% of the total firms considered.

A third more representative group is constituted by Italy which firms represent 6.3%, followed by Netherland with 5.1% and by Sweden, which have near 5% of the firms. Spain is the next country with more firms included in the sample with almost 4%.

All other countries have less than 5%. There several countries between 1% and 2%, that is the case of Belgium with 1.3%, Greece with 1.1%, Norway represents 1.3%, Portugal having 1% of the firms, and Ireland with 2%. These five countries represent just 7% of the sample.

The last representative country is Luxembourg with just one firm in the sample, followed by Finland with two firms and Austria with four. These are the countries with the smallest number of firms and together they have less than 1% of the sample.

This information is presented in table 1.

**Table 1: Number of firms per country in the time series sample**

Country	No. of firms (A)	Observations (B)=A*16 years	(C)=(A)/819
Austria	4	64	0.5%
Belgium	11	176	1.3%
Denmark	33	528	4.0%
Finland	2	32	0.2%
France	125	2000	15.3%
Germany	118	1888	14.4%
Greece	9	144	1.1%
Ireland	16	256	2.0%
Italy	52	832	6.3%
Luxembourg	1	16	0.1%
Netherlands	42	672	5.1%
Norway	11	176	1.3%
Portugal	8	128	1.0%
Spain	30	480	3.7%
Sweden	40	640	4.9%
Switzerland	23	368	2.8%
UK	294	4704	35.9%
Total	819	13104	100.0%

For all the period considered and from table 2, we see that, in time series approach, 643 firms were audited by one of the biggest auditing company which represent almost 79% of the total sample. This number has a dramatic decrease in terms of ADR: only 116 firms of 819 (14%) issued ADR list.

In the cross-sectional approach, there is a slight decrease in Big4 and the relative number of firms with ADR is constant: 76% of firms in our sample had auditory made by one of Big4 and 14% have ADR list (196 in 1406 firms).

UK is the country with the highest percentage of ADR list and Big4: almost 28% have ADR list and 35% are audited by a Big4 in the time series and 32% have ADR list and a Big4 company in cross-sectional approach. These percentages have correspondence with the relative number of UK firms in the total sample (see tables 1 and 2).

Ireland exhibits a strong protection to investors (one of the two countries with common law) because 31% and 26% of the firms has got ADR list (time series and cross-sectional, respectively). More than 93% and 86% of the firms are audited by one of Big4 (15 in 16 in time series and 19 in 22 firms in cross-sectional approach

Norway is close to Ireland with 28% of the firms with an ADR list. Norway also has a huge percentage of firms audited by one of the Big4 with 93% and 96%.

France percentages of ADR and Big4 are smaller than the percentage of firms in the total sample. This situation is worse in the cross-sectional approach. These numbers confirms that code law protects less the investors than the other legal origins.

Countries as Portugal, Greece and Spain have just six percent of the firms with ADR list in the cross-sectional approach (the situation is worse in the time series where Portugal and Greece do not have any firm with ADR list) and about half of firms are not audit by one of the four biggest auditing firms. Once again these converge to La Porta *et al.* (1998) since these countries have code/French law origin.

In Luxembourg, half of firm had ADR list and all were audited by one of BIG4. Those are the highest percent of firms with ADR list and audited by one of BIG4. However, just four firms from this country were included on the sample given the restrictions explained above.

**Table 2: Countries corporate governance characteristics**

Countries	Time series				Cross-section				Law/ Origin
	ADR	% ADR	Big4	% Big4	ADR	% ADR	Big4	% Big4	
Austria	2	1.72	4	0.62	7	3.57	18	1.69	Code/German
Belgium	1	0.86	11	1.71	2	1.02	24	2.25	Code/French
Denmark	2	1.72	27	4.20	3	1.53	42	3.93	Code/ Scandinavian
Finland	2	1.72	2	0.31	6	3.06	42	3.93	Code/ Scandinavian
France	16	13.79	94	14.62	20	10.20	91	8.52	Code/French
Germany	14	12.07	64	9.95	25	12.76	130	12.17	Code/German
Greece	0	0.00	5	0.78	2	1.02	19	1.78	Code/French
Ireland	5	4.31	15	2.33	5	2.55	19	1.78	Common/English
Italy	11	9.48	52	8.09	13	6.63	69	6.46	Code/French
Luxembourg	0	0.00	1	0.16	2	1.02	4	0.37	Code/French
Netherlands	9	7.76	39	6.07	19	9.69	65	6.09	Code/French
Norway	2	1.72	11	1.71	5	2.55	22	2.06	Code/ Scandinavian
Portugal	0	0.00	4	0.62	3	1.53	7	0.66	Code/French
Spain	3	2.59	28	4.35	3	1.53	28	2.62	Code/French
Sweden	14	12.07	40	6.22	14	7.14	64	5.99	Code/ Scandinavian
Swiss	3	2.59	23	3.58	4	2.04	82	7.68	Code/German
UK	32	27.59	223	34.68	63	32.14	342	32.02	Common/English
<b>Total</b>	116	100.00	643	100.00	196	100.00	1068	100.00	

In the cross-sectional sample, the UK still has the highest number of firms with close to 31%. This country has firms in all industries considered, except in two-digits SIC code no. 16 (Building- Heavy).

France and Germany are again the second and third most represented countries. They also decrease their importance in the total sample when we compare with the time series sample. Together they represent 26%.

The least represented is still Luxembourg but it has a slight increase: from one to four firms. Portugal is the second country with fewer firms with less than 1% of total sample firms (13 firms). Switzerland, Austria, Finland and Belgium increase their importance in the cross-sectional sample: these four countries have less than 5% of the sample in time series data and increase to almost 15% in the cross-sectional data.

The number of firms fixed on countries from code law origin is bigger than the number of firms from common law (68% from the 17 countries considered less UK and Ireland). In accordance with LaPorta *et al.* (2000), our sample has more firms with less investor protection.

The industry with the most number of firms is SIC code 35 (Industrial) with 6.7% of total. But there are several industries around 6% as SIC code 73 (Business Services), 28 (Chemicals) and 20 (Food). The industries with the fewest firms are SIC code 29 (Petroleum), with the minimum to be considered (nine firms) and SIC code 39 (Manufacturing), with 10 firms.

The composition of our sample by countries and industries is contained in table 3.

**Table 3: Number of firms per country and industries in cross- sectional sample**

SIC2	Austria	Belgium	Denmark	Finland	France	Germany	Greece	Ireland	Italy	Luxemb.	NL	Norway	Portugal	Spain	Sweden	Swiss	UK	Total Industry	% of total	
13	0	0	0	0	4	0	0	1	0	0	0	1	0	1	0	0	9	16	1.1	
15	5	1	1	2	3	3	0	2	0	0	2	0	3	0	1	0	20	43	3.1	
16	0	0	2	0	4	3	5	3	0	0	3	0	0	7	1	0	0	28	2.0	
17	1	0	0	1	2	1	0	0	0	0	1	0	0	1	1	0	7	15	1.1	
20	4	7	5	6	15	12	5	4	0	2	6	0	1	2	1	7	15	92	6.5	
22	1	0	1	0	3	1	1	0	10	0	1	0	0	0	0	0	5	23	1.6	
23	0	0	0	2	1	9	1	0	1	0	1	0	0	0	0	0	4	19	1.4	
25	0	0	1	0	1	1	2	0	0	0	3	1	0	0	0	0	2	11	0.8	
26	2	0	1	9	2	2	0	0	3	0	1	2	2	1	6	1	3	35	2.5	
27	0	0	1	2	1	1	0	2	6	0	5	2	0	0	1	3	12	36	2.6	
28	1	2	5	1	13	19	2	1	5	0	4	0	0	2	0	6	31	92	6.5	
29	1	0	0	0	1	0	0	0	2	0	1	1	0	1	0	0	2	9	0.6	
30	1	4	0	2	4	3	0	0	0	0	0	0	0	1	1	0	6	22	1.6	
32	4	0	5	0	5	13	2	3	4	0	1	0	1	2	0	2	11	53	3.8	
33	2	3	0	1	2	1	6	0	2	0	2	2	0	2	1	5	8	37	2.6	
34	0	0	0	3	6	2	2	1	1	0	2	0	0	0	3	4	13	37	2.6	
35	0	1	1	4	8	26	1	0	3	0	4	2	0	0	9	16	19	94	6.7	
36	1	2	3	4	14	14	0	0	5	0	3	1	0	2	4	7	24	84	6.0	
37	1	2	0	0	8	12	0	0	11	0	1	0	0	3	7	1	9	55	3.9	
38	0	0	2	1	5	5	0	0	5	0	1	1	0	0	3	6	19	48	3.4	
39	0	0	0	1	2	2	0	0	1	0	0	0	0	0	0	0	6	12	0.9	
42	0	0	1	0	3	1	0	0	0	0	2	0	0	0	0	0	3	10	0.7	
44	0	1	1	3	0	2	1	1	0	0	0	3	0	0	1	1	4	18	1.3	
45	2	0	1	1	1	3	0	0	0	0	0	0	0	1	0	0	5	14	1.0	
47	0	0	1	0	1	2	1	0	3	0	0	0	0	2	0	1	4	15	1.1	
48	0	2	1	0	6	1	1	0	4	1	2	0	1	2	4	2	7	34	2.4	
49	2	2	0	2	7	6	0	0	2	1	0	2	1	5	0	5	14	49	3.5	
50	0	1	6	3	11	7	5	1	0	0	5	1	0	2	5	6	27	80	5.7	
51	2	1	3	1	14	15	3	2	1	0	2	2	0	3	0	4	6	59	4.2	
53	0	0	0	2	3	0	0	0	0	0	0	0	0	0	0	2	5	12	0.9	
54	0	2	0	2	3	0	0	0	0	0	3	0	2	0	0	1	3	16	1.1	
55	0	0	1	0	0	0	0	0	0	0	1	0	0	0	3	0	5	10	0.7	
56	0	0	0	0	1	0	0	0	0	0	0	0	0	1	3	1	8	14	1.0	
58	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	3	10	15	1.1	
59	0	1	0	0	3	3	0	1	1	0	0	0	0	0	0	0	7	16	1.1	
70	0	0	0	0	4	1	1	0	2	0	0	0	0	2	0	1	7	18	1.3	
73	0	1	2	0	9	7	1	0	3	0	6	1	0	1	9	6	46	92	6.5	
79	0	0	0	0	5	0	0	0	1	0	0	0	2	0	0	1	8	17	1.2	
80	0	0	0	0	1	5	1	0	0	0	0	0	0	0	0	0	4	11	0.8	
87	0	0	4	0	3	1	0	0	0	0	5	1	0	0	2	0	29	45	3.2	
Total																				
Country	30	33	49	53	181	184	41	22	76	4	68	23	13	44	66	92	427	1406	100.0	
% of total	2.1	2.3	3.5	3.8	12.9	13.1	2.9	1.6	5.4	0.3	4.8	1.6	0.9	3.1	4.7	6.5	30.4	100		

In table 4, we can see the two-digit SIC code industries and the mean absolute value of AA per industry (AAA). SIC code 15 (Buildings- Light) has the highest average amount of AA in the averaged total assets, over 8.4%. This industry represents just 3% of the total sample.

The three most represented industries (SIC code 35- Industrial, SIC code 36- Electrical and 73- Business Services) have high levels of AAA (Absolute Abnormal Value of Accruals), with close to 6.7%, 6.6% and 8% of total assets respectively, in mean. In other words, taking table 3 and 4 we can see that the industries with more number of firms exhibit high levels of AAA.

If we add these four industries we have more than 21% of sample with AAA above the sample average, as we can see in table 5. Besides, more than half of the industries considered (21 of 40) have levels of AAA bigger than the sample average.

The industries with the fewest AA are water air transport (SIC code 44 and 45) with about 2% each one (table4). These industries are not very representative since they represent less than 1% of the sample each one, as we can see in tables 3 and 4.

**Table 4: Industry denomination and each absolute value of Abnormal Accruals**

SIC2	Industry	AAA
13	Oil & Gas	0.048364655
15	Building- Light	0.084022459
16	Building- Heavy	0.074996399
17	Construction	0.053132166
20	Food	0.049722951
22	Textile mill	0.041374786
23	Apparel	0.049965843
25	Furniture	0.061007529
26	Paper	0.03154976
27	Printing	0.033504601
28	Chemicals	0.045037408
29	Petroleum	0.022230844
30	Rubber	0.037141488
32	Stone	0.042937747
33	Metal Work- Basic	0.049609058
34	Metal Work- Fabrication	0.039247411
35	Industrial	0.066969671
36	Electrical	0.065500408
37	Transport Equipment	0.049874877
38	Instruments	0.04653678
39	Misc. Manufacturing	0.049078812
42	Motor Freight	0.040155187
44	Water Transport	0.027941279
45	Air Transport	0.022271353
47	Transport Services	0.050448316
48	Communications	0.050084184
49	Utilities	0.033087356
50	Durables- Wholesale	0.062722744
51	Non Durables- Wholesale	0.053159494
53	General Stores	0.029425799
54	Food Stores	0.025833165
55	Auto Dealers	0.049041197
56	Apparel Retail	0.054097932
58	Eating	0.023159576
59	Misc. Retail	0.045700191
70	Hotels	0.037618876
73	Business Services	0.079249074
79	Amusement & Recreation Services	0.048993939
80	Health Services	0.04029709
87	Engineering, Accounting & Management Services	0.07194476

Considering the time series approach, and as expected, the mean of the AA is close to zero with -0.0006. As we use the absolute value of AA (AAA) it represents 4.75% of the averaged total assets, as we can see in table 4. The mean of firms' size is about €374,000.00. On average, ROA is 5.13%. In mean, total debt is 80% of common equity. The highest standard deviation can be seen in debt to equity. This can indicate that there are some highly leveraged firms and others that are not. Moreover, there are some firms with a negative equity (see table 5).

**Table 5: Descriptive statistics in the times series approach**

	AA	AAA	Size	ROA	DE
Mean	-0.0006	0.0475	12.8333	5.1288	80.5757
Median	0.0005	0.0306	12.7204	5.4900	50.4100
Maximum	0.8072	1.0951	19.4289	501.2800	29869.4300
Minimum	-1.0951	0	4.5539	-1006.4300	-93200.0000
Std. Dev.	0.0746	0.0576	2.0977	15.3912	1101.1480
Obs.	13,104	13,104	12,880	13,045	13,060

Variables definitions: AAA is the absolute value of AA and this is abnormal accruals and consists of residuals of regression estimation:  $TA_t = \alpha_1 + \alpha_2(\Delta sales - \Delta receivables) + \alpha_3 PPE + u_t$ . TA is Total Accruals and is obtained by changes in receivables (wc02051) plus change in inventories (wc02101) and change in other current assets (wc02149) less changes in accounts payables (wc03040) and less depreciation (wc01151). All variables from this model are scaled by the average of total assets (wc02999). Size is the natural logarithm of total assets (wc02999). ROA is returns on assets (wc08326). Finally, DE is Debt to Equity and is defined as total debt to common equity (wc08231).

Changing the approach to cross-sectional makes no considerable differences in the sample structure. The mean of AAA is higher in almost half percent point and it is 5.24% of the average total assets. The mean firms' size increases to about €520,528.00. In mean, the firms included in the cross-sectional approach have more ROA which is 5.88%. The debt to equity ratio decreases when compared with the time series data. However, standard deviation is not only high but increased. This means that the differences in capital structure in the firms included get bigger (see table6).

**Table 6: Descriptive statistics in the cross-sectional approach**

	AA	AAA	Size	ROA	DE
Mean	0.0000	0.0524	13.1626	5.8814	72.1958
Median	0.0007	0.0337	12.9674	5.9000	55.5700
Maximum	0.9291	0.9877	19.4289	996.2900	37501.9200
Minimum	-0.9877	0.0000	4.5539	-1251.1800	-93200.0000
Std. Dev.	0.0820	0.0631	2.0056	29.3649	1492.8010
Obs.	12,654	12,654	12,456	12598	12,651

Variables definitions are in table 5.

About the correlation between variables, in the time series data we can see that the correlation between the proxy of firm's performance ROA and the FRQ proxy (AAA) is the highest with negative correlation of 13.5%. Size is the explanatory variable with the second highest correlation with ROA 8.4%, followed by Big4 with 5.5%. The weakest correlation is between DE ration and ROA with less than 1%.

The correlations between the independent variables are not strong, except that between Size and Big4, with almost 35%. Thus, they do not cause any problem in the estimation of the regressions. See panel A of table 7.

When we use the lagged AAA, all the previous correlation get a little stronger. Specially, the correlation between ROA and AAA (from -13.5% to -18.7%). See panel B of table 7.

**Table 7: Correlations between firm’s performance and the independent variables in the time series approach**

<b>Panel A: Correlations using ROA and AAA</b>					
	<b>ROA</b>	<b>Size</b>	<b>DE</b>	<b>Big4</b>	<b>AAA</b>
<b>ROA</b>	1.0000				
<b>Size</b>	0.0835	1.0000			
<b>DE</b>	-0.0040	0.0389	1.0000		
<b>Big4</b>	0.0540	0.3480	0.0058	1.0000	
<b>AAA</b>	-0.1351	-0.2208	0.0088	-0.1026	1.0000
<b>Panel B: Correlations using ROA and lagged AAA</b>					
	<b>ROA</b>	<b>Size</b>	<b>DE</b>	<b>Big4</b>	<b>AAA</b>
<b>ROA</b>	1.0000				
<b>Size</b>	0.0921	1.0000			
<b>DE</b>	-0.0042	0.0380	1.0000		
<b>Big4</b>	0.0556	0.3506	0.0051	1.0000	
<b>AAA</b>	-0.1871	-0.2212	0.0096	-0.1012	1.0000

Variables definitions are in table 5. Big4 is a dummy and is one if auditing firm is one of the four biggest international companies and zero otherwise (wc07800); Law is a dummy which is one if the country’s legal origin is Common law and zero otherwise.

When we use the ROE as firm’s performance proxy, the correlation between ROE and AAA decreases. From a correlation of -13.5% to a correlation of -5%. Other considerable change is between DE and ROE which turns stronger. It was less than 1% with ROA and get almost 14% with ROE. This is because ROE includes net income (financial component of earnings) and ROA just includes EBIT (Earnings before interest and taxes).

The other correlations don’t change much and again the emphasis to the correlation between Size and Big 4 with near 35%. See panel A of table 8.

Considering the lagged AAA, all correlations get a little stronger. The exception is between ROE and AAA since it decreases form -5.0% to -3.3%. See panel B of table 8.

**Table 8: Correlations between firm’s performance and the independent variables in the time series approach**

<b>Panel A: Correlations using ROE and AAA</b>					
	<b>ROE</b>	<b>Size</b>	<b>DE</b>	<b>Big4</b>	<b>AAA</b>
<b>ROE</b>	1.0000				
<b>Size</b>	0.0540	1.0000			
<b>DE</b>	0.1394	0.0377	1.0000		
<b>Big4</b>	0.0580	0.3425	0.0053	1.0000	
<b>AAA</b>	-0.0504	-0.2026	0.0175	-0.0995	1.0000

  

<b>Panel B: Correlations using ROE and lagged AAA</b>					
	<b>ROE</b>	<b>Size</b>	<b>DE</b>	<b>Big4</b>	<b>AAA</b>
<b>ROE</b>	1.0000				
<b>Size</b>	0.0545	1.0000			
<b>DE</b>	0.1409	0.0373	1.0000		
<b>Big4</b>	0.0606	0.3449	0.0048	1.0000	
<b>AAA</b>	-0.0230	-0.1986	0.0118	-0.0955	1.0000

Variables definitions are in table 5 and 7.

Considering the cross sectional approach, the differences are slight: a small decrease between ROA and AAA (from -13.5% to almost -11%); and an increase of ROA and size (8.4% to 15.1%). The correlation between ROA and DE ratio is still very small, again under 1%. The correlation between Size and big4 also decreased a little from 35% to 27%. See panel A table 9.

About the correlation using lagged AAA, there are almost no changes as we can see on panel B of table 9.

**Table 9: Correlations between firm’s performance and the independent variables in the cross-sectional approach**

<b>Panel A: Correlations using ROA and AAA</b>					
	<b>ROA</b>	<b>Size</b>	<b>DE</b>	<b>Big4</b>	<b>AAA</b>
<b>ROA</b>	1.0000				
<b>Size</b>	0.1512	1.0000			
<b>DE</b>	-0.0014	0.0178	1.0000		
<b>Big4</b>	0.0776	0.2656	0.0011	1.0000	
<b>AAA</b>	-0.1082	-0.1743	0.0061	-0.0757	1.0000

  

<b>Panel B: Correlations using ROA and lagged AAA</b>					
	<b>ROA</b>	<b>Size</b>	<b>DE</b>	<b>Big4</b>	<b>AAA</b>
<b>ROA</b>	1.0000				
<b>Size</b>	0.1603	1.0000			
<b>DE</b>	-0.0008	0.0160	1.0000		
<b>Big4</b>	0.0769	0.2674	0.0003	1.0000	
<b>AAA</b>	-0.1015	-0.1728	0.0090	-0.0738	1.0000

Variables definitions are in table 5 and 7.

As in the time series approach, the correlation between ROE and AAA is smaller than ROA and AAA. The correlation between ROE and Size is smaller than ROA and size. And the correlation between ROE and DE ratio is bigger than ROA DE ratio. See panel A of table 10.

Considering the lagged AAA the differences are too small, just the relation between ROE and AAA get a little weak (from a negative 3.6% to a negative 1.3%). See panel B of table 10.

**Table 10: Correlations between firm’s performance and the independent variables in the cross-sectional approach**

<b>Panel A: Correlations using ROE and AAA</b>					
	<b>ROE</b>	<b>Size</b>	<b>DE</b>	<b>Big4</b>	<b>AAA</b>
<b>ROE</b>	1.0000				
<b>Size</b>	0.0562	1.0000			
<b>DE</b>	0.1199	0.0300	1.0000		
<b>Big4</b>	0.0436	0.2573	-0.0019	1.0000	
<b>AAA</b>	-0.0364	-0.1683	0.0026	-0.0769	1.0000

  

<b>Panel B: Correlations using ROE and lagged AAA</b>					
	<b>ROE</b>	<b>Size</b>	<b>DE</b>	<b>Big4</b>	<b>AAA</b>
<b>ROE</b>	1.0000				
<b>Size</b>	0.0588	1.0000			
<b>DE</b>	0.1232	0.0284	1.0000		
<b>Big4</b>	0.0434	0.2580	-0.0025	1.0000	
<b>AAA</b>	-0.0132	-0.1600	0.0074	-0.0699	1.0000

Variables definitions are in table 5 and 7.

## **Section 2: Empirical results**

In the firms’ performance models estimations, we use unbalanced data panel. This enables us to obtain coefficients estimations that consider differences by including several years and firms.

Data panel is unbalanced because some variables do not have values in certain years. This technique substitutes the missing variables and increases the efficiency of estimated coefficients (Soares and Stark, 2008).

Panel data is estimated with period fixed effects, i.e. with dummy variables for years. When we introduce the dummy to BIG4 we can have just period fixed

effect because it produces the problem of a singular matrix with the panel technique to firms.

From the results we obtained, we can see that the adjusted R squared is always at law levels but it is bigger in ROA estimative of firm performance in all estimations than in ROE:

For time series data, we have a small difference (ROA with 0.0287 and ROE with 0.0273) in contemporaneous analysis. The difference is more expressive in lag analysis (0.0444 and 0.0263 respectively).

For cross-sectional data, we have in ROA an adjusted R-squared with about 0.042 and ROE with about 0.021. These numbers are observable from table 11 to 14.

About the estimative of AAA, we found evidence that AAA is always statistically significant to explain the dependent variable (tables 11, 13 and 14) at 1% level. The only except is when we consider ROE and the lagged AAA, both in cross-sectional and in time series approach.

The sign of AAA estimative is negative in all tests which are in accordance with the predicted sign: when we have more abnormal accruals, this means worse financial information, the firm performance is lower because managers are efficient. Notice that AAA is an inverse estimative of Financial Report Quality. Then, more AAA means less FRQ.

All control variables are statistically significant at 1% level and their signs are in accordance with the expected. The only exception is DE which is not statistically significant and with the opposite sign from expected for ROA *proxy* of firm's performance in both the time series and cross-sectional approaches and with current or lag methodology for FRQ *proxy* (tables 11 to 14).

Focusing in table 11, we can see that all explanatory variables included are statistically significant at 1% level, both in the time series and the cross-sectional approach.

In addition, all the estimative signs are in accordance with the predicted sign: Size produces a positive effect on firms' performance, meaning that when size increase firms exhibit better financial information; DE affects positively ROE

because when firms' debt increases the managers make accounting decisions to increase firms' performance; Finally Big4 is positively related with ROE since the international auditing firms have an effective monitoring effect and all earnings are reported.

**Table 11: H0- Impact of FRQ (AAA) on firm's performance (ROE)**

Independent Variables	Predicted Sign	Coefficient Prob.	
		(OLS t-statistic) Time series	(OLS t-statistic) Cross-sectional
<b>Intercept</b>		-7.8432 *	-19.8087 *
		-1.7737	-3.6419
<b>Size</b>	+	0.9279 *	1.8898 *
		2.6694	4.6184
<b>DE</b>	+	0.0105 *	0.0099 *
		16.1996	13.8926
<b>Big4</b>	+	8.3388 *	6.6200 *
		4.8843	3.5225
<b>AAA</b>	-	-60.7904 *	-42.6908 *
		-4.9300	-3.3439
Number of Obs.		13,405	13,539
Adjusted R-squared		0.0273	0.0210

Variables definitions are in table 11.

\*correlation is significant at the 0.01 level.

In table 12, we see that AAA does not have a statistical significant impact on ROE. This is the only exception.

AAA sign is always negative and it is in accordance to the expected. In other words, when we consider the AAA in the current year or in the year before the relation with ROE does not change: when AAA increases the ROE decreases, meaning that managers are not opportunists.

About the control variables included, all variables are statistically significant and produce a positive effect on ROE both in the time series and in cross-sectional approach (table 12). Therefore, we can say that the lagged AAA methodology does not affect the relations between those set of variables and ROE

**Table 12: H04- Impact of FRQ (lagged AAA) on firm's performance (ROE)**

Independent Variables	Predicted Sign	Coefficient Prob.	
		(OLS t-statistic) Time series	(OLS t-statistic) Cross sectional
<b>Intercept</b>		-13.0427 *	-26.8922 *
		-2.8032	-4.5396
<b>Size</b>	+	1.1059 *	2.2309 *
		3.0297	5.0178
<b>DE</b>	+	0.0104 *	0.0100 *
		15.7899	13.5326
<b>Big4</b>	+	9.2917 *	6.9100 *
		5.1762	3.3720
<b>Lagged AAA</b>	-	-18.7647	-6.2960
		-1.4386	-0.4486
Number of Obs.		12,611	12,180
Adjusted R-squared		0.0263	0.0210

Variables definitions are in table 11.

\*correlation is significant at the 0.01 level.

When we consider ROA as a *proxy* of firm's performance, the FRQ *proxy* is still statistically significant, at a 1% level, to explain the dependent variable in the time series and cross-sectional.

The sign is again negative, as expected, since poor financial report quality (higher AAA) means a decrease in ROA (table 13).

As control variables are concerned, we have a considerable difference from the results obtained for the ROE proxy of firm's performance: the DE ratio becomes no significant and with opposite (negative) sign from expected. For the other two explanatory variables results are consistent both in ROE and in ROA. Therefore, Size and Big4 still produce a positive and statistically significant impact on ROA, at 1% level (see table 13).

**Table 13: H04- Impact of FRQ (AAA) on firm's performance (ROA)**

Independent Variables	Predicted Sign	Coefficient (OLS t-statistic)	
		Time series	Cross-sectional
<b>Intercept</b>		0.8170	-6.3482 *
		0.9448	-8.4977
<b>Size</b>	+	0.4148 *	0.8446 *
		6.0899	14.9850
<b>DE</b>	+	-9.28E-05	-3.79E-05
		-0.7753	-0.5040
<b>Big4</b>	+	0.8091 *	1.0925 *
		2.4053	4.1834
<b>AAA</b>	-	-32.7194 *	-17.8527 *
		-14.0790	-10.2224
Number of Obs.		13,665	13,823
Adjusted R-squared		0.0287	0.0430

Variables definitions are in table 11.

\*correlation is significant at the 0.01 level.

With the lagged methodology, the relations of independent variables and ROA do not change in a considerable way: the FRQ *proxy* is statistically significant at 1% level in the time series and cross-sectional approaches and its sign is negative as predicted since whether FRQ decrease in the previous year (the AAA of t-1 increases) the current firm's performance decreases (table 14).

The explanatory variables Size and Big4 produce the same impact on ROA as in ROE and in current or lagged methodology: when these variables increase the ROA also increase. In other words, if these explanatory variables decrease ROA also decreases. In contrast, with ROA the DE ratio remains positive. This is the opposite sign from expected and it is not statistically significant (see table 14).

**Table 14: H04- Impact of FRQ (lagged AAA) on firm's performance (ROA)**

Independent Variables	Predicted Sign	Coefficient Prob.	
		(OLS t-statistic) Time series	(OLS t-statistic) Cross-sectional
<b>Intercept</b>		1.7204 *	-7.5203 *
		(1.8985)	(-9.4285)
<b>Size</b>	+	0.3900 *	0.9124 *
		(5.4747)	(15.2022)
<b>DE</b>	+	-8.11E-05	-2.97E-05
		(-0.6665)	(-0.3879)
<b>Big4</b>	+	0.7578 *	1.0337 *
		(2.1513)	(3.7063)
<b>Lagged AAA</b>	-	-47.0256 *	-15.5470 *
		(-19.4937)	(-8.3875)
Number of Obs.		12,861	12,439
Adjusted R-squared		0.0430	0.0419

Variables definitions are in table 11.

\*correlation is significant at the 0.01 level.

### Section 3: Conclusions

We found evidence that FRQ produces a positive impact on firm's performance at European countries. Therefore, the current firm's performance (ROA or ROE) increases when FRQ increases both in current and in lagged AAA methodology.

In addition, more than half of industries have levels of AAA above the sample average.

This two evidences means that the performance of firms tends to be adjusted in accordance with the quality of Financial Reports. Higher performances are exhibit when the quality of financial information improves. Moreover this finding is consistent with the hypothesis that managers are efficient and not opportunists. Although, managers have incentives to decrease firm's performance since the FRQ increases they tend to make decisions to defend the firm's best interests.

This result is robust since it was obtained for the times series and the cross-sectional approach. In addition, the results remain the same when we consider the current FRQ or the FRQ of previous year. The only exception appears with the ROE proxy of firm's performance in the lag methodology, where AAA

becomes no significant but still producing a negative impact on firm's performance.

About the control factors of firm's performance, the results obtained shows that size and auditing company are relevant factors and they produce a positive impact on firm's performance. In other words, huge firm's and audited by one of the biggest international auditing firms, exhibits the best performances. These results were obtained in all tests.

About capital structure it is not consistent when we use ROE or ROA. Therefore, with ROE it produces the expected effect on firm's performance because when DE ratio increases the ROE also increase. This is due to avoid debt constrains. In contrast when we use ROA the sign turns negative meaning that a big DE ratio affects negatively the ROA.

A development to this work could be using another proxy for FRQ such as the accounting choice as used by Bradshaw *et al.*

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