

**FrancoAngeli**

# **IL GOVERNO AZIENDALE TRA TRADIZIONE E INNOVAZIONE**

**a cura di  
Luciano Marchi  
Rosa Lombardi  
Luca Anselmi**



**Società Italiana di Ragioneria  
e di Economia Aziendale**

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IL GOVERNO AZIENDALE TRA TRADIZIONE E INNOVAZIONE

# I

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Società Italiana di Ragioneria e di Economia Aziendale



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# FROM THE INCOME STATEMENT MODEL TO THE BALANCE SHEET MODEL: AN EMPIRICAL ANALYSIS ON THE IMPACT ON SMES' EARNINGS QUALITY

Fabio La Rosa<sup>1</sup>, Nicola Moscariello<sup>2</sup>, Francesca Bernini<sup>3</sup>

## 1. Introduction

Financial accounting figures have always been a result of a pragmatic compromise between the income statement model (i.e., revenue/expense approach) and the balance sheet model (i.e., asset/liability approach) (Dichev, 2008). However, during the last decades, financial reporting standards have been gradually moving from the former approach to the latter (Jinnai, 2005), describing the asset/liability view as the only logical and conceptually sound basis of accounting (Sprouse, 1966; Storey and Storey, 1998; Bullen and Crook, 2005).

In response to the clear position taken by regulators, national and international standard setters, several scholars have stressed theoretical and empirical drawbacks associated to the balance sheet model. Indeed, the alleged conceptual superiority of the balance sheet is unclear, while it contrasts with how most businesses operate and create value (advancing expense to generate revenue and earnings) (Dichev, 2008; Kvitte, 2008). At the same time, according to Dichev and Tang (2008), by worsening the revenue-expense matching process, the balance sheet model has lowered the earnings quality of US listed companies, causing a marked deterioration in the forward-looking informativeness of earnings.

Notwithstanding the still ongoing debate on the supposed conceptual primacy of the balance sheet model over the income statement model and on the actual implications exercised by the former over the usefulness of earnings, the asset/liability approach has been increasing its influence shaping the financial statements not only of listed companies but also of the private ones. Indeed, a balance sheet model clearly influences the IFRS for SMEs. Moreover, as a part of the Responsible Business package with its “Think Small First” principle, the European Commission has recently replaced the IV and VII EU Directive with the new Accounting Directive

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<sup>1</sup> Kore University of Enna, corresponding author: fabio.larosa@unikore.it

<sup>2</sup> Second University of Naples.

<sup>3</sup> University of Pisa.

2013/34/EU. This Directive, that applies its provisions from 1<sup>st</sup> January 2016, seems to adopt a financial reporting model closer to the balance sheet one<sup>4</sup>.

For this reason, our study aims to extend knowledge on the relationship between financial reporting models and earnings quality (EQ) by comparing EQ indexes collected on Voluntary Italian IAS/IFRS Adopters (VIA) and Italian GAAP Firms (IGF). Indeed, the IASB standards are strongly rooted on an asset/liability approach (He & Shan, 2015), whereas the Italian GAAPs are traditionally based on a revenue/expense model.

After controlling for several variables that affect the quality of earnings, we find that firms adopting a balance sheet approach (VIA firms) are characterized by earnings of lower quality than firms whose financial statements refer to an income model (IGF).

Our study contributes to the accounting literature in several ways. First, this paper collects new evidence on the relationship between the financial statements models (revenue/expense vs. asset/liability approach) and the quality of earnings. Second, to the best of our knowledge, this is the first study to investigate on the effects of financial statements models on the earnings quality of private companies. Indeed, more research in the private firm setting is needed and this study – by improving our understanding about factors affecting SMEs' earnings quality –

responds to those scholars asking for an improved research design for smaller or private firms (e.g., Sellhorn and Gornik-Tomaszewski, 2006; Nobes, 2010; Brüggemann, Hitz and Sellhorn, 2013). Finally, we contribute to the international debate on the accounting harmonization process and its effectiveness in achieving regulatory objectives. The paper is structured as follows. In section 2, we show our literature analysis and we develop our research hypothesis. The research methodology and the variables definitions with the statistical analyses are illustrated respectively in sections 3 and 4. Finally, in section 5, we illustrate the findings of the empirical analysis and, in section 6, the concluding remarks and the limitations of our study.

## **2. Theoretical background and research hypothesis**

One of the main objective of financial reporting is to provide information about earnings and its components. There are two alternative views of

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<sup>4</sup> In fact, the new EU Directive does not allow to recognize both research and advertising&promotional expenses within the intangible financial assets. Moreover, the EU Directive has introduced the fair value accounting for the measurement of financial and non-financial assets.

earnings: a) the asset/liability approach (balance sheet model); b) the revenue/expense approach (income statement model).

In the asset-liability view, assets and liabilities are economic resources and obligations and the assessment of their attributes and changes represent the fundamental measurement process. Following this approach, earnings are only the consequences of changes in the net assets of an enterprise during a period (adjusted for distributions and contributions from equity holders) (Storey and Storey, 1998). On the other hand, the revenue-expense view holds that earnings are a measure of an enterprise's effectiveness in using its inputs to obtain and sell outputs. The matching process represents therefore the fundamental measurement process and changes in net assets simply originates from the temporal allocation of revenues and expenses (Belkaoui, 1999).

Although financial accounting has always been a pragmatic compromise between these two alternative views of earnings, it is reasonable to say that since the 1970s leading standard setters and stock market regulators worldwide have intentionally chosen to shift from an income statement model to a more balance-sheet-based model of the determination of income as the latter has been often depicted as more logically consistent and objective than the former in measuring wealth.

However, the supposed benefits for the accounting constituents associated to a more balance-sheet-based model of the determination of income are not unanimously accepted by the academia and the accounting profession as it has been described at odds with how most business operate. Moreover, the alleged conceptual superiority of the balance sheet approach with respect to the income statement model is unclear (Bromwich et al., 2010).

A critical position toward the asset/liability approach is also supported by some empirical evidence showing a relationship between a shift towards an asset-liability approach and a lower earnings quality. Indeed, by worsening the revenue-expense matching process, the balance sheet model has increased earnings volatility and lowered earnings persistence of US listed companies (Dichev and Tang, 2008).

Despite these theoretical and empirical drawbacks, in these years the asset/liability view of earnings has been certainly boosted by the widespread implementation of the IAS/IFRS around the world, so creating an ideal setting – and yet still unexplored – to analyze the impact of the balance sheet model over the quality of earnings. In fact, several studies have been published so far concerning the effect of IAS/IFRS on earnings quality, collecting mixed results for both voluntary and mandatory IAS/IFRS

adoption (for a review see Soderstrom and Sun, 2007; Brown, 2011). However, to the best of our knowledge, none of articles about the effects of the harmonization process has explicitly analyzed the impact of IAS/IFRS as a consequence of their asset/liability nature, by comparing the EQ and EM attributes of firms adopting an income statement model with those that – by applying the international accounting standards – have chosen for a balance sheet one.

In order to pursue this goal, we assess EQ indexes of firms adopting a revenue-expense oriented model (IGF) with those of firms voluntarily adopting an asset-liabilities oriented model (VIA).

We then formulate the following hypotheses (in its null form):

**Hypothesis:** different accounting models (revenue-expense vs. asset-liability) do not impact differently on the earnings quality attributes.

### **3. Research methodology**

#### **3.1. Research context**

Our study analyzes the Italian context whose accounting system is traditionally oriented towards a revenue-expense model. Indeed, the Italian GAAP, driven by the need for a proper matching, allows for including certain kinds of deferred charges and credits as assets and liabilities (such as start-up costs, research costs, advertising and promotional costs, provisions for restructuring) and do not permits the use of a fair value accounting for the measurement of assets and liabilities.

While until 2004 both private and public companies shared the same accounting rules, since 2005 public companies are required to use IAS/IFRS. However, as a consequence of the implementation choices given by the IAS Regulation, Italy (like some other EU countries) also permits private firms to adopt voluntarily full IFRS instead of local GAAP. Considering that the Italian accounting system is traditionally oriented towards a revenue/expense model, the Italian context allows to assess simultaneously the EQ of companies adopting the revenue/expense model (IGF) and those of companies that follow an asset/liability model (VIA).

In addition, Italy is an ideal setting because is a code law country. This peculiarity presents some features, such as the lower investor protection, the highly concentrated ownership, the lax law enforcement, the weak disclosure requirements and the poor corporate governance, that may lead to a lower earnings quality and a more pronounced earnings management (Burgstahler et al., 2006; Leuz et al., 2003). At the same time, by limiting the investigation to a single country, we do not have to consider institutional factors, such as

the political and legal systems, which give rise to financial reporting incentives (Schipper, 2005; Bushman and Piotroski, 2006), thus increasing the reliability of our results. In fact, as Brüggemann et al. (2013) point out, focusing on a specific setting, such as a single country, “is likely to be a useful starting point for better understanding and controlling for contemporaneous non-IFRS effects, and should thus increase the internal validity of results”.

### **3.2. Sample description**

As we stated previously, to draw consistent conclusions on the effects of IFRS vs. local-GAAP adoption on EQ and EM attributes is not simple, due to the controversial nature of the scholars’ findings. There are some major concerns that may explain these conflicting results, related to research design issues (Soderstrom and Sun, 2007) such as sample heterogeneity, survivorship bias, and large firm bias. First, sample heterogeneity is related to the adoption of cross-country scenarios, which are likely to produce biased results as a consequence of difficulty to control for economic and political differences existing among countries. By focusing our investigation only on the Italian context, we eliminate by construction this possible distortion, so assuring a homogenous accounting regulation over time among Italian SMEs. Second, the survivorship bias, i.e. the idea that only firms persisting over time are included in the sample, is limited by examining firms’ earnings quality of two samples (VIA vs. IGF) using different accounting models, rather than developing long time-series analysis in order to capture the documented shift from an income model to a balance sheet model. This research strategy also allows to mitigate the risk that lower EQ are not due to the evolution in the accounting model but they are rather a result of changes in the real economy. Finally, large firms bias is related to the fact that larger firms are more likely to benefit from IFRS (e.g., Garcia Lara et al., 2006; Christensen et al., 2007), thus explaining why they are more likely to switch to IFRS voluntarily and why they document positive IFRS adoption effects (Cuijpers and Buijink, 2005; Brüggemann, Hitz & Sellhorn, 2013). In order to limit this last bias we refers to SMEs, so avoiding those commercial databases that suffer from a bias towards large firms. Therefore, from a methodological point of view, the above distinctive features make our study’ findings more robust, especially whether compared to previous investigations on the topic (i.e. cross-country studies, voluntary vs. mandatory IFRS adoption, etc.).

Considering the above issues, we select two samples of Italian SMEs from 2007 to 2012. The first sample consists of private Italian companies

that voluntarily adopt IFRS (VIA firms) (130 units) and that, therefore, follow an asset/liabilities accounting model. The second sample is composed by Italian GAAP companies adopting a revenue-expense model (130 units).

We adopted a matched case-control design, where cases are coupled to one or more controls based on variables that are presumed associated with the outcome. Since cases and controls were similar with respect to variables coupling, their difference against the phenomenon analysed is due to other factors not considered for matching (Schlesselman, 1982). This approach provides the most effective means of controlling demographic firm data such as location type, industry, and size. We first set up pairs of business in the same industry and of approximately the same size. To identify the firms' industries, we use the four-digit statistical classification of economic activities in the European Community (NACE, Rev. 2). Besides, we had also to select those comparable firms showing in AIDA approximately the same number of years (AIDA does not cover the same period of observation for all firms) and complete in accounting, firm and individual demographic, and governance variables.

#### 4. Variables definitions and research methods

In this section, we define proxies for EQ and other control variables, followed by the appropriate model specification to test our hypotheses.

##### 4.1 Proxies for EQ

Our first measure for EQ is given by the volatility of operating income. We measure earnings volatility as the standard deviation of the operating income within the observed time interval (EQ\_1).

The predictability of the operating income represents the second measure for EQ. Earnings predictability is given by the square root of the error variance from the following regression model (Lipe, 1990) (EQ\_2):

$$\frac{EBIT_{it}}{TA_{it}} = \beta_0 + \beta_1 \frac{EBIT_{i(t-1)}}{TA_{i(t-1)}} + \sum (Dummy\_Years)_{it} + \sum (Fixed\_Effects)_{it}$$

where large values of the square root of the error variance imply less predictable earnings.

Finally, for each sample, we measure the abnormal accruals. We use the cross-section version of the standard-Jones (1991) model. For a given industry, we perform the following cross-sectional regression to estimate abnormal accruals for firm *j* in year *t*:

$$\frac{TotalAccruals_{jt}}{TA_{jt}} = \alpha \left( \frac{1}{TA_{jt}} \right) + \beta_1 \left( \frac{\Delta REV_{it}}{TA_{jt}} \right) + \beta_2 \left( \frac{PPE_{it}}{TA_{jt}} \right)$$

where:

$\Delta REV_{jt}$  = firm j's change in revenues in year t;

$PPE_{jt}$  = firm j's gross value of property, plant and equipment in year t.

We then use the year-specific parameter estimates from the above regression to estimate the abnormal components of total accruals ( $AA_{j,t}$ ) for firm j in year t as a percent of lagged total assets<sup>5</sup>:

$$AA_{jt} = \frac{TotalAccruals_{jt}}{TA_{jt}} - \left[ \hat{\alpha} \left( \frac{1}{TA_{jt}} \right) + \hat{\beta}_1 \left( \frac{\Delta REV_{jt}}{TA_{jt}} \right) + \hat{\beta}_2 \left( \frac{PPE_{jt}}{TA_{jt}} \right) \right]$$

The absolute value of abnormal accruals ( $|AA_{j,t}|$ ) is our third measure of earnings quality, with larger values indicated lower EQ (EQ\_3).

## 4.2 Control variables

In order to better test our hypotheses, in addition to the dummy variable  $FR\_model$  (for V.I.A., and I.G.F. firms), we include in the regression model several control variables which might affect firms' EQ apart from their financial reporting model (income statement vs. balance sheet model).

Specifically, following (Francis et al., 2005), we include three innate determinants of EQ represented by total annual sales ( $Log\_Sales$ ), sales annual variability ( $\Delta Sales$ ) and cash flow annual variability ( $\Delta CFO$ ). We expect a negative relationship between our EQ variables and  $Log\_Sales$  and a positive relationship between our proxies for EQ and  $\Delta Sales$  and  $\Delta CFO$ . We also include two corporate governance variables represented by financial leverage ( $Leverage$ ), computed as net debt over total asset, and the percentage of ownership concentration ( $\%Own$ ). We expect a negative relationship between  $Leverage$  and  $\%Own$  and the EQ variables. Finally, we also include year and industry dummy variables in each regression.

## 4.3 Descriptive statistics

The tables below show the descriptive statistics relating to the two samples analyzed.

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<sup>5</sup> Coefficients do not vary substantially when we estimate accruals based on a cross-sectional regression for the whole sample.



*Table 1 – Italian GAAP firms: descriptive statistics*

	Min	Max	Mean	Median	Variance	Std Dev
EBIT	-0,22189536	0,33205238	0,07559210	0,05937879	0,00554679	0,07447680
$\Delta$ _Sales	-0,46866689	1,88465620	0,14681004	0,09194048	0,10162732	0,31879040
$\Delta$ _OCF	-8,80480960	11,39072800	0,27000948	0,11560763	2,90510283	1,70443622
Leverage	0,06447822	0,98443325	0,60602466	0,62300311	0,03423237	0,18501992
Sales/TotAssets	0,04220816	3,04045120	1,02326480	0,96128325	0,30591258	0,55309365
DevST_EBIT	0,00226761	0,17437734	0,03914982	0,02790205	0,00111966	0,03346136
DevST_Sales	0,00437861	0,84747852	0,17365935	0,14023822	0,01903776	0,13797739
DevST_OCF	0,00468729	0,17300659	0,03442861	0,02455901	0,00090160	0,03002671
AA_Jones	0,000006134	0,15021582	0,03479137	0,02432319	0,00114875	0,03389318

Table 2 – Voluntary IFRS adopter firms: descriptive statistics

	Min	Max	Mean	Median	Variance	Std Dev
EBIT	-0,22189536	0,33205238	0,03894456	0,03217116	0,00870039	0,09327586
$\Delta$ _Sales	-0,46866689	1,88465620	0,07401447	0,02600141	0,09459496	0,30756294
$\Delta$ _OCF	-8,80480960	11,39072800	-0,00150033	-0,01978696	5,57858317	2,36190245
Leverage	0,06447822	0,98443325	0,61879777	0,64635493	0,04829301	0,21975670
Sales/TotAssets	0,01253912	3,31242770	0,87941714	0,76363438	0,36145460	0,60121094
DevST_EBIT	0,00556510	0,29828579	0,05717064	0,03916838	0,00322149	0,05675821
DevST_Sales	0,00717329	0,75642040	0,16828528	0,11421342	0,02589708	0,16092568
DevST_OCF	0,00500338	0,24894205	0,04619117	0,03006144	0,00242645	0,04925898
AA_Jones	0,00013806	0,36345333	0,04889838	0,03015064	0,00367426	0,06061568

#### 4.4 Models specification

To test the hypothesis defined in Section 2 (concerning the relationship between financial accounting models and firms' EQ), we set up the following cross-section robust regression:

$$(1) EQ_i = \beta_0 + \beta_1 FR\_model + \beta_2 LnSales + \beta_3 \delta Sales + \beta_4 \delta CFO + \beta_5 Leverage + \beta_6 \%Own + \sum YearDummy + \sum IndustryDummy + \varepsilon$$

where *i* equals 1 in case of earnings volatility and 2 for earnings predictability.

The impact of the financial reporting model over abnormal accruals is assessed by the following clustered robust regression model:

$$(2) EQ_{-3} = \beta_0 + \beta_1 FR_{model} + \beta_2 LnSales + \beta_3 \Delta Sales + \beta_4 \Delta OCF + \beta_5 Leverage + \beta_6 \%Own + \sum YearDummy + \sum IndustryDummy + \varepsilon$$

#### 5. Results and discussion

The estimation results for the regression analysis are presented in Tables 3-4. The variable  $FR_{model}$  is a dummy variable that equals 1 in case of IGF firms and zero for VIA firms.

Findings from equation 1 show a significant and negative correlation between  $EQ_1$  (volatility) and the dummy variable  $FR\_model$ . Findings from equation 1 also show more predictable ( $EQ_2$ ) earnings for I.G.F. firms. Moreover, as expected,  $EQ_1$  and  $EQ_2$  are also positively correlated with the control variables  $\delta Sales$  and  $\delta CFO$ .

As to the abnormal accruals models, equation 2 supports evidence about a negative and significant relationship between the  $FR\_model$  dummy variable and  $EQ_3$ . These results testify a lower degree of abnormal accruals for I.G.F. firms relative to the V.I.A. firms.

Overall, our results testify that firms adopting a balance sheet approach (V.I.A. firms) are characterized by earnings of lower quality than firms whose financial statements refer to an income model.

Table 3 – Earnings quality indexes: V.I.A. firms vs. I.G.F.

	Dependent Variable: EQ_1			Dependent Variable: EQ_2		
	Coefficient	t-stat	P >  t	Coefficient	t-stat	P >  t
Intercept	-0.0084090	-0.23	0.821	0.0362882	1.76	0.079
<b>FR<sub>model</sub></b>	<b>-0.0117668</b>	<b>-3.14</b>	<b>0.002</b>	<b>-0.0087069</b>	<b>-3.36</b>	<b>0.001</b>
Ln_Sales	0.0008966	0.47	0.641	-0.0011083	-1.01	0.314
<b>ΔSales</b>	<b>0.0532726</b>	<b>2.37</b>	<b>0.018</b>	<b>0.0407958</b>	<b>3.25</b>	<b>0.001</b>
<b>ΔOCF</b>	<b>0.6797892</b>	<b>5.59</b>	<b>0.000</b>	<b>0.4077886</b>	<b>6.01</b>	<b>0.000</b>
Leverage	0.0056295	0.44	0.662	-0.0031596	-0.44	0.657
%Own	0.0003092	0.30	0.768	0.0002842	0.33	0.738
Dummy_Industry	Included			Included		
Dummy_Year	Included			Included		
R <sup>2</sup>	0.52550			0.53030		
F-value	19.08			26.38		
Prob. >F	0			0		
n. of observations	397			397		

Table 4 – Abnormal accruals: V.I.A. firms vs. I.G.F.

	Dependent Variable: EQ 3				
	Coefficient	t-stat	P >  t		Coefficient
Intercept	0.0752970	3.50	0.001	Dummy_Industry	Included
<b>FR<sub>model</sub></b>	-0,0120467	-3.14	0.002	Dummy_Year	Included
Ln_Sales	-0.0019648	-1.70	0.090	R <sup>2</sup>	0.10920
<b>ΔSales</b>	<b>0.0120094</b>	<b>2.21</b>	<b>0.028</b>	F - value	10.64
<b>ΔOCF</b>	-0.0015066	-1.23	0.220	Prob. >F	0.0000
Leverage	-0.0010319	-0.12	0.908	n. of observation	2.382
<b>%Own</b>	<b>-0.0026128</b>	<b>-2.78</b>	<b>0.006</b>		

In sum, our results allow us to reject our research hypothesis and to assert that companies adopting a revenue-expense approach are characterized by higher earnings quality than firms whose financial information is closer to an asset-liability model.

## **6. Concluding remarks and limitations**

Within the so-called articulated approach, two alternative views of earnings compete: a) the asset/liability approach (balance sheet model); b) the revenue/expense approach (income statement model). Although scholars and practitioners have stressed several theoretical and empirical drawbacks associated to the asset/liability approach, during the last decades, financial reporting standards have been gradually moving from the revenue/expense view to asset/liability view, describing the latter as the only logical and conceptually sound basis of accounting.

In order to assess the impact of this trend over the quality of earnings, this paper investigates on the EQ of Italian SMEs on the basis of a three-sample research design, combining different accounting models, as well as differently incentivized firms. Our results confirm that the “revenues/expenses” accounting model (i.e., Italian-GAAP) shows systematically better results in terms of EQ than the “asset/liability” model (IFRS).

There is a high criticism recently characterizing the debate around the IFRS monopoly. This is disadvantageous since it would eliminate “the opportunity to compare alternative practices and learn from them”, and would not allow “the tailoring of financial reporting to local variations in economic, business, commercial, legal, auditing, regulatory, and governance conditions across the globe” (Sunder, 2011). Following this though, one major conclusion of our study is that IFRS adoption for SMEs should be remain on a voluntary basis. As noted by Kaya and Koch (2015), “voluntary adoption leaves it up to the individual firm to decide whether IFRS for SMEs is the set of accounting standards that best fits its specific needs. This is particularly important within the heterogeneous group of private firms where cost-benefit trade-offs of applying international accounting standards are likely to differ across firms”.

We recognize the existence of some limitations in this study. Our analysis is based on a single country, that is we compare the EQ stemming from different accounting systems only in the Italian context. Estimated effects of IFRS on outcomes may be significant only for countries where reporting incentives and the strength of enforcement are classified as being high, while no evidence of IFRS-related benefits may be where institutions underpinning enforcement and preparer incentives are weak (Daske et al., 2008).

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