Forecast bias of estimates of market analysts in Brazil: Impact of the IFRS Adoption

Abstract

This paper analyzes the impact of the convergence to the international accounting standards on the quality of accounting information in Brazil. Particularly, the study verifies the impact of the adoption of the IFRS on the bias of estimates of market analysts. The study analyzed 128 companies from 2006 to 2012. The results of the work indicate that along the period analyzed, the forecast bias of the estimates of market analysts was positive with increase of the forecast bias in the period of partial adoption and significant reduction in the period of mandatory adoption of the IFRS in Brazil.

Key words: Quality of accounting information. IFRS. Forecast bias.

1 Introduction

The IFRS is a set of accounting standards issued by the *International Accounting Standards Board* (IASB) aiming to create a unique model of international accounting standards with high quality information for the users of such information.

In Brazil, the adoption of the IFRS was carried out in two stages: first, the partial adoption from January/2008 and, then, after January/2010, the international standard became mandatory for publicly traded companies (Lima, 2010). Studies show, in general, an increment in information quality in the Brazilian capital market (Santos; Calixto, 2010; Lima, 2010).

The international literature presents a great amount of studies which seek to analyze the analysts´ forecast for the results of the publicly traded companies and the IFRS adoption. The researches present divergent results concerning the improvement in the quality of accounting information (Lang; Lundholm, 1996; Ashbaugh; Pincus, 2001; Hope, 2003; Daske; Gebhardt, 2006; Jiao; Mertens & Roosenboom, 2011; Cotter; Tarca; Wee, 2012).

The analysts´ forecast is used to check the impact of the adoption of international standards in the capital markets. Within this line of research, the forecast bias of estimates is used as measure of quality of accounting information (Martinez, 2004; Martinez, 2007; Dalmácio, Lopes, Rezende & Sarlo Neto, 2013).

Thus, this work investigates the behavior of forecast bias of the market analysts in the Brazilian capital market along the process of adoption of international standards (IFRS) in the quality of accounting information.

In this research, the data of 128 companies of the Brazilian capital market were used, except the companies of the financial sector, from 2006 to 2012, divided between the periods: prior to the adoption, partial adoption and mandatory adoption of the IFRS in Brazil. The data was taken from the *Institutional Brokers Estimate System* (I/B/E/S) base and the methodology used was the panel data analysis.

The results of this work indicate that in the period prior to the adoption of international accounting standards in Brazil, the market analysts presented positive bias; when there was the partial adoption of the IFRS, the bias continued to be positive, but with greater magnitude. Finally, in the period of mandatory adoption, it was observed a decrease of the forecast bias, with forecast bias close to stability.

2 Theoretical Approach

2.1 Adoption of the IFRS and quality of accounting information

The IFRS presents the objective of standardization and improvement in informational quality disclosed to information users. The standards proposed present greater and greater comprehensiveness, with more than 120 countries making use of the international accounting standard to disclose the content of accounting information (DELOITTE, 2012).

According to Iudícibus, Martins & Gelbke (2009), the main change the adoption of international accounting standards brings to the informational set is the preference of the essence over the form, which enables the registration of economic transaction of operation by the company.

In Brazil, the process of convergence to the international standards started in 2005 with the creation of the Conselho Federal de Contabilidade (CFC) – *Federal Accounting Council* - and the Comitê de Pronunciamentos Contábeis (CPC) – *Committee of Accounting Pronoucements* – aiming to unify the decisions of

the process of adoption of the IFRS. Moreover, during this same period, the Bolsa de Valores, Mercadorias e Futuros de São Paulo (BM&F BOVESPA) made the disclosure of accounting information mandatory for the companies with level 2 corporate governance.

After this period of initial preparation, the adoption of the IFRS in Brazil was carried out in two steps: i) approval of the Law 11,638/07, allowing the partial adoption from 2008 on and ii) the mandatorry adoption from 2010 on for publicly traded Brazilian companies (Lima, 2010).

2.2 Accounting Information Quality

Lang, Raedy & Yetman (2003) indicate that the alteration in information quality is given by the minimum variation in the kind of information disclosed.

According to Iudícibus & Lopes (2008), the confirmatory role of the informational content relates to the feedback power of information, that is, it enables the comparison between projected and accomplished results, thus, fulfilling the role of conflict reduction of agency in the companies.

Barth, Landsman & Lang (2008) present a three-metric study to evaluate the accounting information quality: i) relevance of accounting information; ii) timely recognition of losses and iii) management of the result. The results of the study indicate that for the sample of European countries, the adoption of international standards enhanced the accounting information quality.

Daske *et al.* (2008) indicate that for the sample of 26 countries in Europe, the market value of the companies as well as the negotiation liquidity increased after the adoption of the IFRS, suggesting, therefore, improvement in the quality of accounting information.

However, Van Tendeloo &Vanstraelen (2005) showed that the results can be divergent depending on the sample analyzed. In Germany, the companies which voluntarily adopted the IFRS presented greater degree of management of result.

2.2 Market Analysts and convergence to international accounting standards

The market analysts are professionals who help investors in decision making concerning the investment portfolio. According to Iudícibus & Lopes (2008), these professional have the task of recommending the purchase, sale and maintenance of assets based on projections carried out for the future performance of the company. .

Dechow & Schrand (2004) state that the analysts have great use in the capital market since they assess the company by using the information of the current period for projection of expected results, helping the determination of the share market value.

According to Martinez (2004), the quality of the analysts´ forecast is related to the accuracy, dispersion and bias of the forecast. Martinez (2004) states that accuracy is the tendency of an estimator to be close to the real value and for the literature of analysts´ forecast, it is one of the measures used to check the quality of the projections performed. Yet according to the same author, the accuracy of the estimates is related to the variance of the estimates, that is, the lower the dispersion of the estimates, the greater the accuracy of the estimator.

The bias of an estimator is characterized by the presence of systematic error of an indicator, moving the expected value of the sample away from the real value of the population. International researches indicate that market analysts present an optimistic behavior concerning the estimates (DECHOW; SCHRAND, 2004).

Lim (2001) indicates that the bias of market analysts is predominantly positive and that for small companies, the forecast bias is even higher. Schipper (1991) also indicates the trend of analysts´ forecast bias to be positive.

According to KOTHARI (2001) the optimistic bias of market analysts is based on two kinds of factors: i) economic incentives and ii) cognitive behavioral postures.

Chiang & Chia (2005) analyzed companies of capital market in Thailand from 2000 to 2002. The results indicate that when the company discloses information with greater transparency, the analysts´ forecast bias tend to be lower.

For the Brazilian case, the works of Martinez (2004), Martinez (2007) and Dalmácio et al., 2013, show the predominance is of positive bias in the Brazilian capital market. However, it is important to highlight that this bias is lower and lower for more recent periods.

3 Research Methodology

3.1 Data and Sample

The data used in this work were obtained from the *Thomson Reuters*® platform, in the I/B/E/S database. The sample is composed by data from the periods: i) prior to the adoption – 2006 to 2007; ii) partial adoption– 2008 to 2009 and iii) mandatory adoption of the IFRS in Brazil – from 2010 on. The exclusion of financial companies was done due to the difference in the pattern of information disclosure.

In this base, the analysts´ median forecast was obtained for the yearly EPS (Earnings per Share) of the companies in December of the years analyzed. The choice of December is due to the fact that, according to Martinez (2204), the projections of the analysts are less biased in December.

The sample for the forecast bias analysis was composed by a total of 128 companies, with 654 observations along the period. Table 1 shows the distribution of sample of the analysts´ forecasts by the sectors of activity. Through the data it can be seen a greater participation of the companies of industrial, energy and discretionary consumption sectors.

3.2 Bias Variable

For the construction of the variable which represents the forecast bias of the analysts, the methodology proposed by Dalmácio et al., (2013) was used, with the difference of price per share as division factor instead of earnings per share. Moreover, the present study does not use individual analysts´ forecast data, so the forecast bias is calculated by the analysts´ forecast median, that is, if the analysts´ median is recurrently greater or lower than the result disclosed by the company. .

The choice by the use of the forecast median is justified by the fact that according to Gu & Wu (2003), the disproportionate individual errors contribute to the existence of forecast bias.

The forecast bias is obtained by the difference sign between the earnings median forecasted by market analysts ($F_{n,t}$), and the earnings per share presented by the company ($A_{n,r}$), divided by the price per share in the period ($P_{n,t}$), as demonstrated by the equation (1):

$$BIAS = \left(\frac{1}{n}\right) \times \sum_{i=1}^{n} \frac{F_{n,t} - A_{n,r}}{P_{n,t}} \quad (1)$$

The BIAS variable represents the sum of individual bias for each company in the period, divided by the quantity of companies analyzed (*n*), that is, an average of the analysts´ bias in each period analyzed.

4 Analysis of the Results

Table 2 presents the results of the BIAS variable for the periods of the analysis: i) prior to the adoption of the IFRS; ii) period of partial adoption of the IFRS and iii) period of mandatory adoption of the IFRS in Brazil.

The result shows positive bias in the three periods analyzed. The result found align themselves with the literature works of Schipper (1991), Lim (2001), Martinez (2004), Martinez (2007), Dalmácio et al., (2013), Kothari (2001) in which it can be seen the predominance of positive bias of market capital analysts.

It is important to highlight that, in the period of partial adoption, the analysts´ forecast bias raised when compared to the period prior to the IFRS in Brazil. This result is aligned to the results found in Van Tendeloo & Vanstraelen´s (2005) study and suggests that in the period of partial adoption there was no improvement in the quality of accounting information.

However, in the period of mandatory adoption, a relevant drop in the forecast bias of market analysts can be seen, which suggests that, in this period, the informational quality better forecast bias by the market analysts. Aiming to check whether these alterations of analysts´ bias are statistically significant, the mean difference test for the *BIAS* in the periods analyzed was carried out.

Since the *BIAS* variable does not present normal distribution, the *Kruskal-Wallis* non-parametric. Table 3 and Picture 1 present the results found.

The result of the test indicates that the increase of bias in the period of partial adoption does not represent statistically significant alteration. And, finally, it corroborates that, in the period of mandatory adoption, the analysts´ bias decreased in a statistically significant way, when compared to the period of partial adoption. As highlighted by Martinez (2004), the bias can be interpreted as an indication of improvement of the informational content disclosed to the market because, according to Chiang & Chia (2005), companies which disclose more transparent information present less forecast bias.

To minimize the effects of other factors on the bias of analysts´ forecast was created a control sample with companies that have published information on another accounting standard before the process of adoption of IFRS in Brazil. For that, the companies were separated into two groups: i) group of companies listed only in the brazilian capital market. and ii) group of companies listed in other capital markets.

The results of the comparison between the groups, Table 4, indicate that prior to the adoption of IFRS, the group of companies that published information only in the brazilian standard presented greater prediction bias. In the period of partial adoption, the prediction bias of both groups increased. Finally, in the period of mandatory adoption there was a fall of forecast bias just in the group of companies that have adopted the international accounting standard, suggesting that the adoption of the IFRS standard has reduced the bias of analysts´ forecast on Brazil's capitals market.

Therefore, as presented by Markov & Tamoyo (2006), the adaptation to the new system of accounting information needs a learning period. Thus, analysts and companies, as time goes by, could change the new

information in contents of greater informational quality aligned to Barth, Landsman & Lang´s (2008) and Daske *et al.´s* (2008) studies.

5 Final Considerations

The study sought to analyze the effects of the IFRS adoption in Brazil on the predictive quality of accounting information. To answer the research problem, the forecast bias of market analysts´ estimates was analyzed.

The data were obtained in the I/B/E/S base in the period from 2006 to 2012 for the periods of analysis: prior to the adoption of the IFRS in Brazil, partial adoption and mandatory convergence to international accounting standards.

The forecast bias was obtained by the difference sign between the median of expected earnings estimated by market analysts and the earnings per share presented by the company divided by the share price in the period.

The results indicate positive bias along the whole period analyzed. In the period of partial adoption of the IFRS, an increase of the forecast bias was recorded followed by an important reduction in the period of mandatory adoption of international standards.

These results jointly interpreted can point to the need of a longer adaptation period for real improvement in the quality of accounting information. Markov & Tamoyo (2006) state that the adaptation to the new accounting information system needs a learning period. Thus, analysts and companies could transform, over time, the new information into contents with greater informational quality.

Consequently, the way of adoption of international accounting standards in Brazil and the short period of time analyzed in this model can be the justifications for the results found. Finally, the results found in the work meet the objectives proposed at first, since it contributes to the analysis of the impact of the adoption of the IFRS to the information quality.

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ANNEX

Table 1 – Sample Classification by sectors – Analysts´ accuracy

Sector	Year							
	2006	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**Total**
Food and Beverages	3	9	11	10	11	12	12	68
Discretionary consumption	6	15	15	14	19	22	24	115
Energy	12	16	19	19	19	22	22	129
Industry	6	22	24	24	29	30	28	163
Materials	4	6	5	5	7	7	9	43
Health	1	5	5	6	7	8	8	40
Information Technology		3	3	3	3	3	3	18
Telecommunication	1	1	1	1	2	2	2	10
Utilities	4	6	11	10	11	12	14	68
Total	37	83	94	92	108	118	122	654

Table 2 - Analysts´ Forecast Bias

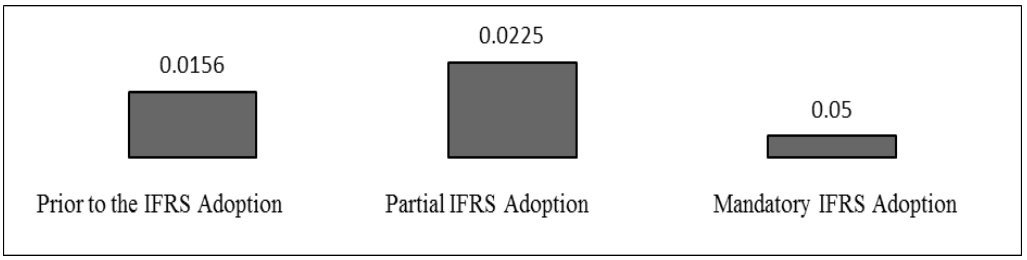
Period	**Forecast Bias (*BIAS*)**	**Sign**
Prior to the adoption of the IFRS	0,0156	Positive
Partial Adoption of the IFRS	0,0225	Positive
Mandatory Adoption of the IFRS	0,005	Positive

Table 3 – Mean Difference Test – Bias

Period	**Observed Difference**	**Critical Difference**	**Difference**
Prior to the Adoption and Partial Adoption	32.47	52.96	No
Prior to the Adoption and Mandatory Adoption	15.40	47.88	No
Partial Adoption and Mandatory Adoption of the IFRS	47.87	41.08	Yes

Table 4 – Bias – companies listed only in the brazilian capital market and companies listed in other capital markets

Period	**Brazilian capital market - bias**	**Other capital Market - bias**
Prior to the Adoption and Partial Adoption	0.01986	0.00296
Prior to the Adoption and Mandatory Adoption	0.02179	0.02480
Partial Adoption and Mandatory Adoption of the IFRS	0.01091	0.00328



Picture 1 – Mean Difference Test – Bias