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## THE RELEVANCE OF PROFIT AND CONSERVATISM IN TIMES OF CRISIS: THE CASE OF BRAZIL

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### ABSTRACT

This study deals with the relevance of earnings, accounting conservatism and the consequences of financial crises between 1995 and 2017. It aimed to measure the presence of conservatism in periods of financial crisis, under the concepts of Basu (1997), in the Brazilian market in periods with and without crisis, evaluating Brazilian companies listed on B3 between the years 1995 and 2017, and whether the level of conservatism positively influences the profit relevance in periods of crisis. The research is characterized as descriptive research and points out that the evidence found as from the proposed methodology, did not show sufficient results capable of being conclusive in relation to the relevance of profit and the presence of conservatism in periods of macroeconomic crisis.

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## INTRODUCTION

The relevance of profit at times of crisis has been the object of increasingly constant research. Davis-Fridaya *et al.* (2006), for instance, observed that in periods of macroeconomic crisis, profit

relevance presented a falling behaviour, as well as decreasing valuation and the explanatory power of profits decrease during the crisis period. In the same correlation line, analyzing the Brazilian market, Costa *et al.* (2012) analyzed that the economic crisis positively affects the relevance of equity presenting negative results.

Given the above about the relevance of accounting profit in periods of financial crises, Francis *et al.* (2013) conducted research to verify the level of profit conservatism in the financial crisis in the United States and found that there is a significant and positive similarity between the conservatism used by companies, the profit and the stock performance in the interim of financial crises. In other words, companies that behaved more conservatively when disclosing earnings presented a more valued performance in investor analyses. The study of Lara *et al.* (2014), on conservatism in accounting, evidenced that the increase of conservatism in companies improves the firms' results. The authors looked at samples of firms in the United States between the period 1997 to 2007 and found evidence that conservatism indeed is useful, not only for debt holders, but also for equity holders.

The results showed that increasing firm-level conservatism leads to a reduction in information asymmetries, showing a subsequent reduction in the volatility of stock returns. Still on accounting conservatism, Ball and Shivakumar (2005) evaluated the reflection of earnings per share, of good and bad news, and the speed of accounting recognition of these news, and found that the recognition of good news is less appropriate accounting than that of bad news. In the same study, Ball and Shivakumar (2005) highlighted that the aggregated gains to the good news tend to be more stable than the losses caused by the bad news, that is, the alterations of the negative results are more evident and provide a reversion in the next period than the positive results. According to Basu (1997) bad news are reflected in corporate results in a quicker manner than that of good news, which due to conservatism, losses are anticipated in a quicker manner than gains. Also, according to Basu (1997), the greater persistence of earnings reflections in corporate results is justified by the fact that good news is partially reflected in the current result, remaining an impact on profits in future periods; thus, it is expected that conservatism increases the relevance of profit at times of financial/economic crises. Sampaio *et al.* (2015) also analyzed Brazilian companies and observed that the manifestation of macroeconomic crises may represent for the organizations an indication of future losses, so that managers need to adopt more conservative decisions, anticipating the recognition of losses by the bad news faster than the gains. Once signaled by good news, they understand that managers utilize such tactics as a way of ensuring and protecting shareholders, since when increasing profits there is an immediate reduction in dividends, making profits more relevant at times of crisis, due to the conservatism adopted by companies. Given the above, the problem of this research is:

#### **Does the relevance of accounting profit in periods of macroeconomic crises depend on the level of conservatism?**

Therefore, this study is justified because the earnings relevance and the level of conservatism are influenced by economic factors, with the emergence of the financial crisis, which directly impacts the users of accounting information, such as investors or creditors. This research expects that the level of conservatism increases the relevance of profit in periods of macroeconomic crisis more than in non-crisis periods. As a result, this study provides empirical evidence given that Brazil has gone through moments of financial recession, as well as through periods of stability, thus making it appropriate to measure the relevance of profit and the level of conservatism at Brazilian companies. For the empirical verification, data from 1995 to 2017 of 251 Brazilian companies listed in the Brazilian Stock Exchange, Bolsa Balcão (B3), as well as those listed in Economática, were analyzed. With the intention of answering the research problem, it was used the model developed by Basu (1997) which measures the accounting conservatism of companies. It is intended, therefore, that this study may contribute to identifying the similarities of the results published by the competent bodies of the Brazilian listed companies, the shocks that the information generates in the market and the impacts caused by the crisis, also analyzing the relevance of the profit and the accounting conservatism in the companies. Thus, the contribution of this study is to collaborate with the academic collection of studies that observe the market, the relevance of profit

and the accounting conservatism in the Brazilian market based on information evidenced in the companies' balance sheets. However, the evidence found, as of the proposed methodology, did not present sufficient results capable of being conclusive as to the relevance of profit and the presence of conservatism in periods of macroeconomic crisis.

## **MATERIALS AND METHODS**

In This study aims to analyze the profit relevance and the accounting conservatism, in a period of crisis, of the Brazilian companies listed on B3. To this effect, initially, the Basu (1997) that estimated the level of conservatism per company, in the sequence, the empirical econometric model tied to the objectives of this research was suggested. This research is characterized as descriptive research because it meets some conditions according to Cooper and Schindler (2003): descriptions of phenomena associated with the target population, estimation of indicators associated with the variables of this population and findings of association between different variables. The study population universe was composed of companies listed on B3. The data concerning the variables were collected in Economática's database. The sample population was composed of 609 publicly traded companies listed on B3 from 1995 to 2017, totaling 14,007 observations. In the sanitization process, companies without information on at least one of the variables in a given year were excluded (358 companies, 10,810 observations), in which the final sample was composed of information from 251 companies from the period 1995 to 2017, equivalent to 3,197 observations. To measure the level of conservatism per company, in this study, the model developed by Basu (1997) is employed, which recognizes losses in advance, raising the level of relevance of the financial statements. According to this definition, losses are recognized in advance with low verification and are more likely to be recognized in the current period. Therefore, companies with negative earnings or changes in profits, in the current period, are more likely to reverse their situation and obtain positive earnings in the next period.

The model proposed by Basu (1997) is represented by the following equation:

$$LL_{it} = \alpha_0 + \alpha_1 DR_{it} + \alpha_2 RET_{it} + \alpha_3 (DR * RET)_{it} + \varepsilon_{it} \quad (1)$$

Where,

$LL_{it}$  = Net Income of company i in year t;

$RET_{it}$  = Stock return was calculated as the variation of the annual closing of year t versus t-1, divided by the annual closing of year t-1

$DR_{it}$  = *Dummy* variable that assumes value 1 if the value of  $RET_{it}$  is negative, and 0 otherwise;

$\varepsilon_{it}$  is the random error of firm i in year t.

As explained by Basu (1997) the interpretation of the parameters in Eq. (1) is associated with the manner in which the accounting result influences corporate profits. Thus,  $\alpha_2$  measures the speed of economic return recognition by the accounting result, whose expected sign for this coefficient is positive. In addition,  $\alpha_1$  and  $\alpha_3$  are responsible for capturing the effect of bad news, i.e., negative accounting results on profits. These two parameters are responsible for capturing the level of conservatism existing in the accounting numbers of the companies once they demonstrate how much faster the bad news are recognized in relation to the good news. Of the four scenarios described by Basu (1997) the main one to assess the level of accounting conservatism is restricted to the sign and statistical significance of the coefficient  $\alpha_3$ . Thus, this study was limited to estimate  $\alpha_3$  and consider it as a proxy of conservatism per company, which was used in the empirical model, described below. The model developed by Basu (1997) does not examine the influence of the financial crisis on the accounting conservatism. In this sense, for the research to achieve the intended objective, some adjustments in the model proposed by Basu (1997).

$$P_{it} = \beta_0 + \beta_1 LL_{it} + \beta_2 DLL_{it} + \beta_3 CRISIS_{it} + \beta_4 (LL * DLL)_{it} + \beta_5 (LL * CRISIS)_{it} + \beta_6 (LL * DLL * CRISIS)_{it} + \beta_7 DCONS_{it} + \beta_8 (LL * DLL * CRISIS * DCONS)_{it} + \beta_k Controls_{itk} + \varepsilon_{it} \quad (2)$$

where,

$P_{it}$  = Market value of company i in year t;

$LL_{it}$  = Net Income of company i in year t;

$DLL_{it}$  = *Dummy* variable that assumes value 1 if the value of  $LL_{it}$  is negative, and 0 otherwise;

$CRISIS_{it}$  = *Dummy* variable that assumes value equal to 1 if it belongs to the crisis period, and 0 otherwise;

$DCONS_{it}$  = *Dummy* variable that assumes value equal to 1 to the group with high level of conservatism, and 0 low level of conservatism. The definitions of the groups were derived from the level of conservatism estimated by the model Basu (1997).

$Controls_{itk}$  = vector of k-control variables (debt, stock exchange liquidity, total assets, fixed assets) for firm i at the end of year t; and

$\varepsilon_{it}$  = Random error of company i in year t.

Equation (2) measures the degree of association between accounting information (Net Income) and the information analyzed by investors (Market Value). However, in order to capture the effects of periods of macroeconomic crises as a function of the level of conservatism, the *dummies* variables CRISIS and DCONS were included to represent these characteristics. This equation seeks to investigate the crisis by verifying whether accounting is more quickly associated with market information when this is bad (negative Net Income - DLL), and the behavior of this when considering the degree of conservatism of the companies. Thus, the present study raised the following research hypothesis: "H1- The level of conservatism positively influences the relevance of profit in periods of crisis", and equation (2) was suggested with views to contributing with this study and consequently with the research question.

The coefficient  $\beta_1$  evaluates the speed of market value recognition as of the company's Net Income, whilst  $\beta_2$  and  $\beta_4$  capture the effect of bad news, that is, negative accounting results, on market value. These two parameters are responsible for capturing the degree of conservatism that exists in corporate accounting numbers, as they demonstrate how much quicker bad news (Net Income less than zero) is recognized in relation to good news. The interpretation of these three coefficients is similar to the model proposed by Basu (1997). The coefficient  $\beta_5$  captures the relevance of profits in periods of macroeconomic crisis, allowing for the investigation of the relationship between Market Value and Net Income. As the same purpose, but with the consonant of bad news (negative Net Income), the  $\beta_6$  coefficient seeks the effects of the accounting relevance in the scenario of bad news also in periods of macroeconomic crisis. And finally, the coefficients  $\beta_7$  and  $\beta_8$  that consider the attributions on the level of conservatism of companies. It is important to emphasize that the *dummy* CONS was defined as from the model Basu (1997) - equation (1).

Initially, the level of conservatism was estimated, extracted the estimates of the coefficient  $DR * RET$  for each company and then the sample was divided into two groups: High conservatism, more conservative 50% of the sample universe - Above the sample median; and Low conservatism, 50% less conservative - Below or equal to the sample median. If the  $\beta_7$  coefficient is significant and positive, there will be statistical evidence that, on average, companies classified as high conservative level present higher market value when compared to the less conservative companies. The coefficient  $\beta_8$  seeks to contribute with the hypothesis H1 and will be responsible for demonstrating whether the most conservative companies, even in the face of a crisis scenario and negative profits, present a lower level of market devaluation when compared to the less conservative ones, i.e., it is expected that  $\beta_8$  is positive and significant, as evidenced by Khan and Watts (2009). In general, Table 1 presents the descriptions and definitions of the variables considered in equation (2).

## RESULTS

This section will present the results of the research conducted, by means of a table with a descriptive statistics analysis and mean test, and then the results of the panel regression. To eliminate the effect of inflation in the period of analysis, the variables LL, P, PL, END, AT, and IMOB were deflated by the IPCA measured by the IBGE, considering the year 2017 as reference. The results presented below were prepared using Stata 12.0 software and spreadsheets. With the intent of verifying the distribution of variables in the sample per company, in an overview, Table 2 exposes the average and standard deviation, in addition to the position measures of the indicators. With the exception of the *dummies* variables - DR (negative return), DLL and CRISIS, the continuous variables LIQBOL and Conservatism, measured from the model of Basu (1997) model, all other variables were standardized by total assets, as observed in Table 2. When synthesizing the data for the sample of variables outlined for the model of Basu (1997) - equation (1), it was noticed that the return average (RET), in the evaluated period, resulted in 0.280, with standard deviation of 0.790. When evaluating the return median, it was concluded that for 50% of the sample the return occurred between 0.112 and 3.128. Regarding the *dummy* that indicates the negative return (DR), of the 3104 observations of the sample, in 41.4% (approximately 1286) the observed return was negative. The statistics of net income (LL) reported that, on average, the net income resulted in 0.059 with standard deviation of 0.120, and for 75% of the sample the observed LL occurred between 0.042 and 0.483.

As previously mentioned, the Basu (1997) model, adopted in this study, allowed measuring the level of conservatism per company. In the model, the dependent variable considered is the net income and the independent variables the *dummies* DR, the Return (RET) and the interaction DRxRET. From the model, the level of conservatism was represented by the estimated value of the coefficient associated with the DRxRET interaction variable. When evaluating the descriptive statistics for *proxy* conservatism, it was evidenced that the sample exhibited a mean coefficient of -0.041 and standard deviation of 0.773. The median indicated that for 50% of the sample, the level of conservatism assumed values between -0.015 and 2.054. With regard to the variables associated with the empirical model, which contributed to the hypothesis of this study, it was noted that the mean of the dependent variable market value was centered at 1.197 with a standard deviation of 2.009. The mean of the *dummy* variable DLL, which represents the proportion of the sample in which net profit resulted negative, reported that for 21.1% of the sample, companies with net profit less than zero ( $LL < 0$ ) were identified. The crisis variable is yet another *dummy* variable presented in this study, the statistic exposed as mean is precisely the proportion. Of the total of 3104 observations, in 72.3% were recorded in periods with crisis.

Observing the variables presented as control, we had that: indebtedness standardized by total assets, the average was 0.852 and standard deviation of 0.753; liquidity on the stock exchange, the average was 0.497 and standard deviation of 1.432; neperian logarithm (ln) of total assets, the average resulted in 13.953 and standard deviation of 2.014; and finally fixed assets, which in the sample collected, the average was 0.695 and standard deviation of 0.985. In addition to the descriptive statistics presented in Table 1, it was applied the *T-Student* mean test with the purpose of comparing the means of the variables between the crisis periods or not, and also, to compare the sample with low level of conservatism against the group with high level of conservatism. The statistics of the mean test are shown in Tables 2 and 3, respectively. When comparing the averages of the variables outlined between the periods with crisis against the periods without crisis, it was noted that, at the 1% significance level, statistically it was evidenced difference between the periods for: Market Value (P), Return (RET), Net Equity (PL),

Table 1. Description and reference of the variables

Model	Code	Definition	Variable Type	Literature
Dependent	P <sup>a</sup>	Market Value	Quantitative	Ohlson (1995)
Independent	LL <sup>a</sup>	Net profit	Quantitative	Basu (1997)
	DLL	Assumes value of 1 if the LL value is negative, and 0 otherwise	Dummy	Dechow et al. (2010) and Francis et al. (2005)
	CRISIS	Assumes value equal to 1 if it belongs to the crisis period, and 0 otherwise	Dummy	Costa et al. (2012)
	DCONS	It assumes value equal to 1 to the group with high level of conservatism, and 0 low level of conservatism. The definitions of the groups were derived from the level of conservatism estimated by the Basu (1997) model.	Dummy	Basu (1997)
Control	PL <sup>a</sup>	Shareholders' equity	Quantitative	Ohlson (1995)
	END	Total Debt	Quantitative	Potin et al. (2016)
	LIQBOL	Stock exchange liquidity per share	Quantitative	Duarte and Young (2009)
	LNAT	Neperian Logarithm of Total Assets	Quantitative	Moura et al. (2014)
	IMOB <sup>a</sup>	Fixed Assets	Quantitative	CPC (2009)

Note: <sup>a</sup> Variables standardized by total assets: P, LL, PL, END AND IMOB. Source: Prepared by the authors based on the literature. These variables were deflated by the IPCA measured by IBGE, with reference year 2017.

Table 2. Descriptive statistics of the indicators

Variable	Average	Standard Deviation	Minimum	Percentile25	Median	Percentile 75	Maximum	N
LL	0,059	0,120	-0,217	0,005	0,042	0,101	0,483	3104
DR (RET<0) <sup>a</sup>	0,414	0,493	0,000	0,000	0,000	1,000	1,000	3104
RET	0,280	0,790	-0,785	-0,203	0,112	0,515	3,128	3104
P	1,197	2,009	0,038	0,251	0,561	1,211	11,252	3104
DLL <sup>a</sup>	0,211	0,408	0,000	0,000	0,000	0,000	1,000	3104
CONS	-0,041	0,773	-8,345	-0,167	-0,015	0,100	7,955	3104
CRISIS <sup>a</sup>	0,723	0,448	0,000	0,000	1,000	1,000	1,000	3104
PL	0,981	0,944	0,103	0,474	0,758	1,115	5,305	3104
END	0,852	0,753	0,111	0,434	0,654	0,994	4,304	3104
LIQBOL	0,497	1,432	0,000	0,000	0,021	0,329	8,343	3104
LNAT	13,953	2,014	8,987	12,721	14,045	15,318	17,925	3104
IMOB	0,695	0,985	0,000	0,076	0,435	0,884	5,391	3104

Explanatory note: (i)<sup>a</sup> *dummy* or dichotomous variable type, in which the mean represents the proportion; (ii) Variable Description: LL - Net Income divided by total assets; RET - Return per share; DR (RET<0) - *dummy* variable that takes value equal to 1 if the value of RET is negative, and 0 otherwise; P - Market Value divided by total assets; DLL - *dummy* variable that takes value equal to 1 if the value of LL is negative, and 0 otherwise; CONS - level of conservatism estimated by Basu (1997) model; CRISIS - *Dummy variable* that assumes value equal to 1 if it belongs to the crisis period, and 0 otherwise; PL - Stockholders' equity divided by total assets; END - Total debt divided by total assets; LIQBOL - Stock market liquidity per share; LNAT - Neperian logarithm of total assets; and IMOB - Fixed Assets divided by total assets; Source: Prepared by the authors based on survey data.

Table 3. Test of the mean in periods without crisis and with crisis

Variable	Period						t-statistic (p-value)
	No Crisis			With Crisis			
	n	Average	Standard Deviation	N	Average	Standard Deviation	
P	860	1,009	0,050	2,244	1,269	0,046	0,001***
RET	860	0,428	0,024	2,244	0,223	0,017	0,000***
LL	860	0,066	0,004	2,244	0,057	0,003	0,043**
CONS	860	-0,002	0,023	2,244	-0,055	0,017	0,089*
PL	860	1,119	0,034	2,244	0,929	0,019	0,000***
END	860	0,815	0,017	2,244	0,866	0,018	0,086*
LIQBOL	860	0,326	0,030	2,244	0,562	0,033	0,000***
LNAT	860	13,674	0,067	2,244	14,060	0,043	0,000***
IMOB	860	0,856	0,033	2,244	0,633	0,021	0,000***

Explanatory Note: (i) Description of Variables: LL - Net Income divided by total assets; RET - Return per share; P - Market Value divided by total assets; CONS - level of conservatism estimated by Basu (1997) model; PL - Shareholders' Equity divided by total assets; END - Total Debt divided by total assets; LIQBOL - Stock market liquidity per share; LNAT - neperian logarithm of total assets; and IMOB - Fixed Assets divided by total assets; (ii) Significance Level: \*\*\*, \*\* and \* Significant at 1%, 5% and 10% level. Source: Prepared by the authors based on research data.

Stock Exchange Liquidity (LIQBOL); Total Assets (LNAT) and Fixed Assets (IMOB); at the 5% significance level, Net Income (LL); and finally, at the 10% level, the degree of Conservatism (CONS) and Total Debt (END). As of Table 2, it became possible to highlight that the variables return and net income in periods of crisis, presented the lowest statistical averages when compared to the periods without crisis, and it was confirmed by the t-test statistics, in other words, there is an impact for this scenario for the periods "without crisis" versus "with crisis".

However, as far as the conservatism *proxy is concerned*, the lower average in the period with crisis means a lower level of conservatism when compared to the period without crisis - in period with crisis, companies are not so conservative. Table 3 exposes the comparison of averages between groups with 50% less conservative (low level of conservatism) and 50% more conservative (high level of conservatism), that is, the median was used to qualify the groups between low and high level of conservatism.

Table 4. Mean comparison test by level of conservatism

Variable	Level of Conservatism						t-statistic (p-value)
	Bass			Upper			
	N	Average	Standard Deviation	n	Average	Standard Deviation	
P	1,572	1,236	0,053	1,532	1,157	0,049	0,274
RET	1,572	0,277	0,019	1,532	0,282	0,021	0,843
LL	1,572	0,067	0,003	1,532	0,052	0,003	0,001***
CONS	1,572	-0,292	0,020	1,532	0,217	0,017	0,000***
PL	1,572	1,033	0,025	1,532	0,928	0,022	0,002***
END	1,572	0,889	0,021	1,532	0,814	0,017	0,005***
LIQBOL	1,572	0,648	0,042	1,532	0,341	0,029	0,000***
LNAT	1,572	14,253	0,052	1,532	13,645	0,049	0,000***
IMOB	1,572	0,717	0,027	1,532	0,672	0,022	0,202

Explanatory Note: (i) Description of Variables: LL - Net Income divided by total assets; RET - Return per share; P - Market Value divided by total assets; CONS - level of conservatism estimated by Basu (1997) model; PL - Shareholders' Equity divided by total assets; END - Total Debt divided by total assets; LIQBOL - Stock market liquidity per share; LNAT - neperian logarithm of total assets; and IMOB - Fixed Assets divided by total assets; (ii) Significance Level: \*\*\*, \*\* and \* Significant at 1%, 5% and 10% level. Source: Prepared by the authors based on research data.

Table 5. Estimation of the Empirical Econometric Model

$$\text{Equação (2): } VM_{it} = \beta_0 + \beta_1 LL_{it} + \beta_2 DLL_{it} + \beta_3 CRISE_{it} + \beta_4 (LL * DLL)_{it} + \beta_5 (LL * CRISE)_{it} + \beta_6 (LL * DLL * CRISE)_{it} + \beta_7 DCONS_{it} + \beta_8 (LL * DLL * CRISE * DCONS)_{it} + \beta_9 Controles_{itk} + \varepsilon_{it}$$

Market Value (P)	Coefficient	Standard Error	T-statistics	P Value	Confidence Interval (95%)	
LL	6,276	1,271	4,940	0,000***	3,785	8,767
DLL	0,020	0,070	0,280	0,780	-0,118	0,157
CRISIS	0,037	0,096	0,380	0,702	-0,151	0,225
LL*DLL	-7,968	2,192	-3,640	0,000***	-12,265	-3,671
LL*CRISIS	3,680	1,377	2,670	0,008***	0,980	6,380
LL*DLL*CRISIS	-6,988	2,696	-2,590	0,010***	-12,274	-1,703
DCONS	0,108	0,047	2,300	0,021**	0,016	0,199
LL*DLL*CRISIS*DCONS	0,139	1,680	0,080	0,934	-3,156	3,434
PL	0,584	0,070	8,340	0,000***	0,447	0,721
END	0,800	0,070	11,490	0,000***	0,663	0,936
LIQBOL	-0,173	0,018	-9,600	0,000***	-0,209	-0,138
LNAT	0,083	0,012	7,050	0,000***	0,060	0,106
IMOB	-0,009	0,057	-0,160	0,875	-0,122	0,104
Constant	-1,934	0,214	-9,040	0,000***	-2,353	-1,515
Number of observations		3104				
F(13,3090)		218,24				
p - value (F)		0,000				
Adjusted R <sup>2</sup>		66,02%				

Explanatory Note: (i) Description of Variables: LL - Net Income divided by total assets; RET - Return per share; DR (RET<0) - dummy variable that assumes value equal to 1 if the value of RET is negative, and 0 otherwise; P - Market Value divided by total assets; DLL - Dummy variable that assumes value equal to 1 if the value of LL is negative, and 0 otherwise; DCONS - Dummy variable that assumes value equal to 1 to the group with high level of conservatism, and 0 low level of conservatism; CRISIS - Dummy variable that assumes value equal to 1 if it belongs to the crisis period, and 0 otherwise; PL - Net worth divided by total assets; END - Total debt divided by total assets; LIQBOL - Stock market liquidity per share; LNAT - Neperian logarithm of total assets; and IMOB - Fixed assets divided by total assets; (ii) Significance level: \*\*\*, \*\* and \* Significant at 1%, 5% and 10% level. Source: Prepared by the authors based on research data.

It is important to point out that this segmentation was carried out from the median value measured from the variable CONS - level of conservatism estimated by the model Basu (1997). It is noted that, at 1% significance level, statistically it was evidenced difference between the groups for: Net Income (LL), Conservatism (CONS), Net Equity (PL), Total Debt (END), Liquidity in Stock Exchange (LIQBOL), and Total Assets (LNAT). And, statistically, it was not proven difference of averages between groups of low and high level of conservatism for Market Value (P), Return on shares (RET) and Fixed Assets (IMOB). Also considering table 3, through the mean test, it is possible to infer that: on average, the net income of companies with high level of conservatism is lower when compared to the group of low level of conservatism, i.e., companies with a high level of conservatism tend to have a lower profit. The estimates of the empirical model suggested for hypothesis H1, which aimed to answer the following question:

#### Does the relevance of the accounting profit, in a period of macroeconomic crises, depends on the level of conservatism?

This model characterizes regression with stacked or Pooled unbalanced data panel, in which the coefficients were estimated by the ordinary least squares method, with a robustness procedure that aims to correct the problem of heteroscedasticity of the errors, as described by Wooldridge (2012).

It is important to reinforce that, in a first moment, an analysis of conservatism was conducted using the Basu (1997) model, in order to assess the level of conservatism per company. In general, 251 regressions were estimated (per company) and the estimated coefficient DR\*RET was extracted from Equation (1), where it represented the level of conservatism of the company. The dummy variable DCONS was built from these estimates, that is, using the median central tendency measure to classify companies with low level of conservatism (DCONS=0) and high level of conservatism (DCONS=1). The results in Table 4 refer to equation 2.

The F statistic informs that the model was adjusted at the 1% significance level. The adjusted R<sup>2</sup> admits that 68.4% of the variability of the market value was explained by the independent and control variables. The results of Table 4 demonstrated that, for variable LL, its estimated coefficient proved significant at the level of 1% and positive value, indicating that the increase in net income increases the market value of companies. Of the coefficients  $\beta_2$ (DLL) and  $\beta_4$ (LL\*DLL) proposed in the model to capture the effect of bad news - Negative Net Income, only the coefficient  $\beta_4$  coefficient presented statistical significance at the 1% level, which demonstrates a devaluation of the companies' market value before this accounting result (LL<0). The results found for the values of the coefficients  $\beta_5$  and  $\beta_6$  demonstrated that in companies, even in a period of crisis, the increase in Net Income suggests an appreciation of the market value

of companies ( $LL*CRISIS = 3.680$ ). The estimation of  $\beta_6$  ( $LL*DLL*CRISIS$ ), indicated that in the period of macroeconomic crisis, with negative accounting result scenario ( $LL < 0$ ), at the 1% significance level, there is statistically a devaluation of the companies' market value. Thus, the evidence found is similar to that of Davis-Fridaya et al. (2006) who find evidence that in periods of macroeconomic crisis, the relevance of the profit presented devaluation in the explanatory power of profits, as they decrease during the crisis period. The result is close to the findings of Costa et al. (2012) which verified that the crisis affects the relevance of the studied companies' equity and net income. The result of the  $\beta_7$  coefficient (DCONS) demonstrated that, on average, companies belonging to the group with high level of conservatism (above the median) present a higher market value when compared to companies with low level of conservatism. And finally, the  $\beta$  coefficient<sub>8</sub> ( $LL*DLL*CRISIS*DCONS$ ), adopted in this study in the search for statistical evidence that could collaborate with the hypothesis

### H1 - The level of conservatism positively influences the relevance of profit in periods of crisis"

In turn, the value found for this coefficient did not show sufficient results capable of being conclusive in relation to the mentioned hypothesis. In this context, it was not possible to verify the relevance of conservatism in the crisis scenario, i.e., not being in accordance with the authors Balakrishnan et al. (2016), Francis et al. (2013) e Sampaio et al. (2015) which evidenced that companies with more conservative behaviors in the earnings disclosure present a more valued performance, making this behavior more relevant in periods of crisis due to the conservatism adopted by companies. The evidence found concerning conservatism and earnings per Brown Jr. et al. (2006) e Lara et al. (2014) demonstrated that profit when more conservative enhances the firms' results. Therefore, in relation to the control variables, with the exception of IMOB, all others were significant at 1% significance level, with the following interpretations: the higher the company's Net Equity (Net Worth) the higher its Market Value; the higher the company's Total Debt (END) the higher its Market Value; the higher the Stock Exchange Liquidity the higher the market value; and finally, Total Assets (LNAT) with positive estimated coefficient, indicates that the larger the company's size the higher its market value.

## CONCLUSION

The present work aimed at measuring the presence of conservatism in periods of financial crisis, under the concepts of Basu (1997) in the Brazilian market in periods with and without crisis. The study analyzed years with and without financial crisis, evaluating Brazilian companies listed in B3 between the years 1995 and 2017, and whether the level of conservatism positively influences the relevance of profit in periods of crisis. The evidences found, as from the proposed methodology, did not exhibit sufficient results capable of being conclusive regarding the relevance of the profit and the presence of conservatism in periods of macroeconomic crisis, did not present conformity with studies of the authors Balakrishnan et al. (2016) Francis et al. (2013) e Sampaio et al. (2015), which evidenced that companies that behaved more conservatively when disclosing profits presented a more valued performance, making this more relevant in crisis periods due to the conservatism adopted by companies. In the academic aspect, this study will contribute to improve the collection of studies that analyze the Brazilian financial market, examining the relationship of the financial variables and the management performance in periods of crisis. The study presented limitations, by restricting unlisted companies, not allowing the study for this scenario, considering that they are companies that promote the economy, and both experienced periods of crisis, however being more restricted access to accounting information. Although the focus of this study was on companies listed on B3, future studies could explore the market variations and verify the crisis effects, examining companies not listed on B3 in order to enable the confrontation having a broader scenario of Brazilian companies. It is also suggested that a study be

conducted in companies of the same activity market, taking into account the behavior and the management practices of each corporate segment.

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