VALUE RELEVANCE OF DVA DISTRIBUTED: ANALYSIS IN THE BRAZILIAN MARKET IN LIGHT OF THE STAKEHOLDERS AND SHAREHOLDERS THEORY

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ABSTRACT

The objective of the study was to analyze the behavior of the relevance of the informational content of the distribution of the value of the DVA, according to the interest aroups classified in light of the Stakeholders and Shareholders Theory. The methodology applied characterizes in gualitative and guantitative terms, in the period from 2009 to 2018, 169 Brazilian companies. The data were organized in a panel, totaling 1,690 observations, and the Ohlson (1995) model of value relevance adjusted according to the survey was used. The Vad variables were classified into VadShare (Shareholders), VadStake (Stakeholders), StakSoc (Social), StakGov (Government) and StakTer (Third Parties) and the hypotheses based on economic theory. The results showed that Vad provides a more adequate model and has a negative influence on stock prices, confirming the economic theory. The maximization of wealth to shareholders is confirmed in the results in all interest groups in the distribution of wealth - it was found that the VadShare model is the most appropriate when compared with VadStake, StakSoc, StakGov and StakTer. It was found that the period analyzed, of economic and political crisis, influenced the behavior of the value of the distribution of wealth, the price of shares and the average negative performance. In general, it can be inferred that other factors can impact the stock price. It is important to note that both the discussion of the theory of Shareholders and Stakeholders and the analysis of the empirical evidence may be the awakening of interest in analysis and discussions in academia and areater use and utility of VAD in companies and the market.

Keywords: Value Relevance, DVA, Value Added District, Shareholders and Stakeholders.

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VALUE RELEVANCE DO VALOR DISTRIBUÍDO DA DVA: ANÁLISE NO MERCADO BRASILEIRO À LUZ DA TEORIA DOS STAKEHOLDERS E SHAREHOLDERS

RESUMO

O objetivo do estudo foi analisar o comportamento da relevância do conteúdo informacional da distribuição do valor da DVA (Demonstração do Valor Adicionado), conforme os grupos de interesses classificados à luz da Teoria dos Stakeholders e Shareholders. A metodologia aplicada caracteriza-se em qualitativa, com predominância quantitativa, no período de 2009 a 2018, em 169 empresas brasileiras. Os dados foram organizados em painel, totalizando 1.690 observações, e utilizou-se o modelo de Ohlson (1995) de value relevance ajustado conforme a pesquisa. As variáveis do Vad (Valor Adicionado) foram classificadas em VadShare (Acionistas), VadStake (Stakeholders), StakSoc (Social), StakGov (Governo) e StakTer (Terceiros) e as hipóteses fundamentadas na teoria econômica. Os resultados apontaram que o Vad proporciona um modelo mais adequado e possui influência negativa no preço das ações, confirmando a teoria econômica. A maximização de riqueza aos acionistas é confirmada nos resultados em todos grupos de interesse na distribuição de riqueza - constatou-se que modelo do VadShare é o mais adequado ao ser comparado com o VadStake, StakSoc, StakGov e StakTer. Constatou-se que o política, crise econômica e período analisado, de influenciou no comportamento do valor da distribuição de riqueza, do preço das ações. De forma geral, pode-se inferir que outros fatores podem impactar o preco das ações. Destaca-se como contribuição da pesquisa que tanto a discussão da teoria dos Shareholders e Stakeholders como a análise das evidências empíricas podem ser o despertar de interesse de análise e discussões na academia e maior uso e utilidade da DVA nas empresas e no mercado.

Palavras-Chave: Value Relevance, DVA, Valor Adicionado Distríbuido, Shareholders e Stakeholders.

1 INTRODUCTION

Based on scientific evidence that stock prices adjust to accounting earnings (Ball & Brown, 1968), content and economic value are attributed to accounting information. Beaver (1968) corroborates this by stating that investors react to earnings disclosure in relation to the volume and price of shares close to the announcement.

According to Barth et al. (2001), the relevance of accounting information began to be investigated using the terminology value relevance, with the research by Amir et al. (1993) who analyzed the relevance of reconciling accounting results and net worth to the standard US accounting of foreign companies. From this context, several studies were carried out (Collins et al., 1997; Brown et al., 1999; Ohlson, 1995; Feltham & Ohlson, 1995; Barth et al., 2001; Lee & Lee, 2013; Filip & Raffournier, 2013; Lam et al., 2013).

Some studies have analyzed the relevance of the informational content of the DVA and, in general terms, argue that the value created, in the DVA, has an informational potential that exceeds that of the profit conventionally reported in the DRE (Riahi-Belkaoui & Picur, 1999; Sherer, 2006; Barros et al., 2013; Costa, Guimarães & Mello, 2013; and Machado, Macedo & Machado, 2015; Santos, Botinha and Rudders, 2019). On the other hand, there are studies that do not attribute the same findings (Martins, Machado & Callado, 2014; Arruda et al., 2015).

Freeman (1984, 1998), Donaldson and Preston (1995), Jones (1995), Metcalfe (1998) and Moore (1999) consider that the objective of organizations is to serve the interests of shareholders and other stakeholders. From this perspective, there are no more important or more legitimate interests than others. Campos (2006) states that in the legal, administrative or economic dimension, stakeholders have different roles, interests and participation. While employees, suppliers and consumers have their participation in the business already established by contracts made a priori, shareholders depend on the residual results, evidenced at the end of the process.

In view of the above, the DVA considers, in the distribution of added value, the identification of interest groups, comprised of Stakeholder, Shareholder and others. For Smith (2003), shareholders hold control and direct capital according to their interests, however, the obligation of managers must be with all stakeholders.

In this conception, for Campbell (1997) the stakeholder theory is fundamental to generate wealth, as it demonstrates that it is not possible to guarantee the survival of the company without delivering value to important stakeholders. Thus, although shareholders have some privileges and rights that are different from other interest groups, other stakeholders, this does not give them more rights to receive benefits from the company.

Given the role and influence of shareholders and other stakeholders in the transfer of resources generated by the company, evidenced in the DVA, the research question arises. How does the relevance of the informational content of the added value distributed by DVA behave in the Brazilian market? Therefore, the objective is to analyze the behavior of the relevance of the informational content of the distribution of the value of the DVA, according to the interest groups classified in the light of the Stakeholder Theory, in the period from 2009 to 2018.

The research is justified by the idea that in research on value relevance of information by interest groups, according to Souza (2015), the market determines how much it is willing to pay for the shares of a given company, as well as tests which accounting information is shown relevant. In this context, Lopes (2002) points out that the results of investigations involving value relevance are of interest to a wide audience: financial analysts, regulatory bodies and corporate governance agents.

In this sense, there is a theoretical gap about the existence of relationships between the axiological profile of business leaders and orientation more towards shareholders or other stakeholders. The debate regarding the direction of corporate identity, whether favorable to the exclusive interests of shareholders or proposing articulation between all interested publics is still recent and has not found definitive theoretical and practical support (Adams et al., 2011).

The present study is also justified by the analyzed period, 2009 to 2018, which was marked by economic and political instability. There was, in this period, a general decline in growth, with negative GDP for several years in a row, a fall in investments with negative consequences for productive and commercial activity.

Thus, one can expect anomalous behavior in accounting variables and in the share price of Brazilian companies and, consequently, in the relevance of accounting informational content. Still, this research is justified by the proposed discussion approach that seeks to identify the relevance of the added value distributed in the Brazilian market to Shareholders and other Stakeholders, which has not yet been explored in the literature.

2 THEORETICAL REFERENCE

2.1 Information Quality and Value Relevance

The quality of information, according to Francis et al., (2008) is linked to accuracy. However, for the authors, accuracy in the capital market context should be restricted to some aspects of the Accounting Conceptual Framework, more specifically in the qualitative characteristics of information, considered as attributes of information quality.

Francis et al. (2008) state that the quality of the result is a multidimensional concept, in which some measures are linked to the perception of investors. Thus, studies that investigate the relevance of accounting numbers assume that the market price or return on the share reflects the judgment of investors. Thus, studies on the relationship between accounting variables and the capital market, in line with scientific evidence, agree that stock prices adjust to accounting earnings.

In this sense, the seminal work of Ball and Brown (1968) stands out, which attributed content and economic value to accounting information.

Beaver (1968) corroborates the studies by Ball and Brown (1968) when comparing the value of the variance of the abnormal returns in the announcement period in relation to the other periods (without announcement). Greater variance in the announcement period indicates that there is informational content, but does not test the statistical significance of the greater variance of returns (Lo & Lys, 2000).

Barth et al (2001) argue that the first definition of relevance was found in the research by Amir et al (1993), who investigated whether the reconciliation adjustments of accounting results and shareholders' equity to the US accounting standard of foreign companies of 20 countries listed on the New York Stock Exchange were relevant. The results show that the reconciliations are relevant in relation to the information disclosed in the accounting system of the companies' country of origin.

In Brazil, the English expression 'value relevance' is understood as the extent of the impact that certain accounting information has on the company's share price (Ramos; Lustosa, 2013). Thus, the primary issue in studies on relevant value is whether the content of financial statements is relevant for investors (Barth et al., 2001; Beaver, 2002; Lopes, 2002; Baboukardos; Rimmel, 2014; Tsalavoutas; Dionysiou, 2014).

Thus, the relevance of information lies in the fact that it makes artifacts available to users so that they can assess the outcome of past and present events and predict future events or, even, that have feedback value and thus confirm or correct expectations outlined a priori. (Germon & Meek, 2001; Riahi-Belkaoui, 2000). Macedo et al. (2011) add that relevant accounting information contributes to reducing the existing information asymmetry between the company's internal and external users.

In this sense, value relevance, for the academy, can be understood as an investigation of the empirical relationship between the reaction of the capital market and specific accounting information, with the aim of verifying its suitability to subsequently consider it a standard (Holthausen & Watts, 2001). It is apprehended that the information is generated in the light of intrinsic qualities of the Conceptual Structure.

For Barth et al. (2001), information is considered relevant if it is correlated with the company's market values. It is common in studies to use profit and equity as independent variables and to associate these two variables with the market value of companies (Brown et al., 1999).

Studies on the quality of accounting information brought theoretical and empirical advances to the literature, however, there are still gaps and possibilities, as this theme can be applied and researched on different approaches. Thus, among the attributes of the quality of accounting information, relevance stands out, which is fundamental for users' decisionmaking.

The study of relevance seeks to identify whether a given event occurred or included in the information process generates accounting information capable of modifying user expectations and stock prices.

2.1.1 Studies on the Relevance of Accounting Information

The Ohlson model (1995) uses the variables Net Equity and Net Income in its assessment, which is why it promotes interest in researchers with emphasis on value relevance studies (Alencar & Dalmacio, 2006; Lopes et al., 2007; Rezende et al., 2008). Thus, with Ohlson's model (1995), it becomes possible to empirically verify whether "other information" available in the market, not recognized by accountants in the calculation of accounting profit due to prevailing precepts in accounting standards, is capable of altering the estimation of future abnormal profits and, consequently, the value of the firm.

The Ohlson model (1995) does not specify which relevant events make up "other information", but, when considering them, it recognizes that there is a set of information capable of affecting the value of the firm not determined by the accounting method, since such information is available to the public. market and can alter investor expectations (Ball & Brown, 1968). Ohlson (1995) proposes that the value of the firm is a function of (i) the value of equity; (ii) future residual income at present value; and (iii) future flows resulting from "other information" not yet captured by the accounting process due to conservatism.

The Ohlson model (1995) was applied in Brazil by Lopes et al. (2007), Coelho and Braga (2008), Coelho et al.,(2011) and Madeira and Costa (2015), and makes it possible to empirically test whether "other information" resulting from relevant events could add future residual profits and, thus, impact the current assessment of the firm (Coelho & Braga, 2008; Lopes et al., 2007; Ohlson, 1995). Thus, the Ohlson model (1995) makes the variable "other information" explicit in the format of the equation below.

$$P_{\dagger} = \alpha_0 + y_{\dagger} + \alpha_1 x^{\alpha_{\dagger}} + \alpha_2 v^{\alpha_{\dagger}} + \varepsilon_{\dagger} \quad (1)$$

Where Pt is the firm's value, yt is equity, xat is abnormal earnings, and vat is other information.

Thus, "other information" is considered as the possible application of a proxy capable of highlighting events relevant to accounting information. In this study, the informational content of the DVA is presented as other information, specifically the distributed added value, as a possible variable to produce value relevance, to the interest groups involved, shareholders and other stakeholders.

Thus, the value relevance of accounting information is related to several factors linked to the quality of accounting information and its ability to influence investors' decisions. In this sense, the way added value is distributed can change investor behavior according to their wishes and interests.

In this conception, the primary objective of research on value relevance is to investigate whether the statements produced by companies provide investors with valuable accounting information for decision-making, and this relevance is analyzed through its reflection on the share price (Barth et al., 2001; Holthausen & Watts, 2001; Alfaraih, 2009; Hassan & Mohd-Saleh, 2010).

2.2 DVA and Distributed Added Value

The emergence of the VAD was motivated by social movements in the 1960s of the 20th century in France, Germany and England, which began to demand information regarding remuneration, social charges, professional training, hygiene and safety conditions at work (Santos, 2007). And Santos (2003, p.35) adds that such a demonstration "is the most competent form created by accounting, to assist in measuring and demonstrating the generation capacity, as well as distribution, of an entity's wealth".

De Luca et al (2009) present the lack of usefulness of the DVA as a justification for the USGAAP, FASB and IASB (IAS/IFRS) accounting entities not mentioning the preparation and publication of the DVA.

In Brazil, the DVA became mandatory for publicly-held companies, as of 2008, with the enactment of Law n. 11,638/07, which amends Law n. 6,404/76. The DVA is structured in two parts: generation and distribution of wealth, where the distribution is made up of: Personnel and Charges; Taxes, fees and contributions; Interest and Rents; Interest on Equity and Dividends; and Retained Earnings/Loss for the Year.

Studies show the adoption of added value to explain the value of the company. Riahi-Belkaoui (1993) carried out a study to analyze the informational content of the stock return, the added value, the result and the cash flow of companies in the United States, in the period from 1981 to 1987. The results indicated greater informational content in the added value, compared to both the income for the year and the cash flow.

Bao and Bao (1998) analyzed the usefulness of two elements for measuring economic performance: added value and extraordinary economic returns. Based on data from DVA and DRE, surveyed in the period from 1992 to 1993, they concluded that the results do not attest to a relationship between extraordinary returns, and attest to a relationship with added value, which was significant at all price levels presented.

Lähtinen and Toppinen (2008) researched the economic change of the Finnish locksmith industry. They verified the possible effect of added value and cost-efficiency on performance. Using regression analysis in a time frame from 2000 to 2004, they concluded that cost-efficiency better explains short-term performance while added value better explains long-term performance.

In Brazil, Machado et al. (2015) analyzed the relevance of the informational content of the VAD in the Brazilian capital market, through the relationship between share prices and wealth created per share (RCPA), in the period from 2005 to 2011. The evidence supports that the DVA has relevant informational content, as it explains the stock price. The relationship between RCPA and price was significant and positive. The evidence indicated that the market reacts more to the RCPA than to the Net Income, revealing indications that the RCPA represents a better proxy for the result than the LLPA.

Santos et al (2019) investigated whether the informational content of the DVA is relevant to investors. The sample consisted of Brazilian companies belonging to the B3's Differentiated Corporate Governance Stock Index (IGCX), in the period from 2011 to 2015. The results showed that the value added for distribution is relevant for the stock market at different levels of corporate governance. However, when the control variables are added, it is observed that the earnings per share have more explanatory power in relation to the net added value. The study also showed that the content of the DVA leads to transparency of the entities and influences the decisions of investors.

On the other hand, the research by Martins et al., (2014) evaluated the value relevance additivity of the DFC and the DVA to the set of financial statements of the Brazilian stock market, in the period from 2008 to 2010. The

results showed that the DFC added value relevance to the set of financial statements, unlike the DVA which did not show relevance in the informational content.

Arruda et al. (2015) showed that the DVA has little influence on stock returns in different time horizons. To analyze stock returns, the authors observed three event windows: short (three days before and after the release of the statements), medium (seven days before and after) and long (15 days before and after).

In view of the studies mentioned, the applicability of value added in explaining the price of shares is perceptible; however, an approach regarding the behavior of the relevance of the informational content of the VAD value distribution in Brazilian companies by interest group was not evident, which permeates the study.

Although there are studies that indicate that added value is more relevant than profit and PL (Riahi-Belkaoui & Picur, 1999; Scherer, 2006; Machado et al., 2015; Santos et al., 2019), there are, on the other hand, On the other hand, studies that do not attribute the same findings (Martins et al., 2014; Arruda et al., 2015), which indicates a duality of results and doubts about the relevance of the DVA for the capital market. Thus, the research contributes to the discussion and mitigates the questioning of the relevance or not of the added value distributed to explain the stock price.

Thus, it was decided to consider the fundamentals of the theory of the firm, Friedman (1962, 1970), Jensen (2001) and Sundaram and Inkpen (2004) and the empirical findings of the research by Arruda et al. (2015) and Santos et al. (2019), to elaborate the first research hypothesis.

H1: Distributed added value (Vad) negatively influences stock prices in the Brazilian market.

Thus, it is expected that the variable Vad presents statistical significance with a negative sign. However, the distribution of added value caters to different interest groups, as defined in Accounting Pronouncement, CPC 09 (CPC, 2008). Therefore, we seek to theoretically support the structure and classification of these interest groups in the Stakeholder Theory.

2.3 Stakeholder Theory

In the literature, discussions about the theory of the firm (shareholders) and the theory of stakeholders are contemporary and controversial. A central point in these discussions concerns which function - companies should serve. While the theory of the firm proposes that the company prioritize economic performance and, therefore, the wealth of the shareholder, the theory of stakeholders argues that the objective of the company is to coordinate the interests of the various stakeholders and not just the shareholder. (Boaventura, 2012).

Thus, it is in this sense that Friedman (1971) argues that the only responsibility of company managers is to generate profits for Shareholders and believes that, through profit, the well-being of a society is increased. However, it

states that the social performance of a company and the profit maximization of the Shareholders are only possible under some restricted conditions.

Jensen and Meckling (1976) pose a set of questions: (i) How do administrators, as a central element of contracts, administer them? (ii) Are there preference relationships between administrators and contracted parties? (iii) How are the organization's results distributed and what criteria are used to define this distribution? iv) What is the relative importance of each contractor? The responses to these formulations constitute the main differences in stakeholder theory between shareholders and other stakeholders.

Boaventura (2012) presents criticisms of stakeholder theory, bringing the view of Marcoux (2000), that stakeholder theory deals primarily with the equal treatment of stakeholders, which is a vague proposal devoid of depth and, in this sense, reinforces the conflict between the interests of shareholders and other stakeholders. The author resumes the controversy between the objective functions of the theory of the firm and the stakeholders, and counter-argues with the defense of the theory by Freeman, Wicks and Parmar (2004), who point out that this theory addresses how the processes and procedures that promote justice should be in the distribution of resources.

Jensen (2001) argues that maximizing value for shareholders is the organization's objective, however he believes that such a goal will not serve as inspiration for managers or their stakeholders. In addition, Freeman (2004) suggests seeking through the stakeholder theory an integrative revolution, in which the main responsibility of an executive is to create the maximum possible value for the stakeholders, because that is how he can create the maximum possible value for the shareholders – shareholders.

In view of the above, shareholders and other stakeholders can be identified in the DVA structure, which allows classification into interest groups. Pinto and Freire (2013) argue that the DVA signals the policy adopted by the company towards its various interest groups, in addition to disclosing macroeconomic data.

Vasconcelos et al. (2013) state that the DVA is seen as a new dimension of information for stakeholders, compared to traditional statements, as these have always had the purpose of disclosing economic information about companies, mainly serving the interests of their owners and the government.

Friedman (1962, 1970), Jensen (2001) and Sundaram and Inkpen (2004) are major advocates of shareholder profit maximization, which finds its roots in the theory of the firm. Maximizing Shareholders' profit is a desirable goal, not only for Shareholders, but also for the benefit of society, as advocated by Sternberg (1999) and Jensen (2001). Sundaram and Inkpen (2004) state that the other parties related to the company, which are not shareholders (employees, suppliers and customers) have the protection and benefits of contracts and legislation, which does not occur with shareholders.

Managers can transfer wealth from various publics to shareholders instead of increasing the company's value (Sundaram & Inkpen, 2004) and there is no possibility of maximizing long-term value if managers ignore or harm someone important involved with the organization (Jensen, 2001). However, when there are conflicts between shareholders and other stakeholders, management theorists give precedence to economic objectives (Walsh, 2005).

Thus, it is attributed the understanding that the informational content of the shareholders has greater relevance among the other groups, due to the fact that it is the greatest holder of the risk and manages the interests of those involved, and should be better remunerated. Thus, regarding the distribution of added value to shareholders, the hypothesis is based on:

H2: Added value distributed to shareholders positively influences stock prices in the Brazilian market.

Based on the theoretical foundations presented in the hypothesis above, the following hypothesis is based on the interest group of other stakeholders:

H3: Added value distributed to other stakeholders negatively influences stock prices in the Brazilian market.

In this understanding, other hypotheses are inferred in order to contemplate the discussions regarding the stakeholders. As for stakeholder theory, it is a theory of organizations that proposes a relational model, linking shareholders, individuals, groups, communities, companies, institutions and the State (Pesquex & Damak-Ayadi (2005).

Thus, the first interest group of the Stakeholders theory contemplated in the DVA is the social one, composed of employees. Thus, this study considers and is guided by the classic foundations of the literature - greater is the relevance of shareholders compared to other interest groups and, thus, the following hypothesis is elaborated.

H4: The added value distributed to the social negatively influences the stock price in the Brazilian market.

With regard to the government interest group, a priori, it is considered that it seeks to benefit from the success of organizations, which allows it to generate employment, economic growth and increased revenues through taxes. Cosenza (2003) states that the government also participates in the creation of wealth for the entity, as it supports its productive activities through investments in infrastructure, tax incentives and subsidies. However, the research is guided by theoretical foundations on shareholders (theory of the firm), with the following hypothesis.

H5: The added value distributed to the government negatively influences the stock price in the Brazilian market.

The interest group that involves the Third Parties corresponds to the financiers with remuneration of capital from third parties, through interest, rents, copyrights and others. Kroetz and Cosenza (2004) state that for financiers and creditors, the DVA communicates the economic health of the entity and its development in the generation of wealth.

Considering the economic conceptions and the conflict of interests between the groups (Friedman, 1971; Freeman, 1984; Donaldson and Preston, 1995; Gibson, 2000; Boaventura, 2012), the following hypothesis is raised: H6: Added value distributed to third parties negatively influences stock prices in the Brazilian market.

After presenting the theoretical foundations, with regard to the quality of information, value relevance, Statement of Added Value, Distributed Added Value, Stakeholder Theory, together with the hypotheses raised, it leads to the statistical methods for the evidence and inferences to the present study.

3 METHODOLOGICAL PROCEDURES

3.1 Sample, Collection and Processing of Data

Regarding the problem/object of study, the research is classified in the qualitative and quantitative approach, with quantitative predominance. The research population consists of Brazilian companies listed on Brasil, Bolsa, Balcão (B3), in the period from 2009 to 2018, according to the classification of Economática® sectors, which published the Added Value Statement. The 'financial' and 'other' sectors were excluded from the sample to maintain a homogeneous database, and due to the fact that the DVA of financial institutions has a specific and distinct structure from companies in general, with possible effects on the results. Thus, the sample consisted of 216 companies, 47 companies were excluded due to lack of data, totaling 169 companies in the 10-year period, with 1,690 possible observations.

Companies were excluded according to the following criteria: i) Lack of uniformity and criteria and classification of the 'others' sector and the peculiarities of the 'financial' sector; ii) Not contain more than 50% of data in the Share Price, Shareholders' Equity and Net Income variables; iii) Presence of outliers in variables, atypical values, very discrepant and with clear evidence of error in the base.

Data collection was carried out through the B3 and CVM websites. However, the information on the Financial Statements and other information was collected from the Economática® database and the Bovespa bulletin.

To test the research hypotheses, the explanatory power of the regressions is considered through the significance of the parameter values of the variables of interest and the expected signs, as well as the model's R2 explanation coefficient, Akaike Criteria, Schwarz and the maximum of the Likelihood function.

In this sense, the regressions were estimated through the panel data model, with the execution of the Chow F Test, Breush Pagan and Hausman Test, in the search for the most adequate model, the research.

3.2 Variables and Econometric Models

The sample is made up of companies of different sizes, so there may be problems with the scale effect. According to Martins et al. (2014), companies with larger (smaller) sizes will have higher (lower) market value, higher (lower) equity and higher (lower) profits. It is considered that large companies influence the regressions of accounting variables and market values (Lima, 2010). In order to mitigate the possible scale effect, the variables used will be relativized by the number of shares, that is, the amount of variables will be divided by the number of shares (Barth & Clinch, 2009; Silva et al., 2012; Gonçalves et al., 2014; Machado et al., 2015; Santos et al., 2018). The number of shares (QA) was collected from Economática®, observing splits, considering common shares (ON). Still, in this understanding, the Neperian logarithm was applied to total assets (Crippa and Coelho, 2012; Santos et al., 2019).

Thus, the variables used in the study are shown in the table below:

Table 01

Variables used in the search

Description/Acro nym	Hypothesis	Formula/Source	Signal	Autores		
Dependent Variable						
Share Price (PA) (Dependent)		PA/QA Economática		Barros et al (2013); Arruda et al (2015); Machado et al (2015)		
Explanatory/Independent Variables						
Earnings per share (LL) (Independent)		LL/QA Economática	+	Feltham e Ohlson (1995); Collins et al.(1997), Stanzani et al. (2016); Machado et al. (2015)		
Equity per Share (PL) (Independent)		PL/QA Economática	+	Feltham e Ohlson (1995); Collins et al. (1997), Stanzani et al. (2016); Machado et al. (2015)		
Added Value Distributed Per Share (VAD) (Independent)	H1: Vad negatively influences stock prices in the Brazilian market.	VAD/QA B3	-	Riahi-Belkaoui e Picur (1999); Martins et al.(2014); Machado et al.(2015); Santos et al.(2019).		
Value Added Distributed to Shareholders per Share (VadShare) (Independent)	H2: Vad to shareholders positively influences the share price in the Brazilian market.	VadShare/QA B3	+	Friedman (1962, 1970), Jensen (2001) e Sundaram e Inkpen (2004)		
Added Value Distributed to Stakeholders per Share (VadStake) (Independent)	H3: Vad to stakeholders negatively influences stock prices in the Brazilian market.	VadStake/QA B3	-	Boaventura (2012)		
Added Value Distributed to Social per Action (StakSoc) (Independent)	H4: Vad to social negatively influences stock prices in the Brazilian market.	StakSoc/QA B3	-	Boaventura (2012); Kroetz e Cosenza (2004)		
Added Value Distributed to the Government per Share (StakGov) (Independent)	H5: Vad to the government negatively influences stock prices in the Brazilian market.	StakGov/QA B3	-	Boaventura (2012); Kroetz e Cosenza (2004); Cosenza (2003); Lopes (2015)		

Added Value Distributed to Third Parties per Share (StakTer) (Independent)	H6: Vad to third parties negatively influences the price of shares in the Brazilian market.	StakTer/QA B3	-	Boaventura (2012); Kroetz e Cosenza (2004)
	Con	trol Variables		
Entity Size (AT) (Control)		LN of the company's total assets/ Economática	-	Crippa e Coelho (2012) Santos et al.(2019)
Indebtedness (Endiv) (Control)		AT - PL Economática	-	Crippa e Coelho (2012) Santos et al. (2019)
Sector (Sept) (Control)		Dummies Sector Economática	-	Follmann et al.(2011); Grecco et al (2010); Santos et al (2019)
Corporate Governance (GoC) (Control)		0 – does not have ; 1 – Has / B3		Klapper e Love (2002) Scherer (2006) Santos et al (2019)
Issues ADR (ADR) (Control)		0: does not emit; 1: issue/ Economática	-	Klapper e Love (2002)
State or Private (Est) (Control)		0: state; 1: private/ Economática		Chan et al. (2007); Braga (2008); Machado et al. (2009)
Market-to-book (MTb) (Controle)	- (0000)	Market Value/PL Economática	-	Bharath et al. (2008)

Source: Survey data (2020).

As for the variables of share price and number of shares, the date of April 30 of the year subsequent to the publication of the financial statements was considered. According to Grillo et al (2016), the premise for using prices four months after the end of the fiscal year is used since the market has already assimilated the disclosed information. Also, a tolerance of 10 days was considered, that is, from 04/20 to 04/30 of the years surveyed. The same procedure was used in studies by Silva et al. (2012); Grillo et al (2016) and Santos et al. (2018). The other variables were collected on December 31 of each year of the survey period.

To test the hypotheses, the value relevance model of Feltham and Ohlson (1995) and Collins et al. (1997) which seeks to capture the relationship between the share price and the book value (PL) and profit (LL), according to equation 2 below:

$$P_{it} = \alpha_0 + \beta_1 PL_{it} + \beta_2 LL_{it} + \varepsilon_{it}$$
(2)

Studies that seek to verify the informational content of accounting information measure the relationship between accounting information disclosed on Net Income and Shareholders' Equity and the Share Price.

To answer hypothesis 1, the variable added value distributed (VAD), equation 3, is used, according to studies (Riahi-Belkaoui and Picur, 1999; Scherer, 2006; Martins et al., 2014; Machado et al., 2015; Santos et al., 2019).

$$P_{it} = \alpha_0 - \beta_1 VAD_{it} + \epsilon_{it}$$
(3)

To analyze the relevance, the result of the equations is compared and it is expected that equation 2 is better than equation 3, according to the theory of the firm. It is inferred that the VAD has less explanatory power for companies' stock prices.

According to evidence by Santos et al. (2019) DVA is complementary information to other accounting information. Thus, to verify whether the VAD adds informational content when included with the original model, Equation 4 is inferred:

$$P_{it} = \alpha_0 + \beta_1 PL_{it} + \beta_2 LL_{it} + \beta_3 VAD_{it} + \varepsilon_{it}$$
(4)

The result of equation 4 will be analyzed with that of equation 2, to verify if there was a gain or loss of content when including the VAD. If the result of equation 4 is better, it can be inferred that there was informational gain and, therefore, the VAD has value relevance.

As for Shareholders, the VadShare proxy is established for the amount distributed to investors and shareholders. Thus, hypothesis H2 will be tested by the following equation:

$$P_{it} = \alpha_0 + \beta_1 PL_{it} + \beta_2 LL_{it} + \beta_3 VadShare_{it} + \beta_4 AT_{it} + \beta_5 End_{it} + \beta_6 Set_{it} + \beta_7 GoC_{it} + \beta_8 ADR_{it} + \beta_9 Est_{it} + \beta_{10} Mtb_{it} + \epsilon_{it}$$
(5)

The literature advocates that shareholders should be the greatest holders of wealth distribution (Friedman, 1962, 1970; Jensen, 2001; Sundaram & Inkpen, 2004). In this way, it is expected that VadShare will be the holder of greater relevance of informational content in the distribution of DVA value. Thus, the result of equation 4 must be better than that of equation 6.

To test H3, equation 6 is used, which refers to the distribution of wealth to other stakeholders, according to the VadStake proxy.

 $P_{it} = a_0 + \beta_1 PL_{it} + \beta_2 LL_{it} + \beta_3 VadStake_{it} + \beta_4 AT_{it} + \beta_5 End_{it} + \beta_6 Set_{it} + \beta_7 GoC_{it} + \beta_8 ADR_{it} + \beta_9 Est_{it} + \beta_{10} Mtb_{it} + \epsilon_{it}$ (6)

Considering the structure of the DVA based on the theory of stakeholders in interest groups, there are: (i) employees (StakSoc); (ii) government (StakGov); (iii) third parties (StakTer). Thus, to test H4, H5 and H6, the equations were elaborated respectively:

$$\begin{split} \mathsf{P}_{it} &= a_0 + \beta_1 \, \mathsf{PL}_{it} + \beta_2 \, \mathsf{LL}_{it} + \beta_3 \, \mathsf{StakSoc}_{it} + \beta_4 \, \mathsf{AT}_{it} + \beta_5 \, \mathsf{End}_{it} + \beta_6 \, \mathsf{Set}_{it} + \beta_7 \, \mathsf{GoC}_{it} + \beta_8 \\ & \mathsf{ADR}_{it} + \beta_9 \, \mathsf{Est}_{it} + \beta_{10} \, \mathsf{Mtb}_{it} + \epsilon_{it} \quad (6.1) \\ \mathsf{P}_{it} &= a_0 + \beta_1 \, \mathsf{PL}_{it} + \beta_2 \, \mathsf{LL}_{it} + \beta_3 \, \mathsf{StakGov}_{it} + \beta_4 \, \mathsf{AT}_{it} + \beta_5 \, \mathsf{End}_{it} + \beta_6 \, \mathsf{Set}_{it} + \beta_7 \, \mathsf{GoC}_{it} + \beta_8 \\ & \mathsf{ADR}_{it} + \beta_9 \, \mathsf{Est}_{it} + \beta_{10} \, \mathsf{Mtb}_{it} + \epsilon_{it} \quad (6.2) \\ \mathsf{P}_{it} &= a_0 + \beta_1 \, \mathsf{PL}_{it} + \beta_2 \, \mathsf{LL}_{it} + \beta_3 \, \mathsf{StakTer}_{it} + \beta_4 \, \mathsf{AT}_{it} + \beta_5 \, \mathsf{End}_{it} + \beta_6 \, \mathsf{Set}_{it} + \beta_7 \, \mathsf{GoC}_{it} + \beta_8 \, \mathsf{ADR}_{it} \\ &\quad + \beta_9 \, \mathsf{Est}_{it} + \beta_{10} \, \mathsf{Mtb}_{it} + \epsilon_{it} \quad (6.3) \end{split}$$

Deploying the VadStake proxy to other variables makes it possible to analyze the behavior of the distribution of wealth to interest groups. Considering the hypotheses raised, it is expected that VadStake and its interest groups have less relevance in the informational content. It is expected that the theoretical foundations and hypotheses are confirmed: (i) variables coming from other Stakeholders present a negative relationship with the stock price and/or, (ii) the parameters do not present statistical significance.

4 DATA ANALYSIS AND RESULTS

The data suggest a temporal series and cross-sectional arrangement. Therefore, panel diagnostic tests were performed to identify the most appropriate model between Pooled, fixed effects and random effects. The tests were carried out with the aid of the Gretl software. After applying the tests, it is evident that the Fixed Effect model is the most suitable for regressions.

To mitigate the problem of non-normality of the residues and heteroscedasticity, the regressions were estimated with robust standard errors and regarding the autocorrelation of the residues, an autoregressive component Ar(1) was included, according to Fávero & Belfiore (2017).

Table 02 shows the results of Equations 2, 3 and 4.

Table 02

Variables	Equation 2	Equation 3	Equation 4
Constant	28,101***	27,983***	27,856***
	(0,017)	(0,013)	(0,157)
LI	6,139e-05	-	-0,003***
	(4,474e-05)		(0,001)
PI	-0,000***	-	0,001
	(2,997)		(0,001)
Vad	-	-0,000***	-0,001**
		(4,649)	(0,000)
AR(1)	0,700***	0,699***	0,700***
	(0,012)	(0,012)	(0,012)
F	42,917***	43,143***	42,553***
R^2	0,86	0,86	0,86
DW	1,86	1,86	1,86
Akaike (AIC)	13726,05	13661,60	13645,70
Schwarz (BIC)	14614,81	14539,08	14533,31
Maximum Likelihood	- 6692,027	-6661,801	-6651,851
(VFM)			
Jarque Bera	1,291e+006***	1,256e+006***	1,262e+006***
Wald test	1,347e+010***	3,106e+034***	7,266e+032***

Result of the Regressions of Equations 2, 3 and 4.

Source: survey data. * Significant at 10%, ** significant at 5%, and *** significant at 1%. Standard errors in parentheses.

It is observed in Equation 2 that PI is statistically significant, but with a negative relation and LI is not statistically significant. This result contradicts the seminal studies by Feltham and Ohlson (1995), Collins et al. (1997), those by Machado et al. (2015) and Stanzani et al. (2016) who claim that the accounting variables PI and LI have a positive relationship and influence stock prices. This

result can be explained by the behavior of the analyzed period, which highlights the influence of the economic environment on the accounting numbers and the relationship with the market reaction in pricing the companies' assets.

In equation 3, Vad presents a negative and statistically significant relationship at the 1% level, the expected result and, thus, H1 is not rejected. Thus, the evidence indicates that equation 3, represented by the accounting variable (Vad), has statistical significance and, therefore, influences the stock price when its value decreases. Thus, the result confirms the economic theory of the shareholders, when obtaining a decrease in Vad the company has its market value increased. When comparing equations 2 and 3 by the tests (AIC), (BIC) and (MFV) it is observed that equation 3 is more adequate, because in the first two the values are lower and in the last one higher (Paula, 2004).

Equation 4 observes whether Vad adds relevance when inserted together with LI and PI. The results indicate that Vad is statistically significant at the 5% level. Thus, there is evidence that explains the stock price but, however, with a negative relation, confirming the result of Equation 3. Regarding the results of the comparison tests (Equation 4 with Equation 2), it can be inferred that the 4 is best suited (AIC -, BIC - and MFV +) to explain the stock price.

The importance of the informational content of the DVA is highlighted, specifically the VAD that adds information to investors, shareholders, but, however, the sign is inverted and expected, contrary to the studies by Machado et al. (2015) and Santos et al. (2019). With this, it is apprehended that Vad adds relevant content in the increase of the stock price when it decreases. Thus, in the analyzed period, the companies in the sample increased the price of their shares even with the decrease in wealth created, a fact that can be explained in greater detail in the analyzes below, when classifying Vad in the light of the Stakehoder Theory.

Table 03 presents the results with the other regressions.

Table 03

Result of the Regressions of Equations 5, 6, 6.1, 6.2 and 6.3							
Equation 5	Equation 6	Equation 6.1	Equation 6.2	Equation 6.3			
34,523***	32,153***	31,936***	33,736***	33,723***			
(5,970)	(5,483)	(5,491)	(6,026)	(5,970)			
0,300**	-0,004***	-0,007***	-0,003***	-0,002*			
(0,142)	(0,001)	(0,001)	(0,001)	(0,001)			
-0,000***	0,002*	0,003***	0,002**	0,000			
(5,581)	(0,001)	(0,001)	(0,001)	(0,001)			
-0,299**	-	-	-	-			
(0,142)							
-	-0,001***	-	-	-			
	(0,000)						
-	-	-0,004***	-	-			
		(0,001)					
-	-	-	-0,002***	-			
			(0,000)				
-	-	-	-	-0,002*			
				(0,001)			
-0,432	-0,389	-0,381	-0,432	-0,401			
(0,413)	(0,382)	(0,383)	(0,411)	(0,407)			
	Equation 5 34,523*** (5,970) 0,300** (0,142) -0,000*** (5,581) -0,299** (0,142) - - - - - - - - - - - - -	Equation 5 Equation 6 $34,523^{***}$ $32,153^{***}$ $(5,970)$ $(5,483)$ $0,300^{**}$ $-0,004^{***}$ $(0,142)$ $(0,001)$ $-0,000^{***}$ $0,002^{*}$ $(5,581)$ $(0,001)$ $-0,299^{**}$ $ (0,142)$ $-0,001^{***}$ $-0,299^{**}$ $ (0,142)$ $-0,001^{***}$ $-0,001^{***}$ $-0,001^{***}$ $-0,000^{*}$ $-0,000^{**}$ $-0,001^{***}$ $-0,000^{**}$ $-0,001^{***}$ $-0,001^{***}$ $-0,001^{***}$ $-0,001^{***}$ $-0,001^{***}$ $-0,001^{***}$ $-0,001^{***}$ $-0,001^{***}$ $-0,001^{***}$ $-0,000^{**}$	Equation 5 Equation 6 Equation 6.1 $34,523^{***}$ $32,153^{***}$ $31,936^{***}$ $(5,970)$ $(5,483)$ $(5,491)$ $0,300^{**}$ $-0,004^{***}$ $-0,007^{***}$ $(0,142)$ $(0,001)$ $(0,001)$ $-0,000^{***}$ $0,002^{*}$ $0,003^{***}$ $(5,581)$ $(0,001)$ $(0,001)$ $-0,299^{**}$ - - $(0,142)$ $-0,001^{***}$ - $-0,299^{**}$ - - $(0,000)$ - - $-0,001^{***}$ - - $(0,000)$ - - $-0,001^{***}$ - - $(0,000)$ - - $-0,004^{***}$ - - $(0,000)$ - - $-0,432$ $-0,389$ $-0,381$	$\begin{array}{c c c c c c c c c c c c c c c c c c c $			

16 Revista Contabilidade Vista & Revista, ISSN 0103-734X, Universidade Federal deMinas Gerais, Belo Horizonte, v. 34, n. 2, p. 1-26, maio/ago. 2023. Value relevance of DVA distributed: analysis in the Brazilian market in light of the stakeholders and shareholders theory

Endiv	-1,115	0,521	0,512	-1,10	-1,104
	(0,716)	(0,602)	(0,597)	(0,709)	(0,714)
Mtb	0,366	0,365	0,365	0,369	0,367
	(0,241)	(0,227)	(0,227)	(0,241)	(0,242)
AR (1)	0,671***	0,681***	0,681***	0,671***	0,672***
	(0,039)	(0,040)	(0,040)	(0,039)	(0,039)
F	29,601***	30,115***	30,166***	29,806***	29,768***
R ²	0,82	0,82	0,82	0,82	0,82
DW	1,85	1,88	1,88	1,85	1,85
AIC	12644,10	12686,74	12715,15	12848,27	12743,85
BIC	13502,28	13545,74	13574,56	13719,71	13608,65
VFM	-6154,050	-6175,368	-6189,573	-6254,135	-6202,923
Jarque Bera	800669***	825686***	857144***	861656***	847120***
Wald Test	9,798e+035***	3,089e+033***	1,526e+034***	4,767e+034***	2,964e+033***

Source: survey data. * Significant at 10%, ** significant at 5%, and *** significant at 1%. Standard errors in parentheses. The variables Set, GoC, Est, Adr were omitted by the gretl software.

It is verified in Equation 5 that the variable VadShare presents statistical significance at the level of 5% and with a negative relation, according to the study by Arruda et al (2015). We highlight the significance of LI with a positive relationship and the significance and negative relationship of PI, a different result from Equation 2. These findings may portray the multicollinearity between LI and Vadshare and, in this sense, a sign inversion can be seen between the variables.

Thus, with the result of Equation 5, H2 is rejected, as Vadshare does not exert a positive influence to explain the stock price. This result contradicts the theory of the firm and, when compared with Equation 1, it is similar and, therefore, it can be inferred that it mitigates the problem of multicollinearity between LI and VadShare. Furthermore, the result of equations 2 and 5 also diverge from the foundations of Ohlson's theoretical model.

With the result of Equation 6, H3 is not rejected; the variable parameter VadStake has statistical significance at the 1% level and with a negative relationship. This result confirms the foundations of Campbell (1997); Freeman et al. (2007); Freeman et al. (2010); and Boaventura (2012) regarding the distribution of wealth to Stakeholders – it is necessary to meet the demands of other Stakeholders to attract them to the organization's objectives of generating wealth for investors, and adds that it is not possible to guarantee the survival of the company without delivering value to important stakeholders.

When comparing Equations 5 and 6 with the test results (AIC -, BIC - and VFM +), it is concluded that Equation 5 is the most adequate. This finding confirms the foundations of Friedman (1962, 1970), Jensen (2001) and Sundaram and Inkpen (2004) who defend the supremacy of Shareholders. Thus, it is inferred that by reducing the distribution of wealth destined to other Stakeholders, the share price of companies increases, a result also found in the study by Arruda et al (2015).

When analyzing the results of the Equations that contemplate the unfolding of the Stakeholders, it is observed that the variables StakSoc and StakGov present the same significance levels (1%) and negative relation, while 'StakTer' has a significance level of 10% and relation negative. Thus, H4, H5 and H6 are not rejected.

When comparing each of the three equations with Equation 5 (VadShare), better results are verified in Equation 5 (AIC -, BIC - and VFM +), therefore, the most appropriate equation. These findings confirm the Economic Theory and the findings of Friedman (1962-1970); Jensen (2001) and Sundaram and Inkpen (2004), when presenting the supremacy of shareholders over other Stakeholders - the other parties related to the company, employees, suppliers and customers (non-shareholders) have the protection and benefits of contracts and legislation, a fact that does not occur with shareholders who seek other forms of protection.

With the results of the econometric models, it can be inferred that the behavior of stock prices is explained by the Theory of the firm. Thus, the economic theory of maximizing shareholder wealth prevails.

Regarding the analysis of all control variables, it is noteworthy that the variables Sectors (Set), Corporate Governance (GoC), State (Est), ADR (Adr) were omitted by the gretl software. Also, Total Assets (At) did not show statistical significance, contrary to Crippa and Coelho (2012) and Santos et al. (2019); Indebtedness (End) was also not significant to explain the share price, confirming the findings of Santos, Botinha and Lemes (2019). And finally, the Market-to-book (Mtb) variable did not show statistical significance and with a positive sign, the opposite of what was expected, opposite to the results of Bharath et al. (2008).

5. CONCLUSIONS

The study aimed to analyze the behavior of the relevance of the informational content of the distribution of the DVA value, according to the interest groups classified in the light of the Stakeholder Theory, in the period from 2009 to 2018. The Distributed Added Value is composed of personnel, government and third parties, classified in the research based on the Stakeholder Theory, and, including shareholders.

The research through the DVA addresses the theories, where Boaventura (2012) highlights the controversy between the objective functions of the theory of the firm and of the stakeholders, and presents criticisms of the theory of the stakeholders, bringing the vision of Marcoux (2000), that the theory of stakeholders deals primarily with meeting the interests of stakeholders and, in this sense, calls into question the conflict between the interests of shareholders and other stakeholders.

Stakeholder management is increasingly present in organizations' strategies as it is associated with stakeholders with the creation of value and sustains that the ideal value for the company will be created under conditions in which the greatest value is also for the other stakeholders, in addition to of shareholders (Freeman et al., 2007; Freeman et al., 2010). However, in 1971 Friedman (1971) argued that the only responsibility of company managers was to generate profits for Shareholders and, through profit, the well-being of a society would be increased. Thus, the maximization of Shareholders' profit is seen as a desirable goal, according to Sternberg (1999) and Jensen (2001). The research brought evidence of this conflict of interests through the analysis of the influence of the added value distribution on the stock price.

All research assumptions were guided by the foundations of economic theory. Thus, the result confirms the economic theory of the firm, when obtaining

a decrease in Vad the company has its market value increased. However, the importance of the informational content of the Distributed Added Value stands out, as it aggregates information for the group of investors, shareholders, according to studies by Holthausen and Watts (2001) - if a specific accounting value adds information for a group of investors, the classification - 'marginal informational content' -, however, Vad adds relevant content in the increase in stock prices when it decreases, a result contrary to the studies by Machado et al. (2015) and Santos et al. (2019).

In light of the Stakehoders theory, the results showed that VadShare, value distributed to shareholders, does not influence the share price, corroborating Arruda et al (2015), on the contrary, VadStake negatively influences the share price, confirming the foundations of Campbell (1997); Freeman et al. (2007); Freeman et al. (2010); and Boaventura (2012). In the search for the most adequate model, the findings indicate the Theory of the Firm model, according to Friedman (1962, 1970), Jensen (2001) and Sundaram and Inkpen (2004). Thus, it is inferred that by reducing the distribution of wealth destined to other Stakeholders, the share price of companies increases.

When analyzing the unfolding of the variable VadStake (other stakeholders), the results confirm the previous findings of the predominance of Shareholders. Thus, the DVA is not a parameter capable of pricing shares, however, it would be linked to the traditional accounting variables of Shareholders' Equity and Net Income.

During the research, a determining factor in the results was observed, the period, which brought particularities to the study. The analyzed research period was marked by recession and economic and political crisis in the country (Barbosa Filho, 2017 and Rossi and Mello, 2017), directly impacting the distribution of wealth of companies and the price of shares.

In terms of social and corporate responsibility, the study exposed the duality and discussion of the Stakeholder Theory. The study showed that the Added Value Distributed by the DVA aggregates informational content and that the distribution to Shareholders is more relevant and, among the other Stakeholders, the Added Value Distributed to employees is the one with the greatest relevance and, thus, allows for greater discussions and analysis.

With this, it can be inferred that the results support evidence both for companies and for the Market regarding the usefulness of DVA in their analyzes and strategies. However, the sovereignty of the Shareholders in the process. As for the other Stakeholders, there is a sign of some research (Gallizo 1990; Berman et al., 1999; Waddock & Graves, 1997; Boaventura, 2012), that is, the relevance of employees in the business environment and how much this can impact the results.

Finally, it can be concluded that the objective of the research was achieved - the analysis of the behavior of the relevance of the informational content of the distribution of the value of the VAD was carried out with empirical evidence for the groups of interest classified in the light of the Stakeholder Theory. Thus, it is expected that the study has contributed to the advancement of the literature and to the discussions about the themes involved, in order to arouse the interest of academia and greater use of VAD by companies, the market and investors.

The research had some limitations related to the absence of more updated studies internationally that use distributed added value as a basis, possibly justified by the non-mandatory DVA in international countries, in addition to studies that address the Theory of Shareholders and the firm.

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