
RELATED PARTY TRANSACTIONS: EVIDENCE OF EARNINGS PERSISTENCE IN THE BRAZILIAN CAPITAL MARKET

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ABSTRACT

Related Party Transactions – RPTs are common day-to-day operations of large organizations and have the potential to improve business efficiency, bringing greater synergy to company operations, and they can be used to expropriate minority investors, harming the entity value. Although the literature documents the use of RPTs to manipulate results, little is known about their impact on earnings persistence (Rahmat et al., 2020). This work aimed to investigate the influence of RPTs on earnings persistence, assuming the hypothesis that abnormal RPTs reduce persistence. The individual statements of 123 non-financial companies from B3 published from 2014 to 2018 were selected. The Dichev and Tang (2009) model was used to measure the persistence of earnings. To measure the abnormal RPTs, the residuals of the models of Jian and Wong (2010) and Al-Dhamari (2018) were also used. To estimate the final models, quantile regressions were used in order to analyze the behavior of abnormal RPTs in specific quantiles of earnings persistence. As a result, it was found that abnormal sales and purchase transactions with related parties, considered individually or together, negatively influence earnings persistence, with greater emphasis on companies in the most persistent quantiles. The study corroborates what has been exposed internationally (Jian & Xiaohui, 2015) and contributes to the discussion of the potential of RPTs to influence on earnings quality from companies at emerging countries such as Brazil.

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TRANSAÇÕES COM PARTES RELACIONADAS: EVIDÊNCIAS DE PERSISTÊNCIA DOS LUCROS NO MERCADO DE CAPITAIS BRASILEIRO

RESUMO

As Transações com Partes Relacionadas - TPRs são operações comuns no dia a dia das grandes organizações, e têm tanto o potencial para melhorar a eficiência dos negócios, trazendo maior sinergia para as operações das empresas, quanto podem ser utilizadas para expropriar os investidores minoritários, prejudicando o valor da entidade. Apesar da literatura documentar o uso das TPRs para a manipulação dos resultados, pouco se sabe sobre o impacto delas na persistência dos lucros. Este trabalho objetivou investigar a influência das TPRs na persistência dos lucros, assumindo a hipótese de que TPRs anormais reduzem a persistência. Foram selecionadas as demonstrações individuais de 123 empresas não financeiras da B3, publicadas de 2014 a 2018. Foi utilizado o modelo de Dichev e Tang (2009) para mensurar a persistência dos lucros. Para mensurar as TPRs anormais foram utilizados os resíduos dos modelos de Jian e Wong (2010) e Al-Dhamari et. al. (2018). Para a estimação dos modelos finais foram utilizadas regressões quantílicas a fim de analisar o comportamento das TPRs anormais em quantis específicos de persistência dos lucros. Como resultados, obteve-se que as transações anormais de venda e de compra com partes relacionadas, consideradas individualmente ou em conjunto, influenciam negativamente a persistência dos lucros, com maior destaque para as empresas nos quantis de maior persistência. O estudo corrobora com pesquisas internacionais e contribui para a discussão do potencial das TPRs como influenciadoras na qualidade do resultado de empresas de países emergentes, como o Brasil.

Palavras-Chave: Persistência dos Lucros. Transações com Partes Relacionadas. Qualidade da Informação Contábil. Qualidade do Lucro.

1 INTRODUCTION

Transactions with Related Parties are common day-to-day operations of large organizations and have both the potential to improve business efficiency, bringing greater synergy to the companies' operations, and can also be used to expropriate minority investors. The potential abusive use of this type of transaction has generated financial scandals and attracted the attention of investors, governments and society in general (Tareq et al., 2017; Rahmat et al., 2020).

CPC 05 R1 (2010) conceptualizes Transactions with Related Parties - RPTs as the transfer of resources, services or obligations, between the entity that reports the information and a related party (individual or legal entity), regardless of whether there is a financial consideration. These RPTs can be varied and complex, requiring a lot of attention from the organizations' stakeholders in order to correctly identify their effects (Mihai & Radu, 2016).

This is because in the literature, RPT can be used both to improve the performance of related companies, and they can also be used improperly, damaging the company's value and expropriating minority shareholders' wealth (Gordon et al., 2004; Cheung et al., 2009). Considering these possibilities, investors face difficulties when making decisions about their investments, as they are unable to perceive the real motivation of in companies' accounting reports (Lo & Wong, 2016).

There are several incentives that lead owners or managers of business groups to use their investment and financing decisions through RPTs to manage their results, reducing the quality of profit (Rahmat, 2013; Bona-Sánchez, 2017). One of the incentives may be the presentation of persistent earnings, sustainable in the long term. Earnings persistence is one of the attributes of accounting information associated to the contribution in forecasting the company's future results, being a desirable aspect of earnings, as persistent earnings are more useful in evaluating investments (Dechow et al., 2010; Kolozsvari & Macedo, 2016).

According to Dichev et al. (2013), CFOs believe that, above all, quality profits are those that are sustainable and repeatable, and therefore, it is likely that persistent profits commonly influence their decisions. First, because company valuation approaches consist of viewing the entity as a long-term stream of earnings and cash. Secondly, because persistent earnings are a desirable feature in credit analyses, primarily as a guide to future solvency. long term and to determine the company's performance (Dichev et al., 2013).

In this context, companies can manage their results seeking to increase the perception of information users about persistent earnings when, in fact, they are not (Dichev et al., 2013). In China, Jian and Xiaohui (2015) examined the relationship between financial RPT and earnings persistence and found that the higher the RPT scale, the lower the earnings persistence. This may indicate that, although the persistence of earnings is a desirable characteristic in terms of information quality, if companies perform RPT with the aim of manipulating earnings, the effect on information quality is the opposite.

In Brazil, there are no news of researches that investigate the relationship between earnings persistence and RPT, however, the Brazilian capital market presents concentrated ownership, favorable to agency problems, and may be a convenient environment for the expropriation of non-controlling shareholders (Moraes et al., 2019). El-Helaly (2016) says that in countries with weak investor protection, companies are more likely to have RPT with the aim of masking the expropriation of wealth from non-controlling investors, managing profits and negatively affecting the quality of accounting information, and that expropriators are less likely to face legal consequences.

Taking this into consideration, the following research problem arises: what is the influence of RPT on the persistence of earnings of publicly traded Brazilian companies? The study is justified by the lack of research in Brazil on the relationship between RPTs and earnings persistence; because RPT with the purpose of manipulating earnings undermines company value, efficiency and market transparency (Pozzoli & Venuti, 2014), in addition to being one of the recurring areas of concern due to corporate scandals in some countries (Jiang et al., 2010). Furthermore, the persistence of earnings is one of the attributes of the quality of

accounting information, useful for the decision-making process of investors. However, this only happens if earnings are reflecting the true economic performance of the company (Dechow et al., 2010), as well as, if RPTs are used with the aim of manipulating earnings, they may interfere with earnings persistence and, therefore, with the quality of accounting information.

The research aims to contribute to the literature on RPT and the quality of accounting information, especially in Brazil, where there is no research investigating the relationship of RPT in the persistence of corporate earnings. It is also expected to contribute with standard-setters and investors who recognize and are concerned about the possibility of using RPT abusively (Pozzoli & Venuti, 2014). Finally, the study also contributes to auditors, because if they can better understand the logic behind transactions with related parties, they will be able to inhibit improper transactions with greater precision (Fang & Zhang, 2018).

2 THEORETICAL REFERENCE

2.1 Quality of Profit and Persistence of Results

Accounting information is an instrument capable of reducing information asymmetry between owner, manager and external users (Biddle et al., 2009). Therefore, the construction of financial reports must be based on the qualitative characteristics of the information. The fundamental ones being: relevance and faithful representation (CPC 00, 2019).

Relevance concerns the ability of using information to influence users' on their decision-making, so that the greater the relevance, the greater the informational capacity of profits and the quality of profits (Francis et al., 2004; Silva et al., 2018). Researches that examined the relationship between earnings and stock returns, and found positive evidence, confirm this informational capacity of disclosed earnings, demonstrating that they are useful to the market in evaluating a company's shares (Ball & Brown, 1968; Kormendi & Lipe, 1987).

However, despite being much discussed, the quality of profit still does not have a single and exact definition in the academic and professional environment (Dichev et al., 2013). In a detailed survey of CFOs from 169 companies, Dichev et al., (2013) found that, in the view of most of them, earnings quality is linked to sustainable, recurring earnings that are more likely to be repeated in the long term.

Earnings persistence concerns the sustainability of earnings behavior over time, as well as the ability of information related to past earnings to base the forecast of future earnings (Dechow et al., 2010). The authors suggest that companies with more persistent earnings have more sustainable earnings and cash flows (Dechow, 2010), making earnings persistence a fundamental parameter to predict the value of a company (Schipper & Vincent, 2003; Pimentel & Aguiar, 2012).

On the same point of view, Silva et al. (2018) state that high-quality earnings are good predictors of future dividend flows and, consequently, good predictors of company value. This is because, in the classic model for valuing a company, the share price is equal to the present value of the expected future benefits for the shareholders, so the magnitude of the reaction of the return of the shares to a new

information in the earnings is a function of the persistence of them, that is, the effect of current earnings on expected future earnings (Kormendi & Lipe, 1987).

In addition, earnings persistence can also be used as a performance measure, as it helps to mitigate actions aimed at short-term profitability at the expense of long-term profitability (Pimentel & Aguiar, 2012). According to Maria et al., (2018), when saying that profit is persistent, it does not mean that a monetary value alone has the capacity to explain future results, but rather how much the set of strategies to obtain performance (operational, financial, marketing, among others) was successful in a given year and how applications or corrections of these strategies for the following periods will affect the company's profits.

Thus, persistence measures have been used in the accounting literature as proxies for the quality of accounting information or earnings quality (Francis et al., 2004; Arruda et al, 2015; Silva et al., 2017; Kajimoto & Nakao, 2018; Silva et al., 2018; Maria et al. 2018). According to Dichev and Tang (2009), in addition to persistence being an attribute of earnings quality, it is also relevant for influencing investor decision-making and analysts' projections, as it provides a solid basis for forecasting future earnings of the company. However, it should be noted that the use of earnings persistence as a proxy for earnings quality is valid when earnings are closer to economic performance, free of manipulation (Dechow et al., 2010).

2.2 Persistence of Results and Transactions with Related Parties

The relationship between related parties usually takes place through a power bond, where one of the parties influences the decision-making of the other. Because of this influence, operations between them can be carried out on prices and terms that are different from those of the market, that is, they engage in operations that generally third parties would not accept to engage in (Anastasia & Onuora, 2019).

This relationship can be considered a resource to boost the value and performance of the companies in question, under the hypothesis of efficient transaction, serving, for example, as a means of support in the face of financial difficulties through the strengthening of an internal market in the group of companies (Chen et al., 2009; Bona-Sánchez et al., 2017).

On the other hand, RPTs can also carry a high potential for conflict of interest and be used abusively, as a means of expropriating minority investors, under the hypothesis of conflict of interest (Bona-Sánchez et al., 2017). In this case, the risk involved is that the subsidiary is managed not to meet the objectives of the company and its shareholders in general, but to exclusively meet the objectives of its controller.

The prices involved in RPT are called transfer prices and there are several ways to calculate them (Atkinson et al., 1999). According to Knupp (2013), transfer pricing can be used to perform tunneling or propping, being a target of agency conflict. Propping is the transfer of wealth from the parent company to the subsidiary, while tunneling is the opposite, where the parent company increases its wealth to the detriment of the subsidiary's wealth (Knupp, 2013).

Tunneling and propping can be used in the same company, through the same type of transaction, however, at different times (Peng et. al., 2011). That is, in

one period, the parent company can transfer resources to its subsidiary (propping), for various reasons, and in the following period, revert them through the tunneling process.

Lo et al., (2010) state that if transfer prices between RPTs are manipulated, they can suit to transfer resources to different stakeholders, resulting in gains for some and losses for others, and as a consequence, resulting in a poor quality of accounting information, as they distort statements and increase information asymmetry.

According to Friedman et al., (2003), propping is usually used in the face of economic instability, where the parent company invests resources in the subsidiary to ensure its continuity. However, the controller will only make this contribution of resources if there is the possibility of carrying out tunneling operations in the future, otherwise, the controller prefers to let the subsidiary go bankrupt (Friedman et al., 2003). In this way, RPT can help to increase the company's performance, but temporarily, which generally does not add value to the company in the long term (Peng, et al., 2010).

In China, Chen et al., (2011) addressed the RPT during an Initial Public Offering (IPO) and observed that in the pre-IPO period, several operational RPTs were structured, increasing the operating performance of the subsidiaries, however, after the IPO, RPT declined, negatively affecting the company's performance and stock returns.

Due to the potential use of RPT as a form of earnings management (Aharony, 2010; Jian & Wong, 2010), the various corporate scandals in some countries due to the use of RPT as a way of manipulating profits and diverting resources from their companies (Anastasia & Onuora, 2019) and the flexibility of transactions, sometimes propping or tunneling. It can be said that as the proportion of RPTs increases, the concern about the negative impact on future profits also increases (Hong & Fang, 2005).

Profit is one of the main items of accounting reports, and therefore there is a concern with its quality (Firmansyah & Herawaty, 2019). One of the attributes of profit quality is its persistence (Maria et al., 2018). Companies with persistent profits provide the basis for a better projection of their future cash flows by information users (Dechow et. al., 2010). Therefore, according to Dichev et al., (2013), companies may try to manipulate accounting information in an attempt to convey to external users an image of persistent profits when, in fact, they are not.

In China, Jian and Xiaohui (2015) examined the relationship between RPT and earnings persistence based on data samples from 1527 Chinese companies from 2007 to 2012. The authors used a RPT dummy between parent and subsidiary and transaction volume was measured by the natural logarithm of the sum of the many types of RPT, using the Dichev and Tang (2009) model to calculate persistence.

As a result, Jian and Xiaohui (2015) concluded that companies that have RPT have lower earnings persistence than companies that do not have RPT. In addition, the higher the RPT scale, the lower the earnings persistence and consequently, the quality of information.

In Taiwan, Fang and Zhang (2018) investigated the relationship between the company that audits the business group, RPT and earnings persistence in companies from 1996 to 2011. The authors find that most entities of a business group are audited by auditors from different companies, resulting in a misunderstanding of the nature of RPTs and enabling group companies to perform RPTs through non-operating activities in order to reduce the persistence of earnings.

The authors also identified that when companies in the business group are audited by the same company, instead of being audited by different companies, earnings persistence does not decrease (Fang & Zhang, 2018).

There is no news of studies in Brazil that investigate the relationship between RPT and earnings persistence. However, the Brazilian environment is characterized by high ownership concentration in the hands of the controlling shareholder, which increases the possibility of using RPT as means of expropriation (Silveira & Barros, 2008, Silva et al., 2018). According to Bao and Lewellynb (2017), earnings manipulation is a likely consequence of ownership concentration, because the significant influence that the controlling owner has over management allows him to get involved with the production of the company's accounting information.

Moreover, it is evidenced in some studies that if the company manages changes in profit that would be relevant to investors' decision-making. It reduces the persistence of earnings, worsening the quality of information (Dechow et al., 2010; Kolozsvari & Macedo, 2016; Ribeiro et al., 2020). Therefore, the following research hypothesis is raised: Hypothesis 1: The RPTs of publicly traded non-financial Brazilian companies have a negative influence on earnings persistence.

The fact that the RPTs can be used both according to the efficient transaction hypothesis and considering the conflict of interest hypothesis (Gordon et al., 2004), makes it clear that there is not yet a single model that perfectly identifies the RPTs that are inappropriate. What studies seek to do is try to find proxies for them (Chen et al., 2018).

In this sense, a large part of the research tries, through a regression, to separate the normal RPTs (common to the company's business) from the abnormal ones (used for a purpose different from the company's business). Thus, a regression is performed placing the most recurrent transactions between related parties (such as sales, purchases and loans) as dependent variables and inserting independent control variables, which would explain such transactions. The value estimated by this regression is normal RPTs and its residual is abnormal transactions (Al-Dhamari et al., 2018; Chung et al., 2019; Habib et al., 2017; Jian & Wong, 2004, 2010).

Therefore, based on Jian and Wong (2010), who used abnormal sales transactions, and Al-Dhamari et al. (2018), who used abnormal purchase transactions, Hypothesis 1 of the research is subdivided as:

Hypothesis 1a: Abnormal selling RPTs have a negative influence on earnings persistence;

Hypothesis 1b: Abnormal buy RPTs have a negative influence on earnings persistence;

Hypothesis 1c: Abnormal buy and sell RPTs together have a negative influence on earnings persistence.

3 RESEARCH METHOD

3.1 Population and Sample

In order to verify the influence of RPTs on earnings persistence Economática® was used to select the individual financial statements of publicly-held companies, with shares traded on B3 – Bolsa, Brasil and Balcão, during the period from 2014 to 2018, totaling 354 companies. The use of individual statements is because the financial data referring to RPTs are fully eliminated in the consolidation process.

The analyzed period was chosen because of the persistence models, as they require the calculation of the net profit of the last 5 years, so, for 2014 the base years would be 2010 to 2014; if years prior to 2014 were used, the sample would have data prior to 2010 - the pre-convergence period to international accounting standards.

In this sense, Silva et al., (2017) demonstrated the existence of a difference in the persistence of earnings before and after the adoption of international standards. Thus, it is not indicated that the same sample contains a historical series of accounting data from pre-IFRS and post-IFRS periods, as a way to avoid problems of lack of comparability (Cardoso et al., 2015).

Of these 354 companies, financial companies were excluded, because of their individualities. Companies that did not provide information on any of the necessary variables in the models used throughout the period of analysis; and those that had a negative equity (PL), so as not to compromise the results of variables whose calculation uses PL. Thus, the sample was composed of 123 companies (see Table 1).

Table 1
Description of Sample Selection

Sample selection step	Nº Observations
(=) Companies whose shares are traded on B3	354
(-) Exclusion of financial companies	(78)
(-) Exclusion of companies with negative PL	(49)
(-) Missing data	(104)
(=) Final Sample	123

Source: Survey data

The financial data referring to the accounting statements present in the proposed models were collected at Economática and the data referring to the RPTs were collected individually in the Explanatory Notes available on the B3 website or on the company's individual website.

3.2 Empirical Model of Earnings Persistence

The Persistence metric addressed in the work of Dichev and Tang (2009) was adopted, as it is also used in studies made by Jian and Xiaohui (2015), one of the bases studies that investigated Persistence of Earnings and RPT, discussed in the theoretical framework.

The metric is based on the idea that earnings persistence comprises earnings volatility, therefore, the more volatile the net earnings, the lower the earnings persistence. Therefore, the calculation of earnings persistence is done by the inverse of the standard deviation of net earnings for the 5 previous years for each company-year observation. Thus, for the year 2014, the years from 2010 to 2014 will be used; for the year 2015, the years from 2011 to 2015 will be used, and so on according to Equation 1:

$$\text{Pers}_{it} = \frac{1}{\sigma_{LL}} \quad (1)$$

Pers = earnings persistence;

σ_{LL} = standard deviation of net income scaled by total assets at the end of the five-year period.

3.3 Empirical Models of Transactions with Related Parts.

In view of the various existing RPT measures, this research will adopt those that separate, through regression, proper and improper RPTs, based on Jian and Wong (2010) and Al-Dhamari et al. (2018).

This metric was chosen since abusive RPTs are those that do not correspond to the company's normal operation (Yeh et al., 2012), and, generally, earnings manipulation activities (such as intentional earnings smoothing) gives through abnormal RPTs (Lo et al., 2010).

Jian and Wong (2010) use sales as a measure of profit manipulation, showing that when companies have incentives to manipulate profits, they have abnormal high levels of related party sales, as controlled companies are willing to buy more from the company to increase its revenue and consequently its profit.

Based on the model made by Jian and Wong (2010), in addition to sales, Al-Dhamari et al. (2018) also considers purchases between related parties, as they would be the two most recurrent types of TPRs, and therefore less likely that manipulation through them will be detected (Wong et al. 2015).

The model, based on Jian and Wong (2010) and Al-Dhamari et al. (2018) is evidenced in Equation 2:

$$\text{RPT}_{it} = \alpha + \beta_1 \text{TAM}_{it} + \beta_2 \text{ALAV} + \beta_3 \text{MBT}_{it} + \beta_4 \text{SET} + \varepsilon_{it} \quad (2)$$

RPT_{it} = sales transactions, purchases, and sales+purchases of goods and services between related parties, both in logarithmic form;

TAM = natural logarithm of total assets;

ALAV = Total liabilities divided by total assets;

MTB = Market to book, with the market value divided by the company's shareholders' equity;

SET_{it} = represents the sector of economic activity of company i in period t , according to B3;

ε_{it} = model error term/residuals

From Equation 2, the purchase RPTs; sales and; grouped are regressed, each one, year by year (2014-2018) in order to find the portion that corresponds to the abnormal RPTs, represented by the residuals of the regressions and called anRPTV (abnormal sales) and anRPTC (abnormal purchases) and anRPTT (abnormal sales+purchases).

3.4 Final empirical models

Based on the persistence model exposed in the work of Dichev and Tang (2009) along with the RPTs models, the final empirical model of the research is presented in Equation 3:

$$\text{PERS} = \alpha + \beta_1 \text{anRPT} + \text{control variables} \quad (3)$$

The variables used in the final models are described in Table 2 below:

Table 2
Research Variables

Variable	Description	Measure	References
Dependent Variable			
PERS	Earnings Persistence	$\frac{1}{\sigma_{LL}}$ (see Equation 1)	Dichev e Tang (2009)
Independent Variables of Interest			
anRPTV	Abnormal sales with related parties	Residue of Equation 2	Jiang e Wong (2010)
anRPTC	Abnormal purchases between related parties	Residue of Equation 2	Al-Dhamari et al., (2018)
anRPTT	Total abnormal TPRs (buy + sell)	Residue of Equation 2	Al-Dhamari et al., (2018)
Control Independent Variables			
TAM	Size	Natural logarithm of end-of-period total assets	Brunozi et al., (2019) Lunardi et al. (2019)
ROA	Return on Total Assets	Net Income/Total Assets	Junior et al. (2019); Lunardi et al. (2019)
AUD	Audit Company	Dummy: 1 for companies audited by the Big Four and 0 otherwise	Brunozi et al., (2019), Lunardi et al. (2019); Silva et al. (2017);
ANO	Annual period from 2014 to 2018	Period corresponding to the year of observation i in period t, when considering the year 2014 as a reference	Ribeiro et al. (2020)
SETOR	Sector of each company, according to B3	Economic activity sector of company i in period t, when considering the industrial goods sector as a reference	Ribeiro et al. (2020)

Source: Prepared by the authors.

As shown in Table 2, control variables related to earnings quality and therefore, earnings persistence will be used. In addition, control will be carried out

by sector (SETOR) and by year (ANO), since the particular characteristics regarding the activities carried out, as well as internal and external aspects of the companies vary over time and can influence the investigated results (Ribeiro et al., 2020).

The audit control variable represents companies audited by one of the Big Four: PwC, Deloitte, Ernst Young and KPMG. Large audit firms tend to be more demanding with regard to the quality of information, in addition to having more advanced technological resources and more qualified personnel than other audit firms (Chalmers & Godfrey, 2004). Thus, some research show that companies audited by the Big Four have a higher quality of information when compared to companies that are not audited by the Big Four (Moura et al., 2017; Silva et al., 2014). Therefore, a positive relationship between companies audited by the Big Four and earnings persistence is expected.

The size (TAM) variable is pointed out in the accounting information quality literature both as a management incentive, where large companies are more likely to manage profit downwards, due to political costs (Mazzioni & Klann, 2016; Watts and Zimmerman, 1990) assuming a whether negative relationship between size and persistence of results; as it is also identified as inhibiting earnings management, where the larger the company, the greater its internal controls and corporate governance, as well as the greater the expectations placed on them by investors and analysts, presuming a positive relationship between size and persistence of results.

The ROA variable represents the profitability of the company's total assets. The literature shows that earnings manipulation takes the company away from its ideal performance, affects the companies' cash flow and is likely to increase earnings volatility (Cupertino et al. 2016). Therefore, companies with higher profitability are expected to be companies with higher earnings quality, that is, more persistent companies.

Univariate and multivariate statistical techniques were used for data analysis. In the univariate technique, the sample count, mean, median, standard deviation and coefficient of variation of the variables under analysis were presented in each quantile.

In the multivariate analysis, it was decided to use quantile regression, using STATA® 13. Quantile regression represents quantiles of the distribution, more appropriate when the distribution is heterogeneous, that is, when variations of X will have different impacts on high and low values of Y. The commonly used linear regression method, based on Ordinary Least Squares (OLS), represents mean values, which can obfuscate important distributive effects, and therefore are more useful when the distribution around the regression line is homogeneous.

Thus, the use of quantile regression is justified, as the influence of the three RPTs measures can be different along the distribution of the persistence of results variable and, in addition, the impact of the three RPT measures can be more significant according to the level of persistence of the company's results (Marioni et al., 2016). Furthermore, quantile regression makes the results more robust in relation to outliers by observing the response of each quantile and using the conditional median as a measure of central tendency, instead of just a regression line around the mean, as in OLS. (Marioni et al., 2016). Thus, the quantiles (0.25; 0.50

and 0.75) will be estimated

The following section presents and discusses the results of the univariate, bivariate and multivariate statistical techniques presented here.

4 RESULTS ANALYSIS AND DISCUSSION

Table 3 below puts a view on the results of the descriptive statistics of the variables used in the research, based on the extreme quantiles of the dependent variable PERS, in other words, by the highest and lowest level of persistence of the results and also by the central quantile.

Table 3

Descriptive Statistics by quantiles

Panel A: Descriptive Statistics of the quantile (0.25) of the Persistence of Results – PERS

Variables	Observations	Mean	Median	SD	Minimum	Maximum
PERS	205	14.4272	14.8344	6.0551	2.0731	24.0773
anRPTV	156	-0.1429	0.0809	2.4165	-9.3264	7.8573
anRPTC	136	-0.2110	0.2014	2.3310	-6.4075	4.4090
anRPTT	184	-0.2969	-0.0710	2.0589	-6.0137	5.7185
MTB	200	1.7976	0.9619	2.1741	0.1187	12.1604
ROA	205	0.0147	0.0287	0.1572	-1.1344	0.3691
TAM	205	14.7535	14.6939	1.6902	10.8055	20.3646

Panel B: Descriptive Statistics of the central quantile (median) of Persistence of Results - PERS

Variables	Observations	Mean	Median	SD	Minimum	Maximum
PERS	205	35.1385	34.8109	7.4881	24.1710	48.5961
anRPTV	170	0.2272	0.6288	2.1062	-6.4196	4.3833
anRPTC	160	0.3596	0.4426	1.7828	-8.1603	3.6098
anRPTT	195	0.2323	0.2935	1.5530	-4.0181	4.0635
MTB	201	2.0090	1.4761	1.9949	0.1821	14.8092
ROA	205	0.04951	0.0439	0.0563	-0.0722	0.2290
TAM	205	15.3431	15.2759	1.6011	10.9112	20.5485

Panel C: Descriptive Statistics of the quantile (0.75) of the Persistence of Results - PERS

Variables	Observations	Mean	Median	SD	Minimum	Maximum
PERS	205	85.8725	75.2982	38.0089	48.9675	309.8537
anRPTV	176	-0.0927	-0.0215	2.3897	-6.1171	5.6351
anRPTC	157	-0.1836	0.0147	2.1459	-8.7451	3.4532
anRPTT	191	0.0487	0.1748	1.9072	-5.5803	5.3483
MTB	196	2.1520	1.4684	2.0436	0.1702	11.3253
ROA	205	0.0573	0.0533	0.0479	-0.0495	0.2222
TAM	205	15.1713	15.4751	1.3510	11.5273	18.4420

Source: Research data.

In Table 3, it can be seen that the 3 metrics of abnormal transactions with related parties and the persistence variable have a high variability, mainly in the

extreme maximum quantile. Thus, a measure based on the mean would not be the most appropriate.

It is also observed in Table 3 that abnormal sales, purchases and joint transactions are smaller at the maximum quantile than at the minimum quantile, indicating that companies with greater earnings persistence have lower levels of abnormal sales and purchases with parts related and smaller abnormal simultaneous purchase and sale transactions, which may already indicate an inverse relationship of these variables.

It is also noted that the size variable did not show much difference between the quantiles, indicating the independent potential in relation to persistence. ROA, on the other hand, has higher averages in the quantile of greater persistence, indicating that companies with more persistent profits have greater profitability.

Table 4 shows the results of the multivariate analysis using quantile regression, where the dependent variable is Profit Persistence:

Table 4

Quantile Regressions

Panel A: Sales Persistence and Abnormal RPTs			
	Quantile 0.25	Quantile 0.50	Quantile 0.75
anRPTV	0.3290	0.2835	-1.8637**
TAM	2.2099***	2.4141***	2.8264**
ROA	18.5393**	28.7439**	48.0847*
AUD	-4.5640	-9.1702**	-15.2347**
Constant	-5.6717	8.4236	37.9851
Pseudo-R2	8.62%	9.90%	13.05%
CS	Sim	Sim	Sim
CPA	Sim	Sim	Sim
Observations	502		
Panel B: Persistence and Abnormal Purchasing RPTs			
	Quantile 0.25	Quantil 0.50	Quantile 0.75
anRPTC	0.1572	-0.4769	-2.7854**
TAM	3.0203***	3.5023***	5.2322***
ROA	32.4488***	36.8579***	59.4097**
AUD	-2.9407	-10.0219***	-5.9506
Constant	-18.1344	-11.4928	-16.8402
Pseudo-R2	9.50%	9.30%	11.14%
CS	Sim	Sim	Sim
CPA	Sim	Sim	Sim
Observations	453		
Panel C: Persistence and Total Abnormal RPTs (Sales+Purchases)			
	Quantile 0.25	Quantile 0.50	Quantile 0.75
anRPTT	0.8783**	0.6342	-3.0476***
TAM	2.2612***	3.0255***	4.5320***
ROA	19.3947***	29.1524***	53.0900**
AUD	-2.4637	-9.6947**	-19.0423***
Constant	-11.4871	-0.6727	12.9414
Pseudo-R2	7.40%	7.50%	10.00%
CS	Sim	Sim	Sim
CPA	Sim	Sim	Sim
Observations	570		

Note: * significance at the 10% level; **significance at the 5% level; ***significance at the 1% level. CS = Sector Control; CPA = Control of Annual

Periods. The constants of these econometric models absorbed the following variables: SECTOR = Industrial Goods and YEAR = 2014.
Source: Survey data.

For a better understanding of the results of the regressions, Table 5 summarizes the significant influences of transactions with abnormal related parts on earnings persistence, showing whether this influence was positive or negative.

Table 5

Summary of the Influence of RPT on Persistence

Abnormal RPTs /Quantiles	0,25	0,50	0,75
anRPTV (Sales)			-
anRPTC (Purchases)			-
anRPTT (Sales+Purchases)	+		-

Source: Survey data

It can be seen from Tables 4 and 5 that the abnormal sales transactions, the abnormal purchase transactions and the total abnormal transactions with related parties have a positive coefficient in the lowest persistence quantile (0.25), although statistically significant only in the anRPTT.

This can be explained because companies that make use of transactions with abnormal related parties may be manipulating their results and this implies a lower predicability of profit, and consequent lower quality of accounting information (Dechow & Schrand, 2004; Dechow et al., 2010), hence the positive coefficient in the lowest quantile of persistence and abnormal transactions with related parties and negative between the quantile of persistence and abnormal transactions with related parties.

When analyzing the largest persistence quantiles, it is noticed that the abnormal sales transactions, the abnormal purchase transactions and the total abnormal transactions with related parties have negative and significant coefficients. It can be concluded that transactions with related parties for the purpose of manipulating accounting information negatively influence earnings persistence, not rejecting research hypotheses 1a, 1b and 1c. These results complement Jian and Xiaohui (2015) studies with Chinese companies, which examined the relationship between financial RPT and earnings persistence and found that, the higher the scale of RPTs, the lower the earnings persistence.

The results also corroborate with the rest of the literature on earnings quality, as earnings are considered persistent, and therefore of quality, when they faithfully represent the company's current performance and serve as a basis for predicting earnings for future periods (Dechow et al., 2010). Consequently, one of the effects of manipulating information that would be relevant in decision-making is the reduction in earnings quality. Therefore, when the company uses abnormal purchase and sale transactions between related parties, it reduces the informational capacity of profit, resulting in a negative influence on the persistence of results.

Another possible explanation for RPTs negatively influencing earnings persistence is that such transactions can sometimes benefit the parent company, sometimes the subsidiary, through propping and tunneling transactions. In other

words, at any moment companies can execute transactions in which the resource flows from the parent company to the subsidiary in order to achieve a specific objective, and in the next period, they structure transactions where the resource flows from the subsidiary to the parent company (Jian & Wong, 2010; Aharony, 2010; Chen et al., 2011). Therefore, at any moment, RPTs can contribute to the company's profit and performance, but in a transitory way, so, this contribution does not persist in the long term (Peng, et al., 2011).

The size (TAM) control variable showed a positive, significant and increasing coefficient in all earnings persistence quantiles, thus, the higher the persistence quantile, the larger the companies. This agrees with the results of some studies that relate company size to earnings persistence, such as the research done by Pimentel and Aguiar (2012), which show that the earnings persistence parameter is higher in larger companies, due to their better internal controls and corporate governance, and suffer greater pressure from investors and analysts.

The performance variable, ROA, also showed a positive, significant and increasing coefficient in all earnings persistence quantiles, so, the higher the persistence quantile, the better the companies' performance. This result is consistent with the literature, which states that unmanipulated earnings, i.e., higher quality (more persistent), result in greater profitability, because when the result is manipulated, a company deviates from its ideal business performance and financial implications arise. long term (Gunny, 2010).

Finally, the audit variable showed a negative coefficient in all earnings persistence quantiles. In the sample, of the 123 companies, 92 of them were audited by Big Fours in all years of the study, while 31 were audited by other companies that were not Big Fours. This result differs from that pointed out in the literature, as it was expected that auditing would have a positive influence on the persistence of results, as an attribute of earnings quality, since large auditing firms are more demanding in terms of information quality and have greater resources to audit than small companies (Chalmers & Godfrey, 2004).

Possibly, the influence of abnormal transactions with related parties may have been the reason for the divergent result, since the fact that RPTs are complex transactions, it is more difficult for people outside the group, such as auditors, to discover questionable or even fraudulent transactions (Huang and Liu, 2010). Another possible explanation is that the audit is negatively relating to the portion of the company's results that may be manipulated to appear to be a possible persistence, whereas, according to Dichev et al (2013) companies manage results in an attempt to increase the perception of investors about persistent profits, when in their entirety they are not.

5 CONCLUSION

The study aimed to investigate the influence of transactions with related parties on the earnings persistence of Brazilian companies. In order to achieve this aim, a model based on Dichev and Tang (2009) was used. Three measures of transactions with related parties were also used: abnormal sales transactions, abnormal purchase transactions, and total abnormal transactions

(sale+purchase), both obtained from the residuals of the econometric models by Jian and Wong (2010) and Al-Dhamari et al. al. (2018).

The persistence of earnings is one of the earnings quality attributes, and, therefore, a desirable characteristic for companies. Therefore, there is a possibility for entities to manage profits seeking to appear to have persistent and sustainable profits, in order to attract more investments, become better evaluated by the market, etc. A possible tool for this, discussed in the theoretical framework, are Transactions with Related Parties.

However, although the persistence of earnings is a desirable characteristic in terms of information quality, if companies perform RPT with the aim of manipulating earnings, that is, if they manage changes in earnings that are important for investors' decision-making, the effect on earnings quality of the information is inverse. For that reason, the hypothesis was established that abnormal transactions with related parties of sale (hypothesis 1a), purchase (hypothesis 1b) and total (hypothesis 1c) would have a negative influence on the persistence of earnings.

The results showed that both abnormal sales transactions, abnormal purchase transactions and total abnormal transactions with related parties negatively influence earnings persistence, not rejecting research hypotheses 1a, 1b and 1c.

These results agree with the international literature, such as the study by Jian and Xiaohui (2015) with Chinese companies, which examined the relationship between financial RPT and earnings persistence and found that the higher the RPT scale, the lower the persistence of earnings.

The present study contributes to the discussion of RPTs and profit quality, showing that in Brazil such transactions may be contributing to reduce the quality of accounting information used by those interested in evaluating companies and despite the numerous cases of financial scandals involving transactions with related parties (Kohlbeck & Mayhew, 2017; Rahmat et al., 2020) has received little attention in the national accounting literature.

The study also indirectly contributes to the literature on the investigation of other earnings quality perspectives, with emphasis on research involving earnings management, as one of the limitations of this type of research is not being able to specifically identify which operations companies are managing. Therefore, this research contributes by showing that transactions with related parties, purchase and sale, can be one of the means used by companies to manipulate their results.

Some limitations were found in this research. The limitations were the sample size and the use of residuals from the econometric models, which can generate a greater dispersion of the results and eventually lead to evaluation errors (Ball, 2013).

Finally, it is suggested for future research to investigate RPTs with other attributes of earnings quality, or even using other metrics for measuring RPTs, or other types of RPTs in addition to sales and purchases, in order to corroborate with the discussion of the impact of these transactions on the quality of accounting information. Another suggestion for future research is to analyze the influence of

capital concentration on transactions with improper related parties, since there are indications that this factor favors agency problems, which may make the environment convenient for the expropriation of non-controlling shareholders.

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