RELATED PARTY TRANSACTIONS, DISCLOSURE AND OWNERSHIP STRUCTURE IN BRAZIL

João Antônio Salvador de Souza *, Patrícia Maria Bortolon **, Ricardo Pereira Câmara Leal ***

* Accounting Department, Fluminense Federal University, Macaé, Rio de Janeiro, Brazil
** *Corresponding author*, Accounting Department, Federal University of Espírito Santo, Vitória, Espírito Santo, Brazil
Contact details: Federal University of Espírito Santo, Av. Fernando Ferrari, 514, Vitória, ES, 29075-910, Brazil
*** The COPPEAD Graduate Business School at the Federal University of Rio de Janeiro, Rio de Janeiro, Brazil

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Abstract

This article investigates the association between RPTs, disclosure, ownership structure, and performance in Brazil and uses a hand-collected sample of 3,790 Brazilian RPT contracts obtained from corporate filings of a representative and randomly drawn sample of public companies from 2010 through 2012. Firms with greater conflicts of interest potential may employ less RPTs to signal that there will be no abuse. There is a negative and significant relationship between RPT values and accounting performance, but the same is not true for market value. The evidence in this article contrasts with that presented in national surveys by Matos and Galdi (2014) and Silveira, Prado, and Sasso (2009a), which may reflect different methodological choices. Companies and market participants may realize that some types of RPTs are beneficial and others harmful to minority shareholders and their short and long term impacts on performance are not the same. The evidence suggests that both the hypothesis of efficient economic transactions and of the conflict of interest may have merit depending on the type of RPT and the performance metrics.

Keywords: Related Party Transactions, Disclosure, Ownership Structure, Corporate Governance, Brazil

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1. INTRODUCTION

Related party transactions (RPT) may be a means to expropriate minority shareholders (Pizzo, 2013; Gordon, Henry, & Palia, 2004). The Committee of Accounting Pronouncements (CPC) (2010) defines that a "*Related party* is the person or entity that is associated with the entity that is preparing their accounting statements" (p. 3), such as its senior managers, controlling shareholders, members of the board of directors, and subsidiaries. Related parties bond through contracts in order to formalize transactions, which may involve the sale of assets, the granting of loans, or the acquisition of goods and services. Djankov, La Porta, Lopez-de-Silanes, and Shleifer (2008) claim that no country prevents the use of any type of RPT.

Gordon et al. (2004) advance the conflict of interests and efficient transaction hypotheses about RPTs. The conflict of interest hypothesis sustains

that RPTs are harmful to minority shareholders because they transfer wealth from shareholders in general to the contracting related parties. On the other hand, the efficient transaction hypothesis conjectures that RPTs may be beneficial for companies and congruent with their economic objectives. They can suppress the agency problem because they are carried out in an environment with less information asymmetry among the related parties (Ryngaert & Thomas, 2012; Kohlbeck & Mayhew, 2010). Minority shareholders can benefit because RPTs reduce transaction costs and improve the distribution of resources for the internal investments of the organization (Ariff & Hashim, 2013).

RPTs have not been extensively examined in emerging markets even though they display lower levels of legal investor protection and quality of corporate governance (CG) practices, leading to greater potential for dominant shareholders abuse (Dahya, Dimitrov, & Mcconnell, 2008; Gordon et al., 2004). Brazil, in particular, has very high levels of ownership concentration coupled with a large wedge between control and cash flow rights through the extensive use of non-voting stocks and indirect control structures (Leal, Carvalhal, & Iervolino, 2015; Andrade, Bressan, & Iquiapaza, 2014; Leal & Carvalhal, 2007; Aldrighi & Mazzer Neto, 2007). Thus, Brazil may be a representative case for other emerging markets and a study about the use of RPTs could be a meaningful contribution to the disclosure and CG literature in emerging markets.

Based on the theoretical and empirical apparatus, the research tries to answer the following question: what are the factors related to disclosure, performance and ownership and control structure that determine the RPTs and what is the impact of these transactions on the performance of companies in the Brazilian stock market? Thus, the objective of the article is to examine the relationship between the number of RPTs of Brazilian public companies with disclosure, ownership and control structure, and the value of the firm in the period between 2010 and 2012. RPTs are a vehicle through which these conflicts of interest can materialize the losses for the minority shareholders. Brazilian laws only prohibit contracts between related parties when they violate the duty of loyalty, as provided for in Article 155 of Law No. 6,404 of December 15, 1976, which vetoes the use of insider information by the company senior management. Even so, insider information convictions have been very few and recent. This study offers a description of RPTs in Brazil as well as an analysis of the possible determinants of the number of RPTs, taking into consideration the quality of the CG practices and disclosure of companies, their control and ownership structure along with other characteristics. Finally, the possible impact of the RPTs on the performance of the sampled companies is presented.

This study offers an analysis of RPTs after a major disclosure regulation change that took place at the end of 2009. It analyses hand-collected information from 3790 RPT contracts and, thus, it uses a sample of randomly selected firms for three years from a set of the 200 most liquid listed companies in Brazil. The use of a representative and, at the same time, parsimonious sample justifies the random selection of companies in order to reduce the analysis time and cost as well as to not favor any specific company characteristic. The study describes RPTs according to the Kohlbeck and Mayhew (2010) categories in the descriptive analysis, considering both their quantity and relative value, and uses more key variable metrics and control variables than previous works, such as a disclosure index instead of broader dummy variable indicators like trading in special CG listing segments. The analysis employs Poisson regressions for count data for the number of contracts and the generalized method of moments (GMM) with instrumental variables for the analysis of the impact from RPTs on the value of the firm to control the endogeneity.

The results indicate that the quantity of financial and operational RPT contracts does not differ much, but operational RPTs present a greater average value per contract. Loan agreements and contracts with subsidiaries are the most frequent, but the average value per contract is higher when the counterparty is a large shareholder or the parent company. Smaller companies use financial RPTs more frequently while larger companies use operational RPTs more often, which is consistent with the number of contracts with the subsidiaries. The disclosure index associates positively with the number of operational RPTs and negatively with financial RPTs. The wedge, the difference between control and cash flow rights of the largest shareholder, is negatively related with the number of RPTs.

This evidence suggests that larger companies, possibly with better disclosure practices, understand that operational RPTs are easier to justify and beneficial for all shareholders in accordance with the efficient economic transactions hypothesis. On the other hand, financial RPTs are more difficult to justify because companies displaying a larger wedge may decide to use less RPTs to signal that there will be no abuse on the part of their larger shareholders. The value of the RPTs did not consistently impact company performance. The results reported here do not support the conflicts of interest hypothesis, in general, and suggest that different types of RPTs can influence performance and at the same time company characteristics may influence RPTs differently.

The article proceeds with a review of the literature that discusses the RPTs and their relationship with CG practices and the control and ownership structure. The following section describes the sample, the variables, and the models employed. The analysis of results gives continuity to the article whose final section brings together the conclusions.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

As advanced in above, Gordon et al. (2004) affirm that RPTs can be harmful or favorable to minority shareholders and propose, correspondingly, the conflict of interest and the efficient economic transactions hypotheses (Kohlbeck & Mayhew, 2010; Ariff & Hashim, 2013). Gordon et al. (2004) analyzed 112 US companies in 2000 and 2001 and conjecture that the financial volume of the RPTs was associated with worse CG practices before the enactment of the Sarbanes-Oxley Act, which forbade loans to

executive officers and board members. They also argue that the market considers RPTs as a source of conflict of interests between managers and shareholders because the annual industry-adjusted return presented a negative association with the total quantity of RPTs.

Dahya et al. (2008) argue that RPTs are used to transfer assets and income to companies where the participation of the controlling shareholder is greater in 799 companies from 22 countries. Shleifer and Vishny (1997) argue that the concentration of control and the separation between ownership and control can reduce the value of companies due to the conflict of interests between major and other shareholders. The wedge, differences between control rights (shares with voting rights) and flow rights (shares with and without voting rights) of the largest shareholders, can motivate the expropriation of the minority shareholders by major shareholders and the consequent reduction in the market value of the company.

Wang (2015) argues that the structure of a board indicates the quality of corporate governance. Investigating 7,487 observations per year of the companies listed on the Shanghai Stock Exchange between 2003 and 2012, it is verified that companies controlled by the state and with boards composed of independent directors with political ties (central or local government) present problems of over-investment and expropriation of minority investors through RPTs. Still, in the Chinese stock market, Wong, Kim, and Lo (2015) find that interaction between sales between related parties and the shareholding structure determines the economic consequences of these transactions. Its results suggest that intra-group sales in companies with high government participation are used with the aim of expropriating minority shareholders.

Jiang, Lee, and Yue (2010) analyzed 1,377 public companies from China between 1996 and 2006 and observed that loans to the controlling shareholders were used as a mechanism that resulted in the expropriation of minority shareholders. Companies with the largest financial value of these loans may achieve a lower operational performance in the future. The authors find that there is more expropriation when there are deviations of control and cash flow rights. Tong and Wang (2008) found that the controlling shareholders in China employ RPTs to increase the value of the company in general (propping) when their participation in the equity capital is greater than 50 percent. On the other hand, majority shareholders use RPTs as a mechanism for the expropriation of the minority shareholders (tunneling) when their participation is less than 50 percent. Wang, Cho, and Lin (2019) evidence that, in general, RPTs lead to lower company performance. It is argued that RPTs are beneficial, only when carried out between companies with similar industry attributes and/or a greater degree of vertical interaction in business groups.

There is more evidence in favor of the conflict of interest hypothesis in China and Taiwan. Gao and Kling (2008) believe that the presence of external members on the board of directors, the quality of the audit reports, and the dispersed ownership structure curb the practice of tunneling in its operational form in China. Lo, Wong, and Firth (2010) conclude that good CG practices restrict the manipulation of transfer pricing in related sales. Also in China, Li, Lu, Qian, and Zhu (2020) observe that companies forced to adopt a set of rules, which prohibit deviations of assets for "non-operational" purposes, experience a reduction in RPTs, an increase in investment, and better performance. In this way, a strengthening of the regulation can curb tunneling. Chien and Hsu (2010) investigate the possible relationship between RPT, company performance, and CG mechanisms in a sample of companies traded on the Taiwan stock exchange between 1997 and 2006. They conclude that there is a negative relationship between RPT and the return on assets and a positive relationship between the presence of prestigious external auditors, the independence of the board members, and the return on assets.

The conflict of interests can be substantial in Brazil due to the high ownership concentration (Leal & Carvalhal, 2007; Aldrighi & Mazzer Neto, 2007). Articles addressing RPTs in Brazil precede the introduction of the Reference Form (RF) with the Instruction 480 of December 7, 2009, of the Securities Commission of Brazil (CVM), which brought about a major improvement in mandatory disclosure. Silveira et al. (2009a), for example, found a significant and negative relationship between the importance of RPTs and the market value of companies and concluded in favor of the conflict of interests instead of hypothesis. They measured RPTs using binary variables and analyzed 94 companies that supposedly present better CG practices because they are listed in the special segments of the Securities, Commodities, and Futures Exchange (BM&FBovespa) in 2006. Matos and Galdi (2014) analyzed data from Brazilian listed companies through ordinary least squares (OLS) with data from 2008 and 2009 pooled and separately. The authors did not address the potential problems of identification through other methods. They reveal a significantly positive relationship for some types of operational RPTs and performance and a significantly negative relationship with a performance for some types of financial RPTs. Their RPT measures were taken in relation to total assets.

These studies suggest that the quantity and relevance of RPTs may be associated with the value or performance of a company and that there can be a negative correlation between the quality of the CG and disclosure practices and the quantity of RPT contracts, supporting the conflict of interest hypothesis. Three hypotheses may derive from this discussion:

H1: There are less RPTs when the company adopts better disclosure practices.

H2: The quantity of RPTs is positively correlated with the wedge, the difference between control and cash flow rights of large shareholders.

H3: The performance of a company shows a negative association with the occurrence of RPTs.

3. METHODOLOGY

3.1. Sample

This paper proposes an analysis and classification of each contract with a related party disclosed to the Securities Commission (CVM) by means of the new

filing form introduced in December 2009, called Reference Form (RF). Given the very large number of contracts, there was a random selection of companies in the three years sampled years that is detailed below. The initial year (2010) corresponds to the first year in which the information in the RF was registered in a standardized way by means of software supplied by CVM. Two more years (2011 and 2012) were added to this initial one, also due to a large number of contracts to be examined. The annual financial information employed comes from a longer period, between 2005 and 2012, so that it would be possible to estimate the standard deviation and instrumental variables, and were obtained from the Economatica database and B3 (Securities, Commodities, and Futures Exchange) website.

The sample was obtained in four steps. Beginning with all listed companies, financials were excluded due to their peculiarities (Healy & Wahlen, 1999). The 200 non-financial companies with the highest stock market liquidity in 2013 were selected in the second step because companies with more frequent trading offer more reliability for calculating market returns and their information will tend to be more accurate and complete. The third step consisted of forming a sample of 70 companies by means of a simple random drawing. The reduction of the sample to 70 companies was due to the extensive manual collection of information about the contracts with related parties in the RF, particularly the examination and classification of each RPT, which led to the analysis and classification of 801 contracts with related parties in 2010, 1,543 in 2011, and 1,446 in 2012, totaling 3,790 contracts. Determining the ultimate percentages of indirect control and ownership of the largest shareholders also represents a significant amount of work. Finally, the availability of the information necessary for calculating the main variables determined the final sample of 53 companies, which represented 12 percent of the 452 companies listed and 21 percent of the stock exchange capitalization of R$ 2,524 billion at the end of December 2012. The list of selected companies is presented in Appendix A.

3.2. RPT classification and main variables

This study classified RPTs into two types of transactions for the econometric analysis: financial (that grouped the types collateral and guarantees, debentures, and loans) and operational (that grouped provision of services, leases, cost sharing, purchases and sales, and others). The descriptive portion of the study uses the ungrouped financial and operational classifications according to the type of transactions (eight categories) and the counterparty (seven categories). The expanded classification herein contains one more category for the type of operation and two more for the counterparty type as that in Silveira et al. (2009a).

The Brazilian regulation requires identifying all the direct shareholders with the right to vote with positions that are equal to or greater than five percent of the voting share capital, regardless of the type of shareholders. Indirect shareholding occurs when a company has other companies or institutions as a shareholder, and then it is necessary to identify the ultimate shareholders of these companies, which can be an individual, the government, or an institutional or foreign investor. The largest shareholders with and without the right to vote, therefore, were identified. The methodology used is described in Leal and Carvalhal (2007) and is based on the multiplication of the participation percentages along the chain of companies in order to calculate the proportion on the total equity capital and the lowest value in the chain for the proportion of the voting capital of a shareholder or group of shareholders. The deviation between the control and cash flow rights was calculated by the ratio between these percentages. The binary categorical variables to characterize the identity of the last shareholder were defined according to the four categories mentioned, already employed by Bortolon (2013), for example. These and the other explanatory variables are described in more detail in the Appendix B. Silveira et al. (2009a) and Souza, Knupp, and Borba (2013) did not employ measures of indirect control concentration and deviation of control and cash flow rights. Matos and Galdi (2014) did not consider the control and ownership structure.

This study used the disclosure dimension of the corporate governance practices index (CGI) for Brazilian companies described in Leal et al. (2015). The complete index is composed of objective questions related to four dimensions: (1) disclosure, (2) board composition and functioning, (3) ethics and conflicts of interest and (4) shareholders rights. The option to use only the disclosure dimension is justified because it is the most directly related to the disclosure of RPT. Leal and Carvalhal (2007) and Black, Carvalho, and Sampaio (2014) state that the disclosure dimension of their respective CG indices has the largest influence on the performance of Brazilian companies. Silveira, Leal, Barros, and Carvalhal (2009b) show that voting rights concentration and the identity of the largest shareholders are important determinants of CG practices measured by the CGI. The disclosure dimension of the CGI score described in Leal et al. (2015) is based on the disclosure of information on senior management and board of directors compensation, on the dissemination of policies for dealing with conflicts of interest and RPT, the existence of qualified opinions from independent auditors, the availability of company reports and presentations for market analysts on the company's website, and on the inclusion of a specific section about the implementation of the CG principles in publicly available corporate reports.

A number of control variables are described in Appendix B and their choice is based on those employed in various articles on RPT analysis such as Ryngaert and Thomas (2012), Kohlbeck and Mayhew (2010), Lo et al. (2010), Silveira et al. (2009a), Gao and Kling (2008), and Cheung, Rau, and Stouraitis (2006).

3.3. Models

The Poisson regression model allows count dependent variables and it was used to assess the RPTs classified as financial or operational. Equation (1) depicts this model and the signs expected from the explanatory variables. The model checks the relationship between the quality of transparency *(DISC)*, the type of RPT, the relative

value of the company *(TOBINQ),* and the wedge, deviations between the control and cash flow rights of the largest shareholders (several variables initiated with *WED,* which are not used simultaneously). The operational definitions of the variables are in Appendix B.

$$(FIN\_RPT_i; OPE\_RPT_i) = f\,(DISC_i^- + TOBINQ_i^- + WED_i^+ + Controls_i^?) \quad (1)$$

It is possible, in the reverse direction, that RPT contracts influence the performance of a company. Equation (2) depicts this association. It is expected that RPTs have a negative impact on the performance of the firms. In this case, the proportion of the financial value of RPTs in relation to total asset represents the importance of related contracts. This second model also considered interactions between the relative importance of RPTs and the binary categorical variables for the type of largest shareholder and industry. This model was estimated through the generalized method of moments (GMM) with lagged instrumental variables in order to mitigate the possible effects of endogeneity. All the models adopt the correlation matrix from White (1980) to mitigate problems caused when the error terms are not homoscedastic.

$$TOBINQ_i = f\,(RPT/TA_i^- + DISC_i^+ + WED_i^- + Controls_i^? \quad (2)$$

4. RESULTS

4.1. Descriptive analysis

Panel A of Table 1 shows that the average value per contract is much higher for the operational RPTs. It also shows that the average value per contract fell considerably from 2010 to 2012, making it possible to speculate if this was not an effect stemming from the introduction of the new RF disclosure regulation. *Panel B* of Table 1 indicates that loans are by far the most frequent type of RPT, but the largest mean values per contract are those of the provision of services, purchases and sales, and other operational RPTs. Finally, *Panel C* points out that RPTs are more frequent with subsidiaries, which can facilitate trade and joint ventures. The largest average amounts per contract, however, are the ones that have the parent company and large shareholders as counterparty. The results about the proportions are consistent with the percentage of industries that present certain types of RPTs in Souza et al. (2013) for a sample of 78 companies among the 100 largest in the country in 2011. The evidence reported herein extends prior research because it offers information on the average contract value and details about the RPT types.

Table 1. Percentage and average RPT contract value according RPT type

	Proportions (%)			***Average Contract Value***			***Change %***
	2010	***2011***	***2012***	***2010***	***2011***	***2012***	***2012/2010***
Number of contracts	801	1543	1446	–	–	–	–
Panel A: synthetic classification							
Operational	48.9	54.4	57.3	1072.1	532.5	454.5	-53
Financial	51.1	45.6	42.7	321.5	138.2	114.9	-60
Panel B: expanded classification							
Loans	48.6	42.1	40.2	334.5	148.2	120.4	-60
Leases	11.4	28.4	32.6	589.8	157.6	129.8	-75
Purchases and sales	19.0	11.9	11.3	1352.0	1100.6	1017.7	-16
Provision of services	10.6	8.1	7.8	1296.0	975.1	923.1	-21
Cost sharing	2.8	2.3	2.8	0.20	0.28	0.22	24
Collaterals and guarantees	2.0	3.3	2.2	66.5	15.8	21.8	-64
Bonds	0.5	0.3	0.3	83.2	71.5	61.3	-18
Other	5.2	3.6	3.3	1212.6	952.4	961.9	-12
Panel C: counterparties							
Majority owned subsidiary	73.9	58.1	57.8	807.7	535.1	473.1	-35
Shared control company	5.5	20.0	20.2	68.0	4.7	2.8	-95
Senior management and BOD	10.5	13.8	13.4	4.2	5.9	2.1	-43
Parent company	6.0	4.3	4.1	946.4	729.0	698.6	-18
Large shareholder	2.3	1.3	1.1	1364.0	653.6	545.2	-55
Minority owned subsidiary	1.1	0.5	0.5	31.3	52.2	105.0	274
Other	0.8	2.0	2.9	0.1	10.0	6.5	16050

Notes: RPTs are related party transactions. Percentages in relation to the total number of RPT contracts in each year. All percentages calculated with the original Brazilian currency values. Percentages were rounded up. Sorted by the 2012 proportions.

BOD is board of directors. Average values in millions of US dollars converted from the original Brazilian currency values based on the total amount of the contract (the portions paid and to be paid) using the average US dollar value in each year for presentation purposes only.

Some averages in Table 1 are quite skewed by large RPTs. Table 2 provides more details. *Panel A* of Table 2 shows that operational RPTs are concentrated in larger companies while the financial RPTs are more concentrated in the central size quartiles. The quantity and the average amount per contract increase with the size of the company. It is worth pointing out that the very high average amounts per contract are due to Petrobras (the Brazilian oil giant and largest company at the time) and Braskem (a large petrochemical company jointly controlled by Petrobras and Odebrecht, a large Brazilian construction conglomerate). It is possible to speculate that larger companies are more complex and have more associated companies and subsidiaries and, thus, more operational RPTs (Souza et al., 2013). However, they are also the ones that show a lower count of financial RPTs perhaps

because their size and possibly more sophisticated internal and external control and monitoring systems make this type of transaction more difficult to justify.

All types of ultimate shareholders, except the government, show similar proportions of financial RPTs in *Panel B* of Table 2. Operational RPTs are more frequent for individuals and foreign shareholders. A similar pattern occurs for the sample of all RPTs.

The four groups of industries in *Panel C* of Table 2 show that there is a higher frequency of RPTs for industrial and commercial companies and very little in the services industry, perhaps because the first two industries contain more processes with tangible assets, which could justify more operational RPTs, and also contain more large companies, which corresponds to the relation of RPTs with the size of the companies. The average amount of contracts is greater for industrial companies controlled by the government due to Petrobras and Braskem.

Table 2. Number and average RPT contract value according to selected variables

	Financial RPT			*Operational RPT*			*All RPT*	
	No.	***%***	***Average***	***No.***	***%***	***Average***	***No.***	***%***
Panel A: according to the natural logarithm of total assets								
1st quartile	413	24	1.5	181	9	1.9	594	16
2nd quartile	531	31	10.4	375	18	3.0	906	24
3rd quartile	497	29	12.2	621	30	3.8	1118	29
4th quartile	289	17	983.9	883	43	1397.9	1172	31
Panel B: according to the identity of the largest ultimate shareholder								
Individual	569	33	7.4	989	48	31.1	1558	41
Foreigner	475	27	5.8	515	25	11.5	990	26
Institutional	532	31	16.4	261	13	10.7	793	21
Government	154	9	1823.9	295	14	4063.6	449	12
Panel C: according to industry								
Industrial	1043	60	273.9	801	39	1529.2	1844	49
Commerce	155	9	36.3	815	40	1.3	970	26
Services	35	2	14.4	119	6	41.0	154	4
Other	497	29	9.6	325	16	22.8	822	22

Notes: RPTs are related party transactions. Counts and percentages relative to the number of financial, operational, and all RPT contracts in the years 2010 through 2012. Percentages were rounded up. Financial RPTs include collateral and guarantees, bonds and loans. Operational RPTs include provision of services, leases, cost sharing, purchases and sales of inputs and assets, and other transactions. Average values in millions of US dollars converted from the original Brazilian currency values based on the total amount of the contract (the portions paid and to be paid) using the average US dollar value in the 2010-2012 period for presentation purposes only.

Table 3 shows the main descriptive statistics. The contract amounts at the end of the year are an average of 1.25 times total assets and 79 percent of gross revenues. The disclosure index averages 4.84 for a maximum score of 6, which is consistent with Leal et al. (2015). The wedge, the deviations of control and cash flow rights of the largest shareholder, represent control leverage of around 1.41 times directly and of 1.92 times indirectly, confirming that pyramidal structures are present and raise the potential of conflicts of interest among shareholders. The wedge values are consistent with those in Leal and Carvalhal (2008) and correspond to the average of a pyramidal structure with three or more levels in Aldrighi and Mazzer Neto (2007). The most frequent type of ultimate shareholder are individuals followed by foreigners, also as in Aldrighi and Mazzer Neto (2007).

Table 3. Descriptive statistics

Variable	***No. Obs.***	***Average***	***St. Dev.***	***Minimum***	***Maximum***
RPT:					
RPT/total assets	131	1.25	8.43	0.00	70.81
RPT/gross revenues	127	0.79	2.37	0.00	18.05
Corporate governance:					
Disclosure index (from 0 to 6)	137	4.85	1.15	0.50	6.00
Wedge (direct)	139	1.41	0.77	0.73	4.36
Wedge (indirect)	138	1.92	1.82	0.19	11.28
Identity of the largest ultimate shareholder:					
Foreigner (0 or 1)	139	0.25	0.44	0.00	1.00
Government (0 or 1)	139	0.09	0.28	0.00	1.00
Individual (0 or 1)	139	0.50	0.50	0.00	1.00
Institutional (0 or 1)	139	0.16	0.37	0.00	1.00
Performance:					
ROA	139	0.02	0.19	-1.57	0.27
Tobin's q	139	2.53	11.45	0.15	112.89
Financial characteristics:					
Total debt/Total assets	139	0.88	5.50	-0.70	48.10
Fixed assets/Total assets	139	0.24	0.23	0.00	0.76
Ln (firm age)	139	8.81	0.93	6.63	10.33
Ln (total assets)	139	21.66	1.91	12.99	27.24

Notes: The figures refer to the 2010-2012 period. The observations are companies-year. RPTs are related party transactions. All ratios and the natural logarithm of total assets were computed from the original in Brazilian currency. RPT correspond to the total amounts of the contracts of a company-year in Brazilian currency (the portions paid and to be paid). The wedge is the deviation between control and cash flow rights and refers to the largest direct and ultimate shareholder in the direct and indirect ownership structure, respectively. All variables are defined in the Appendix B.

4.2. Determinants of the quantity of RPT contracts

Table 4 presents the results of the potential determinants of the number of RPTs using the Poisson regression model for count data depicted in Equation (1). The results are different for operational and financial RPTs. The higher the disclosure scores the less financial and the more operational contracts. *H1* states that there are less RPTs when the company adopts better disclosure practices and it is not rejected for financial RPTs. Moreover, there are more operational than financial RPT contracts in larger companies (3rd and 4th quartile of the sample), which may have better disclosure practices, than in the smaller ones (1st and 2nd quartile). Cheung et al. (2006) admit that worse disclosure practices are associated with RPTs that are harmful to minority shareholders (tunneling) in Hong Kong. The evidence in Table 4 suggests then that financial RPTs may be harmful to the minority shareholders.

Verrecchia (1990) demonstrates that the managers of a company tend to disclose more when they possess better quality information. It is possible that larger companies provide better quality information for their managers because they have more resources and better formal management systems. Leal et al. (2015) also show that there is a positive relationship between firm size and their Corporate Governance Index (CGI) score. They also claim that disclosure represents 30 percent of the total CGI score and that companies reach a relatively higher score in this dimension of the index than in others. This evidence suggests that larger companies may employ better disclosure practices.

The wedge presents negative coefficients in relation to the number of contracts with related parties with a statistical significance that is more frequent in the operational kind. The sign of the coefficient rejects *H3,* which states that the quantity of RPTs is positively correlated with the wedge. It is possible that companies with greater deviations between control and cash flow rights employ fewer RPTs to signal that major shareholders will not abuse the minority. Souza et al. (2013) found a non-significant and negative relationship between the degree of direct control concentration of the three largest shareholders and the total amount of RPTs of the company, which is in line with the results in Table 4.

Moreover, the Brazilian empirical evidence on pyramidal structures does not always associate the wedge with worse CG practices or performance. Bortolon (2013), for example, found that characteristics of pyramidal structures are positively related to the dividend payment and negatively correlated to cash balances, which may be an attempt to signal to minority shareholders that the available cash will not be expropriated. Andrade et al. (2014) show a positive relationship between pyramidal structures and performance as long as pyramids are not associated with the presence of non-voting shares or have many layers above the ultimate shareholders. Leal and Carvalhal (2008) admit that companies with shared control through shareholder agreements display larger relative valuations despite the presence of a wedge.

There are significantly more financial RPTs when the largest shareholder is an institutional investor. In the Brazilian market, Punsuvo, Kayo, and Barros (2007) found a negative correlation between the relevant shareholding of institutional investors and CG practices and de Oliveira, Leal, and Almeida (2012) did not show a significant relationship between the presence of the largest Brazilian pension funds and better CG practices. The largest Brazilian institutional investors are pension funds of large state-owned companies. This type of institutional investor can act according to a complex set of motives, including those of a political nature, which are not necessarily aligned with best CG practices (Inoue, Lazzarini, & Musacchio, 2013). Su, Fung, Huang, and Shen (2014) find evidence that politically connected Chinese companies are associated with more RPTs and a greater risk of expropriation of minority shareholders. Thus, this evidence is not inconsistent with this type of conjecture and the presence of institutional investors does not necessarily reduce predatory acts in Brazil.

Contrastingly, there is a negative and significant relationship with the amount of financial RPTs when individuals are the largest ultimate shareholders. This result may be consistent with that for the wedge. The largest individual shareholder may indicate that his/her presence does not represent an increased risk of abuse by using less RPTs. This conjecture is consistent with the hypothesis of efficient economic transactions of Gordon et al. (2004). Finally, performance (Tobin's q) does not seem to influence the frequency of contracts with related parties. There is no confirmation for *H3* concerning the negative relationship between performance and RPTs in this part of the analysis.

Table 4. Determinants of the RPT quantity

	Financial RPTs				*Operational RPTs*			
Variables	***1***	***2***	***3***	***4***	***5***	***6***	***7***	***8***
DISC	-0.21*	-0.23**	-0.26**	-0.25**	0.29*	0.30**	0.37**	0.39**
	(0.11)	(0.11)	(0.11)	(0.12)	(0.15)	(0.15)	(0.17)	(0.18)
TOBINQ	-0.01	-0.00	-0.00	0.00	0.18	0.18	0.10	0.09
	(0.01)	(0.01)	(0.01)	(0.01)	(0.16)	(0.15)	(0.14)	(0.14)
WEDD1	-0.02				-0.66**			
	(0.17)				(0.21)			
WEDD3		-0.38				-1.10**		
		(0.30)				(0.38)		
WEDI1			-0.14**				-0.08*	
			(0.07)				(0.05)	
WEDI3				-0.21				-0.12
				(0.18)				(0.10)
INST	0.84**	0.86**	0.64**	0.70**	-0.55	-0.26	-0.77	-0.69
	(0.29)	(0.29)	(0.32)	(0.31)	(0.63)	(0.58)	(0.68)	(0.68)
INDIV	-0.58**	-0.53**	-0.60**	-0.59**	0.43	0.50*	0.18	0.17
	(0.21)	(0.21)	(0.22)	(0.21)	(0.28)	(0.30)	(0.26)	(0.26)
EXCES	0.13	0.17	0.02	0.07	-0.12	-0.05	-0.33	-0.28
	(0.21	(0.22)	(0.21)	(0.20)	(0.23)	(0.22)	(0.27)	(0.25)
TANG	-1.81**	-1.76**	-1.81**	-1.81**	-1.46**	-1.59**	-1.38**	-1.43**
	(0.71)	(0.68)	(0.66)	(0.66)	(0.57)	(0.59)	(0.65)	(0.69)
AGE	-0.44**	-0.41**	-0.42**	-0.42**	0.49*	0.51*	0.51	0.52
	(0.09)	(0.09)	(0.09)	(0.09)	(0.29)	(0.28)	(0.36)	(0.37)
SIZE	0.10	0.14	0.15	0.14	0.29**	0.32**	0.18**	0.18**
	(0.11)	(0.11)	(0.10)	(0.10)	(0.07)	(0.08)	(0.06)	(0.06)
INDUST	1.07**	0.99**	1.02**	1.08**	-0.51	-0.53	-0.53	-0.44
	(0.27)	(0.24)	(0.26)	(0.25)	(0.36)	(0.35)	(0.50)	(0.48)
Constant	5.04**	4.41*	4.49**	4.55**	-7.93**	-8.26**	-6.71*	-6.85*
	(2.43)	(2.46)	(2.07)	(2.19)	(3.16)	(3.06)	(3.64)	(3.72)
No. Obs.	111	110	110	110	110	109	110	110
LR Chi^2	177.40	185.40	221.10	172.90	37.61	45.75	34.04	31.16
Chi^2 p	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pseudo R^2	0.40	0.40	0.41	0.40	0.32	0.33	0.24	0.24

Notes: RPTs are related party transactions. All variables defined in the Appendix B.
DISC is the disclosure index.
TOBINQ is Tobin's q.
INST and INDIV are dummy variables to denote a largest ultimate institutional or individual shareholder, respectively.
WEDD1, WEDD3, WEDI1, and WEDI3 are the wedges for the largest and three largest direct and ultimate indirect shareholders, respectively.
The control variables are the excessive compensation dummy (EXCES), tangible assets ratio (TANG), company age (AGE), company size (SIZE), and a dummy for an industrial company (INDUST).
The dependent variables are FIN-RPTs and OP-RPTs.
The model for the 2010-2012 period is estimated according to a Poisson regression.
White's (1980) robust standard errors are in parentheses.
LR Chi^2 is the likelihood ratio chi-square test that indicates that at least one of the coefficients of the explanatory variables is not null.
Chi^2 p indicates the likelihood that the explanatory variables have no effect.
Pseudo R^2 is the estimate of McFadden in the form of a conventional R^2 and should be interpreted with caution.
** and ** indicate statistical significance at 10% and 5% levels, respectively.*

4.3. RPTs and performance

The GMM models in Table 5 do not confirm *H3* for the two types of RPTs. Considering Tobin's q as the performance metrics, there is a positive and significant relationship between the value of financial RPTs relative to total assets whereas this ratio is negatively and significantly associated with the ROA. The ratio of operational RPTs relative to total assets is negatively and significantly associated with ROA as well. Thus, when ROA is the performance metrics, the negative relationship between performance and RPTs of *H3* is confirmed. However, this is not the case when Tobin's q, a relative market value metric, represents performance. Thus, RPTs impact accounting performance negatively but the same is not observed for market performance.

Regarding significant relationships for other variables, the wedge negatively impacts market performance while the disclosure score impacts accounting performance positively. This is consistent with previous Brazilian studies.

An additional pooled cross-sectional OLS analysis, not reported here to save space, reveals that there is no significant relationship with a performance for operational RPTs as a group. However, taken separately, those of the provision of services and purchase and sales types maintain a positive and significant relationship with the performance, while those classified as cost sharing show a negative and significant coefficient. These are the three most important types of operational RPTs according to the average amount of contracts in Table 1. This result suggests that one should not view RPTs as a homogeneous category. Some types of contracts may be harmful and others favorable to shareholders. Several alternative models were estimated, in particular, some with all the RPTs in relation to total assets and the revenue, and also with the various specifications of the wedge in Appendix B, in addition to categorical variables for the identity of the largest ultimate shareholder (Kohlbeck & Mayhew, 2010; Ryngaert & Thomas, 2012; Matos & Galdi, 2014). They lead to similar conclusions and are available with the authors.

Table 5. RPTs, market value, and accounting performance

Dependent variable	*Tobin's q (1)*	*Tobin's q (2)*	*Tobin's q (3)*	*ROA (4)*	*ROA (5)*	*ROA (6)*
Lagged financial RPTs over total assets	1.13** (0.01)	–	1.13** (0.01)	-0.01** (0.00)	–	-0.01** (0.00)
Lagged operational RPTs over total assets	–	16.00 (10.88)	-0.25 (0.30)	–	-0.26* (0.15)	-0.05 (0.06)
Lagged disclosure score	0.28 (0.22)	0.10 (1.09)	0.27 (0.22)	0.09* (0.05)	0.09* (0.05)	0.09* (0.05)
Wedge of largest direct shareholder	-0.21** (0.09)	0.86 (0.91)	-0.22** (0.09)	0.00 (0.02)	-0.01 (0.02)	-0.00 (0.02)
Excess compensation	0.32 (0.21)	0.02 (0.85)	0.33 (0.21)	-0.02 (0.02)	-0.02 (0.02)	-0.02 (0.02)
Asset tangibility	-0.05 (0.40)	-6.41 (4.73)	0.01 (0.42)	-0.08* (0.05)	0.01 (0.08)	-0.07 (0.05)
Age	0.20 (0.13)	-0.20 (0.71)	0.21 (0.14)	0.03* (0.02)	0.03 (0.02)	0.03* (0.02)
Ln (total assets)	-0.14* (0.09)	-3.15 (2.07)	-0.13 (0.08)	-0.01 (0.01)	0.03 (0.03)	-0.01 (0.01)
Constant	1.28 (0.93)	70.63 (47.07)	0.83 (1.15)	-0.36* (0.21)	-1.34** (0.65)	-0.45 (0.29)
No. of observations	84	84	84	84	84	84
R^2	0.99	0.36	0.99	0.58	0.34	0.58
Wald Chi^2	9.4e+05	3.52	1.1e+06	6552	8.14	7076
p	0.00	0.83	0.00	0.00	0.32	0.00

Notes: The dependent variables are Tobin's q and ROA.

All variables are defined in the Appendix B. RPTs are related party transactions. The lagged variables are the instrumental variables lagged by one year. The models for the period 2010-2012 were estimated according to the generalized method of moments (GMM). White's (1980) robust standard errors are in parentheses.

Wald Chi^2 is the test that indicates that at least one of the coefficients is not null and p indicates the probability of this test.

**, ** indicate statistical significance at 10 and 5 percent levels, respectively.*

5. CONCLUSION

This study investigated the relationship between RPTs, disclosure, ownership structure in Brazil, and performance. A priori, the very high ownership concentration and deviation between control and cash flow rights in Brazil suggested that RPTs could be harmful to minority shareholders, which is the conflicts of interest hypothesis of Gordon et al. (2004). Furthermore, Brazilian companies on average achieve only half of the maximum score in an index of CG practices according to Leal et al. (2015). The alternative to the conflicts of interest hypothesis is that RPTs are efficient economic transactions.

The results for a representative sample of publicly-traded Brazilian companies between 2010 and 2012 show that the most frequently reported RPT contracts are loans and the most frequent counterparty is majority-owned subsidiaries. The average contract amounts are larger for operational RPTs, particularly purchases and sales and services providing when the counterparty is the parent company or a large shareholder. There are more RPTs in larger companies, which concentrate those classified as operational. There is a greater frequency of RPTs in industrial and commercial companies that display more tangible assets.

The disclosure scores are negatively related to the number of financial RPTs but are positively associated with the number of operational RPTs. Maybe better transparency inhibits the quantity of financial RPTs, which could be more difficult to monitor and potentially harmful to minority shareholders. This conjecture is consistent with a negative sign, contrary to what was expected, for the coefficient of the relationship between the number of operational contracts and the wedge, the deviation between control and cash flow rights of the largest ultimate shareholders. It is possible that companies with a greater wedge employ less RPT contracts to indicate that this potential conflict of interest will not result in the majority of shareholders' abuse.

The impact of the relative value of RPTs on performance varies according to the nature of these contracts. There is a negative impact of RPTs on accounting performance but the same is not observed for market value. Thus, the impact of RPTs on performance is not clear in Brazil and may vary depending on the types of performance metrics and RPT. When RPTs are detailed further, loans, the provision of services and purchases and sales transactions maintain a positive relationship with performance while other types of operational RPTs have negative coefficients.

The evidence in this article is not always consistent with the conflicts of interests hypothesis in Gordon et al. (2004). Silveira et al. (2009a) and Matos and Galdi (2014) concluded in favor of the hypothesis of conflicts of interest, a result that this study does not support every type of RPT. In fact, the positive and significant coefficients for some important types of operational RPTs lend support to the efficient economic transactions hypothesis. This suggests that future investigations need to assess separately some of the simplest types of RPTs considered here, as in the case of operational contracts (Black, Kim, Jang, & Park, 2015; Wong et al., 2015).

The results of the research must be interpreted in light of its limitations. The main limitations refer to the size and selection of the sample since 70 companies were randomly selected from a total of 200 with the most liquid shares. The adoption of this procedure is justified by an extensive manual collection of information about the contracts. Another limitation is related to theoretical concepts because it seeks to corroborate with the conflict of interest aspects described by Gordon et al. (2004), given the characteristics of the Brazilian stock market. So, the beneficial impacts of some types of RPTs described in the results were not deeply explored and should be subject of future investigations.

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APPENDIX A

Table A.1. Sample Companies

Order	*Titles*	*Sector*	*Order*	*Titles*	*Sector*
1	Aliansce	Other sector	28	Mangels Indl	Steel and metallurgy
2	Autometal	Vehicles and Parts	29	Marcopolo	Vehicles and Parts
3	BR Brokers	Other sector	30	Metalfrio	Industrial machines
4	BR Pharma	Commerce	31	Minupar	Food and drinks
5	Bradespar	Other sector	32	MMX Miner	Mining industry
6	Brasilagro	Agriculture and Fishing	33	Net	Other sector
7	Braskem	Chemistry	34	P.Acucar-Cbd	Commerce
8	Cia Hering	Textile	35	Petrobras	Oil and Gas
9	Direcional	Construction	36	Plascar Part	Vehicles and Parts
10	Eucatex	Other sector	37	Positivo Inf	Electronics
11	Eztec	Construction	38	Qualicorp	Other sector
12	Gp Invest	Other sector	39	Recrusul	Vehicles and Parts
13	Grazziotin	Commerce	40	Santos Brp	Transport and Service
14	Grendene	Textile	41	São Carlos	Other sector
15	Guararapes	Textile	42	Schulz	Vehicles and Parts
16	Ideiasnet	Other sector	43	Sierrabrasil	Other sector
17	Inepar Tel	Telecommunications	44	Springs	Textile
18	Iochp-Maxion	Vehicles and Parts	45	Tecnisa	Construction
19	Itausa	Other sector	46	Telef Brasil	Telecommunications
20	JHSF Part	Construction	47	Time For Fun	Other sector
21	Kepler Weber	Steel and metallurgy	48	Totvs	Software and Data
22	Light SA	Electric power	49	Tran Paulist	Electric power
23	LLX Log	Other sector	50	Trisul	Construction
24	Localiza	Other sector	51	V-Agro	Other sector
25	Lopes Brasil	Other sector	52	Viver	Construction
26	Magaz Luiza	Commerce	53	Wilson Sons	Transport and Services
27	Magnesita SA	Mining industry			

APPENDIX B

Table B.1. Variables Definitions

Variable	*Definition*
Main variables:	
FIN_RPT	Quantity of related contracts whose transactions involve: collateral and guarantees, debentures and loans.
OPE_RPT	Quantity of related contracts whose transactions involve: provision of services, leases, cost sharing, purchases and sales, and other transactions that do not fit in the previous definitions.
RPT/REV	Total amount in Brazilian currency of RPTs divided by the company's total revenues for each year of the period 2010-2012.
RPT/TA	Total amount in Brazilian currency of RPTs divided by the company's total assets for each year of the period 2010-2012.
DISC	Index resulting from the sum of points that represent positive answers for question in Dimension 1 (Transparency) of the version of the questionnaire of the Corporate Governance Practices Index (CGI) presented in Leal et al. (2015). The variable goes from 0 to 6, for positive responses (1 point) or negative (0 point) for six questions.
TOBINQ	Equal to the sum of the market value of equity and total debt divided by the company's total assets, according to the method proposed by Chung and Pruitt (1994).
ROA	The return on assets is defined as the ratio of net income to the total values of assets.
WEDD1	The ratio between the voting equity capital and total capital, which is voting and non-voting stocks of the largest shareholder in the direct ownership structure according to the methodology presented in Leal and Carvalhal (2008).
WEDD3	The same as WEDD1 for the three largest shareholders.
WEDI1	The ratio between the voting equity capital and total capital, which is voting and non-voting stocks of the largest ultimate shareholder in the indirect ownership structure according to the methodology presented in Leal and Carvalhal (2008).
WEDI3	The same as WEDI1 for the three largest shareholders.
Control variables:	
INST	Binary categorical variable equal to 1 when the ultimate shareholder is an institutional investor and zero otherwise, according to the methodology presented in Leal and Carvalhal (2008).
INDIV	Binary categorical variable equal to 1 when the ultimate shareholder is an individual and zero otherwise, just as in INST.
EXCES	Binary categorical variable equal to 1 when the company has excessive compensation (waste greater than zero) derived from the regression defined in Funchal and Terra (2006) and zero otherwise.
TANG	The ratio between the company's property, plant and equipment to total assets to represent the degree of tangibility of its assets.
AGE	Natural logarithm of the number of days elapsed between the date of the company's establishment and the data collection date.
SIZE	Natural logarithm of the company's total assets.
INDUST	Binary categorical variable equal to 1 for an industrial company and zero otherwise. An industrial company is in the construction, electronics, industrial machinery, mining, oil and gas, chemical, steel and metallurgy, textiles, and vehicles and parts industries.