



## Examining the impact of Board of Directors Characteristics on Transactions with Related Parties: Goods and Financial Resources

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### ABSTRACT

**Purpose:** One of the core assumptions underlying the Agency Theory (AT) is that managers consume the company's resources for their benefit to maximize their own interests. In this context, related-party transactions (RPTs), often favorable to managers and detrimental to shareholders, are among the striking examples. Against this background, the present study was to investigate the effects of board of directors' (BD) characteristics on transactions of goods and financial resources with related parties (RPs).

**Methods:** In total, 125 companies listed on the Tehran Stock Exchange (TSE), Iran, for the period of 2018-2023 (viz., 750 company-year observations), were selected by the systematic sampling technique, and then examined. Two indicators, i.e., transactions of goods and financial resources, were accordingly chosen to evaluate RPTs as the dependent variable. Moreover, BD characteristics were measured through chief executive officer (CEO) dual responsibility, BD size, BD independence, and CEO tenure.

**Findings:** The study results revealed a significant relationship between CEO dual responsibility, BD size, BD independence, and CEO tenure and RPTs (namely, transactions of goods and financial resources) with a 95% confidence interval (CI).

**Conclusion:** A direct relationship was ultimately established between CEO dual responsibility and BD size, confirming the notion of transaction efficiency, but there was an inverse relationship between BD independence and CEO tenure, verifying the view of a conflict of interest.

### Keywords:

Related-Party Transaction CEO , Board of Directors, Dual Responsibility, Independence, Tenure .



## 1. Introduction

During the most recent financial scandals, related-party transactions (RPTs) have been of concern, in such a way that their targeted use or non-disclosure and insufficient disclosure have been among the factors influencing company failure. On many occasions, RPTs seem to be unavoidable and even beneficial as they are recurrent in the operating cycles of companies, but they allow major shareholders or company managers in certain circumstances to secure their personal interests to the detriment of minority shareholders. Though not all RPTs are opportunistic, the prevailing attitude is that they shape risks, so investors attach great importance to them before making investments. Currently, the opportunism of RPTs is one of the significant factors decreasing capital market value. In this sense, experts believe that the main reasons for financial crises in companies are RPTs and their concealment through financial statements. According to Djankov et al. (2008), such transactions provide a direct opportunity for related parties (RPs) to withdraw cash from the company by underground economic activities. The experiences occurring over recent years also testify to the claim that RPTs not only disrupt value creation as the major task of managements, but also gradually cause companies collapse. In this line, the United States Congress passed the Sarbanes-Oxley Act (SOX) after the Enron Scandal, which in part referred to RPTs, so the American Stock Exchange (AMEX) set some strict rules regarding the need to disclose RPTs for its listed companies. On the other hand, Cheung et al. (2003) deem that RPTs can be practiced to support low-performance companies.

Among the key assumptions underlying the Agency Theory (AT) is the fact that managers consume the company's resources for their benefit to maximize their own interests. In this context, RPTs, often helpful to managers at the expense of shareholders, are considered as the notable examples. Such misbehavior in managements disrupts value creation and threatens managers' job security. As a result, they may misrepresent financial statements to avoid the adverse effects of the given transactions, which in some ways distort the value creation process in the long term and deprive owners of making informed decisions due to distorted information. In this regard, owners attempt to reduce agency costs raised by RPTs through establishing some mechanisms, including management contracts in which owners include provisions in order to prevent opportunistic behaviors of managements and consider such transactions as part of contract components to kill motivation in managers to behave so.

Internal mechanisms are typically based on the actions taken by individual companies to implement

control and accountability. One of the major mechanisms in this regard is corporate governance, which is typically associated with the board of directors (BD) as a guiding body that monitors and supervises executive managers to protect shareholders' ownership interests. It seems that the key to a company's success lies in its proper management, so it is alleged that the secret of longevity of reputable companies is in their efficient and effective BD. Accordingly, poor BD performance demands immediate attention and special care. Like lifeblood for the body health, the correct flow of information in BD is also necessary for the precision of operations in a company (Hassas-Yeganeh & Baghomanian, 2006).

Research provides two alternative explanations on the role of related party transactions. The first is the efficient transaction hypothesis (Friedman et al., 2003; Pozzoli and Venuti, 2014), according to which RPTs are an effective way to reduce transaction costs through the formation of a group internal market (Claessens et al., 2006; Jian and Wong, 2010). The second is the conflict of interests' transaction hypothesis (Pozzoli and Venuti, 2014), in which RPTs are a means through which managers and controlling shareholders (insiders) expropriate the firm's resources for private benefit, to the detriment of minority shareholders and creditors (outsiders) (Mohammed, 2020; Johnson et al., 2000). Opportunistic RPTs are used to improve the firm's financial performance (Jian and Wong, 2010; Williams and Taylor, 2013), and there is a tendency for firms to use RPTs to boost financial performance during the pre-initial public offering (IPO) period (Aharony et al., 2010) causing a negative impact on post-IPO long-term performance (Chen et al., 2011). Empirical research provides evidence of the propension for business group owners to transfer profits from companies where they have low cashflow rights, to companies where they have high cashflow rights (Bertrand et al., 2002). The controlling shareholder in a business group may exploit different types of shareholding structures (direct, indirect and pyramidal ownership) in order to gain private benefits via RPTs, making it harder to identify the related party (Ali et al., 2021). Furthermore, the literature, basing on quantitative analysis methods, suggests that transactions with related parties may be either a substitute (El-Helaly et al., 2018) or a complement to EM practices (Thomas et al., 2004; Marchini et al., 2018), as well as a standalone tool to manipulate earnings (Chen et al., 2011).

Summary of internal research results indicates that numerous studies have been conducted on factors affecting transactions with related parties, the results of which have sometimes been contradictory, but the relationship between the mechanisms of the research

in question and related transactions has not yet been examined. In other words, the effect of board of directors' characteristics on transactions of goods and financial resources with related parties has not yet been examined and tested, which is one of the innovations of leading research, and this led to the conduct of the present study. The importance of this research is that the results of the research can help investors, creditors, and other users of financial statements understand the nature of transactions with related parties, the investment behavior of companies, and the effectiveness of corporate governance mechanisms in the Iranian business environment. Therefore, considering the above, the purpose of the present study is to investigate the effect of board of directors' characteristics on transactions of goods and financial resources with related parties in order to take a step towards enriching accounting research in this field and, by presenting its findings, to help users of financial statements in better analysis. For this purpose, after stating the theoretical foundations and relevant perspectives, which are briefly presented in the second section, a review of similar research is conducted and research hypotheses are formulated. The research method, models used, and research results are presented next. The final section of the research is also dedicated to conclusions and research suggestions.

## 2. Literature Review

Related party transactions (RPTs) are defined as the transfers of resources or obligations between related parties, no matter they are expressed in monetary terms. A related party is principally one that is able to control or have an effect on a business entity or the one controlled or owned by it (Chien & Hsu 2010).

RPTs are viewed from two perspectives, addressing various aspects. The first perspective is in line with the agency problem, maintaining that such transactions are utilized to gain personal benefits for managers and bring about losses to firms and shareholders. Alternatively, managers misrepresent financial statements to conceal the adverse effects of such transactions (Gordon et al., 2004; Chung et al., 2006; Jiang et al., 2008; Aharony et al., 2010).

In recent frauds, managerial opportunism has been one of the highest conflicts and main factors discussed within the framework of Agency Theory and even a key driver in the misuse of assets and misleading financial reporting. The examples of opportunistic RPTs can be observed in Enron, wherein the managers sought personal benefits through RPTs and distorted financial statements to avoid the negative consequences of these practices. In many of such frauds, management had previously exploited RPTs to enrich themselves and create misleading financial

statements (Kohlbeck & Mayhew 2010). According to Habib et al. (2015) and Agency Theory, RPTs raise concerns because managers reduce profits and the reliability of financial statements by inappropriately transferring wealth, and then lower the effectiveness of contracts designed to settle agency conflicts and ultimately cause losses to shareholders.

The second perspective reflects on RPTs as a part of the business entity's demand and a guarantee of managers' work in firms. As an effectiveness perspective toward RPTs, it sticks to the concept of transaction costs presented by Coase (1937) and Williamson (1975). Moreover, it does not consider RPTs to be harmful, but more exactly affirms that such transactions may be beneficial to shareholders. In this way, the presence of high-quality corporate governance activities can moderate the negative impacts of RPTs and consequently boost firm performance (Abdul Wahab et al., 2010; Gordon et al., 2004; Gordon & Henry 2005). As implied in previous studies, good corporate governance is an effective tool to diminish opportunistic management behavior, improve reporting quality in firms, increase firm value, and shift RPTs that turn conflicts of interest into efficient transactions (Denis & McConnell, 2003; Bhagat & Bolton, 2008; Gordon & Henry, 2005; Chien & Hsu, 2010; Abdul Wahab, 2010).

Generally, RPTs have both positive and negative effects on firm value (Bansal et al., 2020). Such transactions can have different shades, and firms can thus control and minimize their disadvantages to achieve their benefits. Accordingly, reaching this type of balance is not easily possible (Wong et al., 2015).

Not like developed economies, the developing ones such as Iran are drawn against a high amount of centralized ownership. In such economies, a large gap exists between cash flow and control rights. Some drawbacks associated with law enforcement in developing countries also lead them to being in support of centralized ownership to cut the costs of monitoring management (Dalci, 2019). In centralized ownership, the magnitude of the agency problem between the manager and shareholders is demoted because controlling shareholders have greater incentives to monitor management. On the other hand, such shareholders have more incentives and opportunities to benefit from firms' resources through RPTs, as compared to the minority ones (Vermeulen, 2012). The deficiency of a proper legal environment and monitoring mechanisms may also cause minority shareholders to worry that controlling shareholders will deprive them of their rights through RPTs. The transfer of resources between the firm and its related parties thus multiplies their personal interests. In other words, there is a concern that such transactions will be influenced by the self-interest of a group of

stakeholders in the firm, including the majority owners.

As well, empirical research provides evidence of the tendency of business group owners to shift profits from firms with low cash flow rights to the ones with high cash flow rights (Bertrand et al., 2002). The controlling shareholders in the business group may accordingly misuse various types of shareholding structures (viz., direct, indirect, and pyramidal ownership) to obtain private benefits through RPTs, making it more difficult to identify the related party (Ali et al., 2021). Furthermore, the literature based on quantitative analysis methods suggests that RPTs may be either an alternative or a complement to the earnings management ones as well as an independent tool for earnings manipulation practices (El-Helaly et al., 2018).

On the other hand, there is evidence that CEO duality may bring down the effectiveness of the board to monitor managerial behavior and augment earnings management (Chi et al., 2015). The literature additionally suggests that CEO founders tend to get engaged in upward earnings management once approaching re-election in order to prevent minority shareholders from demanding professional CEOs to improve financial performance in firms (Ansari et al., 2021). On the subject of the impact of board characteristics on RPTs, there is also evidence that family firms with multiple family members involved in the business are less likely to undertake such transactions than those wherein only one family member owns or manages the business (Fan & Yu, 2022). Besides, controlling shareholders in group-controlled firms make use of their controlling power among group members to manipulate earnings through RPTs, and organizational complexity also allows them to conceal such transactions (Khodamipour et al., 2012).

In general, the present study was to investigate the effects of BD characteristics on RPTs (here, transactions of goods and financial resources), so the main problem addressed was whether BD characteristics could have an effect on RPTs in companies listed on the Tehran Stock Exchange (TSE), Iran. Within this framework, the research hypotheses were developed as follows:

- 1) BD independence has an effect on transaction of goods with RPs.
- 2) BD independence has an effect on transaction of financial resources with RPs.
- 3) BD size has an effect on transaction of goods with RPs.
- 4) BD size has an effect on transaction of financial resources with RPs.
- 5) CEO dual responsibility has an effect on transaction of goods with RPs.

- 6) CEO dual responsibility has an effect on transaction of financial resources with RPs.
- 7) CEO tenure in BD has an effect on transaction of goods with RPs.
- 8) CEO tenure in BD has an effect on transaction of financial resources with RPs.

Afterward, some previous research in this line was reviewed. For instance, Shashank and Thenmozhi (2020) had investigated the relationship between ownership structure and RPTs, and stated that centralized management ownership could be positively correlated with RPTs, and it was quite likely that RPTs were beneficial to minority shareholders. Moreover, there could be RPTs in the highest value companies. Agnihotri and Bhattacharya (2019) had also examined internationalization, RPTs, and corporate ownership structure using empirical evidence from an emerging market, viz., an Indian manufacturing company, and discovered that RPTs had a negative effect on internationalization. As well, ownership in business groups could strengthen the negative relationship between RPTs and internationalization, while foreign shareholders could undermine it. Yuan (2019) had additionally studied the relationship between corporate governance and voluntary disclosure of RPTs, and concluded that foreign ownership, independent managers, information disclosure, and company age had significant effects on voluntary disclosure of RPTs. On the other hand, company size was negatively correlated with such disclosure. Other factors, such as government ownership, professional supervisors, company performance, CEO dual responsibility, and audit quality had no impacts on RPTs.

In this context, Khatiri et al. (2022) had explored RPTs and unexpected fees for loss-making audit companies, and then confirmed the moderating effect of ownership structure. They had additionally assumed a significant positive relationship between RPTs and unanticipated audit fees. As well, BD independence and CEO dual responsibility had a significant effect on this relationship. On the other hand, BD size and CEO stability were not so. In view of that, RPTs could increase unexpected audit costs, and BD independence and CEO dual responsibility could reduce the relationship between RPTs and unforeseen audit costs. Baghoomian and Mohammadi (2020) had then investigated the effect of financial expertise in audit committee members on the relationship between environmental risks and audit fees in companies. Although the research hypotheses had been rejected, they had revealed that boosting financial expertise in audit committee members had not demoted the strength of the direct relationship between environmental risks (including financial, operational, and commercial risks) and audit fees. Besides, Mohammadi (2019) had explained the relationship

between RPTs and audit service fees in the companies listed on the TSE, Iran, and established no significant relationship between RPTs (viz., total, sales, and purchases) and audit fees. Other results had further demonstrated that non-audit fees were not effective in the relationship between RPTs (namely, total, sales, and purchase) and audit fees. In Panahi (2018), the effect of the volume of RPTs and unexpected audit fees in the companies listed to the TSE, Iran, had been considered. The analytical conclusions had further indicated that the volume of purchase transactions from (sales to) RPs had a significant positive effect on unexpected audit fees. In the companies where RPTs were high, unexpected payment audit fees could also be at high levels.

### 3. Methodology

The data-gathering method is descriptive-correlation research and is targeted in the applied research category in terms of purpose. The present article uses the combined data method. This technique (panel/combined), which combined time-series data and cross-sectional data, is broadly employed by many scholars. This method is used for the issues that cannot be investigated in time-series and cross-sectional or when the number of data is low. The integration of time-series and cross-sectional data and the need for using them more likely is owing to increasing the number of observations, raising degrees of freedom, reducing heteroscedasticity of variance, and decreasing collinearity between variables (Salehi et al. 2020). Besides, panel data with random effects have been used to test the hypotheses of this study, and the period of this research is 6 years, which is from 2018 to 2023. In this paper, the F-Limer test is used to examine if a model estimation should be based on the ordinary least squares (OLS) or panel data method. After that, the Hausman test is employed to identify whether panel data with fixed effects should be used or panel data

with random effects. Moreover, the Wald test for evaluating heteroscedasticity and the variance inflation factor (VIF) index for measuring the severity of multicollinearity is used in this study. To identify the problem of serial autocorrelation among residuals, Durbin–Watson is employed, too. Finally, other statistical tests such as the residual cross-section dependence test, unit root test, and the regressor endogeneity test have been performed.

The statistical sample of this research is all the manufacturing companies listed on TSE during the period 2013–2018. In this study, to determine the sample size, the systematic elimination method has been used based on the following criteria:

- The audited financial information of each of the companies under study must be available.
- The financial periods of companies should be finished at the end of the solar year (20 March).
- The companies should not have changed their fiscal year during the study period, and they should not have more than six months trading halts.
- Building on the research time (2018–2023), the company should be listed on the Tehran Stock Exchange before the year 2018 and its name is not removed from the listed companies by the end of 2023.
- The type of the business activity should be productive; hence, investment companies, leasing, credit, and financial institutions and banks are not included in our sample due to these companies have quite different natures in terms of reporting and ownership structure (Moradi et al. 2021).

Taking account of the conditions of Table 1 that have been used in many local studies (Salehi et al. 2018; Moradi et al. 2020, 2021), a sample size of 125 TSE manufacturing firms has been selected.

**Table 1. The study limitations.**

Limitations	Firms
All listed firms on the Tehran Stock Exchange (TSE) by the end of March 2023	620
Investment firms, leasing, credit, and financial institutions and banks	(145)
Companies that have more than 3 months trading halt or have changed fiscal year during the period under study	(165)
Companies whose information is not available or have been removed from the stock exchange	(185)
The remaining firms in the sample	125

#### 3-1. Models

To test the research hypotheses no. 1, 3, 5, and 7, the regression model (Eq. 1) was considered, developed based on the indicator of transaction of goods with RPs:

$$\text{Eq.1} \quad \text{ARPTG}_{it} = \alpha_0 + \alpha_1 \text{DUAL}_{it} + \alpha_2 \text{BDSIZE}_{it} + \alpha_3 \text{BDIND}_{it} + \alpha_4 \text{TENURE}_{it} + \alpha_5 \text{SIZE}_{it} + \alpha_6 \text{GROWTH}_{it} + \alpha_7 \text{LEVERAGE}_{it} + \alpha_8 \text{AUDIT}_{it} + \varepsilon_{it}$$

The regression model (Eq. 2) was then applied, developed with reference to the indicator of transaction of financial resources with RPs, to test the research hypotheses no. 2, 4, 6, and 8:

$$\text{Eq. 2} \quad \text{ARPTF}_{it} = \alpha_0 + \alpha_1 \text{DUAL}_{it} + \alpha_2 \text{BDSIZE}_{it} + \alpha_3 \text{BDIND}_{it} + \alpha_4 \text{TENURE}_{it} + \alpha_5 \text{SIZE}_{it} + \alpha_6 \text{GROWTH}_{it} + \alpha_7 \text{LEVERAGE}_{it} + \alpha_8 \text{AUDIT}_{it} + \varepsilon_{it}$$

### 3-2. Variables

The independent variables in this study were BD characteristics, including:

- CEO dual responsibility (DUAL), as a virtual variable of 0 and 1. If the CEO was the BD chairman or vice-chairman, the value was zero; otherwise, it was 1. This variable had been also employed with the same definition in Mukherjee and Sen (2019) and Kaur and Singh (2018).
- BD size (BDSIZE), similar to that in Limpan and Limpan (2006), meant that the number of BD managers was a measure of BD size.
- BD independence (BDIND), which was in line with Dimitropoulos and Asteriou, so the number of non-executive managers to the total number of BD members was utilized to assess BD independence.
- CEO tenure (Tenure), which is equal to the number of years a person has been the CEO of a company (Goldman et al., 2017).

To evaluate RPTs, two indicators were accordingly exploited as the dependent variables in order to represent different aspects of such transactions:

- Transaction of goods with RPs (RPTG), which was described as the sum of purchases and sales with RPs divided by total assets.
- Transaction of financial resources with RPs (RPTF), which represented the total demand and debt with RPs divided by total assets.

In keeping with the related literature, four control variables with the possibility of affecting the study results were taken into account:

- Company size (Size), which denoted the natural logarithm of total assets.
- Company growth (Growth), calculated using market-to-book ratio, showed that the company's market value was equal to the company's stock price at the end of the year in the number of issued shares, and the company's book value was equal to that of the shareholders' equity.
- Financial leverage (Leverage), which was equal to the ratio of liabilities to total assets.
- Audit reference (Audit), which suggested transparency and disclosure in financial statements of companies. As well, it revealed which basic financial statements were audited and reviewed by which group of auditors. If the audit organization was the company auditor, its value was 1; otherwise, it was 0.

## 4. Results

### 4-1. Descriptive Statistics

Table 2 shows the descriptive statistics for the study models. The main central index was the mean, referring to the balance point and the center of distribution, to depict the centrality of the data. According to Table 1, the mean values of transactions of goods and financial resources with RPs in the sample companies were 0.420 and 0.198, respectively, and their highest values were 4.13 and 1.93, in that order. These two independent variables as RPTs were then divided by total assets to reach homogeneity. When interpreting the descriptive statistics, the way the variables were calculated needed to be considered. The median was also another central index that indicated the state of the statistical population, meaning that most data were around this point.

Table 2. Descriptive statistics for study variables

Variable	Symbol	Mean	Median	Maximum	Minimum	Standard deviation	Number of observations
CEO dual responsibility	DUAL	0.255	0.00	1.00	0.00	0.31	750
BD size	BDSIZE	6.88	8.00	10.00	1.00	0.76	750
BD independence	BDIND	0.355	0.44	1.00	0.00	0.32	750
CEO tenure	TENURE	3.87	3.00	9.00	0.00	0.25	750
Transaction of goods with RPs	RPTG	0.42	0.11	4.13	0.00	0.71	750
Transaction of financial resources with RPs	RPTF	0.19	0.07	1.933	0.00	0.41	750
Company size	SIZE	28.33	28.05	33.47	25.11	1.62	750
Company growth	GROWTH	2.55	1.67	12.34	-2.25	2.44	750
Financial leverage	LEV	0.76	0.54	1.34	0.29	0.19	750
Audit type	AUDIT	0.25	0.00	1.00	0.00	0.52	750

To reduce the effect of outlier observations on the study results, one percentage of the smallest and largest data related to continuous variables was replaced with the number of the closest observations. The correlation test results, not reported here, demonstrated no high correlation between the independent variables. That is, there was no problem of collinearity between the independent variables.

**4-2. Collinearity Test**

One of the problems encountered in regression analysis was the occurrence of collinearity between the variables in the estimated model. Here, variance inflation factor (VIF) was thus recruited to detect collinearity (Table 3). Accordingly, the calculated VIF value was greater than 1 and below 10, and no collinearity problem existed.

**4-3. Classical Test of Hypothesis with Pooled or Panel Data**

To choose between two types of estimation models (viz., pooled and panel), the F-Limer (Chow) Test was first fitted. It was assumed that the y-intercepts were

equal in the pooled data, and at least one of the sources was different from the others in the panel ones. In the F-Limer Test, the pooled model was utilized to fit the data if the null hypothesis was not rejected, but the panel one was employed if the null hypothesis was rejected. Using the Hausman Test, the fixed effects model was further tested against the random effects one, and then the best model was selected for estimation purposes. The F-Limer Test and Hausman Test results are given in Table 4.

**4-4. Heterogeneity of Variance and Autocorrelation between Error Components**

To check the presence or absence of heterogeneity of variance, the Breusch-Pagan test was utilized. As well, Breusch-Godfrey test was used to find the autocorrelation between error components. The results of the autocorrelation between error components are presented in Table 5, indicating no autocorrelation, but a problem of heterogeneity of variance. To deal with this problem, the generalized least squares (GLS) estimators were employed.

Tabel 3. Collinearity

Independent variable	Symbol	Coefficient of variation	VIF
CEO dual responsibility	DUAL	0.008	1.0245
BD size	BDSIZE	0.012	1.0243
BD independence	BDIND	0.0043	1.0246
CEO tenure	TENURE	0.0044	1.0185

Table 4. F-Limer Test and Hausman Test results

Hypotheses	F-Limer Test		Hausman Test		Results
	F statistic	Significance level	Chi-square statistic	Significance level	
1	10.6166	0.0000	9.2233	0.0000	Panel fixed effects
2	10.7745	0.0000	11.8080	0.006	Panel fixed effects
3	10.6533	0.0000	9.0877	0.005	Panel fixed effects
4	10.7699	0.0000	10.0553	0.0005	Panel fixed effects
5	10.6211	0.0000	12.4343	0.0000	Panel fixed effects
6	10.7322	0.0000	9.0332	0.003	Panel fixed effects
7	10.6644	0.0000	10.1320	0.0000	Panel fixed effects
8	10.7011	0.0000	9.9890	0.0001	Panel fixed effects

Table 5. Heterogeneity of variance and autocorrelation between error components

Hypotheses	Breusch-Pagan test		Heterogeneity	Breusch-Godfrey test		Autocorrelation
	Likelihood ratio Chi-square	Probability	Variance	F statistic	Significance level	
1	12344.55	0.0000	Yes	255.6778	0.0000	No
2	12564.65	0.0000	Yes	266.5304	0.0000	No
3	12443.76	0.0000	Yes	267.6756	0.0000	No
4	12155.67	0.0000	Yes	269.7886	0.0000	No

Hypotheses	Breusch-Pagan test		Heterogeneity	Breusch-Godfrey test		Autocorrelation
	Likelihood ratio Chi-square	Probability	Variance	F statistic	Significance level	
5	12570.69	0.0000	Yes	248.8990	0.0000	No
6	12657.59	0.0000	Yes	261.0544	0.0000	No
7	12544.34	0.0000	Yes	239.6756	0.0000	No
8	12388.39	0.0000	Yes	233.0977	0.0000	No

#### 4-5. Testing Hypotheses no. 1, 3, 5, and 7

The results of testing hypotheses no. 1, 3, 5 and 7, developed according to Model 1, are provided in Table 6.

Considering the F-Statistic probability less than 0.05, it was confirmed with a 95% confidence interval (CI) that the overall model was significant. The coefficient of determination of the model also demonstrated that 67% of the variations in transaction of goods with RPs were explained by the independent and control variables. Besides, the Durbin-Watson statistic value, equal to 2.01, was between 1.5 and 2.5, implying no autocorrelation between the model errors. The significance analysis of the coefficients (Table 6) correspondingly suggested that the T-Statistic probability of the coefficients of CEO dual responsibility, BD size, BD independence, and CEO tenure were smaller than 0.05, so there was a significant relationship between transaction of goods with RPs and independent variables with a 95% CI. According to the sign of the coefficient, a direct relationship occurred for CEO dual responsibility and BD size, which authenticated the view of transaction efficiency, whose advocates appreciate such transactions as useful as economic exchanges in the interest of general shareholders. Moreover, the separation of BD chairman from CEO could make BD better control high-risk plans proposed by CEO, thereby improving company performance and reducing profit manipulation. For the variables of BD independence and CEO tenure, the relationship was inverse, which verified the view of a conflict of interest because its supporters deem these transactions as potentially harmful and believe that RPTs are not in the company's interest but for the benefit of major shareholders and to the detriment of small ones.

Therefore, hypotheses no. 1, 3, 5, and 7 were accepted, and a significant relationship was concluded between transaction of goods with RPs and independent variables with a 95% CI. Among the control variables, a significant relationship was further observed between company size and company growth and transaction of goods with RPs given that the T statistic probability was less than 0.05 for both variables, so the selection of these variables to control

the conditions affecting the dependent variable was appropriate for better hypothesis testing. Nonetheless, financial leverage and audit type did not have a significant impact on transaction of goods with RPs.

#### 4-6. Testing Hypotheses no. 2, 4, 6, and 8

The results related to testing hypotheses no. 2, 4, 6, and 8, developed according to Model 2, are given in Table 7.

Referring to the results in Table 7, according to the F statistic value (32.08) and its significance level equal to 0.00, it was concluded that the null hypothesis was rejected, and the regression equation was significant at the 0.05 level. In this model, the coefficient of determination was 0.54, which meant that 54% of the variations in the dependent variable could be explained by the independent and control variables. Besides, the Durbin-Watson statistic value, equal to 1.98, was between 1.5 and 2.5, indicating no autocorrelation between the model errors. According to the statistical probability related to CEO dual responsibility, BD size, BD independence, and CEO tenure, which were less than 0.05, it was established that hypotheses no. 2, 4, 6, and 8 were accepted. In other words, CEO dual responsibility, BD size, BD independence, and CEO tenure had a significant effect on transaction of financial resources with RPs. This effect was direct for CEO dual responsibility and BD size according to the sign of the coefficient, which confirmed the notion of transaction efficiency, and inverse for BD independence and CEO tenure, validating a conflict of interest.

Among the control variables, a significant relationship existed between company size and company growth and transaction of financial resources with RPs because the T-Statistic probability was less than 0.05 for both variables, implying that the selection of these variables to control the conditions shaping the dependent variable for a better hypothesis testing was appropriate. On the other hand, financial leverage and audit type did not have a significant impact on transaction of financial resources with RPs.

Table 6. Hypothesis testing results

Variable	Symbol	Coefficient	T statistic	Significance level
Constant	C	9.55	7.50	0.00
CEO dual responsibility	DUAL	1.560	14.849	0.00
BD size	BDSIZE	0.994	5.327	0.00
BD independence	BDIND	-1.664	-2.002	0.045
CEO tenure	TENURE	-0.542	-3.255	0.00
Company size	Size	0.97	5.36	0.00
Company growth	GROWTH	1.55	14.66	0.00
Financial leverage	LEV	0.17	0.92	0.35
Audit type	AUDIT	0.67	1.66	0.244
Adjusted coefficient of determination		0.67		
F-Statistic probability		0.00		
Durbin-Watson Statistic		2.01		
F statistic		27.99		

Table 7. Hypothesis testing results

Variable	Symbol	Coefficient	T statistic	Significance level
Constant	C	0.32	7.04	0.00
CEO dual responsibility	DUAL	0.18	3.35	0.00
BD size	BDSIZE	0.84	4.77	0.00
BD independence	BDIND	-1.99	-2.68	0.038
CEO tenure	TENURE	-0.44	-3.01	0.00
Company size	Size	0.38	11.54	0.00
Company growth	GROWTH	1.55	14.66	0.00
Financial leverage	LEV	0.001	0.59	0.55
Audit type	AUDIT	0.13	0.69	0.48
Adjusted coefficient of determination		0.54		
F-Statistic probability		0.00		
Durbin-Watson Statistic		1.98		
F statistic		32.08		

## 5. Discussion and Conclusions

The available evidence suggests that corporate governance has become one of the most common terms in the global business vocabulary at the beginning of the new millennium. Empirical evidence suggests the moderating role of managers and board characteristics in related party transactions. Supervisory mechanisms, which have been widely discussed and considered in the corporate governance literature in developed and emerging countries, play a fundamental role in monitoring and controlling the process of transactions with related parties and, consequently, affect the performance of the company. Related party transactions can be used to mislead users of financial statements. Related party transactions are a complex issue that is currently receiving attention from regulators and researchers. These transactions are difficult to address in accounting (American Institute

of Certified Public Accountants, 2001).

Given the expansion of transactions with related parties and the increasing use of these transactions in companies, it is necessary to establish supervisory mechanisms to reduce financial crimes and improve performance. Among such supervisory mechanisms are the characteristics and role of the board of directors in companies and economic enterprises (Muth and Donaldson, 1998).

The main objective of this study was to investigate the effect of board characteristics on related party transactions. In order to achieve this goal, eight hypotheses were proposed. Accordingly, studies related to 125 companies listed on the Tehran Stock Exchange for the years between 1397 and 1402 were analyzed.

In general, the study results demonstrated a significant relationship between BD characteristics and transactions of goods and financial resources with RPs.

The main characteristics were CEO dual responsibility, BD size, BD independence, and CEO tenure, of which CEO dual responsibility and BD size were directly correlated and BD independence and CEO tenure showed an inverse relationship.

The results of fitting Model 1, testing hypotheses no. 1, 3, 5, and 7, showed a significant relationship between CEO dual responsibility, BD size, BD independence, and CEO tenure and transaction of goods with RPs with a 95% CI. According to the sign of the coefficient, it was concluded that the relationship was direct for CEO dual responsibility and BD size, and inverse for BD independence and CEO tenure. It was thus argued that most transactions of goods with RPs could be non-cash, and part of inventory might be given to RPs instead of being sold to external customers and converted into cash. With respect to the conditions governing such transactions, consideration was non-cash or paid in the distant future, so companies could engage in such transactions once faced with lack of liquidity or a need for investment, and hence, operating cash flow could increase after a growth in sales of products or investment in profitable projects in companies. On the other hand, interpreting these results based on the efficiency or opportunism of transactions indicated a negative relationship between BD independence and CEO tenure and transaction of goods with RPs, to the detriment of small shareholders. This evidence and the significant negative relationship accordingly showed opportunistic behaviors in such transactions, whereas a significant positive relationship between CEO dual responsibility and BD size and transaction of goods with RPs denoted that such transactions could be carried out for the benefit of companies and lead to their efficiency, consistent with the results reported by Shashank and Thenmozhi (2020), Khatiri (2022), Panahi (2013), and Sohrabi-Nodehi (2013).

The results of fitting Model 2, testing hypotheses no. 2, 4, 6, and 8, further displayed a significant relationship between CEO dual responsibility, BD size, BD independence, and CEO tenure and transaction of financial resources with RPs with a 95% CI. According to the sign of the coefficient, it was concluded that the relationship was direct for CEO dual responsibility and BD size, and inverse for BD independence and CEO tenure. Therefore, hypotheses no. 2, 4, 6, and 8 were accepted. Considering a 95% CI, there was also a significant relationship between transaction of financial resources with RPs and independent variables. This could be due to the fact that companies often deal with their RPs to provide liquidity for the implementation of profitable development plans and seize profitable investment opportunities; therefore, RPTs could be beneficial to them. On the other hand, companies could invest in the

profitable development plans of RPs and thus get more returns. Based on the AT, the managers in the sample companies could do transaction of goods with RPs in line with the overall benefit of the company and thus increase its profit. In this way, the management had a positive performance and improved its credibility. Based on the reward hypothesis within the AT, this behavior could bring more rewards for managers and align their interests with those of shareholders. These results were in agreement with the studies of Shashank and Thenmozhi (2020), Khatiri (2022), Panahi (2013), and Sohrabi-Nodehi (2013).

According to the results of testing the research hypotheses, it is suggested to develop accounting and auditing standards in order to limit transaction of goods with RPs, for example, setting a ceiling or a specific time frame for settling such transactions. With regard to the study results, capital market activists, decision-makers, analysts, and potential and actual investors in the TSE, Iran, should consider the relationship between BD characteristics and transactions of goods and financial resources with RPs during making decisions in order to prevent and reduce the targeted transaction of companies with RPs and respect the rights of shareholders and all stakeholders.

These findings have practical implications for investors and auditors. They indicate that, although the level of RPTs, AEM and REM via abnormal discretionary expenses tends to be lower in family businesses, they might use opportunistic relationships between RPTs and EM, and board composition significantly influences the association. Moreover, the moderating effect of CEO duality on the board also suggest to regulators involved in issues related to corporate governance and RPTs a reflection on CEO power and board independence.

Also, based on the results, it can be suggested to the managers of business units that they reduce abnormal costs by reducing transactions with related parties. It can also be suggested to the composition of the board of directors of companies that they provide opportunities for employing more non-executive members, because according to the Commercial Law, such individuals cannot receive compensation for membership in the board of directors. On the other hand, since non-executive members in the composition of the board of directors of companies have heavier responsibilities for advancing affairs and goals and complying with the articles of association and approvals of the general assemblies of companies, it can improve the monitoring activities of the company's activities and can control transactions with related parties.

According to the findings of this study, it is recommended that capital market activists, decision-makers, analysts, and potential and actual investors of

the Tehran Stock Exchange consider the relationship between the characteristics of the board of directors and transactions with related parties when making decisions, in order to prevent and reduce targeted transactions between companies and related parties in order to respect the rights of shareholders and all stakeholders.

Our research studies a single country sample in order to focus on the role of board characteristics on the RPTs, preventing the confounding effects stemming from the use of different institutional settings. This might affect the generalizability of our findings, so future studies could analyze the possible effect of specific institutional aspects by extending the analysis to an international sample.

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