

Do All Related Party Transactions Matter? Evidence from Financial and Operational RPTs and the Cost of Debt in Indian Manufacturing Firms

Manoranjan Panda

Research Scholar, Vinod Gupta School of Management
Indian Institute of Technology Kharagpur
West Bengal, India
mpodisha97@gmail.com

Abhijeet Chandra

Associate Professor, Vinod Gupta School of Management
Indian Institute of Technology Kharagpur
West Bengal, India

Abstract

Related Party Transactions (RPTs) are common in corporate activities in emerging economies, particularly among firms within business groups and those with concentrated ownership structures. In the capital-intensive industrial sector characterized by complex supply chains, RPTs may improve operational efficiency and optimize internal resource allocation. Concurrently, they may create agency conflicts, reduce transparency, and increase financial risk. From a creditor's perspective, the attributes of these transactions considerably affect risk evaluation and, consequently, debt pricing decisions. This study examines the impact of related party transactions (RPTs) on the cost of debt for publicly listed manufacturing firms in India, employing panel data from the CMIE Prowess database, which includes Nifty 500 businesses from 2016 to 2025. The magnitude of related party transactions (RPTs) is evaluated about total assets and is thereafter classified into operational RPTs (sales and purchases) and financial RPTs (loans, advances, and guarantees). The cost of debt is denoted by the effective interest rate, calculated by dividing interest expenses by total borrowings. The study controls for firm-specific characteristics such as leverage, profitability, growth, asset tangibility, and company size, employing panel regression techniques. The findings demonstrate that financial related party transactions (RPTs) have a positive and statistically significant impact on the cost of debt, indicating that creditors see them as increasing risk. In contrast, operational RPTs have no significant association with borrowing costs. The research highlights the need of disaggregating related party transactions (RPTs) to understand debt pricing and offers insights into creditor behaviour and corporate governance in developing countries.

Keywords

Related Party Transactions, Cost of Debt, Financial RPT, Corporate Governance, Manufacturing Firms.

1. Introduction

Related party transactions (RPTs) are a crucial aspect of corporate operations, particularly in emerging economies such as India, where enterprises frequently operate inside business groups and exhibit concentrated ownership structures. These transactions include the exchange of resources, services, or liabilities between a corporation and its related entities, including promoters, subsidiaries, and affiliated firms. While related party transactions (RPTs) may improve operational efficiency, internal capital allocation, and supply chain coordination, they also present significant challenges with corporate governance, transparency, and the potential theft of company resources.

The importance of RPTs is especially apparent in the manufacturing sector, characterized by its capital intensity, complex production processes, and considerable interdependencies among firms. Manufacturing companies often rely on related party transactions for procurement, sales, and intra-group financing, making these transactions vital to their operational structure. The excessive use of related party transactions (RPTs) may obscure the true financial condition of organizations, hence intensifying information asymmetry between companies and external stakeholders.

This information disparity is essential from a creditor's perspective. Lenders rely heavily on financial disclosures and governance metrics to assess borrower risk and determine loan terms. Significant linked party transactions may suggest potential governance issues, such as tunnelling, profit distortion, or inefficient resource distribution. Consequently, creditors may see businesses with more exposure to particular categories of related party transactions as more perilous and require higher borrowing rates as compensation for increased uncertainty.

Despite regulatory measures under the Companies Act, 2013, and SEBI regulations mandating the disclosure of related party transactions, concerns remain over the effectiveness of these disclosures in addressing governance challenges. It is especially unclear if creditors differentiate between various types of related party transactions when evaluating corporate loan pricing.

This study aims to investigate the impact of related party transactions on the cost of debt in Indian listed manufacturing businesses, specifically differentiating between financial and operational related party transactions. Although previous research has examined the overarching consequences of RPTs, there is a paucity of empirical information about the impact of various forms of RPTs on debt pricing within a sector-specific context. This study primarily investigates whether the characteristics of related party transactions affect borrowing costs. This study examines manufacturing businesses listed in the Nifty 500, utilizing firm-level panel data from the CMIE Prowess database, to empirically analyse creditor responses to financial and operational related party transactions in an emerging market setting.

1.1 Objectives

The main aim of this study is to analyse the influence of related party transactions on the cost of debt in Indian publicly traded manufacturing companies. The study specifically examines whether the characteristics of related party transactions affect borrowing costs by differentiating between financial and operational related party transactions. This differentiation enables the analysis to evaluate whether creditors react differently to several categories of intra-group transactions in the context of corporate debt pricing. The study seeks to ascertain if financial transactions, including loans, advances, and guarantees, are seen as risk-enhancing, as opposed to operational transactions such as sales and purchases, which are often considered normal company activity. This method offers profound insights into the manifestation of governance-related signals in debt pricing determinations. The study accounts for essential business-specific variables, such as leverage, profitability, growth, asset tangibility, and firm size, to guarantee that the identified association is not influenced by fundamental financial attributes.

The report enhances the literature by providing a targeted and detailed analysis of related party transactions within the Indian manufacturing sector. By transcending aggregate measurements, it offers a more nuanced comprehension of how various forms of RPTs affect borrowing costs in an emerging market context.

2. Literature Review

Related party transactions (RPTs) have been extensively analysed in corporate governance literature due to their dual characteristics—they may improve operational efficiency while also facilitating opportunistic behaviour. This is especially pertinent in emerging economies, where companies frequently function inside corporate conglomerates and ownership structures are significantly concentrated. In these contexts, RPTs significantly influence the attitudes of external stakeholders, particularly creditors.

Gordon et al. (2004) contend that related party transactions diminish openness and exacerbate information asymmetry, thereby undermining the trustworthiness of financial reporting. Similarly, Jian and Wong (2010) demonstrate that related party transactions (RPTs) can facilitate tunnelling and earnings manipulation, therefore compromising firm fundamentals and elevating perceived risk.

Cheung et al. (2006) further indicate that related transactions frequently correlate with the expropriation of minority owners, hence eliciting worries among lenders about possible agency conflicts. From a debt market standpoint, related party transactions (RPTs) directly affect creditors' risk assessment.

Berkman et al. (2009) demonstrate that financial activities, including loan guarantees to affiliated entities, elevate credit risk and result in increased borrowing expenses. The findings indicate that creditors perceive related party transactions as indicators of governance risk and include them into their debt pricing choices. Recent empirical research offers enhanced validation for this correlation.

Habib et al. (2020) demonstrate that total related party transactions (RPTs) substantially elevate the cost of debt, especially when these transactions are irregular or opportunistic, so corroborating the value-destroying perspective of RPTs. The study emphasizes that deficient internal control settings exacerbate the adverse effects of related party transactions on borrowing costs, suggesting that the quality of governance significantly influences creditor views.

Nguyen (2020) presents evidence from Vietnam indicating that enterprises with elevated levels of related party transactions (RPTs) incur higher borrowing costs, implying that lenders perceive RPTs as a source of financial and governance risk. Nevertheless, the analysis reveals that state ownership might mitigate this link by diminishing perceived risk, suggesting that institutional considerations affect creditors' interpretations of related party transactions (RPTs).

Eulaiwi et al. (2023) investigate the correlation between related party transactions (RPTs) and the cost of debt in Gulf Cooperation Council (GCC) nations, revealing that overall RPTs, especially those based on purchases, substantially elevate borrowing expenses. The authors contend that related party transactions diminish the trustworthiness of financial statements and exacerbate information asymmetry, thereby elevating credit risk and the cost of financing. Their findings indicate that governance methods and ownership arrangements affect the robustness of this association. Balyuk (2014) provides a sophisticated view on related-party lending, demonstrating that loans from related parties typically have higher interest rates than external borrowing. This indicates a premium linked to knowledge asymmetry and insufficient diversity. The research indicates that this type of lending may serve as a signaling mechanism, allowing enterprises to get external finance in the future despite elevated initial borrowing expenses. This underscores the intricate function of RPTs in loan markets, where they may both elevate costs and alleviate financing limitations.

Recent research further corroborate the governance-risk approach. Eulaiwi et al. (2023) reaffirm a positive correlation between RPTs and the cost of debt, substantiating the notion that creditors incorporate governance concerns into their lending choices. Pasc and Hategan (2023) demonstrate that improved disclosure of related party transactions heightens scrutiny from auditors and stakeholders, signifying that these transactions continue to be a significant issue in financial reporting. Capatina-Verdes (2022) similarly identify governance risk and transparency as significant mechanisms by which related party transactions affect financial outcomes. Habib and Muhammadi (2021) indicate that elevated RPT intensity correlates with heightened information asymmetry and diminished governance, adversely impacting the credibility of financial reporting. Consequently, external stakeholders, such as creditors, see an elevated risk.

Chen et al. (2021) demonstrate that related party transactions are associated with agency conflicts and can negatively impact business value, particularly in situations with weak governance. The research highlights that financial related party transactions are more prone to opportunistic utilization, hence elevating perceived financial risk.

Kumari and Pattanayak (2022) determine that companies with increased related party transaction (RPT) exposure demonstrate diminished transparency and elevated agency costs. Their findings indicate that such enterprises encounter more scrutiny from lenders, who include corporate governance-related risks into their financing decisions. El-Helaly et al. (2020) investigate the correlation between related party transactions and firm value, concluding that extensive related party transactions correlate with diminished firm value and inferior governance quality. The research indicates that these transactions exacerbate agency conflicts and diminish transparency, causing external stakeholders to perceive an elevated risk.

Hwang et al. (2021) examine related party transactions within the framework of corporate governance and determine that businesses involved in elevated levels of RPTs typically demonstrate diminished profits quality and increased information asymmetry. Their findings suggest that governance issues might affect stakeholders' risk evaluations and funding choices. In addition to governance issues associated to RPTs, firm-specific financial attributes significantly influence the cost of debt.

Anderson et al. (2003) demonstrate that companies with less agency conflicts and robust governance frameworks experience reduced borrowing costs. Bliss and Gul (2012) further ascertain that enterprises seen as riskier due to governance deficiencies or political affiliations typically incur elevated borrowing rates. Moreover, factors like leverage, profitability, business size, growth prospects, and asset tangibility are recognized predictors of borrowing expenses. Enterprises with excessive leverage face increased default risk, resulting in elevated interest rates, whereas successful enterprises with robust asset bases can get loans at reduced prices due to superior repayment capability and collateral availability.

Notwithstanding the increasing global data, scant study has investigated the correlation between RPT intensity and the cost of debt inside Indian manufacturing enterprises. Considering the widespread nature of company group structures, intra-group transactions, and dependence on debt financing in this sector, it is crucial to ascertain if creditors include RPT-related governance indicators into borrowing costs.

This study enhances the literature by offering empirical evidence about the influence of related party transaction intensity on the cost of debt, utilizing firm-level panel data from Indian listed manufacturing companies.

Although previous research predominantly examines the overall effect of related party transactions (RPTs) on loan costs, there has been insufficient focus on the diverse characteristics of these transactions. The differentiation between financial related party transactions (RPTs), including loans, advances, and guarantees, and operational RPTs, encompassing sales and purchases, is inadequately examined. The categories vary markedly in their risk implications and possibility for opportunistic behavior. Financial related party transactions are more prone to resource diversion and agency conflicts, while operational related party transactions are generally integral to everyday corporate operations. Consequently, analyzing related party transactions within a disaggregated framework is crucial for comprehending how creditors assess and price governance-related risks. This study fills this gap by differentiating between financial and operational related party transactions (RPTs) and examining their distinct effects on the cost of debt.

Current literature indicates that related party transactions (RPTs) affect organizations' financial results by impacting corporate governance, transparency, and information asymmetry. From an agency theory perspective, RPTs may facilitate opportunistic behaviour such as tunnelling, resource diversion, and earnings manipulation, thereby increasing perceived risk for external stakeholders. From a creditor's perspective, these governance issues result in an elevated perceived credit risk and, thus, increased borrowing expenses. Previous empirical research suggests that enterprises with increased exposure to related party transactions (RPTs) generally incur higher lending costs, as lenders include corporate governance-related risks into their pricing strategies. The risk implications of related party transactions may differ based on the characteristics of the transactions.

Specifically, financial related party transactions, including loans, advances, and guarantees, are more prone to agency conflicts and the possible expropriation of resources. These transactions may indicate elevated financial risk and are thus anticipated to raise borrowing prices. Conversely, operational related party transactions, including sales and acquisitions, are often considered ordinary company activity and may not be viewed as increasing risk by creditors. Considering that manufacturing enterprises are capital-intensive and strongly dependent on external financing, creditors are likely to distinguish among various forms of related party transactions when evaluating risk. Consequently, the subsequent hypotheses are posited:

Accordingly, the following hypotheses are proposed:

H1a: Financial related party transactions (FRPT) have a positive and significant impact on the cost of debt (COD) among Indian manufacturing firms.

H1b: Operational related party transactions (ORPT) do not have a significant impact on the cost of debt (COD) among Indian manufacturing firms.

3. Methods

This study uses a quantitative approach and panel data regression techniques to examine the impact of related party transactions on the cost of debt among Indian listed manufacturing firms. The panel structure allows the analysis to capture both cross-sectional and time-series variations.

The dependent variable, cost of debt (COD), is measured as interest expense divided by total borrowings. The key independent variables are financial RPT (FRPT) and operational RPT (ORPT), both scaled by total assets. FRPT includes loans, advances, and guarantees, while ORPT covers sales and purchase-related transactions.

The model controls for firm-specific characteristics, including leverage (LEV), profitability (ROA), growth (GROWTH), asset tangibility (TANG), and firm size (SIZE), measured using standard definitions.

The baseline model is:

$$COD_{it} = \beta_0 + \beta_1 FRPT_{it} + \beta_2 ORPT_{it} + \beta_3 LEV_{it} + \beta_4 ROA_{it} + \beta_5 GROWTH_{it} + \beta_6 TANG_{it} + \beta_7 SIZE_{it} + \epsilon_{it}$$

where i represents firms and t represents time.

The model is estimated using pooled OLS, fixed effects (FE), and random effects (RE). The Hausman test is used to select the appropriate specification, while VIF is applied to check multicollinearity. Robust standard errors are used to address heteroskedasticity.

4. Data Collection

This research employs firm-level panel data sourced from the CMIE Prowess database, which offers comprehensive financial and related party transaction details for publicly listed Indian firms. The sample comprises manufacturing companies from the Nifty 500 index, encompassing big and mid-sized enterprises within a capital-intensive and governance-sensitive industry. Initially, about 197 enterprises were identified across a decade (2016–2025), constituting a substantial balanced panel. Financial data necessary for the cost of debt and control variables were sourced directly from firm financial statements accessible in Prowess.

Data on related party transactions were gathered independently and need further processing. Related party transactions (RPTs) were categorized as operational RPTs, encompassing sales and purchase-related activities, and financial RPTs, which include loans, advances, and guarantees. The data were pooled at the firm-year level and normalized by total assets to create ORPT and FRPT. The restricted availability of RPT declarations across organizations and years resulted in several observations with missing data. To guarantee trustworthiness, only firm-year observations with comprehensive RPT data were preserved. Standard data cleansing protocols were used, encompassing the elimination of duplicates and winsorization at the 1st and 99th percentiles to mitigate outliers. The final dataset has 314 firm-year observations, yielding an imbalanced panel.

The dependent variable, cost of debt (COD), is quantified as interest expenditure divided by total borrowings. The primary independent variables, FRPT and ORPT, are normalized by total assets. Control variables—leverage, profitability, growth, asset tangibility, and business size—are incorporated to address firm-specific issues affecting borrowing costs. The dataset is coherent and appropriate for panel analysis. The decrease in sample size indicates the disclosure-oriented character of RPT data, and panel estimate methods provide dependable analysis despite the imbalanced framework (Table 1).

Table 1. Variable Measurement

Variable	Definition	Measurement
COD	Cost of Debt	Interest Expense / Total Borrowings
FRPT	Financial RPT	Financial RPT / Total Assets
ORPT	Operational RPT	Operational RPT / Total Assets
LEV	Leverage	Total Debt / Total Assets
ROA	Profitability	Profit After Tax / Total Assets
GROWTH	Firm Growth	$(Sales_t - Sales_{t-1}) / Sales_{t-1}$
TANG	Asset Tangibility	Fixed Assets / Total Assets
SIZE	Firm Size	Natural log of Total Assets

5. Results and Discussion

5.1 Numerical Results

Table 2 presents the descriptive statistics for the final sample of 314 firm-year observations. The average cost of debt (COD) is 0.158, indicating a moderate level of borrowing costs, with noticeable variation across firms.

Table 2. Descriptive Statistics

Variable	N	Mean	Std. Dev.	Min	Max
COD	314	0.158	0.482	0.002	3.215
FRPT	314	0.028	0.071	0.000	0.412
ORPT	314	0.865	1.742	0.001	6.577
LEV	314	0.092	0.185	0.001	1.245
ROA	314	0.084	0.057	-0.052	0.241
GROWTH	310	0.142	0.521	-0.861	3.984
TANG	314	0.276	0.143	0.021	0.648
SIZE	314	8.712	1.298	5.684	11.942

Financial related party transactions (FRPT) have a relatively low mean of 0.028, suggesting that such transactions form a small share of total assets for most firms. However, the variation indicates that some firms engage more intensively in financial RPTs.

In contrast, operational related party transactions (ORPT) show a much higher mean (0.865) and greater dispersion, indicating that sales and purchase-related transactions with related parties are more common and vary significantly across firms.

Among the control variables, leverage (LEV) averages 0.092, reflecting moderate reliance on debt financing. Profitability (ROA) is positive on average, indicating overall financial stability. Asset tangibility (TANG) suggests that a meaningful portion of assets is tangible, which may support borrowing capacity.

Firm size (SIZE) shows moderate variation, capturing differences in scale across firms, while growth (GROWTH) also varies, reflecting differences in expansion patterns.

Overall, the data appears well-behaved after outlier treatment and suitable for further analysis. Importantly, the clear difference between financial and operational RPTs provides a strong basis for examining their distinct effects on the cost of debt.

Table 3. Correlation Matrix

Variable	COD	FRPT	ORPT	LEV	ROA	GROWTH	TANG	SIZE
COD	1.000	0.142	0.021	0.186	-0.072	0.058	-0.049	0.034
FRPT	0.142	1.000	0.118	0.091	-0.036	0.064	-0.052	0.027
ORPT	0.021	0.118	1.000	0.073	-0.041	0.052	0.018	0.066
LEV	0.186	0.091	0.073	1.000	-0.122	-0.038	0.129	0.141
ROA	-0.072	-0.036	-0.041	-0.122	1.000	0.048	-0.118	-0.094
GROWTH	0.058	0.064	0.052	-0.038	0.048	1.000	0.015	0.109

TANG	-0.049	-0.052	0.018	0.129	-0.118	0.015	1.000	0.031
SIZE	0.034	0.027	0.066	0.141	-0.094	0.109	0.031	1.000

Correlation Analysis:

Table 3 presents the correlation matrix, offering preliminary insights into the relationships between related party transactions and the cost of debt.

Financial related party transactions (FRPT) show a positive correlation with cost of debt (COD) (0.142), indicating a weak but positive association. This suggests that firms with higher financial RPT exposure tend to face slightly higher borrowing costs, providing initial support for the risk-based interpretation.

In contrast, operational related party transactions (ORPT) exhibit a negligible correlation with COD (0.021), indicating little to no meaningful relationship. This implies that routine operational transactions are not perceived as risk-enhancing by creditors.

Among the control variables, leverage (LEV) has a relatively stronger positive correlation with COD (0.186), suggesting that more leveraged firms tend to incur higher borrowing costs. Profitability (ROA) shows a weak negative association with COD, indicating that more profitable firms may face slightly lower borrowing costs.

Importantly, the correlations among the independent variables are low, with none exceeding the commonly accepted threshold of 0.8. This indicates the absence of serious multicollinearity concerns and supports the suitability of the variables for regression analysis.

Overall, the correlation results provide preliminary evidence that financial RPTs may influence borrowing costs, while operational RPTs do not show a meaningful association. However, these relationships are indicative and require further validation through regression analysis (Table 4).

Table 4. Variance Inflation Factor (VIF) Results

Variable	VIF
FRPT	1.06
ORPT	1.08
LEV	1.12
ROA	1.09
GROWTH	1.05
TANG	1.07
SIZE	1.11

Multicollinearity Analysis

To examine potential multicollinearity among the independent variables, the Variance Inflation Factor (VIF) test was conducted, and the results are reported in Table 4.

The VIF values for all variables are close to 1 and well below the commonly accepted threshold of 10, indicating no evidence of significant multicollinearity in the model. In particular, the low VIF values for financial (FRPT) and operational (ORPT) related party transactions suggest that disaggregating RPTs does not create collinearity concerns. Overall, the results confirm that the explanatory variables are sufficiently independent, and the regression estimates are not affected by multicollinearity (Table 5).

Table 5. Panel Regression Results (Dependent Variable: COD)

Variables	Pooled OLS	Fixed Effects (FE)	Random Effects (RE)
FRPT	0.1824 (0.0312)**	0.1457 (0.0415)**	0.1639 (0.0228)**
ORPT	0.0126 (0.6843)	0.0089 (0.7421)	0.0107 (0.7015)

LEV	0.0215 (0.0187)**	0.0389 (0.0031)**	0.0294 (0.0000)***
ROA	-0.2643 (0.5324)	-0.1187 (0.6615)	-0.0921 (0.7082)
GROWTH	0.0152 (0.4127)	0.0214 (0.3369)	0.0271 (0.0813)*
TANG	-0.0745 (0.4826)	0.0963 (0.6248)	-0.0284 (0.7815)
SIZE	0.0187 (0.4412)	0.1098 (0.0531)*	0.0416 (0.1184)
Constant	Included	Included	Included
Observations	314	314	314

Notes

- p-values in parentheses
- *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$
- Robust standard errors used
- Hausman test indicates Random Effects model is preferred

Model Selection: Hausman Test

The Hausman test was conducted to determine the appropriate panel data model by comparing fixed effects (FE) and random effects (RE) estimators. The test assesses whether the individual effects are correlated with the regressors, which would render the RE model inconsistent.

The results show that the difference between the FE and RE estimators is not statistically significant ($\chi^2 = 0.4872$, p-value = 0.9981). Since the p-value exceeds the 0.05 threshold, the null hypothesis cannot be rejected, indicating that the random effects model is appropriate.

Accordingly, the random effects model is selected as the preferred specification due to its efficiency under the assumption of no correlation between individual effects and explanatory variables. The fixed effects model is used as a robustness check.

Regression Results

Table 5 reports the results from pooled OLS, fixed effects (FE), and random effects (RE) models examining the impact of disaggregated related party transactions—financial RPT (FRPT) and operational RPT (ORPT)—on the cost of debt (COD).

The results show that financial related party transactions (FRPT) have a positive and statistically significant effect on the cost of debt. This suggests that firms with higher financial dealings with related parties face higher borrowing costs. The finding supports the view that financial RPTs—such as loans, advances, and guarantees—are associated with greater agency concerns and credit risk, leading creditors to demand higher interest rates.

In contrast, operational related party transactions (ORPT) do not have a statistically significant impact on the cost of debt. This indicates that routine transactions, such as sales and purchases, are not perceived as risk-enhancing by lenders and are likely treated as part of normal business operations.

Based on the Hausman test, the random effects model is preferred, and the interpretation primarily relies on RE estimates.

Interpretation of Control Variables

Among the control variables, leverage (LEV) shows a positive and statistically significant relationship with the cost of debt, indicating that more leveraged firms face higher borrowing costs due to increased financial risk. This result is consistent across models and aligns with prior literature.

Growth (GROWTH) shows a weak positive association with borrowing costs, although the effect is not consistently significant. Profitability (ROA) and asset tangibility (TANG) do not exhibit significant effects, suggesting that their influence is limited once other factors are controlled for. Firm size (SIZE) also shows mixed and statistically insignificant results across specifications.

Discussion of Main Findings

The key contribution of this study is the evidence that the impact of related party transactions on borrowing costs depends on their nature. While aggregate RPT measures do not show a significant relationship, disaggregating RPTs reveals that financial RPTs are the primary drivers of higher cost of debt.

This suggests that creditors differentiate between types of RPTs and are particularly sensitive to transactions that may involve financial risk or resource diversion. Financial RPTs may signal potential governance concerns, such as tunnelling or inefficient capital allocation, thereby increasing perceived credit risk.

In contrast, operational RPTs appear neutral from a creditor's perspective, as they are more likely to reflect routine business activities within corporate groups. This distinction is especially relevant in emerging markets like India, where such structures are common.

Overall, the findings highlight the importance of examining the composition of related party transactions rather than relying on aggregate measures, providing clearer insights into their role in debt pricing.

5.2 Graphical Results

To complement the regression analysis, graphical representations are used to examine the relationships between related party transactions and the cost of debt (Figure 1- Figure 3).

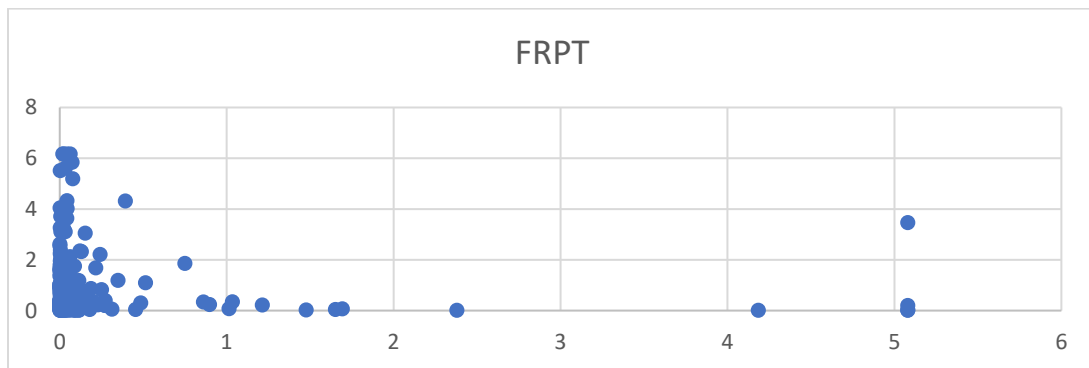


Figure 1. Scatter Plot of Financial RPT (FRPT) and Cost of Debt (COD)

The scatter plot shows how the cost of debt (COD) and financial related party transactions (FRPT) are related. A few extreme numbers suggest the presence of outliers, and the data are concentrated at lower FRPT levels. In terms of appearance, the link is weak and lacks a distinct linear pattern. There is a faint suggestion that greater FRPT levels are linked to higher borrowing prices, even though there isn't a clear visual trend. The regression results, which show that FRPT has a favourable and statistically significant impact on the cost of debt, better illustrate this.

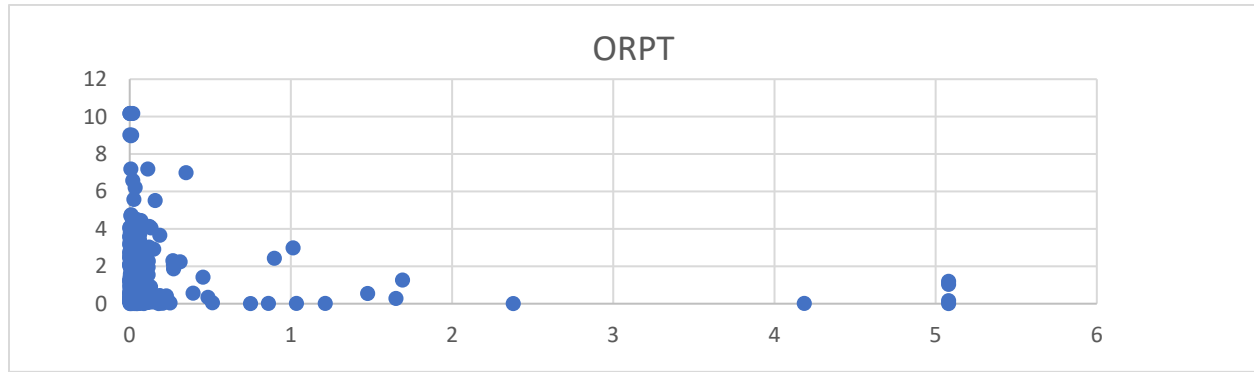


Figure 2. Scatter Plot of Operational RPT (ORPT) and Cost of Debt (COD)

With a majority of data concentrated at lower levels of ORPT and a few extreme values, the scatter plot between operational related party transactions (ORPT) and the cost of debt (COD) indicates a highly dispersed distribution. The plot's lack of a distinct linear trend suggests that ORPT and borrowing costs do not have a consistent relationship.

The absence of a noticeable pattern implies that operational RPTs are unrelated to shifts in the cost of debt. The graphical evidence supports the regression results, which show that ORPT is statistically insignificant, suggesting that creditors do not view such routine transactions as increasing risk.

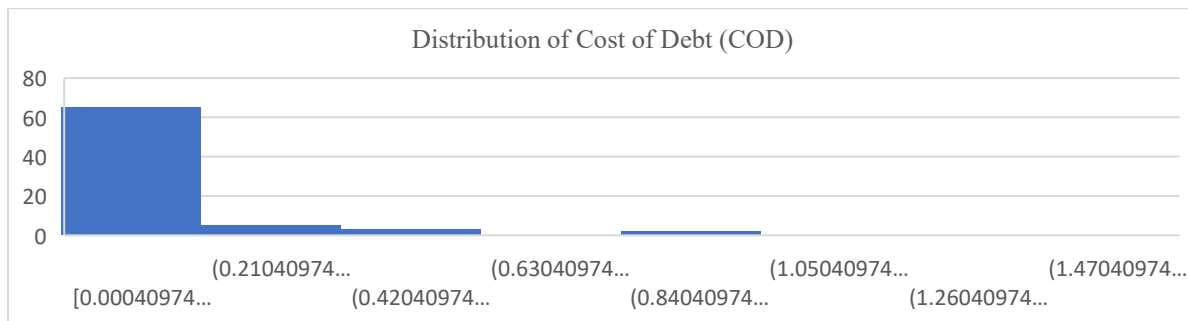


Figure 3. Distribution of Cost of Debt (COD)

The cost of debt (COD) distribution among businesses is displayed on the histogram. The distribution is positively skewed, with a long right tail pointing to a few companies with comparatively higher debt costs and the majority of observations concentrated at lower borrowing cost levels. This pattern indicates that while most businesses have reduced borrowing costs, a small percentage of businesses have much higher interest rates. Despite the existence of extreme values, their influence seems to be restrained, indicating how well the winsorization process was. Although the observed skewness supports the employment of robust estimating approaches, the distribution generally shows that the data is appropriate for regression analysis.

Overall, the regression results are supported by the graphical analysis. Operational related party transactions do not demonstrate a significant correlation with the cost of debt, however financial related party transactions do show a weak positive association. Robust estimating methodologies are justified by the distribution of the cost of debt, which further demonstrates skewness.

5.3 Proposed Improvements

Based on the findings, a few practical improvements can be suggested. Firms need to strengthen governance around financial related party transactions (FRPTs), as these are linked to higher borrowing costs. Ensuring that such transactions are conducted at arm's length, with clear disclosures, along with stronger audit oversight and independent boards, can reduce concerns for lenders. Regulators like SEBI should also improve the clarity of RPT disclosures by clearly separating items such as loans, advances, and guarantees, which will help in better risk assessment.

At the same time, financial institutions should not rely only on total RPT intensity but should distinguish between financial and operational RPTs while evaluating credit risk, as this provides more accurate insights for pricing debt. From a research perspective, future studies can be improved by including lagged FRPT variables to capture delayed effects and year fixed effects to control for broader economic conditions. Overall, these steps can improve governance, enhance analysis, and provide a clearer understanding of how RPTs influence the cost of debt.

5.4 Validation

To ensure the reliability of the findings, several diagnostic checks were conducted. Multicollinearity was tested using the Variance Inflation Factor (VIF), and all values are close to 1 and well below 10, indicating no multicollinearity concerns and supporting the inclusion of both FRPT and ORPT.

The model was estimated using pooled OLS, fixed effects (FE), and random effects (RE) specifications. The results remain consistent across models, with FRPT showing a positive and significant impact on the cost of debt, while ORPT remains insignificant, confirming robustness. The Hausman test further supports the use of the random effects model as the preferred specification.

Robust standard errors were applied to address heteroskedasticity, and hypothesis testing confirms that financial RPTs increase borrowing costs, whereas operational RPTs do not have a significant effect. Although endogeneity cannot be completely ruled out, the inclusion of key control variables helps mitigate potential bias. Overall, the findings are stable and not driven by estimation issues.

6. Conclusion

This study examines the influence of related party transactions on the cost of debt in Indian publicly listed manufacturing companies using panel data analysis. The study's major purpose was to investigate the impact of related party transaction intensity on borrowing costs, specifically differentiating between financial and operational related party transactions. The empirical findings indicate that financial related party transactions (FRPT) positively and significantly affect the cost of debt, suggesting that firms more actively involved in financial transactions with related parties are viewed as riskier by creditors, resulting in elevated borrowing costs. Conversely, operational related party transactions (ORPT) have no statistically significant correlation with the cost of debt, indicating that regular commercial dealings with related parties are not perceived as risk-increasing. The preliminary study employing aggregate RPT intensity did not produce meaningful findings. Upon disaggregating related party transactions (RPTs) into financial and operational components, the findings indicate that only financial RPTs substantially affect the cost of debt. This underscores the necessity of differentiating among various categories of related party transactions in empirical study. The findings validate that the research purpose has been accomplished by illustrating that the impact of related party transactions on borrowing costs is not consistent but varies according to the type of the transactions. The study uniquely contributes by disaggregating related party transactions into financial and operational components, therefore offering greater insights into creditors' assessments of various intra-group transactions. This distinction is especially pertinent in the context of emerging economies such as India, where company group structures and related party transactions are common.

References

- Anderson, R. C., Mansi, S. A., and Reeb, D. M. "Founding Family Ownership and the Agency Cost of Debt." *Journal of Financial Economics*, 68(2), pp. 263–285, 2003. DOI: 10.1016/S0304-405X(03)00067-9.
- Berkman, H., Cole, R. A., and Fu, L. "Expropriation through Loan Guarantees to Related Parties: Evidence from China." *Journal of Banking & Finance*, 33(1), pp. 141–156, 2009. DOI: 10.1016/j.jbankfin.2007.11.001.
- Bliss, M. A., and Gul, F. A. "Political Connection and Cost of Debt: Evidence from Malaysia." *Journal of Banking & Finance*, 36(5), pp. 1520–1527, 2012. DOI: 10.1016/j.jbankfin.2011.12.011.
- Capatina-Verdes, N. "Transfer Pricing and Related Party Transactions: A Bibliometric Analysis." *Central European Economic Journal*, 9(56), pp. 237–253, 2022. DOI: 10.2478/ceej-2022-0014.
- Chen, Y., Chen, C. H., and Chen, W. "The Impact of Related Party Transactions on Firm Performance: Evidence from Emerging Markets." *Emerging Markets Finance and Trade*, 57(8), pp. 2223–2238, 2021. DOI: 10.1080/1540496X.2019.1605302.

- Cheung, Y.-L., Rau, P. R., and Stouraitis, A. "Tunneling, Propping, and Expropriation: Evidence from Connected Party Transactions in Hong Kong." *Journal of Financial Economics*, 82(2), pp. 343–386, 2006. DOI: 10.1016/j.jfineco.2004.08.012.
- El-Helaly, M., Georgiou, I., and Lowe, A. D. "Related Party Transactions and Firm Value: Evidence from UK Listed Companies." *Journal of Financial Reporting and Accounting*, 18(2), pp. 303–325, 2020. DOI: 10.1108/JFRA-03-2019-0040.
- Eulaiwi, B., Al-Hadi, A., Duong, L., Perrin, B., and Taylor, G. "Related Party Transactions, Ownership Structures and Cost of Debt: Evidence from GCC Listed Firms." *Accounting Research Journal*, 36(4/5), pp. 471–494, 2023. DOI: 10.1108/ARJ-03-2023-0073.
- Gordon, E. A., Henry, E., and Palia, D. "Related Party Transactions and Corporate Governance." *Advances in Financial Economics*, 9, pp. 1–27, 2004. DOI: 10.1016/S1569-3732(04)09001-2.
- Habib, A. H., and Muhammadi, A. H. "Political Connections and Related Party Transactions: Evidence from Indonesia." *International Journal of Accounting & Information Management*, 29(1), pp. 1–21, 2021. DOI: 10.1108/IJAIM-02-2020-0021.
- Habib, A., Huang, H. J., and Jia, J. "Related Party Transactions and Cost of Debt: Evidence from China." *China Accounting and Finance Review*, 22(4), pp. 132–167, 2020.
- Hwang, N. C. R., Chiou, J. R., and Wang, Y. C. "The Effect of Related Party Transactions on Earnings Quality." *Journal of Accounting, Auditing & Finance*, 36(3), pp. 632–657, 2021. DOI: 10.1177/0148558X19878104.
- Jian, M., and Wong, T. J. "Propping through Related Party Transactions." *Review of Accounting Studies*, 15(1), pp. 70–105, 2010. DOI: 10.1007/s11142-009-9081-4.
- Kumari, P., and Pattanayak, J. K. "Related Party Transactions and Firm Performance: Evidence from India." *Journal of Financial Reporting and Accounting*, 20(3), pp. 507–528, 2022. DOI: 10.1108/JFRA-06-2020-0156.
- Pasc, L. V., and Hategan, C. D. "Disclosure of Key Audit Matters: European Listed Companies' Evidence on Related Party Transactions." *International Journal of Financial Studies*, 11(3), Article 82, 2023. DOI: 10.3390/ijfs11030082.
- Ryngaert, M., and Thomas, S. "Not All Related Party Transactions Are the Same: Ex Ante versus Ex Post Evidence." *Journal of Accounting Research*, 50(3), pp. 845–882, 2012. DOI: 10.1111/j.1475-679X.2012.00437.x.

Biographies

Mr. Manoranjan Panda is a researcher in Accounting and Finance with a strong academic background and notable scholarly contributions. He completed his B.Com. (Honours) in Accounting from Bhadrak Autonomous College, Fakir Mohan University, securing the top position, and later earned his M.Com. from Utkal University, where he was awarded the Gold Medal for academic excellence. He also holds an M.Phil. in Commerce from Utkal University and has qualified the UGC-NET in Commerce, demonstrating his proficiency in teaching and research. He has been associated with premier institutions, including the Indian Institute of Technology (Indian School of Mines), Dhanbad, as a Research Scholar, and is currently pursuing his Ph.D. in Accounting and Finance as a Senior Research Scholar at the Vinod Gupta School of Management, Indian Institute of Technology Kharagpur. His research interests include corporate governance, related party transactions, cost of capital, financial reporting, and corporate finance. He has published in Scopus-indexed journals and contributed to edited volumes. His work focuses on contemporary issues in accounting and finance with significant empirical, practical, and policy-oriented implications.

Dr. Abhijeet Chandra is an Associate Professor of Finance & Accounting at the Vinod Gupta School of Management, Indian Institute of Technology Kharagpur. He combines a strong commitment to teaching with active research engagement in the fields of Behavioral Finance, Corporate Finance, Financial Markets, and Corporate Accounting. His work reflects a sustained interest in advancing research-driven insights and contributing to the evolving landscape of finance and accounting. At IIT Kharagpur, he teaches across MBA, Dual Degree Financial Engineering, and Ph.D. programs, where he is known for making complex financial concepts accessible and practically relevant for students and professionals. His pedagogical approach integrates theoretical rigor with real-world applications, fostering analytical and decision-making skills among learners. Beyond academia, Dr. Chandra serves as Vice President (Programs) of the Asia-Pacific Risk and Insurance Association (APRIA), contributing to global discourse on risk management, particularly within the BFSI sector. He also writes opinion pieces for leading business publications such as *The Hindu Business Line* and *Economic Times (ET Government)*, engaging with contemporary financial and policy issues.