Determinants of Payment Method in Mergers and Acquisitions : A Study on Indian Companies

B. P. Bijay Sankar [1]
N. M. Leepsa [2]

Abstract

The study empirically investigated the determinants that affected the decision-making of payment methods in mergers and acquisitions (M&As) in the Indian context. The sample for the study covered the M&A deals that acquirer companies announced from the non-financial sector. The binary logistic regression model was used to find out the determinants that affected the payment method of Indian M&As. Descriptive statistics and independent-sample *t*-test were used to know the behavior of the explanatory variables. It was found that there was a positive relation between acquirer cash availability, promoter shareholdings, unlisted targets, and targets from the unrelated industry with cash payment methods in Indian M&A deals. It was also documented that the determinants like the amount of deal value and acquirer leverage were negatively related to cash payment method deals. This empirical study provided some new insights into the determinants of payment methods in Indian M&A deals. This study will help the decision-makers of both acquirers and targets to finalize the payment method of M&As in different corporate situations and facilitate the companies in improving their strategies for bringing in more synergy in the deals.

Keywords : **acquisitions, cash, determinants, payment methods, stock**

JEL Classification Code : G34, G41, P2

Paper Submission Date : February 10, 2020 ; Paper sent back for Revision : December 9, 2020 ; Paper Acceptance Date : March 8, 2021 ; Paper Published Online : October 15, 2021

Choice of payment methods is a crucial factor for the success of mergers and acquisitions (Boateng & Bi 2014; Faccio & Masulis, 2005). According to DePamphilis (2010), finalizing the payment method in M&As has been identified as one of the most critical decisions making stages in the process of M&A deals. Some studies evidenced that the decision of payment method in M&As has a significant impact on both financial performance and stock market performance of companies (Sankar & Leepsa, 2018). The shareholders of both the acquirer and target companies, while making the payment of deal consideration in M&As, face difficulty in choosing whether to use cash mode or stock mode. In cash payment method, acquirers either use own cash or raise fund through debt.

As far as the importance of the selection of payment methods is concerned, very few studies have been carried out in India which focused on the factors that affect the payment methods in M&As. Thus, this study attempts to test the various hypotheses related to payment methods in M&A deals and empirically investigate the determinants of the payment methods by categorizing them into three parts, namely acquirer, target, and deal characteristics, respectively.

[1] *Assistant Professor (Corresponding Author),* Birla Global University, Bhubaneswar - 751 029, Odisha.
(Email : bp.sankar@bgu.ac.in) ; ORCID iD : https://orcid.org/0000-0001-5254-0672
[2] *Lecturer in Business Communications,* Arizona State University at Lake Havasu City, Arizona - 86403, United States.
(Email : leepsa.madhabika@asu.edu) ; ORCID iD : https://orcid.org/0000-0002-1705-0907

DOI : https://doi.org/10.17010/ijf/2021/v15i10/166511

The focus on determinants of payment methods in Indian M&As is different from other countries due to its unique business environment or legal features. Indian M&As have to follow the rules of SEBI Substantial Acquisition of Shares and Takeovers Regulations 2011, Competition Act 2002, Company Act 2013, and Income Tax Act 1961. These rules were amended, and some significant changes occurred with time. The business environment of India is different from the developed countries due to two factors : the corporate ownership structure and the accessibility to financing for the payment of deal value in M&A deals. The ownership structure of Indian companies is mainly held by promoters and family business groups which indicates that these owners would not consent to dilute their ownership control (Satish & Satyanarayana, 2018). So, in this case, companies choose cash as a payment method in M&A transactions to safeguard their controlling rights. However, on the other hand, since the Indian debt market is not as efficient for funding the companies to finance the M&A deals, the use of cash could be limited. Indian companies primarily depend on bank funding and equity capital for an external source of financing, but the debt markets are yet to be developed (Saraogi, 2011). Furthermore, as per the RBI guidelines, the Indian banks are prohibited from financing domestic M&A deals, due to which it becomes difficult to finance the M&A deals through a debt fund. Furthermore, it affects the decision of payment methods in Indian M&As.

The capital structure of non-financial companies is different from financial companies (Ukaegbu & Oino, 2014). So examining the payment method in M&As by taking the sample from both the non-financial companies and the financial companies may give biased results (Ismail & Krause, 2010). This study has considered only the acquirers from the non-financial sector for analyzing the determinants of payment methods in Indian M&A deals because a fewer number of deals are announced in India within the financial sector. Also, financial companies are governed by various banking regulations in India (DeYoung et al., 2009).

The studies regarding the M&As in India have majorly concentrated on the financial sector and evaluated the performance of pre and post-M&As. However, few studies have been done on the M&A deals in the Indian non-financial sector. Examining the determinants of payment methods in M&A deals by taking a sample from the non-financial sector acquired during 17 years from FY 2000 – 01 to FY 2016 – 17 is a new attempt. There are hardly any studies discussing M&As which investigate the impact of acquirer firm's characteristics, target firm's characteristics, and deal characteristics factors on payment method decisions on M&As. The present study examines the Indian corporate sector in light of these issues.

Literature Review

Various authors have briefly explained the theories on payment methods in M&As in the literature. Myers and Maljuf (1984) initially revealed the importance of payment methods in M&As on asymmetric information. Afterward, Hansen (1987) mentioned that both acquirer and target firms had various private information that significantly affected the two companies' performance. Further, the authors recommended that the stock payment mode was favorable for the acquirer if it had more private information of the target firm. Alexandridis et al. (2020) suggested that the payment method in M&As should be opted for based on the capital structure of the merging firms before the M&A deal. However, acquirers with financial constraints normally use the stock payment method in M&A deals. Prakash (2017) disclosed that M&A announcements created positive abnormal returns for acquirer's shareholders but were value destructive for the target's shareholders. Ranju and Mallikarjunappa (2017) found that acquirer shareholders did not gain value in the M&A announcements. However, Jucunda and Sophia (2014) revealed that Indian acquirers used cash as a payment method and generated negative returns.

In the limelight of the previous literature, the current study emphasizes the impact of the acquirer firm's characteristics, target firm's characteristics, and deal characteristics on the choice of payment methods in M&As in India.

Determination of Explanatory Variables and Expected Signs

From the various theories and literature, the following are the possible explanatory variables for the payment methods in M&As.

Acquirer's Cash and Bank Balance

According to Sung (1993), relatively more cash availability with acquirer firms leads to cash offers in M&A deals. Jensen (1986) researched the free cash flows of companies and found out that companies with excess cash flows from operations were essential to finance the positive net present value (NPV) investment projects of a firm. In this case, the shareholders also opted to distribute the excess cash rather than investing in low-return projects. Pinkowitz et al. (2013) studied the payment method of U.S. firms and, surprisingly, identified that cash-rich acquirers were less likely to prefer the cash mode of payment than the stock mode in M&As.

Promoter Holding in Acquirer Ownership

Companies' ownership structure influenced the decision of payment methods in M&As (Martin, 1996). Yook et al. (1999) proved that there was a direct relationship between the degree of equity ownership with top managers in acquirer firms and the methods of payment in M&As. Ladkani and Banerjee (2012) focused on Indian M&A deals and found that acquirers with high promoter shareholding typically used the cash payment method in M&As to retain ownership control.

Acquirer's Leverage

Boateng and Bi (2014) mentioned that acquirer firms with high pre-acquisition leverage preferred to use cash as a payment method in M&As. Bruslerie (2013) explored that financial variables, such as cash availability, collateral, and leverage did not significantly affect the mode of payment in M&As.

Acquirer's Collateral

Ismail and Krause (2010) noticed that access to the debt market was much easier for the acquirers who had a high amount of collateral ; so, the acquirers were much more efficient in paying cash for consideration in M&A deals. Collateral is used as a mortgage for a secured loan from a financial institution, so a high amount of collateral with the acquirer firm before the M&A deal enables the acquirer to raise debt funds. As a result, the M&A deal is paid through the cash payment method (Faccio & Masulis, 2005).

Return on Asset of the Acquirer

The acquirer having high price-earnings ratios, low debt-equity, and return on assets ratios chose to pay the deal value in stock rather than cash in M&As (Kumar & Rajib, 2007). Chaney et al. (1991) showed that higher return on assets was negatively related to the stock payment method and positively related to the cash payment method.

Acquirer's Market Value

According to Hansen (1987), overvalued acquiring firms preferred to pay in stock ; whereas, undervalued firms

chose to pay in cash for their acquisitions. However, Ismail and Krause (2010) examined the relationship between acquirer market capitalization and payment method and explored that the market capitalization was negatively related to the probability of stock payment method in M&As.

Relative Size of the Acquirer as Compared to the Target

The study of Grullon et al. (1997) focused on the M&A deals in the banking sector and found that acquirer firms possibly preferred stock or a combination of cash and stock as a payment method in M&As in case of a target firm comparatively large than the acquirer firm. However, Martin (1996) mentioned that the relative size of the target did not have many differences according to the different payment methods and found an opposite relationship between the relative size of the merging firms and the method of payment adopted to finance the acquisition.

Target Listed Status

Draper and Paudval (1999) concluded a direct relationship between a target's listing status and stock offer in an M&A deal. However, the results of the past research expressed a positive relationship between the acquisition of an unlisted target and the percentage of cash payments used in European M&As (Faccio & Masulis, 2005).

Target Leverage

As per the pecking order theory, the acquirer first selected internal funds such as cash holdings, retained earnings, and internally generated cash flow for payment of the deal value and then opted for external financing. Bruslerie (2013) examined the effect of a firm's leverage on payment methods in M&As. He detected that highly leveraged acquirers and target firms probably preferred the stock payment method in M&A deals. There was a negative relationship between the percentages of cash paid in M&A deals with target leverage.

Complete Stake Acquisition

Ladkani and Banerjee (2012) empirically tested the effect of stake acquisition on payment method decisions in M&A deals and disclosed that a higher percentage of stake acquisition deals were normally paid through the stock payment mode. Chari et al. (2010) observed the relationship between the percentage of stake acquisition and acquirer stock performance. For that, they divided the M&A deals into three types as per the percentage of stake acquisition in the target, that is, minority acquisition (0 – 50%), majority acquisition (50 – 95%), and complete acquisition (95 – 100%) and found that majority acquisition and absolute acquisition deals increased the acquirer stock price.

Size of the Target Firm

The size of the target is an important factor for M&A deals. Kumar and Rajib (2007) predicted whether a firm was to be acquired or not by using the logistic model and noticed that the acquirer always preferred to acquire asset-rich targets for marking operational synergy. Chira and Madura (2018) detected that if the asset value of the target was higher, then there were higher chances of the acquirer going for the stock payment method in the acquisitions.

Deal Value

Deal characteristics play a crucial role in the success and failure of M&A deals (Tanna et al., 2020). Pinkowitz

et al. (2013) found that in high-value M&As, acquirers with greater investment opportunities and public targets were more likely to pay through the stock payment method. Fischer (2017) examined the influence of deal value on the source of financing in M&A deals and noticed that high-value deals were financed in the stock issue.

Target Industry Status

Du and Boateng (2015) stated that related synergy and market monopoly could be achieved if the bidder acquired the target firm from the same industry. On the contrary, the diversification hypothesis suggested that companies from different industries combined to expand in a new segment and took advantage of tax benefits (Barai & Mohanty 2014).

Faccio and Masulis (2005) pointed out that if the acquirer and target were from different industries, the target shareholders would be reluctant to expose themselves to a new industry ; so, they preferred to receive cash as a payment method.

From the above past studies, we have summarized the expected sign for various explanatory variables on the cash payment method in Table 1.

The past literature indicated that the choice of the payment method in M&As is an important corporate decision as it affects the ownership structure, capital structure, cash flows, leverage, and profitability. A stock payment would lead to dilution of ownership of the acquirer's existing shareholders; whereas, a cash payment would decrease the liquidity and increase the leverage of the acquirer.

Table 1. *Overview of Variables*

Variables	Description	Expected Sign	Reference
Deal_SZ	Deal value	Negative	Pinkowitz et al. (2013)
Comp_Acq	Complete stake acquisition	Negative	Ladkani & Banerjee (2012)
Acq_Cash	Acquirer's cash and bank balance	Positive	Jensen (1986)
Acq_Coll	Acquirer's collateral	Positive	Faccio & Masulis (2005)
Acq_ROA	Acquirer's return on asset	Positive/ Neutral	Boateng & Bi (2014) ; Chaney et al. (1991)
Acq_Lev	Acquirer's financial leverage	Positive / Negative	Bruslerie (2013) ; Chaney et al. (1991) ; Hansen (1987)
Acq_MV	Acquirer's market value	Positive	Boateng & Bi (2014) ; Ismail & Krause (2010)
Acq_Prom	Promoter holding in the acquirer	Positive	Ladkani & Banerjee (2012)
Rel_SZ	The relative size of the acquirer as compared to the target	Negative / Neutral	Grullon et al. (1997) ; Martin (1996)
Tar_pub	If the target is a listed firm	Positive	Garcia-Feijoo et al. (2012)
Rel_Indu	If the target industry is the same as the acquirer	Negative	Faccio & Masulis (2005)
Tar_SZ	Book value of target assets	Negative	Hansen (1987)
Tar_Lev	Target's financial leverage	Negative	Bruslerie (2013)

Methodology

Sample Selection Criteria

The population for this study is all M&A deals done by non-financial companies in India during the period from April 1, 2000 to March 31, 2017 since studies relating to M&As require a long sample period. This study uses a long sample period of 17 years to examine the determinants of payment methods in Indian M&A deals. This period is chosen because the Indian corporate sector has been more actively involved in M&As since 2000, and updated data would provide better results. The data were collected from the Bloomberg database, Centre for Monitoring Indian Economy (CMIE) Prowess IQ, and annual reports of the companies. While the M&A-related data were collected from the Bloomberg database, the financial data of acquirer and target firms were collected from the CMIE Prowess IQ database. Some missing data on financial values were also obtained from the annual reports of the companies. Acquirers from the financial sector are not considered for this study because the capital structure of financial companies is very different from non-financial companies (Ukaegbu & Oino, 2014). The sample universe excludes termination deals, buybacks, and divestiture deals. The deal information like announcement date, acquirer countries' names, and sector/industry details should have been available in the Bloomberg database to include the deal in the sample universe for this study. The sample universe does not consider corporate restructuring activities such as joint venture, spin-off, split-off, and buyback. Table 2 depicts the detailed criteria for the selection of the sample for the study.

Table 3 shows the sample of acquirers' sector-wise cash and stock deals. The acquirers' sector and industry classification were prepared based on the classification of the Bloomberg database. Bloomberg categorizes the sector and industry as per the Bloomberg Industry Classification System (BICS). There are nine sectors in the non-financial companies, which are mentioned in Table 3.

Table 2. ***Sample Selection***

Sample Selection Criteria	Number of Deals	Deleted Number of Deals
Total M&A deals announced by Indian acquirers from April 1, 2000 to March 31, 2017	5,413	
Less Deals Excluded:		
Target firm either from other countries or target firm's country name was not available		2,981
Acquirer from the financial sector		385
Terminated, withdraw, pending deals		190
Undisclosed deal value deals		959
Undisclosed payment method deals and mix payment mode deals		107
Minority deals		191
Deal value less than 10 million		50
Acquirer from Pvt. Ltd.		37
Multiple announcement deals		52
Total Sample = (5,413 – 4,952)	**461**	

Source : Compiled from the Bloomberg database.

Table 3. ***Cash and Stock Deals as per the Acquirers' Sector Within the Sample***

Sector Types	Cash Deal	Stock Deal
Basic Materials	27	33
Communications	22	9
Consumer Cyclical	51	31
Consumer Non-cyclical	68	35
Diversified	14	3
Energy	11	2
Industrial	49	46
Technology	30	15
Utilities	7	8
Total	**279**	**182**

Table 4. ***Sample as per Different Types of Deals***

Categories	Cash	%	Stock	%	Total	%
Target public	175	54	148	46	323	70
Target private	104	75	34	25	138	30
Related industry	182	59	127	41	309	67
Unrelated industry	97	64	55	36	152	33
Complete acquisition	151	49	159	51	310	68
Majority acquisition	128	85	23	15	151	32

It is observed from Table 3 that the number of cash deals is higher in the consumer non-cyclical sector (68), and the number of stock deals is higher in the industrial sector (46). Similarly, the number of cash deals is found to be lowest in the utilities sector (7), and the number of stock deals is found to be the lowest in the energy sector (2).

Table 4 shows the cash and stock deals sample as per the different categories of deals. From the target firm's listed status, out of the total 138 target private companies, most deals were discharged through cash rather than the stock mode. Similarly, if the acquirer and target were from the same industries, the highest number of deals was made by cash mode (182) than the stock mode (127). The sample of cash and stock deals is divided into two categories : complete stake acquisition deals and majority stake acquisition deals. At this point, majority stake acquisition includes additional stake purchases and tender offers. Table 4 shows that the complete stake acquisition deals were mainly paid through the stock payment method rather than the cash payment method.

Measurement of Variables

Dependent Variable

(1) Payment Methods of M&As : The choice of payment methods in M&As is used as a dependent variable for the present study. Since the sample consists of only cash and only stock deals, so the dependent variable is a binary dummy. It assumes value one if the deal is paid only through the cash payment method, and the value is equal to zero if the deal is paid through only the stock payment method (Faccio & Masulis, 2005). Table 5 displays the definitions and measurement details of independent variables with evidence.

Table 5. *Independent Variables*

Variables	Definitions	Evidence
Deal_SZ	Log. of deal value is considered as the proxy for deal size	Boateng & Bi (2014)
Comp_Acq	The dummy variable assumes value one if a deal is a complete stake acquisition and the value equal to zero if the deal is a majority stake acquisition deal	Chari et al. (2010)
Acq_Cash	Log of the book value of cash and bank balance of the acquirer at the end of the year before the deals	Ismail & Krause (2010)
Acq_ROA	The ratio of acquirer's net profit to total assets value	Chaney et al. (1991)
Acq_Lev	The ratio of long-term debt to total assets of the acquirer	Fischer (2017)
Acq_Coll	The ratio of the firm's fixed assets to the total assets of the acquirer	Faccio & Masulis (2005)
Acq_MV	Log of the market capitalization of the acquirer	Ismail & Krause (2010)
Rel_SZ	The ratio of deal value to deal value plus acquirer market capitalization	Kohli & Mann (2012)
Acq_Prom	Percentage of promoter holdings in the acquirer	Ladkani & Banerjee (2012)
Tar_pub	Dummy variable, which assumes value one if the target company is listed in any Indian stock exchange and zero otherwise	Draper & Paudyal (1999)
Rel_Indu	Dummy variable: It takes the value one when both the acquirer and target belong to the same industry and zero otherwise	Gorton et al. (2009)
Tar_SZ	Log of the book value of target assets	Chira & Madura (2018)
Tar_Lev	The ratio of the target firm's total debt to the book value of assets of the target	Ismail & Krause (2010)

(2) Theoretical Background for Logistic Regression : The logistic regression model is also known as the logit model, and it predicts the probability of happening of any event. The binary logistic regression model can predict whether an event can occur or not. Normally, value one is taken as a proxy for the event's occurrence, and value zero is for the not occurrence of the event. The main advantage of logistic regression over multiple linear regression is that logistic regression does not require fulfilling the heteroscedasticity and linearity assumptions. Due to the non-linearity nature, the logistic regression can be estimated using the maximum likelihood procedure. By using logistic regression, the likelihood of occurrence of an event is estimated by fitting data to a logit function.

The binary logistic models can be noted as :

$$\text{In}\left(\frac{P}{1-P}\right) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \ldots\ldots\ldots\ldots \beta_n X_n + e \qquad (1)$$

where,

P is the likelihood of occurrence of an event,

$(1-P)$ *is* the not occurrence of an event,

$\beta_1, \beta_2, \beta_3 \ldots\ldots \beta_n$ denote the beta coefficients,

$X_1, X_2, X_3 \ldots\ldots X_n$ denote the independent variables.

The goodness-of-fit of the logistic model is measured through Pseudo-R^2. Like R^2 in the ordinary least square model, in the logistic model, the maximum Pseudo-R^2 value is the best model fit. The chi-square (χ^2) value and its significance reflect the statistical significance of the overall model.

Analysis and Results

Descriptive Statistics

Summary statistics are used to know the normal behavior of the data. The explanatory variables of this study are measured in different scales such as interval scale, ratio scale, and categorical scale. Table 6 shows the number of observations *(N)*, means (Avg.), standard deviation *(SD)*, *t*-test value, and the probability value of different variables. Paired *t*-test is used to check the mean difference of the explanatory variables between cash and stock

Table 6. *Descriptive Statistics of Variables*

Variable List	Cash			Stock				
Deal Characteristics	***N***	**Avg.**	***SD***	***N***	**Avg.**	***SD***	***t* - Test value**	***p* - value**
Deal value (*Deal_SZ*)	279	2342.656	8154.07	182	7506.28	23241.47	–3.405	0.001
Complete stake acquisition (*Comp_Acq*)	279	0.541	0.499	182	0.874	0.333	–7.906	0.000
Acquirer Factors								
Acquirer's cash and bank balance (*Acq_Cash*)	221	2.491	1.130	160	2.277	1.099	1.847	0.066
Acquirer's return on asset (*Acq_ROA*)	221	0.091	0.242	160	0.067	0.109	1.199	0.231
Acquirer's financial leverage (*Acq_Lev*)	221	0.232	0.182	160	0.282	0.209	–2.487	0.013
Acquirer's collateral (*Acq_Coll*)	221	0.273	0.184	160	0.298	0.193	–1.289	0.198
Acquirer's market value (*Acq_MV*)	221	4.037	1.071	160	3.724	1.015	2.872	0.004
Relative size of acquirer (*Rel_SZ*)	221	0.127	0.188	160	0.267	0.270	–6.004	0.000
Promoter holding in acquirer (*Acq_Prom*)	221	34.225	33.699	160	33.558	32.641	0.193	0.847
Target Factors								
Target is a listed firm (*Tar_pub*)	279	0.627	0.484	182	0.813	0.391	–4.338	0.000
Both target and acquirer industry are same (*Rel_Indu*)	279	0.652	0.477	182	0.698	0.460	–1.014	0.311
Book value of target assets (*Tar_SZ*)	116	2.777	1.005	92	3.114	0.884	–2.525	0.012
Target's financial leverage (*Tar_Lev*)	99	0.477	0.474	81	0.456	0.444	0.311	0.756

payment method deals. In the summary statistics (Table 6), the independent variable Deal_SZ is shown in rupees (million) in the form of absolute values, but other independent variables are presented in terms of relative values.

The logistic regression analysis results of determinants of payment methods in Indian M&A deals (non-financial acquirer) are shown in Table 7. A total of seven different models are presented in Table 7. The number of observations, chi-square value, likelihood ratio, and pseudo-R^2 results are presented in Table 7 for each model ; whereas, the values of coefficient, *p*-values, and odds ratio for each variable are shown in all models. The difference of logit is formulated into an odds ratio. The odds ratio is the ratio of the odds of an event happening in one group to the odds of it happening in another group. It means the odds ratio shows the probability of cash payment method deal to the probability of stock payment method deal. Therefore, the higher the odds ratio, the more positive are the impacts of the independent variable on the probability of M&As in the cash payment method.

Model 1 shows the impact of deal characteristics factors, Deal_SZ and Comp_Acq, on payment methods in M&As. Both Deal_SZ and Comp_Acq independent variables in Model 1 show the negative sign, which is statistically significant at the 1% level. The negative sign of Deal_SZ indicates that the lesser the deal value, the higher is the likelihood of using cash as a payment method in M&As. This result suggests that a high amount of M&A deals are discharged through the stock payment method, and this supports the size hypothesis (Chaney et al., 1991). Likewise, in the case of complete stake acquisition, the probability of the deal occurring through the cash payment method is less. This result reveals that complete stake acquisition deals are mostly paid through the stock payment method in Indian M&A deals. The pseudo-R^2 of Model 1 is 20%, which implies that the independent variables in Model 1 explain 20% of the choice of the payment methods in M&A deals.

Furthermore, in Model 2, two target characteristic variables, Tar_pub and Rel_Indu, are included. By adding these two variables, the pseudo-R^2 value increases from 20% to 25%. The result of Model 2 specifies that the Tar_pub is negatively related to the likelihood of the cash payment method (significant at the 1% level). Thus, it is found that if the target is listed in the stock exchange, then the acquirer prefers to use the stock as a payment method. The acquisition of the unlisted target firm is related to more likelihood of cash payment method in M&As. These results are consistent with the results of Faccio and Masulis's (2005) study. However, Model 2 shows that the variable Rel_Indu carries a negative sign, which means there is a lesser probability of cash payment method if both acquirer and target belong to the same industry.

Past studies evidenced that the acquirer with high cash availability and more profitability has a linear relationship with the cash mode of payment in M&A deals. Model 3 depicts that Acq_Cash is positively related to the likelihood of cash payment method in M&A deals, which is statistically significant at the 1% level. This result is similar to the findings of Alshwer et al. (2011). However, the results show that the variable Acq_ROA is not a significant factor to explain the payment methods in Indian deals.

Two financial variables of acquirer such as Acq_Coll and Acq_Lev are introduced in Model 4. The result of the model shows that the Acq_Lev is negatively related to the likelihood of a cash payment method deal, which is statistically significant at the 10% level. It specifies that a financially constrained and high leveraged acquirer does not prefer the cash payment method. This result is different from some studies of the developed economies because the Indian economy is different from the developed economies (Xu & Meyer, 2013). The variable Acq_Coll carries a positive sign in Model 4, but it is not statistically significant. The possible reason for it is that there is a restriction of debt funding for domestic M&A deals by Indian banks. Also, the Indian debt market is not so much open or efficient as compared to developed countries. In Model 4, the pseudo-R^2 slightly increased from 34% (Model 3 to 35%, and also chi-square value increased from 111.619 to 115.535).

In Model 5, the variables like Acq_MV and Rel_SZ are added with Model 4. The results of Model 5 show that the acquirer market capitalization is positively associated with the cash payment method. Acq_MV is statistically significant at the 5% level. This result is similar to the findings of Boateng and Bi (2014) in Chinese M&A deals.

Table 7. ***Logistic Regression Analysis : Determinants' Payment Methods in Indian M&A Deals***

Variables	Model (1)	Odd Ratio	Model (2)	Odd Ratio	Model (3)	Odd Ratio	Model (4)	Odd Ratio	Model (5)	Odd Ratio	Model (6)	Odd Ratio	Model (7)	Odd Ratio
Constant	3.038***		3.877***		3.622***		3.907***		2.538***		4.932***		4.320***	
	(0.000)		(0.000)		(0.000)		(0.000)		(0.002)		(0.002)		(0.000)	
Deal Characteristics														
Deal value	–.481***	0.618	–0.419***	0.658	–0.652***	0.521	–0.661***	0.516	–0.951***	0.386	–0.117	0.889	–0.628***	0.534
(*Deal_SZ*)	(0.000)		(0.001)		(0.000)		(0.000)		(0.001)		(0.785)		(0.004)	
Complete stake	–1.750***	0.174	–1.901***	0.149	–2.212***	0.109	–2.222***	0.108	–2.167***	0.115	–2.733***	0.065	–2.645***	0.071
acquisition (*Comp_Acq*)	(0.000)		(0.000)		(0.000)		(0.000)		(0.000)		(0.000)		(0.000)	
Acquirer Characteristics														
Acquirer's cash and bank					0.402***	1.495	0.398***	1.489	0.033	1.034	0.326	1.385	0.364**	1.439
balance (*Acq_Cash*)					(0.001)		(0.001)		(0.846)		(0.237)		(0.041)	
Acquirer's return on					0.638	1.893	0.175	1.191	–0.406	0.667	0.237	1.268		
asset (*Acq_ROA*)					(0.566)		(0.837)		(0.598)		(0.825)			
Acquirer's financial leverage							–1.433*	0.239	–1.104	.331	–1.822	0.162	–0.956	0.384
(*Acq_Lev*)							(0.053)		(0.153)		(0.151)		(0.295)	
Acquirer's collateral							0.422	1.525	0.546	1.726	0.719	2.052		
(*Acq_Coll*)							(0.576)		(0.481)		(0.575)			
Acquirer's market value									0.743**	2.102	–0.227	0.797		
(*Acq_MV*)									(0.014)		(0.634)			
The relative size of the acquirer									0.407	1.502	–1.267	0.282		
(*Rel_SZ*)									(0.699)		(0.419)			
Promoter holding in acquirer											0.022**	1.022	0.018*	1.018
(*Acq_Prom*)											(0.046)		(0.081)	
Target Characteristics														
Target is a listed firm			–1.066***	0.344	–1.136***	0.321	–1.152***	0.316	–1.191***	0.304	–1.599***	0.202	–1.767***	0.171
(*Tar_pub*)			(0.000)		(0.000)		(0.000)		(0.000)		(0.007)		(0.001)	
Both target and acquirer industry			–0.188	0.829	–0.114	0.892	–0.039	0.962	–0.035	0.965	–0.502	0.605	–0.841**	0.431
are the same (*Rel_Indu*)			(0.410)		(0.659)		(0.881)		(0.895)		(0.262)		(0.035)	
Book value of target assets											–0.444	0.642		
(*Tar_SZ*)											(0.154)			

Target's financial leverage (*Tar_Lev*)						–0.115 (0.804)	0.892
Observation	461	461	381	381	381	180	209
Chi-square	76.056***	97.278***	111.619***	115.535***	126.322***	75.555***	87.939***
Log likelihood	542.5	521.24	406.75	402.835	392.05	172.175	198.8
Pseudo-R^2	0.206	0.258	0.342	0.352	0.380	0.459	0.460

Note. Numbers in parenthesis denote the *p*-value values and * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 8. ***Model 6 Correlation Matrix***

	Constant	***Deal_SZ***	***Comp_Acq***	***Acq_Cash***	***Acq_ROA***	***Acq_Lev***	***Acq_Coll***	***Acq_MV***	***Rel_SZ***	***Acq_Prom***	***Tar_pub***	***Rel_Indu***	***Tar_SZ***	***Tar_Lev***
Constant	1.000													
Deal_SZ	.173	1.000												
Comp_Acq	–.368	–.018	1.000											
Acq_Cash	.225	.092	–.145	1.000										
Acq_ROA	.055	.182	–.074	.018	1.000									
Acq_Lev	–.260	–.033	.146	–.188	.101	1.000								
Acq_Coll	–.092	.107	–.019	.176	.066	–.468	1.000							
Acq_MV	–.564	–.631	.134	–.510	–.327	.157	–.109	1.000						
Rel_SZ	–.325	–.751	.009	–.041	–.188	–.043	–.117	.676	1.000					
Acq_Prom	–.243	.168	–.278	.069	.052	.050	.034	–.114	–.150	1.000				
Tar_pub	–.314	–.028	.121	–.066	.094	.174	–.089	.045	–.003	.051	1.000			
Rel_Indu	–.202	.167	.203	.067	–.163	–.115	.011	.012	–.106	–.072	–.044	1.000		
Tar_SZ	-.196	–.396	.126	–.175	.174	.038	–.062	.011	.126	–.110	–.086	–.207	1.000	
Tar_Lev	.018	.207	.028	–.029	.167	–.140	.004	–.270	–.144	–.111	–.140	.089	.215	1.000

Model 6 establishes the relationship between the payment methods and all explanatory variables. Percentage of promoter holding of the acquirer (Acq_Prom) and two financial variables of the target, Tar_SZ and Tar_Lev, are added in Model 6. The results of Model 6 show that the percentage of the promoter holding in the acquirer company is positively related to the cash payment method in M&As. The highly concentrated promoter holding in acquirer firms leads to an unwillingness of payment through the stock mode. This finding is similar to the ownership hypothesis. As discussed in the study that Indian company ownership is concentrated on high promoter holdings and family ownership, so the role of managerial ownership is less significant in the Indian context. Table 8 shows the correlation matrix of all the explanatory variables used in Model 6. It is observed from Table 8 that all the independent variables are not highly correlated with each other.

Model 7 is framed by taking all the important and significant variables from the rest of the models. Model 7 considers seven independent variables, that is, Deal_SZ, Comp_Acq, Acq_Cash, Acq_Lev, Acq_Prom, Tar_pub, Rel_Indu, which explain the payment methods in M&A deals in the Indian context. The pseudo-R^2 and χ^2 values of Model 7 show 46% and 87.939, respectively. The value of pseudo R^2 is maximum in Model 7 than the rest of the models, so Model 7 is conceded as the best fit model. Appendix A1 shows the detailed results of Model 7, and Appendix A2 reveals the correlation between the independent variables.

Conclusion

This study examines the determinants that significantly affect the payment method in Indian M&As by taking a sample period of 17 years from April 1, 2000 to March 31, 2017. The study considers only pure cash and pure stock deals. There are very few studies that have explored the role of acquirers and targets as well as the impact of deal factors on the choice of payment methods in M&A deals by taking acquirers from the non-financial sector in the Indian context. The results indicate that for high-value deals and complete acquisition deals, stock payments are primarily used as a payment method than the cash payment method in M&A deals.

The findings of the study also support the free cash flow hypothesis and ownership hypothesis. The acquirer with high availability of free cash leads to the choice of cash payment method. This finding is consistent with various past studies (Ismail & Krause, 2010). Promoter holdings have a positive relationship with the cash payment method in Indian M&A deals. So, high promoter holdings and more liquidity with the acquirer decrease the likelihood of the stock payment method. This result is supported by Faccio and Masulis (2005) and Ladkani and Banerjee (2012). The negative relation of the listed target company with cash payment mode suggests that stockholders of the listed target company are more inclined to accept the acquirer's stock for deal consideration.

The empirical results in this study demonstrate that the choice of payment methods in M&As is dependent upon various factors from deal characteristics, acquirer characteristics, and target characteristics. In this regard, the overall results gained in the present study are consistent with the past literature. However, a few results do not support the past studies on determinants of payment methods in the Indian context.

Managerial and Theoretical Implications

By briefly examining the determinants of payment methods and validating various hypotheses related to payment methods in an emerging market like India by taking an extensive sample period is an original move in this study. The knowledge gained from this study will help managers from both acquirer and target companies finalize the payment method of M&As in different corporate situations and facilitate the companies in improving the strategy for bringing in more synergy in the deals. The present study will help the acquirers' decision-makers select an appropriate payment method, improve their investment mechanism, and strengthen their finances

by value creation in M&As. This study will also be helpful for the policymakers to frame better policies relating to Indian M&As for reducing the value destruction due to M&A announcements.

Limitations of the Study and Scope for Further Research

This study examines the domestic M&A deals only, specifically acquirers from the non-financial companies in India. There are some areas in M&As, such as payment methods, which need advanced research in India. This study emphasizes how Indian companies carry out M&A deals. Consequently, the findings are generalized based on the Indian corporate sector only. Future research could be directed towards using a sample from other Asian countries, such as Thailand, Singapore, and Japan, where M&A studies are not much comprehensive. Specifically, this study has used the cash method and stock method. However, other payment methods, including the mixed payment method, earn-out method, issue of debenture, leveraged buyout, and management buyout can also be used in future studies. Changes to liquidity and volatility of the acquirer scrips also need attention. That denotes a hopeful path for further research.

Authors' Contribution

Dr. B.P. Bijay Sankar conceived the idea and made a substantial contribution to the concept and quantitative design to undertake the empirical study. Dr. N. M. Leepsa drafted the article and revised it critically for important intellectual content. Dr. B.P. Bijay Sankar wrote the manuscript in consultation with Dr. N. M. Leepsa. The numerical computations were done by Dr. B.P. Bijay Sankar. Dr. N.M. Leepsa reviewed the results and approved the final version of the manuscript.

Conflict of Interest

The authors certify that they have no affiliations with or involvement in any organization or entity with any financial interest or non-financial interest in the subject matter or materials discussed in this manuscript.

Funding Acknowledgment

The authors received no financial support for the research, authorship, and/or for the publication of this manuscript.

References

Alexandridis, G., Antypas, N., Gulnur, A., & Visvikis, I. (2020). Corporate financial leverage and M&As choices: Evidence from the shipping industry. *Transportation Research Part E: Logistics and Transportation Review, 133,* 101828. https://doi.org/10.1016/j.tre.2019.101828

Alshwer, A. A., Sibilkov, V., & Zaiats, N. (2011). *Financial constraints and the method of payment in mergers and acquisitions.* https://dx.doi.org/10.2139/ssrn.1364455

Barai, P., & Mohanty, P. (2014). Role of industry relatedness in performance of Indian acquirers – Long and short run effects. *Asia Pacific Journal of Management, 31,* 1045–1073. https://doi.org/10.1007/s10490-014-9372-1

Boateng, A., & Bi, X. (2014). Acquirer characteristics and method of payment: Evidence from Chinese mergers and acquisitions. *Managerial and Decision Economics, 35*(8), 540–554. https://doi.org/10.1002/mde.2640

Bruslerie, H. D. (2013). Crossing takeover premiums and mix of payment: An empirical test of contractual setting in M&A transactions. *Journal of Banking & Finance, 37*(6), 2106–2123. https://doi.org/10.1016/j.jbankfin.2013.01.037

Chaney, P. K., Lovata, L. M., & Philipich, K. L. (1991). Acquiring firm characteristics and the medium of exchange. *Journal of Business and Economics, 30* (4), 55 – 69.

Chari, A., Ouimet, P. P., & Tesar, L. L. (2010). The value of control in emerging markets. *The Review of Financial Studies, 23*(4), 1741–1770. https://doi.org/10.1093/rfs/hhp090

Chira, I., & Madura, J. (2018). Reference points and method of payment in mergers. *Managerial Finance, 44*(2), 278 – 290. https://doi.org/10.1108/MF-04-2017-0109

DePamphilis, D. M. (2010). *Mergers, acquisitions, and restructuring activities* (5th ed.). Academic Press.

DeYoung, R., Evanoff, D. D., & Molyneux, P. (2009). Mergers and acquisitions of financial institutions: A review of the post-2000 literature. *Journal of Financial Services Research, 36,* 87–110. https://doi.org/10.1007/s10693-009-0066-7

Draper, P., & Paudyal, K. (1999). Corporate takeovers: Mode of payment, returns and trading activity. *Journal of Business Finance & Accounting, 26*(5 – 6), 521–558. https://doi.org/10.1111/1468-5957.00266

Du, M., & Boateng, A. (2015). State ownership, institutional effects and value creation in cross-border mergers & acquisitions by Chinese firms. *International Business Review, 24*(3), 430–442. https://doi.org/10.1016/j.ibusrev.2014.10.002

Faccio, M., & Masulis, R. W. (2005). The choice of payment method in European mergers and acquisitions. *The Journal of Finance, 60*(3), 1345 – 1388. https://doi.org/10.1111/j.1540-6261.2005.00764.x

Fischer, M. (2017). The source of financing in mergers and acquisitions. *The Quarterly Review of Economics and Finance, 65,* 227 – 239. https://doi.org/10.1016/j.qref.2017.01.003

Garcia-Feijoo, L., Madura, J., & Ngo, T. (2012). Impact of industry characteristics on the method of payment in mergers. *Journal of Economics and Business, 64*(4), 261–274. https://doi.org/10.1016/j.jeconbus.2012.03.003

Gorton, G., Kahl, M., & Rosen, R. J. (2009). Eat or be eaten: A theory of mergers and firm size. *The Journal of Finance, 64*(3), 1291–1344. https://doi.org/10.1111/j.1540-6261.2009.01465.x

Grullon, G., Michaely, R., & Swary, I. (1997). Capital adequacy, bank mergers, and the medium of payment. *Journal of Business Finance & Accounting, 24*(1), 97–124. https://doi.org/10.1111/1468-5957.00097

Hansen, R. G. (1987). A theory for the choice of exchange medium in mergers and acquisitions. *The Journal of Business, 60*(1), 75 – 95. https://www.jstor.org/stable/2352948

Ismail, A., & Krause, A. (2010). Determinants of the method of payment in mergers and acquisitions. *The Quarterly Review of Economics and Finance, 50*(4), 471– 484. https://doi.org/10.1016/j.qref.2010.06.003

Jensen, M. C. (1986). Agency costs of free cash flow, corporate finance, and takeovers. *The American Economic Review, 76*(2), 323 – 329. https://www.jstor.org/stable/1818789

Jucunda, M. E., & Sophia, S. (2014). Do acquisitions add value to acquirers in India ? A study on the sensitivity of the stock market and acquirer returns. *Indian Journal of Finance, 8*(5), 5–18. https://doi.org/10.17010/ijf/2014/v8i5/71914

Kohli, R., & Mann, B. J. (2012). Analyzing determinants of value creation in domestic and cross border acquisitions in India. *International Business Review, 21*(6), 998 – 1016. https://doi.org/10.1016/j.ibusrev.2011.11.006

Kumar, B. R., & Rajib, P. (2007). Characteristics of merging firms in India: An empirical examination. *Vikalpa: The Journal for Decision Makers, 32*(1), 27 – 44. https://doi.org/10.1177%2F0256090920070103

Ladkani, R., & Banerjee, A. (2012). *Emerging market bidder returns and the choice of payment method in M&A: Evidence from India.* https://dx.doi.org/10.2139/ssrn.2139762

Martin, K. J. (1996). The method of payment in corporate acquisitions, investment opportunities, and management ownership. *The Journal of Finance, 51*(4), 1227–1246. https://doi.org/10.1111/j.1540-6261.1996.tb04068.x

Myers, S. C., & Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics, 13*(2), 187–221. https://doi.org/10.1016/0304-405X(84)90023-0

Pinkowitz, L., Sturgess, J., & Williamson, R. (2013). Do cash stockpiles fuel cash acquisitions? *Journal of Corporate Finance, 23,* 128–149. https://doi.org/10.1016/j.jcorpfin.2013.08.003

Prakash, S. (2017). The impact of mergers and acquisitions on shareholders' value: An empirical analysis of select Indian companies. *Indian Journal of Finance, 11*(9), 22–38. https://doi.org/10.17010/ijf/2017/v11i9/118087

Ranju, P. K., & Mallikarjunappa, T. (2017). Do acquisitions create value for acquirer companies in India? An empirical study. *Indian Journal of Research in Capital Markets, 4*(1), 7–18. https://doi.org/10.17010/ijrcm/2017/v4/i1/112880

Sankar, B. P., & Leepsa, N. M. (2018). Payment methods in acquisitions: A study on short-term performance of Indian non - financial acquiring firms. *Indian Journal of Research in Capital Market, 5*(2), 7–22. https://doi.org/10.17010//ijrcm/2018/v5/i2/130185

Saraogi, R. (2011). *Rule of law determines depth of debt market.* India Knowledge @ Wharton. http://knowledge.wharton.upenn.edu/india/article.cfm?articleid=4642

Satish, D., & Satyanarayana, S. V. (2018). Firm value and its non-linear relationship with endogenous promoter ownership in India. *Indian Journal of Finance, 12*(6), 7–24. https://doi.org/10.17010/ijf/2018/v12i6/128107

Sung, H. M. (1993). The effects of overpayment and form of financing on bidder returns in mergers and tender offers. *Journal of Financial Research, 16*(4), 351–365.

Tanna, S., Yousef, I., & Nnadi, M. (2020). Probability of mergers and acquisitions deal failure. *Journal of Financial Economic Policy, 13*(1), 1–30. https://doi.org/10.1108/JFEP-09-2019-0182

Ukaegbu, B., & Oino, I. (2014). The determinants of capital structure: A comparison of financial and non-financial firms in a regulated developing country – Nigeria. *African Journal of Economic and Management Studies, 5*(3), 341–368. https://doi.org/10.1108/AJEMS-11-2012-0072

Xu, D., & Meyer, K. E. (2013). Linking theory and context: 'Strategy research in emerging economies' after Wright et al. (2005). *Journal of Management Studies, 50*(7), 1322–1346. https://doi.org/10.1111/j.1467-6486.2012.01051.x

Yook, K. C., Gangopadhyay, P., & McCabe, G. M. (1999). Information asymmetry, management control, and method of payment in acquisitions. *The Journal of Financial Research, 22*(4), 413–427. https://doi.org/10.1111/j.1475-6803.1999.tb00703.x

Appendix

Appendix A1. ***Model 7, Summary***

	B	S.E.	Wald	Sig.	Odd Ratio
Deal value (*Deal_SZ*)	–.628	.218	8.331	.004	.534
Complete stake acquisition (*Comp_Acq*)	–2.645	.422	39.326	.000	.071
Acquirer's cash and bank balance (*Acq_Cash*)	.364	.178	4.185	.041	1.439
Acquirer's financial leverage (*Acq_Lev*)	–.956	.913	1.096	.295	.384
Promoter holding in acquirer (*Acq_Prom*)	.018	.010	3.049	.081	1.018
Target is a listed firm (*Tar_pub*)	–1.767	.527	11.251	.001	.171
Both target and acquirer industry are same (*Rel_Indu*)	–.841	.399	4.439	.035	.431
Constant	4.320	1.139	14.388	.000	75.205
Observation	209.000				
Chi-square	87.939				
Log-likelihood	198.799				
Pseudo-R^2	0.46				

Appendix A2. ***Model 7 Correlation Matrix***

	Constant	*Deal_SZ*	*Comp_Acq*	*Acq_Cash*	*Acq_Lev*	*Acq_Prom*	*Tar_pub*	*Rel_Indu*
Constant	1.000							
Deal_SZ	–.453	1.000						
Comp_Acq	–.329	.101	1.000					
Acq_Cash	–.282	–.304	–.056	1.000				
Acq_Lev	–.316	.011	.037	.092	1.000			
Acq_Prom	–.477	.053	–.212	.049	.115	1.000		
Tar_pub	–.403	–.112	.159	–.031	.056	.042	1.000	
Rel_Indu	–.329	.051	.253	.174	–.097	–.114	.015	1.000

About the Authors

Dr. B. P. Bijay Sankar is an Assistant Professor (Accounting & Finance), Birla Global University, Bhubaneswar, Odisha. His research interests include corporate finance, mergers & acquisitions, and stock market research.

Dr. N. M. Leepsa is a Lecturer in Business Communications, Arizona State University at Lake Havasu City, Arizona, United States. Prior to this, she worked as an Assistant Professor at the National Institute of Technology (NIT) Rourkela, India.