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Article

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Suggested Citation: Varma, Urvashi; Raveesh K; Munjal, Alka (2021) : Determinants of payout choice between open market repurchase, tender offer repurchase and special dividends, Cogent Economics & Finance, ISSN 2332-2039, Taylor & Francis, Abingdon, Vol. 9, Iss. 1, pp. 1-19,
<https://doi.org/10.1080/23322039.2021.1934975>

This Version is available at:

<https://hdl.handle.net/10419/270103>

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To cite this article: Urvashi Varma, Raveesh K & Alka Munjal | (2021) Determinants of payout choice between open market repurchase, tender offer repurchase and special dividends, Cogent Economics & Finance, 9:1, 1934975, DOI: [10.1080/23322039.2021.1934975](https://doi.org/10.1080/23322039.2021.1934975)

To link to this article: <https://doi.org/10.1080/23322039.2021.1934975>



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Received: 04 October 2020
Accepted: 22 May 2021

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FINANCIAL ECONOMICS | RESEARCH ARTICLE

Determinants of payout choice between open market repurchase, tender offer repurchase and special dividends

Urvashi Varma¹, Raveesh K² and Alka Munjal³

Abstract: The paper aims to identify the variables contributing to special payouts considering open market repurchase, tender offer repurchases, and special dividends. A multinomial logit model has been used to investigate the choice of payout out of 754 payout announcements made between 2004 and 2017 in India. The study investigates agency cost, shareholder heterogeneity, clientele effect, distribution size, misvaluation, and takeover threat. The MNL results suggest that open market repurchase is chosen when the takeover threat is high, firms are significant, or in case of undervaluation of firms. Tender offer repurchase is preferred in high agency cost, high takeover threat, low shareholder heterogeneity, and undervaluation. The study further investigates the nature of ownership in terms of a business group affiliated and standalone firms. The result of the study suggests the nature of ownership impacts the choice of dividend payout choice. Group affiliated firms are driven by clientele effect and distribution size, and in standalone firms' agency and shareholder heterogeneity holds. The Bayesian approach which is based on the combination of previous information and the current data available is used in the study for MNL. The findings suggest that payout choices of open market repurchase and tender offer repurchase over special dividends are based on misvaluation and shareholder heterogeneity.

ABOUT THE AUTHOR

The team for this research consists of Dr Urvashi Varma, Dr Raveesh K and Prof Alka Munjal. Dr Urvashi Varma is working with Amity Business School, Amity University Uttar Pradesh as an assistant professor in the area of Finance. Her research interest is Payout policies and financial systems. Dr Raveesh K is serving as an Assistant Professor at Indian Institute of Management Bodh Gaya in the area of Accounting and Finance. Prof (Dr) Alka Munjal is the Ex-Dean Student academic affairs and support services at Amity University Uttar Pradesh and Professor in Strategy and Finance. She has keen interest in consultancy and research in the field of strategic finance spanning over two decades. Payout policy of firms is an area all three of us specially with the increase in the share buybacks in India in the recent years. The study will be helpful to understand the choice on the payout mode.

PUBLIC INTEREST STATEMENT

This paper focuses on the drivers to choose the payout mode for corporates in India. The three modes discussed are open market repurchase, tender offer repurchase and special dividends. Firms having higher agency cost, threat of takeover, having lower history of dividend payments and lower dividend payouts amount prefer open market repurchase and tender offer repurchase over special dividends. The nature of ownership of a firm (if affiliated to a business group or standalone) also impacts the choice of the payout adopted by the firm. The study also finds that the share buybacks are adopted over special dividends in case the firms are misvalued.

Subjects: Environmental Economics; Finance; Business, Management and Accounting

Keywords: payout policy; multi nominal logit; open market repurchase; tender offer repurchase

1. Introduction

Payout policy, which encompasses form, amount, and timing of distributions of return to the shareholder, is a core corporate finance activity. Decisions regarding dividends and repurchases (or buybacks) constitute the payout policy of a firm. Share buybacks can be performed by open market repurchase or tender offer repurchase. Motives of share buyback have been discussed extensively in literature as a free cash flow hypothesis, substitution hypothesis, agency cost, leverage hypothesis, liquidity hypothesis, and signaling hypothesis by S. K. Jena et al. (2020). Comparing dividends and share repurchases, Dayanandan et al. (2020) suggest that it has been observed that share repurchases are more flexible than dividends. However, share repurchases have been criticized over dividends for focusing on short-term earnings and price. They tend to lose the capital that can be used for long-term profits. The choice between open market repurchase, tender offer repurchase, and special dividends is an intriguing question and has attained researchers' focus for a long time.

Compared with dividends, repurchases offer flexibility to the manager in terms of the amount and timing of the distribution. However, this flexibility comes with a cost. This flexibility is of importance when firms are financially constrained since buybacks are curtailed or eliminated to preserve liquidity. Brav et al. (2005) surveyed financial executives who dislike dividends' rigidity over share repurchase since once the firm initiates a dividend, it is expected to pay dividends in the future. G. Grullon and Michaely have found that large firms have shifted the payouts from dividends to share repurchases, hence maintaining the propensity to payout.

Miller and Modigliani (1961) have suggested that in perfect market conditions, corporations and shareholders should be indifferent to the payment of dividends. However, Fama and Miller (1972) state that perfect markets do not exist and market imperfections help in deciding the choice of disbursement-like taxes, transaction cost, information collection cost, risk of partial expropriation borne by the uninformed investor, risk of a less than perfectly elastic supply curve for a firm's share due to heterogeneous shareholder valuation. Ofer and Thakor (1987) have said that the higher is the cost borne by the manager in the transaction (buyback or dividend) stronger is the credibility of the signal. Brennan and Thakor (1990) suggest that share repurchases have a cost compared to dividends, and the investor bears an information cost or else loses the ownership to a better-informed shareholder.

Dividends are for small distributions, while open market repurchase is for large distributions because the customer will incur more information costs. The largest distributions are through a tender offer. Bagwell (1991, Bagwell, 1992) has found large firms followed by analysts do open market repurchase, have lower insider ownership, low heterogeneity, and flat curves for their stocks. Small firms use tender offer buybacks since they are characterized by high insider ownership, dispersion in shareholder valuation, and steep curves for their stocks. Comment and Jarrell (1991) have found in their study that a Fixed price tender offer is a more credible signal for undervaluation than a Dutch offer because the average premium paid is more significant in a fixed price tender offer. Also, in this case, the insiders set the terms of the trade Tender offer buyback is prevalent in firms with high uncertainty for shareholder valuation, the firms are mature, and low insider ownership is present. Vafeas (1997) has studied the relationship between tender offer buyback agency cost, and free cash flow is looked into. Firms take up tender offer buybacks with high agency costs, high ownership, high debt, increased stock market performance before payout, and large cash to distribute. Lie and Lie (1999) suggest that there is a strong relationship between dividend yield and payment choice in firms with a high level of institutional ownership.

High dividend yield firms prefer special dividends. Also, Jaganathan et al. (2000) suggests that Firms with volatile cash flows use buybacks as a payout option. Lie (2000) said that firms repurchase when they are undervalued, as an alternate to investments.

In India, the total special payouts made by firms listed on the Bombay stock exchange (BSE) between 2004 and 2017 has been Rs 2,225,309.5mn. Thirty percent of the special payouts made is through special dividends, while 15.82% is done by open market repurchase, and the balance 54.18% is through a fixed-price tender offer. The choice of payout policy of a firm can be attributed to different factors like the ownership structure, the current level of payout, the size of the distribution, and the degree of stock undervaluation. Share repurchase and special dividends are referred to as special payouts because of their infrequent occurrence.

In the Indian context, S. K. Jena et al. (2020), in their study, look into the impact of signaling, excess cash flow, substitution, leverage agency cost, and liquidity on selecting between open market repurchase and tender offer repurchase using logistic regression for 430 non-financial buybacks in India between 1998–99 to 2017–18. They find substantial cash reserves, and high promoter ownership drives tender offer repurchase. Tender offer firms are less leveraged than open market repurchase firms. The firms paying regular dividends prefer open market repurchase. Also, companies with a higher turnover ratio choose a tender offer. A study by Hyderabad (2009), Chatterjee and Mukherjee (2015) looks into the price behaviors following share buyback in India. Varma et al. (2018) have analyzed free cash flow, capital structure, profitability as the choice for open market repurchase and tender offer repurchase for 54 tender offer repurchase and 90 repurchase firms using Tobit regression. The researchers find a tender offer is enacted for capital structure correction and open market repurchase for dividend substitution.

The existing literature in India focuses on the comparison of only open-market repurchase and tender offer repurchase as a payout method Varma et al. (2016). Special dividends should also be looked into as a payout method used by corporates. The present study identifies this gap and includes along with open market repurchase and tender offer repurchase the use of special dividends. Also, misvaluation has not been observed in any of the previous studies as a significant variable for being a driver to repurchase, so the present study intends to check the significance of this hypothesis in the Indian context.

The next part of the paper discusses the theoretical framework of the payout choices in section 2 regarding shareholder heterogeneity, agency cost framework, clientele effect, size of the payout distribution, level of undervaluation, prior share performance, etc. the takeover threat. The sample, data sources, and the choice of variables are discussed in section 3. The results and findings are discussed in section 4. Section 5 presents the paper's conclusion and its limitations.

2. Theoretical framework

Studies by Mishra (2005) have identified the requisite candidacy for share buyback in India.

2.1. Shareholder heterogeneity

Shareholder heterogeneity, which refers to the firm's nature of control, is considered an essential determinant of the payout policy. Firms characterized by low heterogeneity or lower insider ownership prefer open market repurchases over the tender offer. However, special dividends are preferred for firms where the shareholder heterogeneity is even lower than open market repurchase. Gaspar et al. (2012) discuss the amount of repurchase and its frequency increases for firms held by short-term investors over dividend payment.

2.2. Agency cost

Agency cost is again an implication of the ownership of the firm. Firms having higher insider ownership and high debt are characterized by low agency costs. Such firms prefer open market repurchase as a payout method. When the firm has idle cash and limited investment opportunities, it might target agency conflict (Dittmar, 2000). When the firm has an agency conflict, the firm can use share buyback to return the excess cash to the shareholders. Since the firm buys back at a premium, the shareholders can tender their shares to benefit the situation. Share buyback hence saves the firm from the threat of excess investment in non-profitable investments. The companies having lower leverage than optimum can also use share buybacks for capital structure correction. Share repurchase in India leads to the cancellation of the repurchased shares. Hence, it reduces the equity. Reduction in equity capital has an incremental effect on the leverage of the firm. Therefore, buyback programs help the company arrive at optimal leverage.

2.3. Clientele effect

The current payout level of the firm also affects the future payout choice. Firms that have declared special dividends over repurchase. The regular dividend-paying firms would prefer special dividends. Dividends and share buybacks are similar in the sense they distribute or return the firm's excess cash to the shareholder, so they can as well be seen as substitutes. However, while dividend distribution signals that the firm is performing well, however, buyback signals firm's undervaluation. (DeMarzo, 2008)

2.4. Size of distribution

The size of the dividend distribution also can create differentiation in the payout choice. The firm where the size of the distribution is less special dividends is preferred over tender offer repurchases. The choice of open market repurchase has been made by firms where the dividend payment has been higher than the tender offer repurchase.

2.5. Level of undervaluation

The level of undervaluation also provides a discriminator amongst the alternate payout choices. Repurchases and dividends act as signals, but the cost of signaling is higher in the case of a repurchase than dividend; hence, repurchases are believed to be more credible signals. Fixed-price tender offers are supposed to be stronger signals than tender, open market repurchase since the average premium paid is higher. In the case of a fixed tender offer, the trade conditions are set up by insiders. The signaling theory has been abundantly discussed by (D'Mello & Shroff, 2000). When the firm's managers believe that the firm's shares price is trading much below its intrinsic worth, they believe buying back at a premium will give a signal about management's faith in the company's well-being. The investors who believe in the signal tend to stay invested in the company, and those investors who would not want to stay invested tender their shares at the premium price offered. Dividends and share buybacks are similar in the sense they distribute or return the firm's excess cash to the shareholder, so they can as well be seen as substitutes. However, while dividend distribution signals that firm is performing well however, buyback signals firm's undervaluation (DeMarzo, 2008).

2.6. Share price performance before distribution

If the firm's share price performance prior to the distribution is low, such firms prefer tender offer, while in case of high share price performance prior to the distribution, the firm would prefer open market repurchase.

2.7. Takeover threat

The firm encountering high takeover threat prefer fixed price tender offer. A firm can thwart the potential threat of takeover by buying back their shares at a premium. The premium price makes the takeover difficult for the acquirer. By gaining greater internal control, share buybacks are an

effective means of stopping an attempted takeover. Share buyback can also remove minor shareholders from the shareholding

In the present study, we also look for the firms’ ownership if their ownership belongs to a business group or are they standalone firms and their relationship with payout choice. Zeng (2011) studied in Canada, where firms belong to business groups and have holdings in other firms, firms with higher inter-corporate deposits have a higher propensity to pay dividends over share repurchases.

3. Research methodology

3.1. Sample

The study focuses on 754 payout announcements made between the period of 2004 to 2017. A total of 383 of these announcements are special dividends, and 371 are buyback announcements. Out of the 371 buyback announcements, 184 are open market repurchase, and 187 are tender offer repurchase announcements, as can be seen in Figure 1. The buyback announcement data has been collected from the website of India’s securities exchange board (SEBI). Like the number of shares bought back, the details on the buyback were collected for individual companies from the Capitaline database. The special dividend data has been collected from the CMIE prowwess database. The data on the respective companies’ financial indicators across the years have been collected from the CMIE prowwess database.

Table 1 presents the chronological distribution of the value of special payouts. The years 2016 and 2017 have seen increased special payout drastically. This is attributed to increased tender offer buyback activity. Years 2014, 2012, and 2004 have witnessed better special payout than 2015, 2009, 2007, and 2005. In the year 2014, special dividends have been the preferred payout choice, while in years 2012, 2011, and 2008 open market repurchases have been the preferred mode of special payout.

Figure 1. Year wise distribution value of payout announcements.

Source: Compiled using data from Securities Exchange Board of India, Capitaline

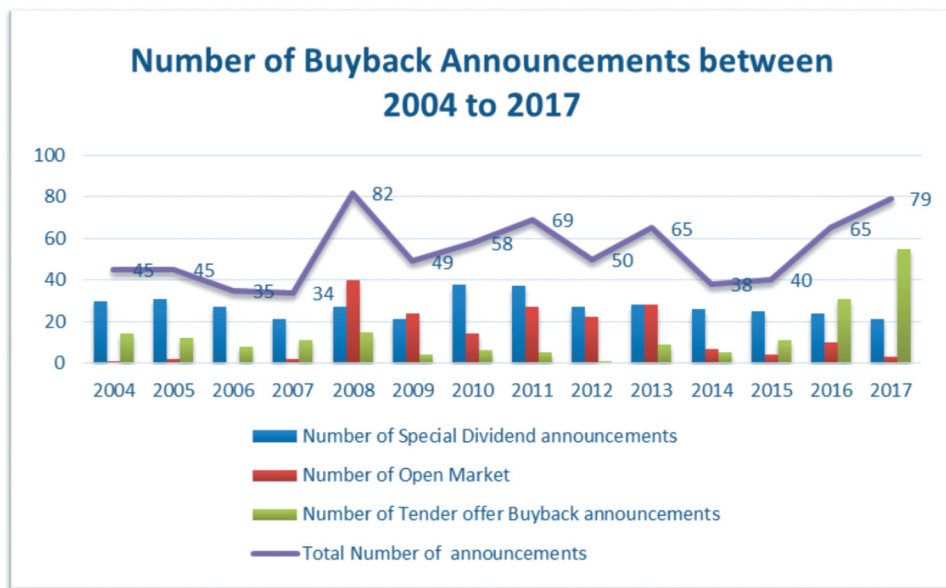


Table 1. Value of special payouts between 2004 and 2017 in India

Year	Percentage value of special dividends	Percentage value of open market buyback	Percentage value of tender offer buyback
2017	0.04%	0.52%	99.44%
2016	41.96%	3.50%	54.54%
2015	50.51%	3.92%	45.57%
2014	55.89%	41.78%	2.33%
2013	47.81%	15.89%	36.29%
2012	28.28%	70.99%	0.74%
2011	28.52%	43.78%	27.69%
2010	62.76%	12.06%	25.18%
2009	47.58%	45.85%	6.57%
2008	24.11%	51.87%	24.03%
2007	45.03%	19.56%	35.41%
2006	92.71%	0.35%	6.93%
2005	90.08%	0.00%	9.92%
2004	12.76%	0.00%	87.24%
Total	30.00%	15.82%	54.18%

Source: Compiled using data from Securities exchange board of India, Capitaline.

The type of ownership has categorized the firms making payout announcements into the business group and standalone firms. In the case of Tender offer buyback firms, out of 188 firms' 91 firms were a part of the business group, while 97 firms were standalone firms in which 80 firms had private Indian ownership and 17 firms had private foreign ownership. In the case of Open market repurchase firms out of the 166 firms announcing for open market repurchase during the study period, 89 firms were a part of some business group, and 77 firms were standalone firms out of which 63 were Indian private firms while the remaining 14 were foreign private firms. For the firms paying out special dividends out of the 375 firms, 236 firms were a part of the business group, while 139 firms were standalone firms, out of which 88 firms were Indian private sector firms while 51 firms were foreign private sector firms.

3.2. Research method

The firms can use any of the three payout choices out of open market repurchase, tender offer repurchase, and special dividends. The choice of payment mode can be explained through various firm performance parameters discussed in previous literature. Dittmar (2000) has used Tobit regression for choice of payouts. S. K. Jena et al. (2020) have used logistic regression to identify the drivers of open market repurchase and tender offer repurchase. The payout choices, namely tender offer repurchases, open market repurchases, or special dividends, are categorical variables. Since the payout choices have more than two options, the MNL model will be appropriate in the present study than a simple logit model. The ordered logistic model cannot be used since the dependent variable is not in order. Caudill et al. (2006) made the first use of MNL adjusted for choice-based sampling.

In the MNL model, two sets are considered at a time, and pairwise comparisons are made. Out of the three payout out choices, one is considered as a base, and the log odds are seen in favor of the other payout choices other than the base case one equation at a time. Since we have three payout choices; hence, two results are obtained on the pairwise comparison. (n-1). The results obtained from MNL are used both for inference and prediction. Also, the classification error can also be looked into different

payout mechanisms. This method is more suited when for studying the payout choice versus logit model of Tobit. The present study hence relies on MNL rather than using logit model or Tobit model.

The log odds in favor of open market repurchase are expressed in equation 1, and log odds in favor of tender offer repurchase are expressed in equation 2

$$\ln \left\{ \frac{P(\text{payout} - \text{omr})}{P(\text{payout} - \text{special dividends})} \right\} = b_{10} + b_{11}X_1 + b_{12}X_2 + b_{13}X_3 + b_{14}X_4 + b_{15}X_5 + b_{16}X_6 \quad (1)$$

$$\ln \left\{ \frac{P(\text{payout} - \text{tender})}{P(\text{payout} - \text{special dividends})} \right\} = b_{20} + b_{21}X_1 + b_{22}X_2 + b_{23}X_3 + b_{24}X_4 + b_{25}X_5 + b_{26}X_6 \quad (2)$$

Where,

X_1 represents shareholder heterogeneity

X_2 represents agency cost

X_3 represents the clientele effect

X_4 represents size of the previous distribution

X_5 represents the level of misvaluation

X_6 represents the takeover threat

Representing the right-hand side of the equation by Y_1 and right-hand side of equation 2 by Y_2 , raising both equation 1 and equation 2 to the exponent power and simplifying the probabilities of a special dividend, open market repurchase, and tender offer repurchase are given in equations 3, 4 and 5 respectively

$$P(SD) = \frac{1}{(1 + e^{Y_1} + e^{Y_2})} \quad (3)$$

$$P(OMR) = \frac{e^{Y_1}}{(1 + e^{Y_1} + e^{Y_2})} \quad (4)$$

$$P(TO) = \frac{e^{Y_2}}{(1 + e^{Y_1} + e^{Y_2})} \quad (5)$$

The marginal effect shows the difference in the probabilities predicted as per equations 3, 4 and 5 for one case in one category relative to the base or reference category. The marginal effect on the dependent variable, which is a categorical variable in the present study, shows how one variable's probabilities change as the other is changed by one. The marginal effect on open market repurchase would show how much more or less likely open market repurchases are practiced relative to special dividends during the study period. Similarly, the marginal effect on tender offer repurchase

would show how much more or less likely tender offer repurchase is practiced relative to special dividends during the study period.

MNL acts as the best estimation choice in case of choice behavior, and hence the same approach has been used to investigate the choice of payout options in India.

The Bayesian approach represents an alternative method for the estimation of MNL. Bayesian MNL is better suited for unordered categorical variables. The Bayesian interface is used to estimate the parameters in the models. In the case of MNL, the Bayesian interface considers the preliminary information on parameter values. The Bayesian approach is based on the combination of previous information and the current data available. Instead of the confidence intervals used in classical methods, the Bayesian estimates are based on the posterior distribution. This paper also includes the Bayesian multinomial logit approach to looking at the choice of payout options by Indian firms during the study period.

3.3. Determinants of payout choice

The variables LSIZE and INSTOWN are a proxy for shareholder heterogeneity. LSIZE is the market value of the firm prior to the announcement date taken from CMIE Prowess. A similar calculation has been used by Caudill et al. (2006). INSTOWN is the ratio of shares held by institutional investors by the total number of shares held at the end of the year prior to the announcement.

DEBT is a proxy for agency cost. It is the ratio of long-term debt to total assets of the firm at the end of the year prior to the announcement. DIVYLD is the proxy for history of dividend paid, also known as the clientele effect. It is the ratio of the firm's regular dividend to the firm's market capitalization at the end of the year before the special payout announcement.

DSIZE is a proxy for the distribution size. In the case of open market repurchase or tender offer repurchase, the ratio of the number of shares repurchased in the year to the number of shares issued at the end of the year after which the buyback or repurchase announcement is made. In the case of special dividends DSIZE, the ratio of the special dividend paid to the firm's market capitalization 5 days prior to the announcement.

MISVAL is a proxy for the level of undervaluation and is measured as the ratio of the market capitalization of the firm to the book value of equity at the end of the financial year before the announcement of the special payout.

The threat for takeover has been studied in the present study using a dummy variable. The data has been obtained from CMIE Prowess on takeover threat. The data analyzed during the study period reflect that out of the 375 firms paying special dividends, 45 firms (12% of the sample) had experienced a threat for takeover. Eighty firms out of the 188 firms announcing tender offer buybacks (42.55%) experienced a takeover threat. However, in open market repurchase, 128 firms out of 166 firms (71.12%) experienced a takeover threat.

4. Results

4.1. Descriptive statistics

Table 2 presents the means and medians of the seven independent variables. In these, the variables DSIZE and MISVAL needed adjustment for outliers (winsorized at $\pm 10\%$). The difference between the three special payouts is studied using the Wilcoxon rank-sum test.

Looking at shareholder heterogeneity, the open market repurchase firms have higher institutional ownership as expected, but the debt to total assets ratio is also high for them than tender

Table 2. Operational definition of variables and relationship with the payout alternatives

S.No.	Variable	Proxy for	Definition	Relationship	OMR	Tender	Special dividends
1	LSIZE	Shareholder heterogeneity or diversity	Ln[market value of the firm 5 days prior to the announcement] (Shares held by institutional shareholder/total no of issues shares prior to the announcement date)	Low: Open Market repurchase, High: Fixed-price tender offer	+	-	-
2	INSTOWN				+	-	-
3	DEBT	Agency Cost	(Long term debt/ Total assets at the end of financial year before the announcement date)	Low: Open Market repurchase, High: Less likely to use open market repurchase	-	+	+
4	DIVILD	History of dividend paid or Clientele effect	(Regular dividend/ Market capitalization of company at the end of Financial year before the announcement date)	Low: Repurchase, High: Special Dividends	-	-	+

(Continued)

Table 2. (Continued)

S.No.	Variable	Proxy for	Definition	Relationship	OMR	Tender	Special dividends
5	DSIZE	Size of distribution	For OMR or tender (No. of shares bought back/No. of shares issued at the end of Financial year prior to the announcement date) For Special dividends (Amount of special dividends/Market capitalization of the company 5 days prior to the announcement)	Low: Special Dividends, High: Tender offer followed by open market repurchase	+	+	-
6	MISVAL	Level of undervaluation	(Market capitalization/ Book value of equity) at the end of the Financial year prior to the announcement date	Low: Open Market repurchase, High: Fixed price tender offer	+	+	-
7	TD	Takeover threat (dummy variable)	TD = 1, if firm is a takeover threat TD = 0, otherwise	Low: Special Dividends, High: Tender offer or Open maker repurchase (for companies having low valuations)	+	+	+

Based on Wesson et al. (2017) and Caudill et al. (2006).

offer firms. The tender offer repurchase firms in India are characterized by low leverage. The largest size firms give out special dividends while the smallest firms are repurchasing their shares through open market repurchase. The DIVYLD or the history of dividend payments for share repurchases (both open market and tender) is significantly lower than firms paying out special dividends. The size of the distribution is much greater in the case of special dividends as against the repurchases. Misvaluation is more pronounced in the case of open market repurchase firms.

4.2. Result from multinomial logit model

The multinomial logit regression results for open market repurchase and tender offer repurchase are represented in Table 4. The result of MNL reflects that LSIZE and TD are significant for open market repurchase at 1% level of significance. In cases of tender offer repurchase DEBT/TA, LSIZE, TD is significant at 1% level and INSTOWN, MISVAL are significant at 5% level.

The ownership pattern of the firm has been considered to further look into the drivers for the payout mode selected by Indian firms. The firms are divided into categories of a business group affiliated firms and standalone firms on the basis of business ownership. The standalone firms are further classified as Indian private sector firms and foreign private sector firms. This analysis is instrumental in understanding the payout behavior of a firm based on ownership.

Table 3 presents the results for MNL in the case of open market repurchase firms on the basis of the ownership structure of the business. The results are presented as firms affiliated with business groups, private Indian firms, and private foreign firms. In firms affiliated with business groups, lower dividend yield and previous dividend payment history drive the open market repurchase. In the case of Indian private firms, the drivers for open market repurchase are leverage and size of the firm. Small size firms with higher leverage prefer open market repurchase over special dividends. Foreign private sector firms having a prior history of dividend payment prefer open market repurchase. Across all the three ownership forms, a threat of takeover is a significant driver for open market repurchase.

Table 5 also presents the findings for the tender offer's payout choice over special dividends across the three ownership forms of a business group affiliated firms, standalone Indian private sector firms, and standalone foreign private sector firms. 313 firms were group firms, 154 firms were Indian private sector firms and 63 firms were foreign private sector firms. The business group affiliated firms preferring tender offer repurchase have low leverage (significant at 5%), low dividend yield, previous dividend payment history. In the case of Indian private sector standalone

Variables	OMR		TO		SPD		Mean difference	
	N = 166	Mean	N = 188	Mean	N = 370	Mean	SPD-OMR	SPD-TO
DEBT/TA	164	0.160	179	0.108	355	0.142	1.627	-2.414**
DIVYLD	159	0.0248	166	0.0199	351	0.0371	-3.384***	-6.414***
DSIZE	153	0.0628	154	0.0670	344	0.0273	5.930***	6.316***
LSIZE	145	7.618	144	8.852	344	9.327	-4.344***	-1.372
TD	164	0.774	185	0.427	355	0.124	14.628***	7.844***
INSTOWN		0.157	166	0.140	350	0.161	-0.498	-1.899*
MISVAL	159	892.4	165	1,735	345	1,369	-1.893**	-1.356

***significant at 1%, ** significant at 5%, * significant at 10% Source: Compiled using data from CMIE-Prowess, Capitaline.

Wilcoxon rank-sum test has been used to identify the difference in means between the different payout choices.

Table 4. Result of MNL regression for open market repurchase and tender offer repurchase

Variables	Base outcome		Relative-risk ratio	
	OMR	Tender offer	OMR	Tender offer
DEBT/TA	1.904** (0.771)	-2.510** (1.035)	6.712** (0.800)	-2.510** (1.042)
DIVYLD	-0.134*** (0.0512)	-0.273*** (0.0912)	-0.134** (0.0611)	-0.273*** (0.0871)
DSIZE	0.127*** (0.0348)	0.180*** (0.0341)	0.127*** (0.0403)	0.180*** (0.0417)
LSIZE	-0.267*** (0.0631)	-0.120* (0.0682)	-0.267*** (0.0639)	-0.120 (0.0776)
TD	3.294*** (0.296)	1.652*** (0.299)	3.294*** (0.399)	1.652*** (0.336)
INSTOWN	0.796 (1.081)	-0.608 (1.072)	0.796 (1.136)	-0.608 (1.107)
MISVAL	-0.000423 (0.000307)	-0.000150 (0.000236)	-0.000423 (0.000383)	-0.000150 (0.000210)
Constant	-0.372 (0.605)	-0.127 (0.693)	-0.372 (0.651)	-0.127 (0.742)
Observations	530	530	530	530
Wald chi2(14)	197***		165.01***	
Pseudo R2	0.3092		0.3092	

Standard errors in parentheses *** p < 0.01, ** p < 0.05, * p < 0.1.

Source: Compiled using data from CMIE-Prowess, Capitaline and computed on STATA.

firms, tender offer is preferred because of prior history of dividend payment. The variable of DSIZE is also significant in the case of standalone foreign private firms. Similar to firms undertaking open market repurchase, the firms opting for tender offer repurchase face a significant takeover threat across all the three ownership types undertaken in the study.

Firms repurchasing using tender offer are smaller in size than firms declaring special dividends looking at the negative sign of LSIZE coefficient the same has been discussed by Caudill et al. (2006). INSTOWN, a measure of shareholder heterogeneity, has a negative coefficient in Table 5, suggesting firms preferring tender offer repurchase over special dividends are characterized by having lower shareholder heterogeneity than firms desiring special dividends. DEBT/TA's coefficient is negative, implying tender offer repurchase firms have low debt or lower agency cost compared to special dividend firms; however, as per Vafeas (1997), tender offer buybacks are taken up by firms having high agency cost and high debt.

The results are presented as firms affiliated with business groups, private Indian firms, and private foreign firms. As in the previous case, the results are obtained using all seven variables. LSIZE and DEBT/TA are significant at 1% level for business group affiliated firms. LSIZE and TD are significant at 1% level for firms having standalone ownership of the Indian private sector. TD is significant at 1% level for standalone firms having foreign ownership and enacting tender offer repurchase.

Table 5. MNL results for open market repurchase firms based on the ownership structure of the business

Variables	Group firms		Private Indian		Private foreign	
	OMR	Tender offer	OMR	Tender offer	OMR	Tender offer
DEBT/TA	1.576 (1.036)	-3.467** (1.703)	2.715** (1.378)	-1.196 (1.566)	6.775 (4.180)	-7.733 (6.030)
DIVYLD	-0.232*** (0.0829)	-0.365** (0.164)	-0.0554 (0.0945)	-0.167 (0.111)	0.0455 (0.139)	-0.546* (0.327)
DSIZE	0.137*** (0.0499)	0.178*** (0.0522)	0.0307 (0.0516)	0.147*** (0.0450)	0.842*** (0.262)	0.466** (0.218)
LSIZE	-0.212*** (0.0755)	-0.172* (0.0994)	-0.360*** (0.108)	-0.0843 (0.105)	-0.425 (0.385)	-0.397 (0.291)
TD	3.225*** (0.381)	1.635*** (0.436)	3.310*** (0.562)	1.598*** (0.524)	9.359*** (1.880)	2.579** (1.083)
INSTOWN	-0.249 (1.302)	-1.542 (1.495)	2.667 (2.384)	0.518 (2.028)	0.0563 (6.606)	0.698 (3.156)
MISVAL	-0.000185 (0.00036)	-0.000732* (0.00042)	-0.00113* (0.00064)	0.000148 (0.00031)	-0.000201 (0.00074)	-0.000376 (0.00072)
Constant	-0.590 (0.802)	0.502 (0.975)	0.608 (0.972)	-0.528 (1.057)	-7.380** (3.645)	2.559 (3.109)
Wald chi2	118.90***		74.27***		41.33**	
Pseudo R2	0.3320		0.2938		0.5620	
Obs	313	313	154	154	63	63

Standard errors in parentheses *** p < 0.01, ** p < 0.05, * p < 0.1.

Source: Compiled using data from CMIE-Prowess, Capitaline and computed on STATA.

TD is significant at 5%, and LSIZE is significant at 10% for business group affiliated firms. TD is significant at 1% level, and DEBT/TA is significant at 5% level for standalone firms owned by the Indian private sector enacting tender offer repurchase. There were no significant variables for standalone firms owned by the foreign private sector enacting tender offer repurchase in India.

Business group firms having higher dividend yield prefer special dividends. In case the distribution size of such firms is lower special dividends are the chosen payout mode. In this ownership type larger size firms opt for tender offer buyback followed by special dividends and then open market repurchase. Special dividends are also preferred mode when takeover threat is low for these firms.

Indian private sector standalone firms prefer special dividends over open market repurchase when firms have lower leverage or when firms size is large. Lower take over threat suggest preference over special dividends. Foreign private sector controlled standalone firms choose special dividends over open market repurchase or tender offer repurchase in case of lower distribution size of dividends and low takeover threat.

The consideration of ownership in the context of a business group affiliated or standalone firms suggests that firms preferring open market repurchase across different ownership structures have higher takeover threats across different ownership structures. Since the number of observations for standalone firms owned by private foreign firms is less the results are not discussed in detail. Small firms with high agency costs prefer open market repurchase over special dividends, as

Table 6. Marginal effects

Variables	Open market repurchases	Tender offer repurchase
DEBT/TA	3.011 (0.13)	0.039*** (0.0001)
DIVYLD	0.000*** (0.01)	0.000*** (0.001)
DSIZE	0.864 (0.32)	0.845 (0.37)
LSIZE	0.743*** (0.0001)	0.838*** (0.0001)
TD	25.221*** (0.0001)	4.761*** (0.0001)
INSTOWN	1.425 (0.73)	0.116** (0.02)
MISVAL	1.000 (0.10)	1.000** (0.0001)
Constant	1.586 (0.39)	3.414** (0.02)

Source: Compiled using data from CMIE-Prowess, Capitaline and computed on STATA.

*** significant at 1% and ** significant at 5%

shown in Table 7. In the case of tender offer, firms also the firms have a takeover threat higher than special dividends. These firms are smaller in size than firms declaring special dividends and have low debt or lower agency conflict.

Table 6 presents the marginal effects, which show how variables affect the probability. Increasing DEBT/TA marginally increases the likelihood of tender offer repurchase by 0.041. Increasing LSIZE increases the probability of open market repurchase by 0.761 at 1% level of significance and the probability of tender offer repurchase by 0.864 at 5% level significance. An increase in takeover threat by 1% increases the probability of open market repurchase by 24.32% and tender offer by 4.339%. The increase in misevaluation increases the probability of tender offer repurchase at 5% significance and open market repurchase at 10% significance level.

4.3. Result of Bayesian MNL

Bayesian MNL for payout choices made by the firms in India during the study period is summarized in Table 7. In the case of special dividends over open market repurchase the significant variables at 95% interval are agency cost, Clientele effect, size of distribution, shareholder heterogeneity and takeover threat. Special dividends are opted over open market repurchase in case of low agency cost, high history of dividend payments, lower distribution size in previous year, larger size firms and higher misvaluation.

Table no VII presents the results for the Bayesian MNL for the choice of special dividends over tender offer repurchases. The significant variables at 95% level are agency cost, history of dividend paid or clientele effect, size of distribution, shareholder heterogeneity, takeover threat and level of misvaluation. The choice of special dividends over tender offer is characterized by high agency cost, high clientele effect, low size of distribution, low takeover threat and higher misvaluation.

Table 7. Result of Bayesian multinomial logistic regression

	Mean	Std. dev.	MCSE	Median	95% Cred. interval
Open market repurchase-special dividends					
DEBT/TA	2.290147	0.671759	0.166286	2.304654	0.94013
DIYVL	-0.13509	0.04969	0.002295	-0.13482	-0.23028
DSIZE	0.132978	0.032718	0.002655	0.131743	0.069435
LSIZE	-0.2642	0.059023	0.00557	-0.26339	-0.37933
TD	3.348614	0.298847	0.040581	3.329901	2.785608
INSTOWN	0.697152	0.541676	0.130028	0.662187	-0.26904
MISVAL	-0.00043	0.000262	0.000027	-0.00041	-0.00097
_CONS	-0.50454	0.548129	0.063592	-0.50076	-1.54748
Tender offer repurchases-special dividends					
DEBT/TA	-2.91415	0.466727	0.120283	-2.8641	-3.88051
DIYVL	-0.29085	0.068273	0.003575	-0.29051	-0.43549
DSIZE	0.183704	0.02986	0.00247	0.182443	0.127308
LSIZE	-0.12618	0.054155	0.004331	-0.12551	-0.23858
TD	1.682271	0.307773	0.029686	1.676579	1.105956
INSTOWN	-0.25297	0.618003	0.10459	-0.28914	-1.42209
MISVAL	-0.00022	0.000213	0.000018	-0.00021	-0.00066
_CONS	-0.07508	0.575665	0.05145	-0.09064	-1.1782

Note: MCMC iterations = 12,500; Random-walk Metropolis-Hastings sampling; Burn-in = 2,500; MCMC sample size = 10,000; No of observation 530; Acceptance rate = 0.2093; Efficiency: min = 0.001506; Avg = 0.01296; Log marginal likelihood = -480.06132; max = 0 .04687.

Source: Compiled using data from CMIE-Prowess, Capitaline and computed on STATA.

5. Conclusion

The total payouts in India have seen a surge from Rs 129.34 billion in 2004 to Rs 597.91bn in 2017. Of the three payout methods special dividends have been the preferred choice in 8 out of 14 years and tender offer repurchase has been prevalent in 3 years, especially in the recent years. Open market repurchase was the prevalent mode in 3 out of 14 years. The present study looks at developing a predictive model for special payouts, which include open market repurchase, tender offer repurchases, and special dividends for Indian companies between 2004 and 2017. The three payout modes discussed are open market repurchase, tender offer repurchase, and special dividends.

The comparison of descriptive values the payout firms on agency cost, Clientele effect, size of previous distribution, institutional ownership, and takeover threat impact the payout method's choice reflects differences between special dividend and open market repurchase firms and special dividend and tender offer firms. Firms opting special dividends over open market repurchase are characterized by higher dividend yield, lower dividend distributions, bigger size, low takeover threat and higher misvaluation. Comparing special dividend firms with tender offer firms the special dividend firms are characterized by higher leverage, higher dividend yield, lower dividend distribution and higher misvaluation.

The study deploys MNL as a predictive tool to investigate the motivation for a special payout. The study finds out that agency cost (measured by debt to total assets), shareholder heterogeneity in terms of size of the firm, takeover threat, and Clientele effect have a significant impact on the choice of open market repurchase and tender offer repurchase over special dividends. Open market repurchases are chosen when the takeover threat is high, and firms are big in size or in case of undervaluation of firms. Tender offer repurchase is preferred in case of high agency cost, high takeover threat, low shareholder heterogeneity, and undervaluation.

Firms characterised by low leverage or agency cost use tender offer repurchases over other modes of special payouts. Firms having clientele effect or high history of dividend yield use special dividends as a payout mode over open market repurchase or tender offer repurchase. Firms using open market repurchase or tender offer repurchase have greater size of distribution of dividends than firms opting for special dividends. Larger size firms prefer special dividends over open market repurchase and smaller size firms prefer tender offer buybacks as a payout mode. Special dividend paying firms experience higher takeover threat than open market repurchase firms and tender offer firms.

The nature of ownership of a firm (if affiliated to a business group or standalone) also impacts the choice of the firm's payout and firms are classified into business group and standalone firms to see the impact of ownership. Across the three ownership modes special dividends is preferred over open market repurchase and tender offer when the firm faces low takeover threat. Business group affiliated firms opt for special dividends when they have high clientele effect, lower size of distribution and higher shareholder heterogeneity. Indian private sector standalone firms choose special dividends over open market repurchase when characterized by low leverage and large size and foreign private sector controlled firms choose special dividends when characterized by lower distribution size higher misvaluation. Special dividends are preferred over tender offer across the three ownership forms when distribution size of dividends is lower. Business group affiliated firms prefer special dividends over tender offer when experiencing high leverage, higher dividend yield, small size and lower misvaluation.

Bayesian MNL has been included the prior information on parameters. The study investigates agency cost, shareholder heterogeneity, clientele effect, distribution size, misvaluation and takeover threat as determinants to payout choice. The findings are summarized in [Table 8](#) based on the variables identified from Wesson et al. (2017) and Caudill et al. (2006).

Table 8. Summary of findings from Bayesian MNL

Sr no.	Variable	Proxy for	OMR	Tender offer	Special dividends
1	LSIZE	Shareholder heterogeneity	-	-	+
2	INSTOWN		+		-
3	DEBT	Agency Cost	+	-	+
4	DIVYLD	Clientele Effect	-	-	+
5	DSIZE	Size of distribution	+	+	-
6	MISVAL	Level of undervaluation	-	+	+
7	TD	Takeover threat	+	+	-

Larger firms size prefer special dividends while firms having higher institutional ownership prefer openmarket repurchases since they are more followed. Firms having lower leverage opt for tender offer repurchase in order to improve their leverage. Special dividends are preferred by firms having higher dividend yield since it is a strong signal to the investor. Firms who have distributed prior with dividends opt for buybacks as an alternate mode to return cash and work for the benefit of the non-tendering shareholder. The level of undervaluation is more in tender offer firms and firms who experience higher takeover threat prefer buyback over special dividends as a payout mode.

Using the Bayesian approach for MNL, the results show that misvaluation is the driver for both open market repurchase and tender offer repurchase over special dividends. The findings of the study have been reinforced in the prior literature. This study adds to misvaluation as a significant driver in the Indian context, which has been the most significant contribution of this study. The study's payout techniques are not a substitute to each other but are unique to agency cost, shareholder heterogeneity, clientele effect, distribution size, and mis valuation.

Funding

The authors received no direct funding for this research

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Citation information

Cite this article as: Determinants of payout choice between open market repurchase, tender offer repurchase and special dividends, Urvashi Varma, Raveesh K & Alka Munjal, *Cogent Economics & Finance* (2021), 9: 1934975.

References

Bagwell, L. S. (1991). Share repurchase and takeover deterrence. *The Rand journal of economics*, 72–88.
 Bagwell, L. S. (1992). Dutch auction repurchases: An analysis of shareholder heterogeneity. *The Journal of*

Finance, 47(1), 71–105. <https://doi.org/10.1111/j.1540-6261.1992.tb03979.x>
 Brav, A., Graham, J. R., Harvey, C. R., & Michaely, R. (2005). Payout policy in the 21st century. *Journal of Financial Economics*, 77(3), 483–527. <https://doi.org/10.1016/j.jfinc.2004.07.004>
 Brennan, M. J., & Thakor, A. V. (1990). Shareholder preferences and dividend policy. *The Journal of Finance*, 45(4), 993–1018. <https://doi.org/10.1111/j.1540-6261.1990.tb02424.x>
 Caudill, S. B., Hudson, C. D., Marshall, B. B., & Roumanti, A. (2006). An empirical model of choice of one-time corporate cash disbursement methods. *Studies in Economics and Finance*, 23(1), 27–50. <https://doi.org/10.1108/10867370610661936>
 Chatterjee, C., & Mukherjee, P. (2015). Price behaviour around share buyback in the Indian equity market. *Global Business Review*, 16(3), 425–438. <https://doi.org/10.1177/0972150915569931>
 Comment, R., & Jarrell, G. A. (1991). The relative signalling power of Dutch-auction and fixed-price self-tender offers and open-market share repurchases. *The Journal of Finance*, 46(4), 1243–1271. <https://doi.org/10.1111/j.1540-6261.1991.tb04617.x>
 D'Mello, R. D., & Shroff, P. K. (2000). Equity undervaluation and decisions related to repurchase tender offers: An

- empirical Investigation. *The Journal of Finance*, 55 (5), 2399–2424. <https://doi.org/10.1111/0022-1082.00292>
- Dayanandan, A., Donker, H., Kuntluru, S., & Nofsinger, J. (2020). Share buybacks in India. *Research in International Business and Finance*, 54, 101296. <https://doi.org/10.1016/j.ribaf.2020.101296>
- DeMarzo, B. J. (2008). Financial management. In B. J. DeMarzo (Ed.), *Financial management* (pp. 18–33). Dorling Kindersley (India) Pvt. Ltd.
- Dittmar, A. K. (2000). Why do firms repurchase Stock? *The Journal of Business*, 73(3), 331–355. <https://doi.org/10.1086/209646>
- Fama, E. F., & Miller, M. H. (1972). *The theory of finance*. Holt Rinehart & Winston.
- Gaspar, J. M., Massa, M., Matos, P., Patgiri, R., & Rehman, Z. (2012). Payout policy choices and shareholder investment horizons. *Review of Finance*, 17(1), 261–320. <https://doi.org/10.1093/rof/rfr040>
- Gullon, G. P., Paye, B., Underwood, S., & Weston, J. P. (2011). Has the propensity to pay out declined? *Journal of Financial and Quantitative Analysis*, 46(1), 1–24. <https://doi.org/10.1017/S0022109010000633>
- Hyderabad, R. L. (2009). Price performance following share buyback announcements in India. *Vision: The Journal of Business Perspective*, 4(3), 59–78. <https://doi.org/10.1177/097226290901300105>
- Jagannathan, M., Stephens, C. P., & Weisbach, M. S. (2000). Financial flexibility and the choice between dividends and stock repurchases. *Journal of financial Economics*, 57(3), 355–384.
- Jena, S. K., Mishra, C. S., Rajib, P., & McMillan, D. (2020). Determinants of the choice of share buyback methods: A study in India. *Cogent Economics & Finance*, 8, 1. doi: [10.1080/23322039.2020.1782073](https://doi.org/10.1080/23322039.2020.1782073)
- Jena, S. K., Mishra, C. S., Rajib, P., & McMillan, D. (2020). Determinants of the choice of share buyback methods: A study in India. *Cogent Economics & Finance*, 8 (1), 1782073. <https://doi.org/10.1080/23322039.2020.1782073>
- Joh, S. W. (2007). Ownership structure and share repurchases in an emerging market: Incentive alignment or entrenchment? *International Research Conference on Corporate Governance in Emerging Markets*, 15–18. Istanbul.
- Lie, E. (2000). Excess funds and agency problems: an empirical study of incremental cash disbursements. *The Review of Financial Studies*, 13(1), 219–248.
- Lie, E. (2005). Financial flexibility, performance, and the corporate payout choice. *The Journal of Business*, 78(6), 2179–2202. <https://doi.org/10.1086/497043>
- Lie, E., & Lie, H. J. (1999). The role of personal taxes in corporate decisions: An empirical analysis of share repurchases and dividends. *Journal of Financial and Quantitative Analysis*, 533–552
- Miller, M. H., & Modigliani, F. (1961). Dividend policy, growth, and the valuation of shares. *The Journal of Business*, 34(4), 411–433. <https://doi.org/10.1086/294442>
- Mishra, A. (2005). An empirical analysis of share buybacks in India. *ICFAI Journal of Applied Finance*, 11(5), 5–24.
- Ofer, A. R., & Thakor, A. V. (1987). A theory of stock price responses to alternative corporate cash disbursement methods: Stock repurchases and dividends. *The Journal of Finance*, 42(2), 365–394. <https://doi.org/10.1111/j.1540-6261.1987.tb02572.x>
- Vafeas, N. (1997). Determinants of the choice between alternative share repurchase methods. *Journal of Accounting, Auditing & Finance*, 12(2), 101–124. <https://doi.org/10.1177/0148558X9701200201>
- Varma, U., & Munjal, A. (2016). A study of tender offer buyback and its share price performance in India. *Indian Journal of Finance*, 10(9), 53–65. <https://doi.org/10.17010/ijf/2016/v10i9/101479>
- Varma, U., Singh, H., & Munjal, A. (2018). Corporate restructuring through share buybacks: An Indian experience. *Australasian Accounting, Business and Finance Journal*, 12(2), 117–133. <https://doi.org/10.14453/aabf.v12i2.8>
- Wesson, N., Smit, E., Kidd, M., & Hamman, W. D. (2017). Determinants of the choice between share repurchases and dividend payments. *Research in International Business and Finance*, 180–196. <https://doi.org/10.1016/j.ribaf.2017.07.150>
- Zeng, T. (2011). Intercorporate ownership, taxes, and corporate payout choices. *Accounting Perspectives*, 10(4), 265–283. <https://doi.org/10.1111/j.1911-3838.2011.00027.x>



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