

Propping in Business Groups: Prediction Efficacy of Earnings Announcements

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Abstract

This study examines the evidences of propping in business groups in India. The article is an empirical study which adopts the event study method to ascertain the price reaction to the earnings announcement by listed group firms. Results indicate that the earnings announcements are perceived to have a positive effect on the financial health of other firms of the group. The cumulative abnormal return (CAR) of the portfolio of nonannouncing firms in a business group is found to be strongly and positively related with that of the announcing firm of that group. The findings of this article will help investors, shareholders and lenders to ex ante forecast the possible improvement in the financial performance of firms of some business groups which maybe going through tough times presently.

Keywords

Earnings announcements, propping, event study, abnormal returns

Introduction

Business groups have scholarly as well as policy-oriented implications in any economy. While business groups are prevalent globally, their presence in Asia, Latin America, the Middle East, Eastern Europe and Africa has been noteworthy. Despite research existing on different elements of business groups and in different nations, it still remains an understudied phenomenon especially in the context of emerging economies. This has been largely due to the fact that most of the group firms in these economies are unlisted and closely held, the regulatory framework for disclosure is relatively weak and not much of firm-level data are available in the public domain.

Much of the better-known studies relating to business groups belong to Asia and that too to Japan (keiretsu) and Korea (chaebol) in particular. Business groups in Asia have significantly outperformed their counterparts in Latin America, the Middle East and Africa. While they diversified into new domestic as well as international industries and markets, governance has always remained a critical element of

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study. Issues such as ownership, control, shareholder interest, transparency, managerial professionalism and agency problem have always attracted research.

Business groups have been defined and conceptualized in a diverse framework. One common understanding that emerges from these varied views is that business groups are clusters of interlinked but legally independent firms. While the definitions by itself do not place a restriction on the size of the group, much of the research has concentrated on reasonably large groups.

Studies concerning business groups have subscribed to two broad lines of thinking. One states that business groups play a positive role in furthering the growth of an economy by internalizing functions for which no external markets or institutions exist. Besides this, they are believed to facilitate diversification in an economy by virtue of their presence across different sectors. The group structure may also enable efficient allocation of resources (Khanna & Palepu, 1997, 2000; Stein, 1997).

However, the flipside is that extreme and unrelated diversification may turn out to be unprofitable and dysfunctional. Business groups have also been accused of tunnelling, that is, expropriation of minority shareholders' interest (Bertrand, Mehta, & Mullainathan, 2002; Johnson, La Porta, Lopez-de-Silanes, & Shleifer, 2000; La Porta, Lopez-de-Silanes, & Shleifer, 1999). Sometimes just the reverse may happen, wherein the controlling shareholders may temporarily prop up an ailing group firm in anticipation of a possibility of tunnelling in future (Friedman, Johnson, & Mitton, 2003). This could take place either ways. Normally it is expected that resources move from low cash-flow rights firms to high cash-flow rights firms in tunnelling, whereas in case of propping, the movement is from high cash-flow rights firms to low cash-flow rights firms.

Various direct and indirect methods for detecting tunnelling and propping are popular. Indirect methodology, first proposed by Bertrand et al. (2002), focuses on the industry-shock method, according to which tracing the propagation of earnings shocks through the business group is carried out. Thereafter several other studies examine the intra-group resource transfer evidences through indirect methods such as mergers announcement (Bae, Kang, & Kim, 2002), spreading news about troubled firms (Bai, Liu, & Song, 2004), private securities offerings (Baek, Kang, & Lee, 2006) and earnings announcements (Bae, Cheon, & Kang, 2008).

Evidence of propping through earnings announcements has most comprehensively been studied by Bae et al. (2008). This study on Korean business groups found that earnings announcements made a positive impact on other nonannouncing group firms when earnings increase and a negative impact when they decrease. Further, cash-flow rights and intra-group loans positively impact the sensitivity of earnings announcements. Business groups in India are quite identical to Korean business groups as both have concentrated ownership, and groups help member firms through intra-group loans. Given these resemblances, we retain the earnings announcement effect methodology as employed by Bae et al. (2008).

To trace instances of propping in group firms, we investigate the effect of earnings announcements by a group firm on market value of equity of nonannouncing firms of that business group. Higher earnings are *ceteris paribus* expected to lead to higher surplus which in turn could be available for transferring to another group firm in order to prop up its financial health. In that case, when a firm announces increase in earnings, the earnings of other firms in the same group are also expected to increase. This is due to the fact that market *ex ante* perceives the signal (news) of propping and valuation effect comes into the picture. This is the propping hypothesis as proposed by Bae et al. (2008) and followed by Cheung, Haw, Tan, and Wang (2014).

Despite numerous critiques to business groups and their functioning styles, investors invest their hard-earned money in group firms. An explanation to this puzzle is that propping enhances the credibility and commitment of owners towards the firm. The article is organized as follows. The second section discusses the review of literature and provides the objectives and rationale of the study; the third section

describes the data and methodology of propping evidences; the fourth section presents and analyses the results obtained via regression; and, finally, the fifth section concludes with a mention of the managerial implications of the study and the scope of future research.

Review of Literature

Before getting on to the review of work done on propping and related phenomena, given the fact that propping is also considered to be negative tunnelling and that they may have a causal relationship, it may be in place to review some important studies on tunnelling. In one of the base works on this topic, Johnson et al. (2000) defined tunnelling as the transfer of assets and profits out of firms for the benefit of their controlling shareholders. They described the various forms that tunnelling could take and examined its legality through a discussion on some prominent legal cases. Bertrand et al. (2002) proposed a general methodology to measure the extent to which owners expropriated minority shareholders by tunnelling resources from firms where they had low cash-flow rights to firms where they had high cash-flow rights. The study found a significant amount of tunnelling in business groups in India. More of this expropriation was found to happen through the non-operating components of profits.

Focusing on business groups in Korea, Bae et al. (2002) examined the impact of acquisitions on firm performance and found whether such acquisitions benefitted the firm or led to tunnelling, thereby enabling the controlling shareholders to increase their wealth by increasing the value of other group firms. The stock price of a group firm on an average fell when it made an acquisition. While minority shareholders of the acquirer firm lost, its controlling shareholder gained with the acquisition, enhancing the value of other firms in the group. Baek et al. (2006) investigated the possibility of a Korean chaebol using equity-linked private securities offerings as a mechanism for tunnelling. Such issuers involved in intra-group deals were found to set the offering prices to benefit their controlling shareholders. The announcement returns were relatively higher (lower) when the private securities were sold at a premium (discount) to other member firms.

Berkman, Cole, and Fu (2009) considered a sample of publicly traded Chinese firms that expropriated wealth from minority shareholders through issuance of loan guarantees to their related parties. The identity and ownership of related parties affected the likelihood of expropriation. Using firm-level panel data from India, Kali and Sarkar (2011) stated that the diversified structure of business groups in emerging economies facilitates expropriation of minority shareholders by controlling insiders through tunnelling. It was found that the relatedness of the activity of a group affiliates to the activity of the core firm correlated with the wedge between control and cash-flow rights of insiders as well as with opacity in insider ownership.

Huang, Schwienbacher, and Zhao (2012) showed that inefficient bank loans reduced the value of borrowing firms when there was expropriation of the stock of minority shareholders by controlling shareholders. Such bank loan announcements were found to generate significantly negative abnormal returns (ARs) for the borrowing firms. Siegel and Choudhury (2012) designed a methodology that simultaneously analysed efficiency-based and agency-based arguments to study corporate governance and expropriation in business groups in emerging economies.

Against a backdrop of such studies accusing controlling shareholders of tunnelling, Friedman et al. (2003) took just the reverse way and found that under some conditions entrepreneurs use their private funds to benefit minority shareholders. This was termed 'propping'. Providing evidence of such an activity through a model, the study advocated that issuance of debt could lead to propping. Exploring the

behaviour of firms in business groups in developing economies, often structured as pyramids, Bertrand and Mullainathan (2003) empirically examined the nature of agency problems within these pyramids.

Almeida and Wolfenzen (2006) provided a new rationale for pyramidal ownership in family business groups, saying that it facilitated the access to all the retained earnings of a controlling firm for setting up a new firm and to share the new firm's resources with shareholders of the original firm. Studying connected transactions between Hong Kong-listed firms and their controlling shareholders, Cheung, Rau, and Stouraitis (2006) found that firms announcing such transactions earned negative excess returns, significantly lower than firms announcing similar transactions.

Using earnings announcement events made by firms belonging to Korean chaebols to study the presence of propping, Bae et al. (2008) found that the announcement of increased (decreased) earnings by a chaebol-affiliated firm has a positive (negative) effect on the market value of other nonannouncing affiliates. Further, the sensitivity of the change in the market value of nonannouncing affiliates to ARs for the announcing firms was higher if the cash-flow right of the announcing firm's controlling shareholder was higher, the announcing firm was larger, performed well and had a higher debt-guarantee ratio. Examining propping in Turkish business group firms, Gonenc and Hermes (2008) held the view that patterns in the use of offering cash rights share issues indicated that controlling shareholders prop up funds in firms.

Marisetty, Marsden, and Veeraraghavan (2008) studied the securities price reaction to announcements of rights issues by listed Indian firms and found a statistically insignificant price reaction to such announcements. The price reaction was significantly more negative for firms that had a family group affiliation compared to firms that did not. For related party transactions between Chinese-listed firms and their controlling shareholders, Cheung, Jing, Lu, Rau, and Stouraitis (2009) ascertained that minority shareholders in these firms were subject to expropriation through tunnelling but also gained from propping. Firms witnessing propping were larger, had larger state ownership, more foreign shareholders and more information disclosure than those tunnelling.

Working within the legal framework on self-dealing transactions, Gutiérrez Urriaga and Sáez Lacave (2010) stated that investment efficiency and welfare could be increased if the interested parties were allowed to have long-term contracts regulating the extraction of private benefits. Kohlbeck and Mayhew (2010) compared the stock market's valuation of firms that disclosed related party transactions to those that did not. The former were found to have significantly lower valuations and marginally lower subsequent returns than the latter. Peng, Wei, and Yang (2011) tested the implication of the model of Friedman et al. (2003). Their work supported their hypothesis that when listed companies are financially healthy (in financial distress), their controlling shareholders are more likely to conduct connected transactions to tunnel (prop up) their listed companies and the market reacts unfavourably (favourably) to the announcement of these transactions.

Testing the diversification–performance relationship in a sample of business group firms, Purkayastha (2013) established that the impact of diversification strategies on firm performance was influenced by industry characteristics. Using data on related party transactions of listed Chinese firms, Ying and Wang (2013) found that institutional motivators such as maintenance of shell resources and qualification for refinancing had a significant effect on the propping behaviour of controlling shareholders. Such behaviour was often followed by more serious tunnelling, wherein the initially improved performance gives way.

Using earnings announcement events made by group member firms in Hong Kong, Cheung et al. (2014) examined the governance role of boards of directors in curbing propping activities within family business groups. The effect of earnings announcements was less pronounced when the announcing firms had a larger board or a board with a higher proportion of independent directors but more pronounced

when an executive director from their controlling families acted as board chairperson. In yet another study, institutional ownership was found to have a larger impact on firms affiliated with business groups compared to stand-alone firms (Syamala, Chauhan, & Wadhwa, 2014).

Objectives

This study presents evidence of propping in business groups by analysing the earnings announcement effect of a firm on the nonannouncing firms of that group. The main objective of this study is to see how the market ex ante perceives the earnings announcement made by a firm in terms of an increase in ARs of other nonannouncing firms.

Rationale

While India has a substantial presence of business groups, there have not been enough attempts to examine the evidences of propping. Even out of the studies that exist, more work has been done on tunnelling than propping. This research gap becomes the rationale for our study, which aims at attending to this gap and presents evidences of propping in business groups in India.

Methodology

The data comprising earnings announcements by Indian firms during the period, from 1 April 2007 to 31 October 2015, have been sourced from CMIE Prowess database. Generally, the earnings are made public after the shareholders meeting for the approval of audited results and therefore the meeting date is taken as the earnings announcement (event) date (EAD) in this study. To examine the propping effect, only listed non-financial business group-affiliated firms (hereafter 'firms') are studied. These firms belong to small as well as large business groups and hence avoid the survivor bias problem. The article studies the impact of earnings announcements of such firms on market value of other nonannouncing member firms in the same group (hereafter 'other firms'). We consider only those groups which have at least two firms and with different dates of announcements. Of the available sample of 315 listed firms during the sample period, the limitations of board meeting dates complete stock price data matching and adjustments for the announcement dates restrict our final sample to 182 firms, having 1,390 announcements (events).

In group-wise announcements, a gradual decreasing pattern of earnings announcements is observed. Tata group has the most, 161 announcements in the sample. As per the classification of CMIE Prowess, group firms are divided into three categories, that is, top 50, other large and other business groups. Of the 182 firms, 119 firms belong to the top 50 business groups, while 63 firms belong to other large and other business group categories. As many as 943 (68% of the total sample) announcements are made by groups belonging to the top 50 group category. Among top 50 business groups, Tata, RPG Enterprises and Kalyani groups have the most number of announcements with 263 (19% of the sample) earnings announcements, which is larger than those of each of the remaining two categories, that is, other large (198, 14% of the sample) and other business groups (249, 18% of the sample). Table 1 exhibits the descriptive statistics and correlation matrix for financial characteristics in its panels A and B, respectively.

Table 1. Descriptive Statistics and Correlation Matrix for Financial Characteristics

Panel A: Descriptive statistics for financial characteristics										
Variable	Mean	Standard Deviation	Min	Max						
Market value of equity (₹ million)	36,631.62	191,168.60	1.50	4,988,978.00						
Total assets (₹ million)	31,642.90	95,898.74	0.50	1,173,685.00						
Previous year's market adjusted return (%)	8.59	11.39	-22.42	75.22						
Related lending and guarantee ratio (loans and guarantees to total assets)	0.39	0.50	-0.85	3.99						
ROA (net income to total asset)	0.21	0.43	-0.99	0.99						
ROA change (change in net income to total assets)	0.03	0.53	-9.19	3.95						
Equity ownership of largest shareholder (%)	26.16	17.99	1.11	83.50						
Equity ownership held by foreign investors (%)	16.43	16.30	0.10	83.50						
Leverage (total debt to total assets)	0.42	0.27	0.11	3.41						
Tobin's Q	1.06	1.42	1.42	23.28						
Panel B: Correlation matrix for financial characteristics										
	MVE	TA	MAR	LG	ROA	Δ ROA	OWN _i	OWN _{for}	LEV	Tobin's Q
MVE	1.00									
TA	0.51	1.00								
MAR	-0.18	-0.33	1.00							
LG	-0.02	-0.05	0.04	1.00						
ROA	0.05	-0.04	0.02	0.06	1.00					
Δ ROA	0.04	-0.03	-0.02	-0.15	0.55	1.00				
OWN _i	-0.05	-0.27	-0.01	0.05	-0.02	0.10	1.00			
OWN _{for}	-0.11	-0.18	0.10	0.17	0.04	0.05	0.59	1.00		
LEV	-0.05	0.18	-0.16	0.01	-0.36	-0.08	-0.29	-0.36	1.00	
Tobin's Q	0.50	-0.07	0.04	-0.06	0.17	0.14	0.23	0.23	-0.18	1.00

Source: The authors.

We measure the impact of earnings news of the announcing firm ($Firm_{individual}$) on the performance of the portfolio of other nonannouncing firms ($Firms_{port}$). The rationale is that if a $Firm_{individual}$ announces increase in its earnings, this creates a positive impact on $Firms_{port}$ as resource-sharing opportunities would have arisen. When this opportunity is seen positively by the market and performance of $Firms_{port}$ as a whole increases, it supports propping. Else it would have signified tunnelling. The cumulative abnormal returns (CARs) of announcements for the announcing firm and the portfolio of nonannouncing firms (CAR_i and CAR_p , respectively) have been considered to be the proxies of earnings announcement news. These are estimated using ARs through the market model approach.

Event studies are widely used to measure the market's reaction to a corporate event disclosed in public by a firm. The method relies on the fact that investors value such events and trade on the information, which ultimately reflects the market response towards such events as suggested by the stock price movement. Several models are available to estimate the expected return. We choose the market return model approach to estimate the expected return. For this, the return on Bombay Stock Exchange (*BSE sensex*) is considered as the market index return for the sample period.

Assuming a linear relationship between stock return and the market index return, the expected return is:

$$AR_{i,t} = R_{i,t} \left[\widehat{\alpha}_i + \widehat{\beta}_i R_{m,t} \right] \quad (1)$$

where $R_{i,t}$ is the expected return for the announcing firm i at time t , $R_{m,t}$ is the market return at time t and β_i is the measure of systematic risk. The parameters α_i and β_i are estimated through the ordinary least squares regression method, being the intercept and the slope, respectively.

The abnormal return ($AR_{i,t}$) for firm i at time t is the difference of realized return and the expected return.

$$AR_{i,t} = R_{i,t} \left[\widehat{\alpha}_i + \widehat{\beta}_i R_{m,t} \right] \quad (2)$$

To estimate the average CAR, we consider 200 days prior to and 20 days after the announcement day as an estimation period. The event window to analyse the ARs is 20 days prior and 20 days after the event date ($t = 0$). The coefficients α_i and β_i are the estimates of Ordinary Least Square (OLS) regression, using the 180 days return period beginning from -200 to -21 . Thus the main event window is $(-20, 20)$ and there are several sub-event windows to analyse the CARs for the announcing firms and the portfolio of nonannouncing firms.

The ARs around the announcement date are then aggregated to evaluate the total effect of event on stock returns, that is, the market's reaction for the event is estimated. To estimate average CAR, ARs are aggregated over time by summing ARs around the event date ($t = 0$), that is, from day -20 to $+20$.

$$CAR_{i(t1, t2)} = \sum_{t=t1}^{t2} AR_{i,t} \quad (3)$$

We use both parametric and non-parametric tests to ascertain the significance of the findings relating to the CAR for the announcing firm as well as that for the portfolio of nonannouncing firms. The tests employed include cross-sectional t -test, Wilcoxon signed rank test, Patell z -test, Boehmer z -test, Corrado rank test and generalized sign test.

Analysis

Table 2 provides ARs using the market model. Here, we present the return results for subgroups, that is, top 50, other group firms, all group firms and comparison between these two. Panels A and B of Table 3 report the results for CAR of announcing and portfolio of non-announcing firms, respectively.

The average ARs for all firms 5 days before, 1 day after, 2 days after, 3 days after, 6 days after and 9 days after the announcement dates were found to be significant. The ARs are not significant when the sample is divided into top 50 and other group-firm categories. The average ARs for portfolios of nonannouncing firms are also not significantly different except 9 days before and 9 days after the EAD. The median values of ARs are mostly significant for the full sample and portfolio of nonannouncing affiliates. The tests of difference results for top 50 and other business-group categories suggest that there is no significant difference for the average and median AR values. The two categories can thus be combined and consideration of the full sample is justifiable.

Table 2. Daily Abnormal Returns (AR) for Group Firms Around the Earnings Announcement Date (EAD)

Day	Announcing Firms												Tests of Difference (A – B)		
	Top 50 Business Groups (A)			Other Business Groups (B)			Full Sample			Nonannouncing Firms' Portfolio			t-Test	Wilcoxon z-Test	
	Mean	Median		Mean	Median		Mean	Median		Mean	Median				
-10	0.001	-0.002		0.001	-0.002		0.000	-0.002**		0.000	-0.001**		-0.077	0.135	
-9	-0.50	-0.36		-0.59	-0.22		-0.71	-0.01		-0.98	-0.01		2.437**	1.676*	
-8	0.000	-0.002		-0.004	-0.003***		-0.001	-0.002***		-0.001*	-0.001**		-0.963	0.798	
-7	-0.78	-0.10		-0.01	0.00		-0.25	0.00		-0.05	-0.01		1.308	1.062	
-6	0.001	-0.002**		0.001	-0.002		0.000	-0.002**		-0.001	-0.001**		0.726	0.463	
-5	-0.47	-0.03		-0.49	-0.34		-0.64	-0.01		-0.15	-0.01		0.146	1.108	
-4	0.001	-0.001		0.001	0.002*		0.000	-0.002		0.000	0.000		1.110	0.328	
-3	-0.14	-0.55		-0.59	-0.08		-0.95	-0.12		-0.27	-0.01		2.850***	2.530***	
-2	0.000	-0.001		-0.001	-0.002		0.000	-0.002		0.001	0.000		0.742	0.124	
-1	-0.64	-0.22		-0.57	-0.06		-0.70	-0.04		-0.02	-0.01		1.392	1.670*	
0	0.002	0.000		0.002	0.000		0.002**	0.001		0.000	0.000**		0.532	0.180	
	-0.09	-0.59		-0.23	-0.72		0.00	-0.24		-0.46	-0.01				
	0.001	-0.001		-0.001	-0.001		0.000	-0.002**		0.000	0.000**				
	-0.21	-0.35		-0.65	-0.21		-0.77	-0.02		-0.36	-0.01				
	-0.08	-0.01		-0.03	-0.29		-0.68	-0.74		-0.75	-0.01				
	0.001	-0.001		0.002	-0.002		0.002	-0.001		0.001	0.000				
	-0.18	-0.64		-0.93	-0.27		-0.03	-0.74		-0.17	-0.01				
	0.000	-0.001		0.002	0.000		0.001	-0.001		0.000	-0.001				
	-0.95	-0.24		-0.10	-0.77		-0.54	-0.47		-0.99	-0.01				
	-0.001	-0.003**		0.000	-0.002		0.000	-0.003**		0.000	-0.001**				

(Table 2 Continued)

(Table 2 Continued)

Day	Announcing Firms												Tests of Difference (A – B)	
	Top 50 Business Groups (A)			Other Business Groups (B)			Full Sample			Nonannouncing Firms' Portfolio				
	Mean	Median		Mean	Median		Mean	Median		Mean	Median		t-Test	Wilcoxon z-Test
1	-0.49	-0.02		-0.87	-0.38		-0.74	-0.01		-0.89	-0.01		0.675	0.113
	-0.002	-0.002**		0.000	-0.004		-0.003**	-0.004***		0.000	-0.001**			
	-0.17	-0.01		-0.89	-0.13		-0.01	0.00		-0.24	-0.01			
2	0.002	0.001		0.001	-0.001		-0.001**	-0.003		0.000	-0.001**		0.900	1.830*
	-0.02	-0.38		-0.71	-0.45		-0.01	-0.36		-0.95	-0.01			
3	0.000	-0.002		0.002	-0.005***		0.001*	-0.001***		0.000	-0.001**		0.990	2.392**
	-0.57	-0.03		-0.12	0.00		-0.06	0.00		-0.65	-0.01			
4	-0.001	-0.003**		-0.001	-0.003		-0.001	-0.003***		-0.001	-0.001**		0.171	0.273
	-0.38	-0.01		-0.47	-0.10		-0.24	0.00		-0.22	-0.01			
5	0.000	-0.003**		0.001	-0.003		0.000	-0.003**		0.000	-0.001**		0.583	0.885
	-0.66	-0.01		-0.68	-0.33		-0.61	-0.02		-0.75	-0.01			
6	0.000	-0.001		-0.002	-0.002**		-0.002*	-0.003***		0.000	-0.001**		0.940	1.390
	-0.63	-0.21		-0.17	-0.01		-0.08	0.00		-0.33	-0.01			
7	0.000	-0.002**		0.001	-0.002		0.000	-0.003***		-0.001	-0.001**		0.410	0.473
	-0.94	-0.03		-0.65	-0.58		-0.86	0.00		-0.12	-0.01			
8	-0.002*	-0.003***		0.000	-0.004		0.000	-0.003***		0.000	-0.001**		0.940	0.070
	-0.08	0.00		-0.99	-0.06		-0.73	0.00		-0.60	-0.01			
9	-0.001	-0.002**		-0.004***	-0.004***		-0.002**	-0.003***		-0.001**	-0.001**		1.670*	1.056
	-0.17	-0.01		0.00	0.00		-0.03	0.00		-0.01	-0.01			
10	-0.001	-0.001**		0.001	-0.002		-0.001	-0.002***		0.000	-0.001**		0.887	1.086
	-0.33	-0.01		-0.65	-0.68		-0.24	0.00		-0.45	-0.01			

Source: The authors.

Note: *, ** and *** indicate significance at the 10 per cent, 5 per cent and 1 per cent levels, respectively.

Table 3. Cumulative Abnormal Return Analysis for Group Firms Around the Earnings Announcement Date (EAD)**Panel A: Cumulative abnormal return analysis for announcing firms**

Event Window	CAR _t	Positive: Negative	t-Test Time Series	t-Test				
				Cross-section	Patell z-Test	Boehmer z-Test	Corrado Rank Test	Generalized Sign t-Test
(-20, 20)	-0.011	620:771	-1.77*	-1.63	-2.14**	-0.96	-1.23	-1.08
(-10, 10)	-0.005	612:779	-1.23	-1.24	-1.75	-0.87	-1.22	-1.51
(-1, 1)	-0.003	610:781	-1.58	-1.39	-2.12**	-0.86	-1.34	-1.62
(-2, 2)	0	624:767	0.17	0.10	0.12	0.05	-0.01	-0.86
(-5, 5)	0.001	645:746	0.37	0.38	-0.01	-0.01	-0.30	0.26
(1, 10)	-0.009	587:804	-2.99***	-3.08***	-3.60***	-1.80**	-3.10***	-2.86***
(-10, -1)	0.004	671:720	1.27	1.37	1.27	0.66	1.55	1.65*

Panel B: Cumulative abnormal return analysis for portfolio of nonannouncing firms

Event Window	CAR _p	Positive: Negative	t-Test Time Series	t-Test				
				Cross-section	Patell z-Test	Boehmer z-Test	Corrado Rank Test	Generalized Sign t-Test
(-20, 20)	-0.006	603:786	-1.92*	-1.58	-3.98***	-1.72*	-1.88*	-2.80***
(-10, 10)	-0.003	610:779	-1.17	-1.18	-2.50**	-1.24	-0.87	-2.42**
(-1, 1)	0.000	638:751	-0.54	-0.55	-0.65	-0.33	-0.63	-0.92
(-2, 2)	0.000	638:751	0.14	0.14	-0.40	-0.19	-0.46	-0.92
(-5, 5)	0.000	623:766	-0.07	-0.06	-1.32	-0.65	-0.96	-1.72*
(1, 10)	-0.004	558:831	-2.63***	-2.61***	-4.07***	-2.06**	-2.81***	-5.22***
(-10, -1)	0.001	640:749	0.90	0.97	0.4	0.21	1.61	-0.81

Source: The authors.

Note: *, ** and *** indicate significance at the 10 per cent, 5 per cent and 1 per cent levels, respectively.

In Table 3, panel A describes the CAR for announcing firms. The average CAR (-1, 1) is negative and significant at the 5 per cent level. Also, CAR (1, 10) is negative and significant at the 1 per cent level, showing that on average after the announcement of earnings, group firms exhibit negative returns. Similarly, the returns of portfolio of nonannouncing firms are negative and significant for CAR (-10, 10) and CAR (1, 10). Overall, the result suggests that average return for announcing and nonannouncing portfolios of firms remains negative after the announcement.

The plot of CARs around the EAD is shown in Figures 1 and 2. In Figure 1, the plots of CAR (-20, 20) for subgroups and full sample are shown to be at peak around EAD and gradually decrease thereafter. The returns for group firms belonging to the other-group category show a sharp increase in returns till the announcement day and also decline at a fast rate after the announcement, when compared with top 50 group firms. For all group firms, returns are shown to be negative before 5 days and after 5 days of the announcement and positive in the window of 5 days before and 5 days after the day of earnings announcements. This concludes that 1 week prior the increasing effect cancels out with 1 week after the decreasing effect and overall, the window [-5, 5] seems irrelevant to check the propping effect on the portfolio of nonannouncing firms.

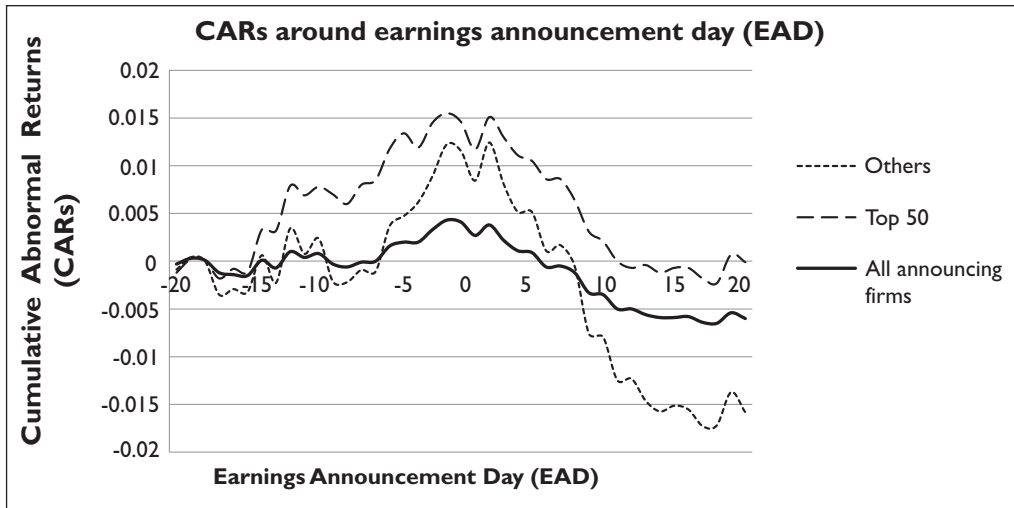


Figure 1. Cumulative Abnormal Returns for all Announcing Firms and Subgroups: Top 50 and Others, Around the Earnings Announcement Day (EAD)

Source: The authors.

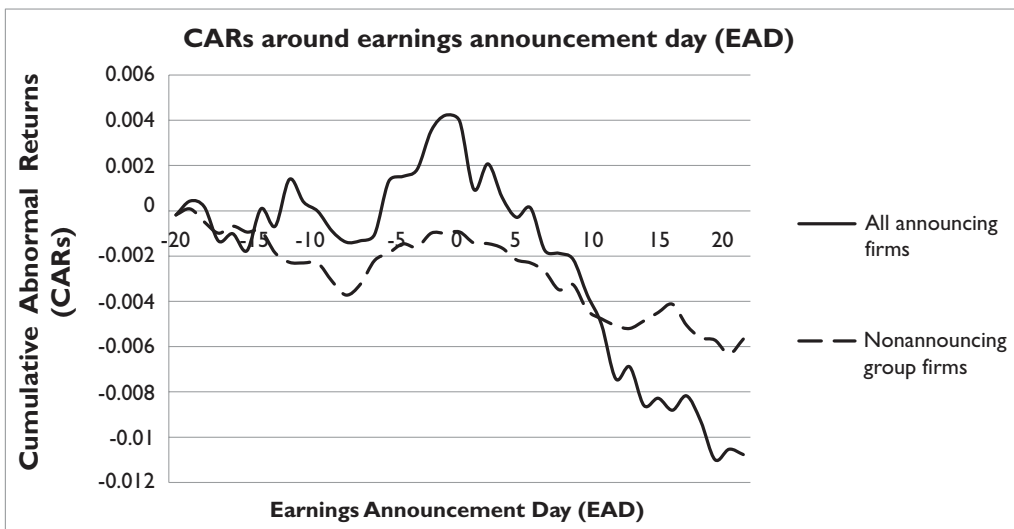


Figure 2. Cumulative Abnormal Returns for All Announcing Firms Versus Portfolio of Nonannouncing Firms Around the Earnings Announcement Day (EAD)

Source: The authors.

Figure 2 shows a comparison between the plots of CARs for announcing firms and portfolio of nonannouncing firms. It is visible that for nonannouncing firms’ portfolio, the return remains negative throughout the observation period, that is, from 20 days before to 20 days after the announcement, and follows symmetry with the CARs of announcing firms. The plot is again an inverted ‘U’ shape and

similar with the plot of CAR (-20, 20) for announcing firms. Also, it is shown that return starts decreasing after the announcement day for announcing firms and adversely affects the returns of the portfolio of nonannouncing firms. The market reaction indicates that by and large the market penalizes the firms as an individual and group as whole, which signifies the possibilities of propping in groups.

Table 4 presents and compares the returns analysis for announcing firms and portfolio of nonannouncing firms. Here, we consider event windows CAR (-5, 5) and CAR (1, 10). In case of CAR (-5, 5), the average and median return values are low and insignificant for announcing firms and portfolio of nonannouncing firms. This shows that in CAR (-5, 5), an increase in earnings before announcement is counterbalanced by the decrease in earnings after the announcement. This explains for the inverted 'U' shape return curve obtained in Figures 1 and 2. Further, in panels B and C, we divide our sample according to the sign of CARs of announcing firms and compare between them. In panel B when CAR is negative, the average (median) return values for announcing firms are -6.60 (-5.10) per cent, and average (median) return values for portfolio of nonannouncing firms are -3.50(-4.80) per cent, respectively. When the sign is positive, the values also have a positive sign for announcing firms and portfolio of nonannouncing firm, that is, 8.20 (5.30) per cent and 4.30 (2.60) per cent, respectively.

Table 4. Cumulative Abnormal Returns (CARs) for Announcing Firms and the Portfolio of Nonannouncing Firms in the Same Group

Panel A: Mean and median CARs for the total sample								
Event Windows	Announcing Firms (N = 1,375)				Portfolios of Nonannouncing Firms (N = 1,375)			
	Mean	25%	Median	75%	Mean	25%	Median	75%
(-5, 5)	0.30 (0.31)	-5.40	-0.70 (0.13)	4.70	0.00 (0.95)	-2.90	-0.50*** (0.00)	2.20
(1, 10)	-0.80*** (0.006)	-5.80	-1.30*** (0.000)	3.90	-0.40*** (0.007)	-2.80	-0.60*** (0.000)	1.60
Panel B: Mean and median CAR (-5, 5) as per the sign of announcing firms' CAR (-5, 5)								
Negative CAR (-5, 5)	Announcing Firms (N = 793)				Portfolios of Nonannouncing Firms (N = 824)			
	Mean	25%	Median	75%	Mean	25%	Median	75%
	-6.60*** (0.000)	-8.50	-5.10*** (0.000)	-2.50	-3.50*** (0.000)	-4.80	-2.60*** (0.000)	-1.20
Positive CAR (-5, 5)	Announcing Firms (N = 582)				Portfolios of Nonannouncing Firms (N = 551)			
	Mean	25%	Median	75%	Mean	25%	Median	75%
	8.20*** (0.000)	2.10	5.30*** (0.000)	10.80	4.30*** (0.000)	1.10	2.60*** (0.000)	5.30
Panel C: Mean and median CAR (1, 10) as per the sign of announcing firms' CAR (1, 10)								
Negative CAR (1, 10)	Announcing Firms (N = 793)				Portfolios of Nonannouncing Firms (N = 824)			
	Mean	25%	Median	75%	Mean	25%	Median	75%
	-6.70*** (0.000)	-9.00	-5.00*** (0.000)	-2.50	-3.30*** (0.000)	-4.70	-2.20*** (0.000)	-0.80

(Table 4 Continued)

(Table 4 Continued)

Positive CAR (1, 10)	Announcing Firms (N = 582)				Portfolios of Nonannouncing Firms (N = 551)			
	Mean	25%	Median	75%	Mean	25%	Median	75%
7.40***	2.20	4.90***	9.30	3.90***	0.90	2.20***	4.90	
(0.000)		(0.000)		(0.000)		(0.000)		

Source: The authors.

Note: *** indicates significance at 1 per cent level.

Likewise in panel C, when we consider the event window CAR (1, 10), the average as well as median returns for announcing firms and portfolio of nonannouncing firms have the same sign and values are significant at the 0.01 level. The similarity of signs for returns of announcing and nonannouncing firms confirms that when a firm announces positive earnings other-group member firms also have positive earnings collectively, which suggests that the market incorporates earnings news and reacts positively. Similarly, when firms announce negative earnings, the market reacts negatively, considering the possibility of support by nonannouncing firms to the announcing firm. These findings are consistent with those of Bae et al. (2008) which confirm for the spillover effect when considering CAR (-5, 5) for Korean business groups. In addition to this, we checked for post-event, that is, CAR (1, 10), and found that results confirm for spill-over effect, continuing even after 2 weeks of the announcement day.

Conclusion

This article studies the evidences of propping in business groups in India by investigating the effect of earnings announcement by a group firm on the market value of equity of nonannouncing firms of that business group. It employs the event study method for this purpose and finds significant positive effects of the earnings announcements of a firm on the ARs of the remaining firms of the group. The results of the study show that the CAR of the portfolio of nonannouncing firms in a business group is strongly and positively related with that of the announcing firm of that group. This indicates that propping exists in business groups in India. The market is able to foresee and factor in the would-be positive impact of the increased earnings of a firm belonging to a business group on the financial health of the other firms of that group.

Managerial Implications

The findings of this article will help investors and shareholders to ex ante forecast the possible improvement in the financial performance of firms of some business groups which maybe going through tough times presently. This may also be a good supporting indicator to banks and other lending institutions for providing loans to financially weaker firms belonging to a business group which may have shown enough evidences of propping in the past.

Future Research

Future research in this area may look at examining these evidences by choosing the study period around some major financial interventions or crises in the economy and forming subperiods therein.

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