Shareholders wealth effects of rights and bonus issues: Evidence from Sri Lanka

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Abstract

This paper investigates price reaction to announcements of rights and bonus issues by firms listed on Colombo Stock Exchange (CSE) during the period 2008-2013. We document that the market reacts negatively to the announcements of rights offerings while bonus issues convey positive signal to the market. The cross-sectional analysis shows that the market reacts more unfavourably to rights issues with lower issue size, higher risk, lower pre-issuance stock run-up, lesser concentrated ownership, lower profitability, and smaller firms. Our empirical study also finds evidence that investors react more favourably to the announcements of bonus issues with higher pre-issuance stock run-up and smaller firm sizes.

Keywords: *Rights offers, bonus issues, price reaction, frontier market, Sri Lanka*

1. Introduction

Public listed companies around the world raise additional capital either from existing shareholders or from new investors. Although rights offerings have largely disappeared in the US market, rights and bonus issues are predominant methods to raise funds from existing shareholders in smaller stock markets where public listed companies tend to have concentrated ownership (Eckbo, 2008). Rights issues refer to firms give existing shareholders the right to subscribe new shares at specified price at pro rata basis. Bonus issues are an allocation of additional shares to existing shareholders at no charge from the accumulated capital reserve or from a combination of capital reserves and retained earnings.

The information asymmetry between managers and shareholders, referred to as classical Agency Problem I, is rarely observed in smaller stock markets due to the concentrated ownership by controlling shareholders and the family members sitting on the board (Alhashel & Alojayan, 2015; Lee et al., 2014). The extant research argues that the asymmetric information between controlling shareholders and minority shareholders, which is referred to as Agency Problem II, encourage firms in less-developed markets to choose rights equity issues as to gain more resources in the firms to expropriation of minority shareholders without diluting their stakes (Alhashel & Alojayan, 2015; Marisetty et al., 2008). The controlling shareholders may have greater incentives and the ability to expropriate some of the firm's wealth at the expense of minority shareholders (Setia-Atmaja et al., 2011; Villalonga & Amit, 2006), which is termed as tunneling. Tunneling is defined as "transfer of assets and profits out of firms for the benefit of their controlling shareholders" (Johnson et al., 2000, p. 22). Vijayakumaran (2015) argues that controlling shareholders may use debt capital to expropriate minority shareholders in emerging markets. It has also been argued that rights equity offerings might be used as a vehicle for tunneling

in less-developed markets. Taken altogether, agency conflicts, tunneling and misuse of funds raised under the rights equity issues may lead a negative price reaction around the rights equity announcements.

The Sri Lankan capital market provides unique institutional and capital-raising settings that are significantly different from other developed stock markets. The Sri Lankan capital market is categorized as a frontier market. Frontier markets are less developed than emerging markets and are relatively small and illiquid and have low integration with the world market and offer diversification benefits through risk-reducing potential (Berger et al., 2011; Berger et al., 2013; Marshall et al., 2013). Most Sri Lankan companies have a high level of ownership concentration by controlling shareholders due to the weakness of investor protection and the absence of well-developed intitutional infrastructure (Samarakoon, 1999; Senaratne & Gunaratne, 2008; Wellalage & Locke, 2012). The presence of controlling shareholders, widespread family ownership, and the participation of controlling shareholders in management may create value-destroying financial decisions in Sri Lanka.

We find a significantly negative market reaction the announcements of a rights issue but a significantly positive market reaction to the announcements of bonus issues in Sri Lanka. We also find the factors affecting the magnitude of price reaction around the announcements of rights issues and bonus issues. The market reacts unfavourably to the announcements of rights issues with smaller offer size, the larger uncertainty of stock returns, lower pre-issuance stock run-up, and lower operating profitability. In other words, the high level of information asymmetry and uncertainty of investment opportunities are associated with more negative announcement period abnormal returns for rights offerings and support the view of that investor perceive rights issues are associated with higher risk. Firms that announcing rights issue in Sri Lanka uses a larger issue sizes and operating profitability as proxies for investment opportunities and high-quality firms respectively implying that high-quality firms signal announcing rights offers with larger issue sizes. In contrast to rights issues, investors react favourably to the announcements of bonus issues with higher pre-issuance stock run-up and smaller firm sizes.

The rest of this paper is organised as follows. Section 2 reviews the literature and develops hypotheses. Section 3 describes the data and the empirical model. The announcement effects of rights offers and bonus issues are reported in Section 4. Section 5 presents the empirical findings. Finally, Section 6 summarises the study and provides some concluding remarks.

2. Literature review and hypotheses development

The market reaction to the announcements of seasoned equity offerings (SEOs) has been the subject of much theoretical and empirical academic discussion around the world. The stock market generally reacts negatively to the announcements of the SEOs. Prior researchers have proposed several hypotheses to explain the negative price reaction to new equity issues. This includes the information signalling hypothesis, the price pressure hypothesis, agency cost hypothesis, the investment opportunity hypothesis, the wasteful investment hypothesis, and the wealth effect hypothesis. Since a single hypothesis is unable to explain the market reaction to SEOs fully, a set of combined hypotheses should be adopted to explain market the reaction to SEOs (Chikolwa & Kim, 2009).

Firms in emerging markets operate in an

environment with a high level of information asymmetries (Dixon Guariglia & Vijayakumaran, 2015). The asymmetric information model predicts that managers with superior private information have incentives to under-value shares to existing shareholders, thus investors then reduce an equity issue as a signal of overvaluation. Agency theory predicts that the conflict of interest between managers and shareholders creates higher agency costs, which lead to negative price reaction around the announcements of equity. Miller and Rock (1985) argue that firms that announcing equity offerings convey negative signals about firms' future earnings prospects resulting a decline in stock prices. In contrast to this argument, Tsangarakis (1996), Tan et al. (2002), and Alhashel and Alojayan (2015) argue that the announcements of equity offerings could send positive signals to the markets and experience positive effects on firms' stock prices.

Rights and bonus issues have been a way to raise fund from the existing shareholders who are offered to chance to acquire new shares in proportion to their existing holding. A number of studies investigate the effects of rights and bonus issues announcements. The existing empirical evidence has documented that the market generally reacts negatively to the announcements of rights issues and positively to the announcements of bonus issues. Balachandran et al. (2008) report a negative price reaction around Australian rights issues. Marsden (2000) demonstrate that the announcements of rights issues by New Zealand are a negative signal. Recently, Lee et al. (2014) find a stock price reaction to rights issues strongly negative on the announcement day. In contrast with results, a positive abnormal returns to the announcements of rights issues has been reported in Greece (Tsangarakis, 1996), Singapore (Tan et al., 2002), and China (Wang et al., 2006). There is mixed evidence reported in the existing literature in relation to price reaction of bonus issue announcements. For example, Joshipura and Unnisa (2013) report positive price reaction around announcement data in India and Ramesh and Nimalathasan (2012) document a negative price reaction on the announcement day in Sri Lanka. Thus, taking these views together, we formally state the following hypothesis:

H1: Rights issuing firms have more unfavourable price reaction than bonus issuing firms.

The prior research attempts to identify the factors which explain a cross-sectional variation in the market reaction to rights and bonus issues have reported relatively mixed evidence. Lee et al. (2014) examine price reaction to the rights issue announcements in Hong Kong and show that investors react more adversely to rights offers with lower growth prospects, higher free cash flows, larger issue size, lower pre-issuance stock run-up and higher debt capacity supporting agency costs and private benefits of control matter in equity financing.

Balachandran et al. (2008) investigate rights offerings in Australia and show that investors react more adversely to the higher issue price discount and lower shareholder take-up. Marsden (2000) investigates price reaction to the announcements of rights issue in New Zealand and reports that firms with larger rights issue size experience more negative price reaction supporting the adverse selection cost and information asymmetry argument. Marisetty et al. (2008) examine price reaction to the rights issue announcements in India and find that investors react more adversely to the rights issues with firms with a family group affiliation supporting agency costs and the tunnelling hypothesis. Alhashel and Alojayan (2015) examine price reaction to the rights issue

announcements in Kuwait and find positive price reaction. They show that investor reacts favourably to rights offers with larger issue size and firms with a family group affiliation.

Malhotra et al. (2013) examine the factors that influencing abnormal returns around rights and bonus issues in India. For rights issue, the issue size and market condition have a significant impact on the announcement returns and for bonus issues, firm size and volatility have an impact on the announcement returns. Balachandran et al. (2005) investigate price reaction around bonus issue in Australia and find that investor reacts more favourably to the announcements of bonus issue firms with larger the size of bonus issues supporting signalling model.

The information asymmetry model presented by Myers and Majluf (1984) predict that new equity issue conveys unfavourable information about the firm. In their model, the issue size is interpreted as a proxy to the amount of negative information, where a larger size of issue conveys more unfavourable information in the market resulting more negative stock prices. In contrast with Myers and Majluf's (1984) information asymmetry model, a growing body of literature has emerged, which argues that issue size may be a proxy for the amount of positive information to the markets, and results in more positive abnormal returns around the equity offering announcements. Existing empirical evidence with regards to the size of the rights issues documents mixed results. Lee et al. (2014) find a significant negative association between the size of the rights issues and the announcement abnormal returns suggesting that a larger rights offer leads to a bigger wealth transfer from between non-participating shareholders and participating shareholders. Alhashel and Alojayan (2015), Tan et al. (2002) and Tsangarakis (1996) document a positive association between the size of rights issues and the announcement abnormal returns indicating that the larger rights issue sizes convey favourable news about positive Net present value (NPV) projects and firm's future earnings and results in more positive abnormal returns. We, therefore, propose the following hypothesis:

H2: The price reaction to the announcements of rights and bonus issues is not related to the size of the issues.

Agency theory suggests that there is a potential conflict of interest arising with the separation of ownership and control, when managers act on their own interest at the expenses of shareholders (Fama & Jensen, 1983; Jensen & Meckling, 1976 and Dixon et al., 2015). The basic assumption of agency theory is that managers will act for their personal interest opportunistically. Jensen and Meckling (1976) also argue that firms with a high level of ownership concentration may mitigate the degree of information asymmetry and agency costs between managers and shareholders. Bohren et al. (1997) argue that shareholders who hold a larger fraction of firm's shares have a motivation to acquire to a new equity issue as to maintain their proportional holding in the firm in order to capture monitoring and controlling-oriented benefits. The presence of larger shareholders reduce agency problems and thus increase the likelihood that share issue is part of a value-maximizing investment strategy, which in turn increased shareholders propensity to subscribe. In a similar vein, Balachandranet al. (2008) find a positive relation between ownership concentration and the announcement abnormal returns and show that firms with more concentrated ownership have a less adverse selection share price response to the right issue announcements and as right issues help to maintain block holders' proportional holding in

the firm so as to capture monitoring and control-oriented benefits. Arrondo and Gómez-Ansón (2003) find that a positive relationship between ownership concentration and equity issue firms' abnormal returns suggests that ownership concentration is playing a role to decrease agency cost of managerial discretion. Marisetty et al. (2008) predict that a right issue also will increase ownership concentration if major shareholders are expected to fully participate in rights issues. This provides a positive signal to the market on the announcement of the rights issue. Therefore, we posit the following hypothesis:

H3: There is no relationship between ownership concentration and the market reaction to announcements of rights and bonus issues.

3. Data and empirical model

3.1 Sample data

Rights and bonus issue announced from 2008 to 2013 by Sri Lankan public companies listed on the CSE constitute our primary data. Rights and bonus issue announcements were collected from the CSE Data Library databases. The CSE Database was used to identify issue announcement date, subscription price, and the allocation new shares to old shares. The Datastream was used to obtain share price data and market value for each company. The company annual reports, the Data Stream, and the OSIRIS database are sources to collect all accounting data.

3.2 Empirical model

$$MMR(-1\ +1)/MMA(-1\ +1) = \beta_0 + \beta_1 OSZ_{i,t} + \beta_2 IDY_{i,t-1} + \beta_3 RUN_{i,t-1} + \beta_4 OWN_{i,t-1} + \beta_5 MTB_{i,t-1} + \beta_6 ROA_{i,t-1} + \beta_7 AGE_{i,t-1} + \beta_8 LMV_{i,t-1} + \beta_9 LEV_{i,t-1} + \beta_{10} FIN + \varepsilon_{i,t} \ldots\ldots(1)$$

3.2.1 Dependant variable

We use two alternative measures to calculate cumulative abnormal returns. MMR and MAR are cumulative abnormal returns for a 3 day period (-1, +1) using traditional market model and mean adjusted cumulative abnormal returns for a 3 day period (-1, +1) using mean adjusted model respectively. Abnormal returns surrounding the rights issue and bonus issue announcements were generated using the market model (MMR) and mean adjusted abnormal returns (MAR). The daily returns are measured in logarithmic form adjusted for dividends. The estimation period used in this study runs from 260 days prior to the announcement day to 61 days before the announcement day (day -260 to day -61). The Sri Lankan all ordinary share price index is the market proxy. Standardized cross-sectional t-test served to test the significant level of abnormal returns during the announcement period (Balachandran et al., 2008; Boehmer et al., 1991).

3.2.2 Independent variables

Balachandran et al. (2008) and Marisetty et al. (2008) use the allocation ratio of new shares relative to existing shares as a proxy for the size of the rights offerings (OSZ). In this study, we use the same variable as a measure of the size of the rights and bonus issues. Ari Pandes (2010) and Lee et al. (2014) use the standard deviation of residuals from a standard market model regression of daily returns is used as a proxy for the uncertainty of firm value and level of information asymmetry (IDY). RUN is pre-issuance run-up which measures the raw return for the one-year period prior to the announcement date (return from -260 to day -2). The ownership concentration (OWN) is defined as a fraction of shares held by top 20 shareholders (Balachandran et al., 2008). The market-to-book ratio (MTB) is the sum of market value and

liability divided by book value of total assets. ROA refers to returns on assets. AGE is firm's age. LMV is firm size as a proxy for information asymmetries about new investment relative to those from assets in place (Lee et al., 2014). The variable leverage LEV is calculated as the total liabilities divided by the book value of total assets. Financial firms (FIN) is an indicator variable.

4. Announcement effects of rights issues and bonus issues

Table 1 reports results of the event study based on the announcements of rights and bonus issue. The mean and median abnormal returns for the total sample, as well as the sub-sample firms are reported. The mean abnormal returns of the entire sample during the (0, +1), (-1, +1), and (-2, +2) windows are negative and statistically insignificant. For the rights issue sub-sample firms, the average abnormal returns during the (0, +1), (-1, +1), and (-2, +2) windows are -4.43%, -3.51% and-3.73% respectively and are significant at the 1% level. For the bonus issue sub-sample firms, the average abnormal returns during the (0, +1), (-1, +1), and (-2, +2) windows are 0.97%, 1.46% and 1.36% respectively. The results show that the market reacts negatively to the announcements of rights issues and positively to the announcements of bonus issues. These results correspond with arguments used in developing Hypothesis 1, wherein rights issues and bonus issues have different price reactions.

5. Empirical findings

5.1 Descriptive statistics

Table 2 reports the issue and firm characteristics of all equity issues as well as sub-groups of rights and bonus issues. The average issue size (OSZ) for all equity firms is 0.70. The sub-sample of right and bonus issue firms has averages of 0.82 and 0.29 respectively and significant at the 1% level. The other variables namely the idiosyncratic risk (IDY), profitability (ROA) and the size of firms

Table 1 Price reaction to the announcements of rights and bonus issues

		All (A)	Rights issues (B)	Bonus issues (C)	MW test (B Vs. C)
	Mean (%)	-3.20	-4.43	0.97	
	Median (%)	-2.42	-4.36	1.24	5.53***
MMR (0 +1)	SRT	(-0.36)	(-12.51)***	(1.95)*	
	Mean (%)	-2.38	-3.51	1.46	3.48***
	Median (%)	-2.30	-4.07	1.55	
MMR (-1 +1)	SRT	(-0.27)	(-9.74)***	(3.26)***	
	Mean (%)	-2.57	-3.73	1.36	2.90***
	Median (%)	-2.26	-4.62	0.71	
MMR (-2 +2)	SRT	(-0.29)	(-11.06)***	(2.50)**	
N		127	98	29	

This table reports mean and median abnormal return employing the market model for Sri Lankan rights and bonus issue announcementsfor the periods: the announcement date to one day after the announcement day (MMR (0 +1)), day before the announcement date to one day after the announcement day (MMR (-1 +1)), and, two days before the announcement date to two days after the announcement day (MMR (-2 +2)). Significance levels of mean abnormal returns are reported using the standardised residual t-tests (SRT). This table also provides non-parametric Mann-Whitney (MW) test statistics for the difference in median abnormal returns across the rights and bonus issues. *Significantly different from zero at the 10% level, ** significantly different from zero at the 5% level and*** significantly different from zero at the 1% level.

measured by the natural logarithm of market value (LMV) and the natural logarithm of total assets (LTA) are shown highly substantial differences between rights and bonus issues. The t-test and the Mann-Whitney non-parametric test of statistics indicate that the differences are statistically significant at the 1% level. The other variables such as prior issuance stock run-up (RUN), concentrated ownership (OWN), market-to-book ratio (MTB), firm age (AGE), and leverage (LEV) do not show any significant differences between the two groups. Overall, the right offer firms have significantly a larger issue size, higher non-systematic risks, lower profitability and smaller firm sizes compared with the bonus issues firms.

5.2 Correlation analysis

Table 3 reports the Pearson correlation coefficients between dependents and independents variables. Prior issuance run-up (RUN) and firm's profitability (ROA) show a positive and statistically significant correlation with the MMR. Issue size (OSZ), ownership concentration (OWN), market-to-book ratio (MTB), and firm's profitability (ROA) are positively correlated with the MAR. Interestingly, firm's size (LMV) is significantly positively correlated with ownership concentration (OWN) and profitability (ROA) and negatively correlated with issue size (OSZ) and risks (IDY).

Table 2 Descriptive statistics

		All equity issues	Rights	Bonus	MW test	t-test
	Mean	0.70	0.82	0.29	3.93***	2.65***
OSZ	Median	0.33	0.35	0.14		
	Mean%	3.63	3.89	2.75	4.43***	3.80***
IDY	Median%	3.27	3.57	2.71		
	Mean%	49.19	44.64	64.54	1.49	1.46
RUN	Median%	49.11	43.42	75.97		
	Mean%	81.75	81.53	82.53	0.09	0.32
OWN	Median%	84.96	84.60	86.21		
	Mean	1.34	1.42	1.10	1.15	1.65
MTB	Median	1.09	1.10	1.05		
	Mean%	3.81	2.58	7.98	3.74***	4.02***
ROA	Median%	3.56	3.16	6.45		
	Mean	22.31	21.23	25.97	1.46	1.44
AGE	Median	21.00	18.00	26.00		
	Mean	7.14	6.89	7.99	3.54***	3.61***
LMV	Median	7.03	6.86	8.03		
	Mean	6.47	6.36	6.83	3.65***	2.87***
LTA	Median	6.49	6.34	6.91		
	Mean	54.69	55.99	50.31	0.94	0.91
LEV	Median	54.29	60.29	46.59		

This table provides firm characteristics of Sri Lankan rights issues and bonus issues. OSZ is the allocation of new shares relative to the old shares. IDY is the idiosyncratic risk is defined as the standard error of the market model regression using daily return over the period from 260 days to 61 days prior to the announcement for each firm. RUN is the raw return for the one-year period prior to the announcement date (return from -260 to day -2). OWN is defined as a fraction of shares held by top 20 shareholders. MTB is measured as the book value of total assets minus book value of equity plus the market value of equity divided by the book value of total assets. AGE is the firm age from its listing date. LMV is the natural logarithm of the market value. LTA: the natural logarithm of the book value of total assets. LEV is measured as the total liabilities divided by the book value of total assts. ***,*** and * correlation is significant at the 1%, 5% and 10% levels respectively.

Table 3 Correlation matrix

	MMR	MAR	OSZ	IDY	RUN	OWN	MTB	ROA	AGE	LMV	LEV	FIN
MMR	1											
MAR	0.92***	1										
OSZ	0.14	0.25***	1									
IDY	-0.14	-0.06	0.46***	1								
RUN	0.24***	0.14	0.17*	0.16*	1							
OWN	0.11	0.16*	-0.10	0.01	-0.05	1						
MTB	0.06	0.23**	0.27***	0.34***	-0.08	0.28***	1					
ROA	0.28***	0.32***	-0.04	-0.20*	0.01	0.22**	0.11	1				
AGE	0.03	0.01	0.13	-0.11	0.27***	-0.13	0.02	0.07	1			
LMV	0.04	0.02	-0.37***	-0.50***	-0.02	0.19**	0.01	0.31***	0.06	1		
LEV	0.03	-0.05	-0.04	0.04	-0.01	-0.29***	-0.22**	-0.39***	-0.11	0.00	1	
FIN	0.01	0.09	-0.09	0.12	-0.12	-0.05	0.05	0.02	-0.19**	0.11	0.20**	1

This table provides Pearson correlation matrix. MMR is cumulative abnormal return for a 3 day period using traditional market model. MAR is mean adjusted cumulative abnormal return for a 3 day period. OSZ is the allocation of new shares relative to the old shares. IDY is the idiosyncratic risk is defined as the standard error of the market model regression using daily return over the period from 260 days to 61 days prior to the announcement for each firm. RUN is the raw return for the one-year period prior to the announcement date (return from -260 to day -2).). OWN is defined as a fraction of shares held by top 20 shareholders.MTB is measured as the book value of total assets minus book value of equity plus the market value of equity divided by the book value of total assets. ROA refers to returns on assets. AGE is the logarithm of firm age from its listing date. LMV is the natural logarithm of the market value. LEV is measured as the total liabilities divided by the book value of total assts. FIN is an indicator variable which takes value one if a firm belongs to financial. ***,** and * correlation is significant at the 1%, 5% and 10% levels respectively.

5.3 The determinants of announcement effects

A cross-sectional model is used to examine the association between the announcement period abnormal returns and a set of variables, which are predicted to influence the price reaction to the announcements of rights and bonus issues. The dependent variable (MMR) is the three-day abnormal returns for the period from one day before the announcement day to one day after the announcement day (day -1 to day 1). The size of the offer issue (OSZ), idiosyncratic risk (IDY), pre-issuance stock returns (RUN), profitability (ROA) and leverage (LEV) are significant explanatory variables for the entire sample as well as rights issue sub-sample firms. For the bonus issue sub-sample firms, pre-issuance stock performance (RUN), profitability (ROA) and firm size are significant explanatory variables.

The variable (OSZ) as a proxy for the size of the issues has a significant positive coefficient for the entire equity offer sample and rights issue points out that a larger issue size leads to a higher announcement abnormal returns. This result is consistent with the view of the market perceives the larger size of the issue as favourable investment opportunities and believe that firms issue the additional capital in order to finance positive NPV project (Alhashel & Alojayan, 2015; Tan et al., 2002; Tsangarakis, 1996).

The idiosyncratic risk (IDY) is used as a proxy for the uncertainty of investment opportunities, which is negatively associated with the announcement abnormal returns of rights issues. Masulis and Korwar (1986) and Ari

Table 4 Cross-sectional regression analysis of abnormal price reaction

	All equity issues	Rights issues	Bonus issues
Constant	0.0230	-0.0349	0.1579
	(0.22)	(-0.25)	(1.37)
OSZ	0.0282	0.0300	0.0231
	(2.26)**	(2.07)***	(0.72)
IDY	-4.0546	-3.8874	-3.6084
	(-3.74)***	(-2.97)***	(-1.65)
RUN	0.0622	0.0657	0.0572
	(3.64)***	(3.07)***	(2.31)**
OWN	0.1209	0.1418	0.0971
	(1.55)	(1.48)	(0.88)
MTB	0.0204	0.0217	-0.0353
	(1.54)	(1.40)	(-0.94)
ROA	0.6013	0.6096	0.5095
	(3.47)***	(2.79)***	(1.67)*
AGE	-0.0112	-0.0106	-0.0070
	(-1.08)	(-0.83)	(-0.45)
LMV	-0.0185	-0.0156	-0.0240
	(-2.10)***	(-1.41)	(-1.87)*
LEV	0.0997	0.1029	0.0798
	(2.50)**	(2.06)**	(1.55)
FIN	0.0164	0.0228	0.0081
	(0.75)	(0.82)	(0.29)
Adjusted R^2	0.2123	0.1724	0.2042
F Statistic	4.40	3.02	1.72
P value	0.0000	0.0025	0.1525
N	127	98	29

This table provides the results for the multiple regression analysis. The dependent variables arecumulative abnormal returnsfor a 3 day period (-1, 1) using traditional market model. Dependent variables are: OSZ is the allocation of new shares relative to the old shares. IDY is the idiosyncratic risk is defined as the standard error of the market model regression using daily return over the period from 260 days to 61 days prior to the announcement for each firm. RUN is the raw return for the one-year period prior to the announcement date (return from -260 to day -2). OWN is defined as a fraction of shares held by top 20 shareholders.MTB ismarket-to-book ratio is the sum of market value and liability divided by book value of total assets. ROArefers toreturns on assets. AGE is the logarithm of firm age from its listing date. LMV is the natural logarithm of the market value. LEV is measured as the total liabilities divided by the book value of total assts. FIN is an indicator variable which takes value one if a firm belongs to financial.***,** and * correlation is significant at the 1%, 5% and 10% levels respectively.

Pandes (2010) find a negative relation between IDY and the announcements of abnormal returns. This result also consistent with the predictions of the information asymmetry model presented by Myers and Majluf (1984) that higher returns variance of the uncertainty of investment opportunities is predicted to be associated with larger negative abnormal returns.

The significantly positive coefficient for prior issuance stock performance (RUN) is consistent with the argument that larger issuance stock price performance prior to the rights issue reflects the market's anticipation of a possible highly positive NPV project (Viswanath, 1993). The variable ROA is positively and significantly

Table 5 Cross-sectional regression analysis of abnormal price reaction

	All equity offers	Rights offers	Bonus issues
Constant	0.0063 (0.05)	-0.0953 (-0.58)	0.1778 (1.74)*
OSZ	0.0520 (1.89)*	0.0548 (1.88)*	0.0205 (0.64)
IDY	-5.2742 (-3.73)***	-4.9608 (-3.19)***	-4.3836 (-2.58)***
RUN	0.0607 (2.45)**	0.0678 (2.25)**	0.0625 (1.93)*
OWN	0.1710 (1.79)*	0.2092 (1.84)*	0.1130 (1.17)
MTB	0.0486 (1.67)*	0.0487 (1.64)	-0.0183 (-0.45)
ROA	0.8336 (3.57)***	0.8873 (3.44)***	0.4341 (1.20)
AGE	-0.0156 (-1.33)	-0.0139 (-0.99)	-0.0020 (-0.12)
LMV	-0.0245 (-2.43)**	-0.0193 (-1.67)*	-0.0296 (-2.47)**
LEV	0.0973 (1.65)	0.0965 (1.30)	0.0841 (1.35)
FIN	0.0507 (1.51)	0.0683 (1.55)	0.0116 (0.60)
Adjusted R^2	0.2553	0.2487	0.1324
F Statistic	5.32	4.21	1.43
P value	0.0000	0.0001	0.2554
N	127	98	29

This table provides the results for the multiple regression analysis. The dependent variables are MAR cumulative abnormal returns for a 3 day period (-1, 1), using mean adjusted cumulative abnormal returns. Dependent variables are: OSZ is the allocation of new shares relative to the old shares. IDY is the idiosyncratic risk is defined as the standard error of the market model regression using daily return over the period from 260 days to 61 days prior to the announcement for each firm. RUN is the raw return for the one-year period prior to the announcement date (return from -260 to day -2).). OWN is defined as a fraction of shares held by top 20 shareholders. MTB is measured as the book value of total assets minus book value of equity plus the market value of equity divided by the book value of total assets. ROA refers to returns on assets. AGE is the logarithm of firm age from its listing date. LMV is the natural logarithm of the market value. LEV is measured as the total liabilities divided by the book value of total assets. FIN is an indicator variable which takes value one if a firm belongs to financial.***,** and * correlation is significant at the 1%, 5% and 10% levels respectively.

related to the announcement returns of all equity offerings. Lee et al. (2014) use ROA as a proxy for firm quality and predict that there is a positive relationship between ROA and announcement returns of rights issues. The equity offering firms in Sri Lanka use ROA as a quality signal. The variable LMV as a proxy for information asymmetries is negatively related to the announcements of all equity issues as well as bonus issues indicating that equity issuing firms in Sri Lanka have information asymmetry problems between parties. The coefficient of the variable LEV is positively and significantly related to the announcement returns of all equity and rights issues suggesting that higher debt capacity leads to more adverse price reactions (Lee et al., 2014). Other variables such as OWN, MTB, AGE, and FIN do not turn out to be significant.

5.4 Robustness test

A number of alternative specifications are tested to test for robustness. Firstly, in Table 5, we re-estimate cross-sectional regression using our second independent variable of the mean-adjusted cumulative abnormal returns for a three-day period (MAR -1 +1). The variables OSZ, IDY, RUN, OWN, ROA, and LMV have impact on the announcement abnormal returns. The results are similar patterns as reported in Table 4. Secondly, we use the alternative measure of the issue size, total proceeds as percentage of market value, report similar results. Finally, we re-estimate the regression in Table 4 by excluding the announcements of simultaneous events of other market sensitive information such as rights and bonus issues with capital reorganization, acquisition, etc. (contaminated events). The results are in line with our findings in Table 4. The consistent with the result reported in Table 4, we still find that rights issuing firms in Sri Lanka use larger issue size and operating profitability as proxies for investment opportunities and high-quality firms.

6. Conclusion

We find a significantly negative market reaction the announcement of a rights issue but a significantly positive market reaction to the announcements of bonus issues in Sri Lanka. We also find the factors affecting the magnitude of price reaction around the announcements of rights issues and bonus issues. The market reactsunfavourably to the announcements of rights issues with smaller offer size, the larger uncertainty of stock returns, lower pre-issuance stock run-up, and lower operating profitability. In other words, the high level of information asymmetry and uncertainty of investment pportunities are associated with more negative announcement period abnormal returns for rights offerings and support the view of that investor perceive rights issues are associated with higher risk. Rights issuing firms in Sri Lanka use a larger issue size as proxies for investment opportunities and operating profitability as a quality. This indicates that high-quality firms signal announcing rights offers with larger issue size. In contrast to rights issues, investors react favourably to the announcements of bonus issues with higher pre-issuance stock run-up and smaller firm sizes.

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