

Standalone Warrants, Subscription Period, Shareholder Takeup and Moneyness of warrants

Balasingham Balachandran
Department of Finance, La Trobe Business School, La Trobe University, Bundoora, VIC 3086,
AUSTRALIA

Sutharson Kanapathippillai
School of Accounting, Economics and Finance, Deakin University, 221 Burwood Highway,
Burwood, VIC 3125, AUSTRALIA

Chandrasekhar Krishnamurti
School of Accounting, Economics and Finance, University of Southern Queensland, Toowoomba,
QLD 4350, AUSTRALIA

Michael Theobald
Mifranthe Associates, Warwick, CV35 8HG, UK

Eswaran Velayutham
School of Accounting, Economics and Finance, University of Southern Queensland, Toowoomba,
QLD 4350, AUSTRALIA

26 April 2013

Address for correspondence:
A/Prof Balasingham Balachandran,
Department of Finance,
La Trobe Business School
La Trobe University,
Bundoora
Victoria, 3086
Australia.

Tel.:(61) 3 94793103
FAX: (61) 3 94791654
Email: B.Balachandran@latrobe.edu.au

Standalone Warrants, Subscription Period, Shareholder Takeup and Moneyness of warrants

Abstract

We examine the market reaction to the announcement of standalone warrants during the announcement period and post announcement period until the end of subscription period. We find that the market reacts positively to the announcement of standalone warrants and further drifts during the post announcement period, indicating some evidence of inefficiencies in the adjustment process, consistent with the overconfidence framework developed in Daniel et al. (1998). This drift is positively related to the moneyness warrants and shareholders' takeup. We also find a positive relation between underpricing and risk and between risk and the proportion of funds raised at the issuance of warrants relative to the funds to be raised by exercising warrants consistent with the work of Chemmanur and Fulghieri (1997).

1.0 Introduction

Australian firms predominantly use rights issues when making secondary offerings of equity, units (known as equity with bonus warrants) and standalone warrants. In this paper the emphasis is upon the latter issue type, that is, standalone warrants, given the shortfall in the available empirical evidence relating to issues of this type. In rights offerings of standalone warrants in Australia, a shareholder receives warrants for a small price, with the right to purchase the stock at the predetermined exercise price, which is, again, generally out-of-the-money at the time of issuance. Thus, very little money is received by the company at the time of issuance of standalone warrants. By issuing warrants, firms effectively pre-commit to a further subsequent seasoned offering at the exercise price of the warrants. Typically, warrants are listed at the Australian Securities Exchange (ASX).

In this paper, we contribute to the literature on rights issue of standalone warrants in the following ways. Firstly, we examine how the market reacts to rights issues of standalone warrants during the subscription period and then secondly, we go on to study the impact of shareholders' take-up on stock prices during both the announcement and subscription periods. Thirdly, we examine the role of the moneyness of warrants upon post announcement period price reactions within the overconfidence framework of Daniel et al. (1998). Fourthly, we extend the work of Chemmanur and Fulghieri (1997) from IPOs to rights issues of standalone warrants in examining the relation between underpricing and risk and between the proportion funds raised at the issuance of warrants relative to the funds to be raised by exercising the warrants.

Suchard (1995) examines the announcement of rights issue of warrants over the period from 1983 to 1994 and documents a positive announcement period price reaction. She suggests that the positive price reaction to standalone warrants indicates that the firm is currently undervalued and rather than issue undervalued equity to raise capital, uses an issue of warrants to signal information. A combined sample of rights offerings of equity and units is examined in Balachandran, Faff and Theobald (2008) who find that high-quality firms signal their quality by selecting fully underwritten

rights issues, low-quality firms employ partially underwritten rights issues, and intermediate-quality firms tend not to underwrite their rights issues. They also show that the announcement period price reaction is positively related to shareholders' takeover, and is negatively related to the subscription price discount. There is a paucity of research on the impact of the quality related variables such as underwriting status, shareholders takeover and discount on market reaction to rights issue of warrants. We extend the work of Suchard (2005) to examine the impact of underwriting status, shareholders takeover and discount on market reaction using a recent sample of the announcement of rights issue of warrants during the period 1997-2008.

Balachandran, Faff, Theobald and Zijl (2012) investigate the price movements during the subscription period of the combined sample of rights offerings equity and units, a time period that has been neglected in the extant literature, and place a particular emphasis upon assessing the importance of shareholder takeover. They show that shareholder takeover information is reflected in price adjustments over the subscription period and that quality-related information disclosed on the rights announcement date further impacts upon prices in this period. They also show that the market reacts more negatively to rights issues of units than to rights issues of equity during the subscription period. There is, however, a paucity of research on the impact of the issuance of standalone warrants during the subscription period and the impact of shareholders' takeover on subscription period price reactions. In this paper we extend this work to address this shortfall.

Daniel, Hirshleifer and Subrahmanyam (1998) argue that sophisticated corporate managers who are not overconfident are likely to selectively undertake certain visible actions and that the stock price reaction to these selective events is related to the mispricing by the market that derives from overconfident investor behavior. The positive announcement returns for warrant issues in Suchard (2005) suggest that management believes that the firm is currently undervalued. As a consequence, managers will have incentives to issue standalone warrants rather than issue undervalued equity. In particular, an out-of-the-money warrant issue avoids the severe dilution

effect that would be associated with selling undervalued equity. Daniel et al (1998) in their proposition 5 state that:

If investors are overconfident, then selective events that are initiated when the stock is undervalued (overvalued) by the market will on average be associated with positive (negative) announcement-date abnormal price changes and will on average be followed by positive (negative) post-announcement abnormal price changes.

Thus the decision to issue standalone warrants in the face of stock that is undervalued can be considered a “*selective event*” in the Daniel et al. (1998) framework. There are two testable implications that follow from the above proposition of Daniel et al. (1998). First, announcement period abnormal returns are expected to be positive for standalone warrant issues. And secondly, the positive announcement period abnormal returns will be followed by positive post-announcement period abnormal returns. This post-announcement drift in stock prices implies that the stock market underreacts to the announcement of standalone warrant issues.

Furthermore, research evidence is lacking as to whether managers selectively determine the moneyness of warrants. As a consequence, we examine the impacts of the moneyness of warrants on market reactions within an overconfidence framework. An out-of-the-money warrant permits the firm to tie the capital inflow to favourable news related to capital requirements, such as a positive discovery in the exploration program for resource firms, consistent with Mayers’ (1998) sequential financing model. Since the issuance of warrants, particularly if the warrants are out-of-the-money, acts as a signal, this will give rise to another testable implication. That is, we posit that out-of-the-money warrant issues elicit a more positive announcement period stock price reaction when compared to in-the-money issues. Furthermore, if the signal implicit in the moneyness of the warrants is not fully impounded in announcement period stock prices, implying an underreaction, then post-announcement period returns will be more positive for out-of-the-money warrants.

Chemmanur and Fulghieri (1997) develop a signaling model for firms going public that focuses upon the interaction between information asymmetry and managerial risk aversion and

argue that the inclusion of warrants in IPOs helps risk-averse insiders signal the high quality of their firm when outcomes are risky. We test two of the predictions arising from their model. First, in unit IPOs, as well as in IPOs without warrants, they predict that the percentage of underpricing increases with the risk of the firm. Second, in unit IPOs, they find that the proportion of firm value sold in the form of warrants is an increasing function of firm risk. Although these predictions were made in the context of IPOs, Chemmanur and Fulghieri (1997) assert that these predictions will also be valid in seasoned offerings. Chollet and Ginglinger (2001) examine French seasoned unit offerings via public offerings and find that the underpricing of units is positively related to the riskiness of the firm and is an increasing function of the proportion of the firm value sold as warrants relative to the proportion of the firm sold in the units' offerings.¹ Balachandran et al. (2013) find that the level of underpricing is positively related to firm riskiness and, the proportion of funds to be received by exercising warrants relative to funds raised at the announcement of units is also positively related to the riskiness of the firm for rights issues of units. However, there is a lack of research on the relation between underpricing and risk as well as the relation between funds raised by exercising warrants relative to funds raised at the announcement of standalone warrants – a situation that we are keen to redress.

Our empirical results provide several key insights. Firstly, we find that the market reacts positively to the announcement of standalone warrant issues, particularly for fully underwritten issues and for out-of-the-money issues. Secondly, quality signals such as takeover play an important role in standalone warrant issues. Takeup is positively related to announcement period and post-announcement period abnormal returns. Thirdly, we find that the level of underpricing is increasing in the idiosyncratic riskiness of the firm. Fourthly, we find that the ratio of funds raised from exercising warrants is positively related to the idiosyncratic risk of the firm. Finally, we provide evidence that is indicative of inefficiencies in the price adjustment process, where the market reacts

¹ They measure the proportion of the firm value sold as warrants relative to the proportion of the firm sold in the units' offerings as the number of shares to be provided by the exercise of warrants divided by the number of shares issued in unit offerings.

positively to the announcement of standalone warrants followed by a further drift during the post announcement period.

This paper is organized as follows. Section 2 describes the data and sample characteristics. Section 3 discusses the empirical results pertaining to price reactions to the announcement of standalone warrants. Section 4 presents our results regarding the importance of quality-related variables. Our conclusions are offered in section 5.

2.0 Research Design

2.1 Data and Sample

Announcement dates of standalone warrants issuance by Australian companies are collected from Bloomberg, DatAnalysis and IRESS. We use the DatAnalysis database to verify (i) the exercise price of the option; (ii) expiry date of the option and; (iii) the market value of the company. Using the following criteria we isolate a clean sample of 100 announcements of rights issue of warrants during the 1997-2008 period that meet the following criteria: Standalone warrants, that can be converted into ordinary shares at the predetermined exercised price, are issued only to ordinary shareholders on a pro rata basis; Shareholders have to incur a cash cost to purchase the rights; share prices are available for the estimation period and announcement period (-260 to +61); subscription period (beginning and end dates) data is available; and Standalone warrants are not announced simultaneously with other announcements, such as: mergers, takeovers, restructuring, on-market buybacks, off market buybacks, stock dividends, stock splits, private placements, public offerings, convertible bonds convertible preference shares, rights issue of shares and bonus share options. In table 1 we provide a summary of the composition of our sample. We provide information on the sample by year in Panel A. There is no evidence of clustering of the sample across the years. In Panel B, we categorize our sample on the basis of industry groups. Sixty percent of our sample belongs to the Materials group. This is not surprising given the dominance of the natural resources sector in the Australian economy. Another 11% of the sample belongs to the energy sector. The

remaining one-third of the sample is dispersed across the other industry groups. In Panel C, we break down the sample based on underwritten status, renounceability and moneyness. Forty seven percent of the issues are either fully or partly underwritten. Ten percent of the issues are renounceable. Seventy six percent of the issues are out-of-the-money.

In table 2, we provide descriptive statistics of the characteristics of our sample firms and the issue details. The mean market value (MV) of the firms in our sample is A\$19.60 million. Another measure of size is total assets (TA) which averages 14.63 million for the entire sample. The average book to market ratio (BM) of the sample firms is 0.76. The average raw return for the one-year period prior to the announcement date (RUNUP) is -0.47% for the entire sample. The mean idiosyncratic risk (IDYRISK) is 6.52%. The average proportion of shares held by the top 20 shareholders is 55.22%, indicating substantial ownership concentration within the sample. The mean proportion of shares held by blockholders (BH) is 28.77%. Total debt to total asset (DEBTRATIO) averages 9.15% for the sample. The average age of the sampled firms (AGE) is 10.19 years.

In terms of issue characteristics, moneyness is measured by the EPTOSP variable. EPTOSP is defined as: $EPTOSP = \frac{EP}{SP}$, where EP= exercise price of warrants; and SP= share price two days prior to the announcement. EPTOSP averages 1.69, indicating that firms issue out-of-the-money options on average. TAKEUP represents the actual percentage of the standalone warrants taken up by shareholders and averages 65.91 %. The OPTOTA variable is the ratio of total proceeds at the initial stage to total assets. It averages 27.47 % for the sample as a whole. The OP variable measures the offer proceeds in millions of dollars; OP averages 1.46 for the entire sample. Managerial share ownership averages 10.45% for the sample. Board independence averages 35%. The average underpricing of the sample firms is 49.86%.

2.2 Abnormal Return Generation and Test Statistics

This study uses the event study framework to examine the impact of rights issues of warrant

announcements upon share prices. The daily returns are measured in logarithmic (continuously compounded) form adjusted for dividends. Abnormal returns are generated for the following event windows: the day of the announcement to the day after the announcement (denoted as day 0 to day 1); the day before the announcement date to the day after the announcement (day -1 to day 1). The market model (hereafter MM) is used to estimate the abnormal returns. 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 Australian All Ordinaries Share Index is used as the market proxy in the MM.

3.0 Price Reaction to the Announcement of Standalone Warrants

This section examines the market reactions to the announcements of standalone warrant issuance. An event study framework is employed as described above to examine the price reactions to the announcements of standalone warrant issuance. Abnormal returns are generated for the day before the announcement date to the day after the announcement (denoted as day -A1 to day +A1), two days after the announcement date to the end of subscription period (day +A2 to day C0) and the full period from the day before the announcement date to the end of subscription period (day -A1 to day C0) using the market model as the return generating process. The t-test statistic (standardized residual test statistic) employed by Mikkelson and Partch (1986) and Singh (1997) is used to report the significance levels of the price reactions to the various announcements.

3.1 Event study results

Table 3 provides details of the price reactions to the announcements of standalone warrants for all event windows. As can be seen in Panel A of Table 3, the price reaction to the announcement of standalone warrants for the announcement period is positive and statistically significant (average abnormal returns of 1.82%). In Panel B of Table 3, we report results of subsamples categorized on the basis of underwriting status. We find that during the announcement period, fully underwritten issues experience significantly positive abnormal returns, while non-underwritten issues have

abnormal returns that are insignificantly different from zero. Our results are consistent with Balachandran et al. (2008) who posit that high quality issuers make fully underwritten issues.

In Panel C of Table 3, we report results of subsamples categorized on the basis of the moneyness of the warrants. We find that during the announcement period, out-of-the-money (OM) warrants experience significantly positive abnormal returns while in-the-money (IM) warrants have abnormal returns that are insignificantly different from zero.

Overall, then, we find that the market reacts positively to the announcement of standalone warrant issues. Fully underwritten issues and out-of-the-money issues experience more positive abnormal returns indicating that underwriting status and moneyness act as quality signals.

We report abnormal returns during the post-announcement period spanning from two days after the announcement of standalone warrant issuance to the last day of the subscription period (+A2 to C0). In Panel A of Table 3 we report results for the overall sample. We find that the mean abnormal returns are positive and statistically significant at the 5% level. Also, the abnormal returns for the overall period (-A1 to C0) are a highly significant 3.57%. Our findings indicate that the market underreacts to the announcement of standalone rights warrants offerings at the announcement period with a subsequent drift in prices as would be expected within an investor overconfidence framework. The announcement period abnormal returns are positive for standalone warrant issues as expected. Furthermore, the positive announcement period abnormal returns are followed by positive post-announcement period abnormal returns. This post-announcement drift in stock prices suggests that the stock market underreacts to the announcement of standalone warrant issues.

In Panels B and C, we compare results of subsamples partitioned on the basis of underwriting status and moneyness of the warrants, respectively. During the post-announcement period, fully underwritten issues experience abnormal returns that are statistically indistinguishable from zero, while non-underwritten issues experience positive abnormal returns. In Panel C, we compare abnormal returns between out-of-the-money (referred to as OM) and in-the-money

(hereafter IM) issues. During the post-announcement period, we find that out-of-the-money issues experience highly significant mean abnormal returns of 6.72%. This return is substantially different from in-the-money issues which experience negative abnormal returns averaging 14.34%. Also, for the overall period, the two groups (OM and IM) show substantially different abnormal returns. While OM issues experience positive returns of 9.21% on average, IM issues have negative returns averaging 14.28%.

Since out-of-the-money warrant issues elicit a more positive announcement period stock price reaction when compared to in-the-money issues, our evidence is consistent with the view that the moneyness of warrants constitutes a quality signal. Also, the signal implicit in the moneyness of the warrants is not fully impounded in announcement period stock prices as our evidence shows that the market underreacts to this signal in the case of OM issues. Furthermore, the post-announcement period returns are more positive for out-of-the-money warrants producing a positive post-announcement drift in stock prices.

3.2 Analysis of Price Reaction

We employ a cross-sectional analysis using the market reactions during the announcement period, post announcement period and full period as dependent variables. The independent variables are DFU: a dummy variable, taking a value of unity for a fully underwritten issue, and zero otherwise; TAKEUP: the actual percentage of shareholders takeup; UNDERP: underpricing; LNEPTOSP: the natural logarithm of the ratio of the exercise price to the share price two days before the announcement date; RUNUP: the raw return for the one-year period prior to the announcement date (return from -260 to day -2); LBM: the natural logarithm of the book-to-market ratio measured as the book value of assets to the market value of assets; LMV: the natural logarithm of the market value one month before the announcement date; DRE: a dummy variable that takes a value of unity if the issue is renounceable, and zero otherwise; MMN1P1: announcement period price reaction; and INDUMMY:

dummy variables for each industry classification as per Panel B of Table 1 except for resources (Materials and Energy). The results are reported in Table 4, Panels A, B and C.

As can be seen in Panel A of Table 4, the coefficient of TAKEUP is statistically significant. Other quality variables such as underwriting status and moneyness of warrants do not have an impact on announcement period stock returns. Our empirical results are consistent with the view that the signal implicit in the moneyness of warrants is not impounded in announcement period stock prices. As can be seen in Panels B and C TAKEUP and LNEPTOSP are statistically significant indicating that the market underreacts at the announcement date followed by a drift in the post announcement period.

Overall, our results point out to inefficiencies in market's assessment of the quality variable moneyness at the time of announcement. A positive post announcement drift therefore indicates a slow adjustment of stock prices to this quality signal. With respect to the takeup variable as a quality signal, the results indicate that the market is less inefficient. The announcement period market reaction impounds some effects of the takeup variable with the post announcement drift being less significant statistically.

4.0 Underpricing, and Funds Raised by Exercising Warrants

We also examine the importance of quality related variables using underpricing as the dependent variable. Specifically, we analyze the relationship between underpricing and idiosyncratic risk (IDYRISK) and present the results in Table 5. Underpricing is calculated as the value of standalone warrants minus the issue price of warrants to the value of standalone warrants using the Galai and Schneller (1978) model to calculate the value of warrants. Our quality proxy is IDYRISK, defined as the standard error of the market model regression of daily stock returns over the period from day-260 to day -61².

² The higher the idiosyncratic risk, the lower the quality of the issue, ceteris paribus.

As can be seen in Table 5, underpricing is significantly positively related to idiosyncratic risk and thereby provides support for the role of quality related variables as found in Balachandran et al. (2008). We use several models incorporating relevant control variables to further investigate this phenomenon. That is we control for i) managerial share ownership (MSO), in order to control for the fraction of equity retained by insiders as posited by Chemmanur and Fulghieri (1997);ii) the size of offer proceeds (LNOP)and the relative size of offer proceeds to total assets (LNOPTOTA); iii) the proportion of shares held by blockholders and the top 20 shareholders (BH & TOP20); iv) the ratio of warrants to current shares outstanding (WIES), and v) the ratio of the funds to be received by exercising the warrants relative to the initial stage financing. Our previous results remain robust to the inclusion of all of these control variables.

Another key variable of interest is that the ratio of the funds raised from exercising warrants relative to the initial stage financing. We would argue that risky firms will raise more funds from the exercise of warrants relative to initial financing and report the results in Table 6. Our dependent variable is LNEWTOIF, the natural logarithm of the ratio of funds to be raised by exercising warrants to initial stage financing. We control for managerial share ownership (MSO), size of offer proceeds (LNOP), the relative size of offer proceeds to total assets (LNOPTOTA), proportion of shares held by blockholders and top 20 shareholders (BH & TOP20), the ratio of warrants to current shares outstanding (WIES),. The ratio of funds raised by exercising warrants is found to be an increasing of idiosyncratic risk; our results remain robust to the inclusion of the various control variables previously defined. Summing up, our results indicate that lower quality firms raise a relatively higher proportion of funds by exercise of warrants compared to initial funds raised, thus mitigating the agency costs of free cash flows.

We find that underpricing is positively related to idiosyncratic risk, consistent with the role of quality related variables as documented by Balachandran et al. (2008). Therefore, we find strong support for the prediction of Chemmanur and Fulghieri (1997) that the percentage of underpricing increases with the risk of the firm. We also find that risky firms raise more funds from the exercise

of warrants relative to initial stage financing lending support to Chemmanur and Fulghieri's prediction that the proportion of firm value sold in the form of warrants is an increasing function of firm risk.

5.0 Conclusion

In this paper, we extend the literature and empirical evidence on rights issues of standalone warrants in Australia in a number of differing dimensions. That is, we study the market reaction during the subscription period and additionally the influence of shareholders' takeup on stock prices during both the announcement and subscription periods. The role of the moneyness warrants on post announcement period price reactions is analysed using predictions deriving from the overconfidence framework developed in Daniel et al. (1998). Finally we examine the relation between underpricing and risk and that between risk and the proportion of funds raised at the issuance of warrants relative to the funds to be raised by exercising warrants utilizing the work of Chemmanur and Fulghieri (1997).

Our empirical results provide several key findings. We empirically document that the market reacts positively to the announcement of standalone warrant issues, particularly in the cases of fully underwritten issues and of out-of-the-money issues. The empirical results indicate that quality signals, such as takeup, play a significant role in the standalone warrant issue process. Takeup is found to be positively related to both announcement period and post-announcement period abnormal returns. We also report that the level of underpricing is increasing in the idiosyncratic riskiness of the firm and that the ratio of funds raised from exercising warrants is also positively related to the idiosyncratic risk of the firm. Finally, our evidence indicates the presence of inefficiencies in the price adjustment process, where it is found that the market reacts positively to the announcement of standalone warrants followed by further drifts during the post announcement period.

Table 1: Summary of standalone warrant Announcements

This table provides the number of standalone warrant Announcements made by Australian companies. Panel A provides information on yearly basis. Panel B provides information on an industry by industry basis.

Panel A – Year wise Classifications	
Year	Number of SWs
1997	11
1998	09
1999	10
2000	12
2001	05
2002	08
2003	06
2004	06
2005	06
2006	11
2007	09
2008	07
Total	100
Panel B – Industry Classifications	
GICS Industry Group	Number of SWs
Capital Goods	04
Diversified Financials	08
Energy	11
Health Care Equipment & Services	04
Material	59
Media	01
Pharmaceuticals & Biotechnology & Life Sciences	09
Software & Services	02
Technology Hardware & Equipment	01
Telecommunication Services	01
Total	100

Panel C: Underwriting status, renounceable issues and out-of-the-money issues

	Number of SWs
% of fully underwritten issues	46.00
% of partially underwritten issues	1.00
% of renounceable issues	10.00
% of out-of- the- money issues	76.00

Table 2: Firm characteristics

This table provides financial characteristics of our sample of standalone rights offering of warrants (RWs). BM: the book-to-market ratio measured, as the ratio of the book value of assets to market value of assets; MV: the market value of the issuing firm one month prior to the announcement; OPTOTA: the ratio of the total proceeds at the initial stage of financing to total assets; OP: the offer proceeds at the initial stage of financing; RUNUP: the raw return for one-year period prior to the announcement date (return from -260 to day -2); IDYRISK: the idiosyncratic risk measured as the standard error of the market model regression of daily stock returns over the period from day -260 to day -61 for each issuing company; TOP20: the proportion of shares held by the top 20 shareholders; BH: the proportion of shares held by blockholders (holders of 5% or more); MSO: the proportion of shares held by the directors; BIND: the proportion of independent directors on the board; DEBTRATIO: the ratio of the total debt to total assets; TA: the total assets; AGE: the company age from its listing date (years); EBITDATOTA: the ratio of earnings before interest, tax and depreciation to total assets; EPTOSP: the ratio of the exercise price to share price two days prior to the announcement; TAKEUP: the actual percentage shareholders takeup of the issue; and UNDERP: Underpricing incorporating the value of warrants. Takeup information is available only for 88 RWs * 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.

BM	Mean	0.76
	Median	0.62
MV (\$M)	Mean	19.60
	Median	8.99
OPTOTA	Mean (%)	27.47
	Median (%)	11.91
OP (\$M)	Mean	1.46
	Median	0.54
RUNUP	Mean (%)	-0.47
	Median (%)	-2.31
IDYRISK	Mean (%)	6.52
	Median (%)	6.20
TOP20	Mean (%)	55.22
	Median (%)	54.37
BH	Mean (%)	28.77
	Median (%)	25.19
DEBTRATIO	Mean (%)	9.15
	Median (%)	0.00
TA (\$M)	Mean	14.63
	Median	6.43
AGE	Mean	10.19
	Median	9.75
MSO	Mean (%)	10.45
	Median (%)	5.80
BIND	Mean (%)	34.66
	Median (%)	5.80
EPTOSP	Mean	1.69
	Median	1.25
EBITDATOTA	Mean (%)	-26.59
	Median (%)	-14.39
TAKEUP	Mean (%)	65.91
	Median (%)	69.38
UNDERP	Mean (%)	49.86
	Median (%)	66.66
SAMPLE SIZE		100

Table 3: Price Reaction to standalone warrant Announcements

This table reports the mean and median abnormal returns, and standardized residual test (SRT) for the period from the day before the announcement to the day after the announcement (day -A1 to day +A1), from two days after the announcement to the last day for the subscription period (day +A2 to C0) and for the full period from the day before the announcement to the last day for the subscription period (day -A1 to C0), employing the market model, for the samples of standalone rights offering of warrants (RWs).

Panel A: Overall Sample				
Day -A1 to Day +A1	MEAN (%)			1.82
	MEDIAN (%)			0.48
	SRT			(3.14) ^{***}
Day +A2 to Day C0	MEAN (%)			1.76
	MEDIAN (%)			0.21
	SRT			(2.60) ^{**}
Day -A1 to Day C0	MEAN (%)			3.57
	MEDIAN (%)			0.31
	SRT			(5.74) ^{***}
	Sample size			100
Panel B - Underwriting status				
		FU	NU	t-test : FU vs NU
Day -A1 to Day +A1	MEAN (%)	3.84	0.35	1.83 [*]
	MEDIAN (%)	2.71	-0.23	
	SRT	(3.35) ^{***}	(1.17)	
Day +A2 to Day C0	MEAN (%)	0.83	2.70	0.13
	MEDIAN (%)	-0.30	0.78	
	SRT	(0.92)	(5.24) ^{***}	
Day -A1 to Day C0	MEAN (%)	4.67	3.06	0.25
	MEDIAN (%)	1.24	0.36	
	SRT	(4.27) ^{***}	(6.41) ^{***}	
	Sample size	46	53	
Panel C – Moneyness of warrants				
		OM	IM	t-test: OM vs IM
Day -A1 to Day +A1	MEAN (%)	2.49	-0.06	0.87
	MEDIAN (%)	0.72	-2.37	
	SRT	(3.73) ^{***}	(-0.42)	
Day +A2 to Day C0	MEAN (%)	6.72	-14.34	2.71 ^{***}
	MEDIAN (%)	4.66	-17.05	
	SRT	(10.32) ^{***}	(-11.76) ^{***}	
Day -A1 to Day C0	MEAN (%)	9.21	-14.28	2.88 ^{***}
	MEDIAN (%)	2.57	-10.40	
	SRT	(14.05) ^{***}	(-12.18) ^{***}	
	Sample size	76	24	

Table 4: Analysis of price reaction

This table provides cross-sectional regression results explaining the market response for the announcement of RWs. The dependent variable is the announcement period abnormal price movement from the day before to the day after the announcement date in Panel A. Independent variables are DFU takes value of one if fully underwritten, and zero otherwise TAKEUP: the actual percentage shareholders take up of the issue; UNDERP: subscription price discount incorporating the value of warrants; LNEPTOSP: the natural logarithm of the ratio of the exercise price to the share price two days before the announcement date; RUNUP: the raw return for the one-year period prior to the announcement date (return from -260 to day -2); LBM: the natural logarithm of the book-to-market ratio measured as the book value of assets to the market value of assets; LMV: the natural logarithm of the market value one month before the announcement date; DRE: a dummy variable that takes a value of unity if the issue is renounceable, and zero otherwise; and INDUMMY: Industry dummies - dummy variables for each industry classification as per Panel B of Table 1 except for resources (Materials and Energy). Robust test statistics are reported in parenthesis. * 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.

	Panel A -Announcement period (Day -A1 to Day +A1) price reaction			Panel B -Post announcement period (Day +A2 to Day C0) price reaction			Panel C - Full period (Day -A1 to Day C0) price reaction		
	(A1)	(A2)	(A3)	(B1)	(B2)	(B3)	(C1)	(C2)	(C3)
Constant	-0.0860 (-1.71)*	-0.0952 (-1.51)	-0.0727 (-1.08)	-0.2100 (-1.58)	-0.1693 (-0.93)	-0.1738 (-0.97)	-0.2754 (-2.05)**	-0.2438 (-1.33)	-0.2646 (-1.41)
DFU	0.0387 (1.45)	0.0378 (1.31)	0.0320 (1.15)	0.0572 (0.87)	0.0722 (1.08)	0.0511 (0.79)	0.0866 (1.30)	0.1017 (1.51)	0.0662 (0.92)
TAKEUP	0.1463 (2.08)**	0.1447 (2.31)**	0.1485 (2.02)**	0.3071 (1.75)*	0.2958 (1.68)*	0.2943 (1.75)*	0.4184 (2.33)**	0.4091 (2.14)**	0.4019 (2.09)**
UNDERP	-0.0062 (-0.14)	-0.0154 (-0.39)	-0.0216 (-0.50)	-0.0564 (-0.69)	-0.0061 (-0.07)	-0.0319 (-0.54)	-0.0612 (-0.64)	-0.0182 (-0.19)	-0.0206 (-0.19)
LNEPTOSP	-0.0103 (-0.56)	-0.0070 (-0.28)	-0.0120 (-0.60)	0.1459 (2.61)**	0.1532 (2.36)**	0.1744 (2.64)**	0.1385 (2.50)**	0.1477 (2.36)**	0.1624 (2.38)**
MMN1P1				-0.2388 (-0.70)	-0.2173 (-0.66)	-0.1493 (-0.48)			
RUNUP		0.0075 (0.81)	0.0072 (0.92)		-0.0057 (-0.16)	-0.0063 (-0.17)		0.0002 (0.01)	-0.0039 (-0.10)
LBM		-0.0108 (-0.66)	-0.0077 (-0.52)		-0.0076 (-0.19)	-0.0182 (-0.42)		-0.0160 (-0.36)	-0.0237 (-0.52)
LMV		0.0022 (0.15)	0.0047 (0.34)		-0.0388 (-0.99)	-0.0351 (-0.90)		-0.0370 (-0.92)	-0.0294 (-0.73)
DRE		-0.0099 (-0.19)	-0.0135 (-0.28)		0.1878 (1.20)	0.1653 (1.08)		0.1801 (1.05)	0.1426 (0.82)
INDUMMY			yes			yes			yes
Adj R ²	0.0562	0.0235	0.0243	0.0834	0.0782	0.1238	0.1108	0.0985	0.1268
F Statistics	2.48	1.83	1.79	2.58	1.82	1.82	3.71	2.19	1.90
P value	0.0501	0.0845	0.0839	0.0321	0.0776	0.0481	0.0079	0.0371	0.0399
N	88	88	88	88	88	88	88	88	88

Table 5: Underpricing and risk

This table provides cross-sectional regression results on the relation between the underpricing (UNDERP) and risk for RWs. The dependent variable is underpricing calculated incorporating the value of warrants. Independent variable are IDYRISK: the idiosyncratic risk measured as the standard error of the market model regression of daily stock returns over the period from day-260 to day -61; TOP20: the proportion of shares held by top 20 shareholders; BH: proportion of shares held by blockholders (who hold 5% or more); MSO: the proportion of shares held by the directors; LNOPTOTA: the natural logarithm of the ratio of offer proceeds at the initial stage financing to total assets; LNOP: the logarithm of the offer proceeds at the initial stage financing; LNEWTOIF: the natural logarithm of the ratio of funds to be received by exercising the warrants to the initial stage of financing; WIES : the ratio of warrants issued to current shares outstanding; Robust test statistics are reported in parenthesis. * 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.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
Constant	0.3762 (4.58) ^{***}	0.3010 (1.88) [*]	-0.0997 (-0.46)	0.1621 (0.90)	-0.3009 (-1.51)	0.3132 (3.90) ^{***}	0.4725 (11.38) ^{***}	0.4077 (3.53) ^{***}	0.2733 (1.71) [*]
IDYRISK	2.3509 (2.47) ^{**}	3.0137 (2.51) ^{**}	2.3332 (1.77) [*]	2.0772 (1.78) [*]	2.6526 (2.04) ^{**}				2.5862 (2.52) ^{**}
TOP20			0.6385 (2.85) ^{***}		0.6230 (2.74) ^{***}				0.5706 (2.42) ^{**}
BH				0.4058 (2.16) ^{**}					
MSO		-0.0794 (-0.25)							
LNOPTOTA		-0.0673 (-1.91) [*]	-0.0725 (-2.22) ^{**}	-0.0753 (-2.17) ^{**}	-0.1187 (-4.29) ^{***}	-0.1002 (-3.62) ^{***}			
LNOP		-0.0955 (-2.28) ^{**}	-0.1008 (-2.44) ^{**}	-0.1034 (-2.54) ^{**}			-0.1355 (-4.18) ^{***}		
WIES									-0.3876 (-2.88) ^{***}
LNEWTOIF		-0.0411 (-1.38)	-0.0152 (-0.50)	-0.0252 (-0.82)	0.0160 (0.51)			0.0339 (1.15)	
Adj R ²	0.0175	0.1811	0.2768	0.2390	0.2297	0.1244	0.1653	0.0005	0.1285
F statistics	2.76	5.29	8.58	7.22	8.38	15.06	20.61	1.05	5.86
p- value	0.0996	0.0003	0.0000	0.0000	0.0000	0.0002	0.0000	0.3081	0.0010

Table 6: Ratio of funds to be raised by exercising warrants to initial stage financing and risk

This table provides cross-sectional regression results on the relation between the ratio of funds to be raised by exercising warrants to initial stage of financing (*LNEWTOIF*) and risk. The dependent variable used in this regression is the natural logarithm of the ratio of funds to be raised by exercising warrants to initial stage of financing. Independent variables are IDYRISK: the idiosyncratic risk measured as the standard error of the market model regression of daily stock returns over the period from day-260 to day -61; MSO: the proportion of shares held by the directors; TOP20: the proportion of shares held by the top 20 shareholders; BH: the proportion of shares held by blockholders (holders of 5% or more); LMV: the logarithm of the market value one month prior to the announcement; LNOPTOTA: the natural logarithm of the ratio of offer proceeds at the initial stage financing to total assets; LNOP: the logarithm of the offer proceeds at the initial stage financing; and WIES : the ratio of warrants issued to current shares outstanding. Robust test statistics are reported in parenthesis. *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.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10
Constant	2.6123 (9.73)***	2.6264 (9.62)***	3.4509 (8.61)***	2.8651 (10.67)***	4.3728 (10.24)***	3.9939 (8.62)***	3.4674 (8.98)***	3.3970 (12.99)***	3.4188 (29.03)***	3.7293 (8.76)***
IDYRISK	15.0441 (3.97)***	15.5774 (4.04)***	16.4407 (4.67)***	17.2179 (4.71)***	11.5318 (2.94)***	12.5100 (2.99)***	12.9484 (3.40)***			9.7719 (2.78)***
MSO		-0.5625 (-0.73)								
TOP20			-1.68353 (-2.56)**		-1.1798 (-1.86)*	-1.0726 (-1.71)*	-1.3179 (-2.19)**			-1.5902 (-2.66)***
BH				-1.3707 (-2.53)**						
LMV					-0.3875 (-3.56)***	-0.3839 (-3.52)***				-0.3357 (-3.27)***
LNOPTOTA						-0.1150 (-1.64)	0.0712 (0.79)	-0.0906 (-0.93)		
LNOP							-0.3876 (-3.43)***		-0.4137 (-4.58)***	
WIES										1.4776 (4.68)***
Adj R ²	0.1125	0.1133	0.1673	0.1602	0.2662	0.2774	0.2702	0.0017	0.1669	0.3881
F statistics	13.55	7.20	10.94	10.45	12.97	10.50	10.16	1.17	20.83	16.60
p-value	0.0003	0.0012	0.0000	0.0001	0.0000	0.0000	0.0000	0.2824	0.0000	0.0000

References

- Balachandran, B., Faff, R., Theobald, M., 2008. Rights Offerings, Takeup, Renounceability and Underwritten Status, *Journal of Financial Economics* 89, 328-346.
- Balachandran, B., Faff, R., Theobald, M., van Zijl, T., 2012. Rights offerings, subscription period, shareholder takeup and liquidity. *Journal of Financial and Quantitative Analysis* 47, 213-239.
- Balachandran, B., Kanapathipillai, S., Krishnamurti, C., Theobald, M., Velayutham, E., 2013. The Issuance of Units in Rights Offerings: Agency Costs and Signaling. SSRN working paper: <http://ssrn.com/abstract=1645008>
- Chemmanur, T.J., Fulghieri, P., 1997. Why include warrants in new equity issues? A theory of unit IPOs. *Journal of Financial and Quantitative Analysis* 32, 1– 24.
- Bohren, O., Eckbo, B., Michalsen, D., 1997. Why underwrite rights offerings? Some new evidence. *Journal of Financial Economics* 46, 223-261.
- Daniel, K., Hirshleifer, D., Subrahmanyam, A., 1998. Investor psychology and security market under- and overreactions. *Journal of Finance* 53, 1839-1885.
- Eckbo, E.B., Masulis, R.W., 1992. Adverse Selection and the Rights Offer Paradox, *Journal of Financial Economics*, 32, 293-332.
- Mayers, D., Why firms issue convertible bonds: the matching of financial and real investment options, *Journal of financial Economics*, 47, 83-102.
- Myers, S., Majluf, N., 1984. Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics* 13, 187-221.
- Schultz, P., 1993. Call of Warrants: Timing and Market Reaction, *The Journal of Finance*, 2, 681-696.
- Slovin, M., Sushka, M., Lai, K., 2000. Alternative flotation methods, adverse selection, and ownership structure: evidence from seasoned equity issuance in the UK. *Journal of Financial Economics* 57, 157-190.
- Suchard, J., 2005. The Use of Options as Unique Capital Raising Instruments, *Journal of Banking and Finance*, 29, 1095-1112.