

Why Do Australian Firms Issue Standalone Warrants?

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Abstract

This paper examines why Australian firms issue standalone warrants and how the market perceives this type of capital raising method. We find that firms with smaller size, smaller issue proceeds, higher risk and lower ownership concentration choose standalone warrants rather than rights issues of equity to raise equity capital. Price reactions to standalone warrant announcements are significantly and positively related to takeup and underwriting status consistent with the findings of Balachandran, Faff and Theobald (JFE, 2008) for the announcements of rights issues of equity. Price reactions are stronger for moderately out-of-the-money warrants than in-the-money and deeply out-of-the-money warrants. We also find that managers of larger/moderate/smaller firms with higher/moderate/lower pre-event RUNUP and lower/moderate/higher risk choose in-the-money/ moderately-out-of-the-money/deeply out-of-the money warrants.

Keywords: Rights issue of equity; Rights issue of warrants; Takeup; Underwriting; Ownership concentration

JEL Classifications: G14; G32

1. Introduction

Australian companies are not allowed to issue more than 15% of their capital without the prior approval of shareholders unless the issue is made to existing shareholders on a proportionate (*pro rata*) basis. As such, public offerings of seasoned firms are rare or non-existent in Australia. Thus, seasoned Australian firms use rights offerings of equity or rights offerings of standalone warrants (delayed equity) to existing shareholders to raise equity capital. Australian firms do not issue unit offerings (known as stock-warrant package offerings) to existing shareholders.¹ To the best of our knowledge, the Australian market is the only developed market where standalone warrants are utilized to raise new equity capital. Prior research shows that the market reacts positively to standalone warrants [Suchard (1995)] and negatively to rights offerings of equity [Balachandran, Faff and Theobald (2008)].

Balachandran, Faff and Theobald (2008) argue that alternative forms of rights offering provide a potentially rich tapestry of credible signals about the varying quality of issuing companies. Byoun and Moore (1993) argue that the sequencing model of Mayer (1998) has implications for warrant financing as warrant financing will reduce the agency costs of free cash flow (Jensen (1986)). Gajewski, Ginglinger and Lasfer (2007) suggest that the agency costs of the free cash flow hypothesis predicts that managers have to set the exercise price of warrants higher than the share price prior to the announcement in order to indicate that the firm has worthwhile projects to obtain second stage financing. This paper examines why some Australian firms issue standalone warrants to existing shareholders rather than rights offerings of equity and whether Australian managers can use alternative forms of standalone warrants to signal their quality by incorporating the credible quality signals identified by Balachandran, Faff and Theobald (2008) use standalone warrants to reduce the agency costs of free cash flow as argued by Byoun and Moore (1993) and Gajewski et al (2007) in their work on packaged offerings of equity with warrants.

¹ Some firms issue bonus warrants (nil paid) with a rights issue of equity as a sweetener.

A number of studies examine seasoned firms' choices as between equity offerings and unit offerings [Byoun and Moore (2003 and 2004), Gajewski, Ginglinger and Lasfer (2007)].² Byoun and Moore (2003 and 2004) show that unit offerings rather than standalone equity are issued by firms with higher information asymmetry with the following characteristics: small, young firms with small proceeds; high-risk, with low-prestige underwriters; and fewer fixed assets. Byoun and Moore (2003) demonstrate that including warrants with equity offerings will increase the abnormal returns above those generated by issuing equity alone. Considering that rights offerings of equity are associated with a negative price reaction and rights offerings of standalone warrants experience a positive price reaction, surprisingly no studies have examined seasoned firms' issue choice between equity offerings and standalone warrants. This study attempts to examine this significant omission in the literature.

Typically, in Australia, standalone warrants are issued as rights issues. A shareholder receives the warrants for a favorably small price with the right to purchase the stock at the predetermined exercise price which is 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 warrants. By issuing warrants firms pre-commit to yet another seasoned offering at the exercise price of warrants. When a company grows, it will most likely need new equity capital. Also, growth will bring about an increase in stock price resulting in the exercise of the warrants. On the other hand, if the firm experiences lackluster growth, its stock price is unlikely to increase and the warrants will not be exercised. As such, managers will undertake positive NPV projects using the warrant proceeds as the second stage financing is conditional on stock price appreciation and they have to demonstrate that the firm has worthwhile projects in order to obtain the second round of financing. We argue that the market will perceive positively the announcement of out-of-the-money warrants offerings

² Byoun and Moore (2003) and Gajewski, Ginglinger and Lasfer (2007) show that the market reacts negatively to public offerings of stock-warrant packages whereas Gajewski et al (2007) show that the market reaction is positive but insignificant to rights offerings of stock-warrants units.

(i.e. with the ratio of exercise price to stock price greater than one) as this will indicate the potentiality of firms' growth opportunities.

Balachandran, Faff and Theobald (2008) examine the interrelations between takeup, underwriting status, renounceability, and subscription price discount on the choice of rights issue method and show that management can signal firm quality to shareholders. They find that the market reaction is positively related to underwriting status and shareholders' takeup and negatively related to the subscription price discount. They also find that firms with higher ownership concentration, larger subscription price discount, stronger pre-announcement returns, smaller issues relative to old shares and larger market capitalizations have higher shareholder takeup. However, no studies have examined the role of underwriting status or shareholders' takeup or the exercise price of the warrants on the issuance of standalone warrants. Thus, this study also investigates the role of underwriting status, shareholders takeup and the exercise price of warrants on price reactions to the announcement of standalone warrants.

An analysis of standalone warrants is of interest and importance for a number of reasons. Standalone warrants provide a cost-effective financing arrangement for small firms which are particularly suited to firms in the natural resources sector with valuable growth options. The quality of firms is likely to be a major factor in explaining the market response to rights offerings of equity in Australia [See Balachandran, Faff and Theobald (2008), and, as such it will be interesting to know how managers use these quality features in designing the standalone warrants, and how the market reacts to them. Warrants financing also has implications for the reduction in the agency costs of free cash flow. Thus, we address the following research questions in this study: What factors determine the choice between the standalone rights issue of warrants and standalone rights issues of equity? Does the market reaction vary between fully underwritten and non-underwritten issues of standalone warrants? What are the underlying factors that induce managers to fully underwrite rights issues of standalone warrants? What are the factors that determine the degree of

moneyiness (exercise price to share price ratio) of standalone warrants? Does the takeup of shareholders have any impact on the market reaction to warrants? What are the factors that determine the shareholders' takeup of warrants?

We find that firms with smaller size, higher risk, lower ownership concentration and firms looking for smaller issue proceeds tend to choose rights issues of warrants rather than rights issues of equity when raising equity capital in Australia. The announcement of standalone warrant issuance is met with a positive stock price reaction (consistent with Suchard (1995)), whereas rights issues of equity experienced negative price reactions (consistent with Balachandran et al (2008)). Moderately out-of-the-money issues have more positive abnormal returns, whereas those that are in-the-money (deeply out-of-the-money) have insignificant (significantly negative) abnormal returns. Underwriting status, firms' growth opportunities and shareholders takeup of warrants are positively related with the price reaction to standalone warrant announcements.

The plan of this paper is as follows. Section 2 develops the hypotheses that underpin our empirical analyses. Section 3 describes our sample and research design. Section 4 discusses the empirical results on i) the issue choice between standalone warrants and standalone equity, ii) differential market reactions to the announcement of standalone warrants and equity, iii) factors that determine the shareholders takeup of standalone warrants, iv) factors that determine the moneyiness of standalone warrants, and v) factors that determine the decision to underwrite the standalone warrants. Finally, our conclusions are presented in section 5.

2. Hypothesis Development

Prior studies have examined the signaling characteristics of the two stages of the financing of unit offerings. How and Howe (2001) show that, after controlling for the fraction of equity retained by insiders, the proportion of the firms sold as warrants increases with the firm riskiness in Australian IPOs. Byoun and Moore (2003 and 2004) show that firms with high information asymmetry

(smaller size and higher risk firms) include warrants in their seasoned equity offerings. These arguments then lead to the following hypothesis:

H1: Firms with higher information asymmetry will choose standalone warrants rather than standalone rights issue of equity

Heinkel and Schwartz (1986) argue that high quality firms would choose fully underwritten rights issues since they would be prepared to pay the full investigation costs, thereby accruing a net benefit from the eventual issue. In the context of rights offerings of equity, Balachandran et al (2008) argue that a quality signal will be inherent within the choice of underwriting status, while Balachandran et al (2008) and Slovin et al (2000), argue that the higher subscription price (lower discount) can also serve as a quality signal. Essentially, managers will select issue methods from the total opportunity set which signal the quality and/or degree of undervaluation of the existing stock in issue. In the context of unit of offerings of IPO, Chemmanur and Fulghieri (1997) argue that it is optimal for high quality firms to issue warrants to finance future growth opportunities. They also suggest that their model is applicable to seasoned issues of equity packaged with warrants. Thus we expect that the price reaction to standalone warrants will be positively related with underwriting and moneyness of warrants (the ratio of exercise price to pre-announcement price).

Eckbo and Masulis (1992) argue that a high expected takeover reduces the adverse selection problem associated with equity issuance and Singh (1997) that higher takeover levels should be associated with relatively more favorable information. Slovin, Sushka, and Lai (2000) and Balachandran, Faff and Theobald (2008) show that shareholder takeover is positively related with the price response to rights issues of equity. Therefore we expect that shareholders takeover of warrants will be positively related with the price reaction to the announcement of standalone warrants.

Mayers (1998) argues more generally that the usage of warrants can be beneficial via reducing dysfunctional overinvestment behavior. Schultz (1993) and Byoun and Moore (1993),

further, argue that incorporating warrants into equity offerings will reduce agency costs of free cash flow. Gajewski et al (2007) suggest that managers have to set the exercise price of warrants higher than the share price prior to the announcement in order to indicate that the firm has worthwhile projects in order to obtain second stage financing consistent with the agency costs of free cash flow hypothesis, previously mentioned. Thus, we have the following hypotheses:

- H2 (a): Price reactions to underwritten warrant issues will be more favorable than to non-underwritten warrants issues, consistent with the signaling hypothesis.
- H2 (b): Price reactions to warrant announcements will be positively related with firms' growth opportunities, consistent with signaling and free cash flow hypotheses.
- H2 (c): Shareholder takeup of warrants will be positively related with price reactions to the announcements of warrants.
- H2 (d): Price reactions to warrant announcements will be more favorable for out-of-the-money warrants than for in-the-money warrants, consistent with signaling and free cash flow hypotheses.

3.0 Research Design

In this section, we describe the sample selection procedure, and the characteristics of our standalone warrants and equity samples. We then outline the probit model used to examine the issue choice between standalone warrants and standalone equity, and the event study methodology used to examine the market reaction to the announcement of standalone warrants and equity.

3.1 Data and Sample

Announcement dates of standalone rights issue of warrants and standalone rights issues of equity of Australian companies are collected from Bloomberg, DatAnalysis and IRESS. We identify the clean sample of 105 announcements of rights issues of standalone warrants and 560 standalone rights

issues of equity during the 1997-2008 period that meet the following criteria: standalone warrants can be converted into ordinary shares at the predetermined exercised price; warrants are issued only to ordinary shareholders on a pro rata basis; shareholders have to purchase the warrants at a predetermined price (price of the warrant); standalone warrants and standalone rights issues of equity are not announced simultaneously with any 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, and bonus warrants; and share prices are available for the estimation period and announcement period (-260 to +1). We find that 52 (340) of the warrants (rights issue of equity) are fully underwritten, and 10 (219) of the warrants (rights issue of equity) are renounceable rights issues.

We used the DatAnalysis database to verify the issue price of the warrant, the exercise price of the warrants to convert into shares, information on underwriting and the expiry dates of the warrants. The market value of the company, share price data adjusted for dividends and Australian all ordinary share index data are obtained from the Datastream database. Data on ownership concentration, shareholders takeup of warrants and other financial data were collected from DatAnalysis database.

Insert Table 1 Here

Table 1 provides a summary of the composition of our sample, with Panel A providing the year-wise distribution of our sample and Panel B a categorization on the basis of industry sectors. Approximately 60% (30%) of standalone warrants (equity) belongs to the Materials group, 12% (11%) to health care and 10% (10%) to energy.

Insert Table 2 Here

In table 2, we provide descriptive statistics of the characteristics of our sample firms and the issue details. As can be seen in table 2, market value, total assets and debt ratio are statistically significantly smaller for firms which choose standalone warrants rather than standalone equity

whereas idiosyncratic risk is higher for firms which choose standalone warrants rather than standalone equity. This evidence supports *H1* in that firms with higher information asymmetry or lower quality choose standalone warrants rather than standalone equity. We also find that firms with higher ownership concentration, larger offer proceeds and poor pre-event period returns choose standalone rights issue of equity.

3.2 *Probit Model for the issuance choice - warrants versus equity*

We examine the factors determining the issuance choice of rights issues of standalone warrants versus rights issues of equity using probit model. The dependent variable, DSW, takes a value of one for standalone warrants and zero for standalone rights issues of equity. The independent variables are RUNUP: 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; LMV: the logarithm of the market value of the issuing firm one month prior to the announcement; *Top20*: the proportion of shares held by top 20 shareholders; BH: Blockholders (holders of 5% or more) ownership; and DEBT_RATIO: the total debt to total assets.

3.3 *Event study methodology*

This study uses the event study framework to examine the impact of standalone warrant and standalone equity announcements upon share prices. The daily returns are measured in logarithmic form adjusted for dividends. Abnormal returns are generated for 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.

4.0 Empirical results

This section provides empirical results. Section 4.1 discusses the empirical results as regards the issue choice between standalone warrants and standalone equity, using a probit model. Section 4.2 discusses market reactions to the announcement of standalone warrants and equity, and the factors that determine the market reaction to standalone warrants. Section 4.3 examines the factors that determine the shareholders take-up of standalone warrants, while Section 4.4 examines the factors that determine the moneyness (exercise price to pre announcement share price) of standalone warrants. Section 4.5 examines the factors that determine the decision to underwrite the standalone warrants.

4.1 *Determinants of issuance choice - warrants versus equity*

In this section, we discuss the empirical findings of the factors determining the issuance choice of rights issues of standalone warrants versus rights issues of equity. Our empirical findings reported in Table 3 show that firms with large market capitalizations tend to favor rights issues of equity over standalone warrants. Firms with high idiosyncratic risk issue standalone warrants in preference to rights offerings of equity. Firms making large issues, as measured by TOPTOMV and LNOP, use rights issues of equity rather than standalone warrants. We have some (weak) evidence indicating that firms with higher leverage (DEBT-RATIO) have a preference for rights issue of equity. These results support our *H1*. That is, firms with higher degrees of information asymmetry choose warrants issues than standalone equity. We also find that firms with more concentrated ownership structures, as reflected by the variables Top 20 and BH, opt for rights issues of equity rather than warrants which is consistent with an asymmetric information argument, in that such firms would normally be expected to have lower degrees of such asymmetries due to their potentially more informed stockholders. We find that firms experiencing a positive run-up in stock prices in the year prior to the announcement date prefer standalone warrants which suggest firms

with better pre-event runup choose standalone warrants rather than standalone equity to use pre-runup momentum to attract shareholders to purchase the more levered warrants.

Insert Table 3 Here

Overall, our results confirm that standalone warrants are the issue of choice for smaller, risky firms with less concentrated ownership. Firms issuing standalone warrants also tend to be less levered.

4.2 Price reactions

Section 4.2.1 provides market reactions to the announcement of standalone warrants and equity.

Section 4.2.2 examines the factors that determine the market reaction to standalone warrants.

4.2.1 Univariate results - Announcement effects

Panel A of table 4 provides price reactions to the announcements of rights issue of standalone equity and standalone warrants for the event window (-1, +1). The rights issue of equity experiences statistically significant negative abnormal returns [mean (median) of -1.82% (-0.46%)], whereas the announcers of standalone warrants, in contrast, earn statistically significant positive abnormal returns [mean (median) of 1.95% (0.59%)]. These results are consistent with those reported in past studies on Australian data, that is, Balachandran, Faff and Theobald (2008) for equity issues and Suchard (2005) for warrants.

Insert Table 4 Here

The divergence in market reaction between the two samples of rights issues of equity and rights issue of standalone warrants issuers is a key finding and deserves further attention. We probe this further in Panels B, C and D of table 4. When we partition the sample of rights issues of equity into those issues with a discount and those issues with a zero discount or premium, we find that the market reacts significantly negatively to issues with discounts [mean (median) of -2.37% (-0.71%)]

and significantly positively to issues with no discounts [mean (median) of 1.77% (0.63%)]. When we partition the sample of rights issue of warrants into those issues which are in-the-money and those issues which are out-of-the-money, we find that market reacts insignificantly to in-the-money issues and significantly positively to out-of-the-money issues [mean (median) of 2.48% (0.72%)].

We also examine whether the market reaction differs between out-of-the-money warrants and rights issues with premium or zero discount and find no significant difference between them. In our sample we find that 88% of the rights issues of equity are issued with a discount whereas 78% of rights issues of warrants are issued out-of-the money. It raises an interesting question as to why managers chose rights offerings of equity with a discount rather standalone out-of-the-money warrants ,given that the market preference is for issues at the money or a premium irrespective of type of the offerings: equity or warrants. That is, as we have shown in section 4, riskier, smaller firms with smaller issue proceeds tend to choose warrants rather than equity. Balachandran et al (2008) have shown that shareholders takeup is positively related with subscription price discount for equity rights issues. Taking together all these results shows that firms with large offer proceeds have to underprice the offerings to attract shareholder takeup. However, riskier firms with smaller offer proceeds choose standalone warrants which are out-of-the-money to signal future growth opportunities.

In panel D of table 4, we analyze the price reactions of firms issuing warrants into three subgroups: in-the-money (EPTOSP is less than 1), moderately out-of-the-money (EPTOSP ranging between 1 and 2), deeply out-of-the-money (issues with EPTOSP exceeding 2.0). Deeply out-of-the-money issues experience statistically significantly negative abnormal returns whereas moderately out-of-the-money issues show strongly positive abnormal returns. Our results indicate that though the market likes issues which are out-of-the-money it dislikes the issues with deep out-of-the-money offerings, potentially indicating that the market views these issues will be more likely to expire out-of-the-money.

Further, we examine in table 5 the impact of underwriting status and shareholders take-up on price reactions to standalone warrants. As can be seen in panel A of Table 5, the underwritten subsample has a higher abnormal return as compared to the non-underwritten subsample with the difference being significant at the 10% level, consistent with *H2 (a)*. In Panel B, we compare the abnormal returns of firms with low take-up to those of high take-up. The results show that the significantly positive abnormal returns are experienced by firms with high take-up (where take-up \geq median) while the low take-up group experience insignificant abnormal returns; this abnormal return significantly differs between these two groups at the 5% level. This result is consistent with *H2(c)*. The results reported for the impact of shareholders take-up of warrants is consistent with the evidence documented by Balachandran et al. (2008) and Slovin et al (2000) for shareholders take-up of rights issue of equity. In Panel C, we compare the abnormal returns of firms between renounceable and non-renounceable issue of warrants. The results show that the market reaction does not vary between renounceable and non-renounceable issue of warrants consistent with the findings of Balachandran et al. (2008) for rights issues of equity.

Insert Table 5 Here

Overall, we find support for a positive price reaction to warrant announcements and that underwriting and take-up effects exist per *H2 (a)* and *H2(c)*, respectively. The price reactions indicate that the market prefers warrant issues that are out of the money, but not too deeply so, providing little support for *H2 (d)*.

4.2.2 Robustness Check

In this section we examine why managers choose deep out of the warrants. Univariate results are reported in table 6 for subgroups classified on the basis of being in the money, moderately out-of-the-money and deeply out-of-the-money warrants with underwriting status. As can be seen in table 6, the market reaction is positive for underwritten warrants irrespective of the status of their moneyness. However, the market reaction is strongest for moderately out-of-the-money warrants

followed by in-the-money warrants and is least positive for the deeply out-of-the-money case. In the case of non-underwritten (uninsured) warrants, the market reaction is positive for in-the-money warrants and negative for moderately and deeply out-of-the-money warrants.

Insert Table 6 Here

It raises an interesting question as to why managers choose deeply out-of-the-money warrants or in-the-money warrants. A close inspection of table 6 shows that larger/moderate/smaller firms with higher/moderate/lower pre-event RUNUP and lower/moderate/higher risk choose in-the-money/moderately-out-of-the-money/deeply out-of-the money warrants. As can be seen in Panel B of table 6, shareholders' takeup of warrants is stronger for underwritten warrants than non-underwritten warrants irrespective of the moneyness category.

4.2.3 Cross sectional analysis of price reaction

In this section, we report the cross-sectional relations between the three-day abnormal returns surrounding announcements of rights issue of standalone warrants and equity and a range of potential explanatory independent variables justified either via our hypothesis development or usage in the extant literature. The independent variables considered are: LTOPTOMV: the natural logarithm of the ratio of total proceeds to market value; DFU takes a value of one for fully underwritten rights issues of equity/standalone warrants and zero otherwise; DRIGHTS takes a value of one for standalone rights issues of equity and zero for standalone warrants; DSW takes a value of one for standalone warrants and zero for standalone rights issues of equity. TAKEUP: actual percentage of takeup of the standalone equity/warrants; DEPTOSP12: a dummy variable equal to unity if EPTOSP takes a value between 1 and 2; EPTOSP: the exercise price divided by share price two days before the announcement date; DIMOM takes a value of unity if EPTOSP is greater than or equal to one otherwise zero; 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; LTA: the logarithm of the total assets prior to the announcement; Top20: the proportion of shares held by top 20

shareholders; DEBRATIO: the total debt to total assets; RUNUP: raw return for the one year period prior to the announcement date (return from -260 to day -2) and DDISC: takes a value of 1 if a rights issue of equity is made with a zero discount or premium and zero otherwise.

Insert Table 7 Here

The results are reported in Table 7 for models 1 to 14 for the total sample (warrants and equity) and models 16 to 18 for standalone warrants. The results reported in table 6 confirm the findings in section 4.2.1. That is, a significantly negative coefficient for DRIGHTS confirms that the market reaction is more favorable to standalone warrants than to standalone rights issues of equity. The significantly positive coefficient for DRIGHTS*DDISC and DSW*DIMOM confirms that the market prefers rights issues that are at the money or with a premium irrespective of the type of offerings either warrants or equity. Comparing the models 4, 5 and 6 confirms that the market reaction is stronger for moderately out-of-the-money than in-the-money and deeply out-of-the-money warrants. LTOPTOMV has significantly negative coefficients, indicating that larger the issue more negative price reaction. Significantly positive coefficients for takeup and DFU confirm their role as quality signals for total sample as well as standalone warrant sample.

As such, then, the results reported in this section provide further corroboration for the results in Section 4.2.1 and 4.2.2, and the Hypotheses developed in Section 2.

4.3 Determinants of shareholders' takeup of warrants

As outlined in section 2, takeup signifies the success of the issue and is significantly affected by the quality and information asymmetry characteristics of the firm. The TAKEUP variable captures the actual response of shareholders to the standalone warrants issue. Therefore, in this section, we model the factors determining takeup using Tobit models and report the results in table 8.

Insert Table 8 Here

The dependent variable employed is the actual percentage of takeup of the warrants. We find that underwritten status is a significantly positive influence upon the TAKEUP of the standalone warrants offerings, whereas the riskiness of the firm, the “moneyness” of the warrants (ratio of exercise price to stock price (EPTOSP) and size of the offerings (LTOPTOMV or LNOP) negatively influences the TAKEUP. It appears that shareholders favorably regard the quality/information asymmetry and attractiveness of the issue when deciding to purchase warrants.

4.4 Factors determine the moneyness of Warrants

Managers will attempt to select the optimal exercise price in order to achieve a favorable response from shareholders. If they set the exercise price too high they signal a high quality issue but potentially increase the possibility of an undersubscription, for example. We model the ratio of exercise price to share price (EPTOSP) incorporating the quality perception effects, option parameters, and potential dilution effects and report the results in Table 9.

Insert Table 9 Here

Our empirical tests indicate that the underwriting status, as signified by DFU, has a significantly positive effect on the dependent variable EPTOSP. The term to maturity of the warrants (TTM) and the total risk variable (STDEV) both have positive impacts on EPTOSP. That is, firms set higher exercise prices when the warrants have a longer time to maturity due to the fact that the probability the option will close in-the-money is higher, the longer the maturity date. The higher the volatility of the underlying the higher the chance a more out-of-the-money option will expire in-the-money and thus firms with higher STDEVs set higher exercise prices. These findings are in accordance with the general option type features and characteristics which would indicate that out-of-the-moneyness should be directly related to the time to maturity and volatility of underlying stock price. LTOPTOMV has a negative effect on EPTOSP indicating that firms set higher exercise

prices for bigger issues. A significantly negative coefficient for TOP20 indicates that firms with higher ownership concentrations are reluctant to set higher exercise prices.

Overall, our results indicate that managers attribute importance to the quality of the issue, in addition to the option parameters such as time to maturity and underlying volatility while setting the exercise price of warrants.

4.5 Determinants of the Underwriting Decision

We model factors affecting a firm's decision to underwrite standalone warrant issues using a probit framework. We conjecture that the quality of the issue and the information asymmetry associated with the firm, will affect the decision regarding underwriting the issue. Our results are reported in Table 10.

Insert Table 10 Here

Out-of-the-moneyness (EPTOSP) is directly associated with the decision to choose underwriting. We find a non-linear relationship between holdings of top 20 shareholders (Top 20) and the decision to underwrite. The positive impact of the variable Top 20 is attributed to the lowering of information asymmetry. The negative effect of the square of top 20 holdings implies the decreasing importance of underwriting for firms with very high ownership concentration. Since large blockholders have strong incentives to subscribe to the issue in order to preclude an attenuation of their control premia, underwriting is of no value to the firm with higher end ownership concentration. .

5.0 Conclusion

The Australian market is the only market in a developed country that utilizes standalone warrants to raise new equity capital. The positive market reaction to standalone warrants as opposed to the negative reaction of rights offerings of equity motivates our study. Our empirical results also support the view that firms with higher information asymmetry (small firms, high risk firms, and

those with low ownership concentration) choose standalone warrants over rights issue of equity. We also document support for the signaling hypothesis based on a more favorable stock price reaction to underwritten issues and firms with higher shareholder takeup of warrants consistent with the findings of Balachandran, Faff and Theobald (2008) for the announcements of rights issue of equity. The price reaction to standalone warrant issue announcements is stronger for moderately out-of-the money warrants than for in-the-money and deeply out-of-the-money warrants. Managers of larger/moderate/smaller firms with higher/moderate/lower pre-event RUNUP and lower/moderate/higher risk choose in-the-money/moderately-out-of-the-money/deeply out-of-the money warrants. Our findings have strong implications for managers in choosing to issue standalone warrants.

Table 1: Summary of rights issue of equity and rights issue of standalone warrant Announcements

This table provides the distribution of the number of rights issue of equity and rights issue of standalone warrant Announcements made by Australian companies during the period 1997 to 2008. Panel A provides information based on year wise classification. Panel B provides information based on industry sector basis.

Panel A – Year wise classification		
Year	Rights issue of equity	Rights issue of standalone warrants
1997	40	12
1998	39	09
1999	41	11
2000	20	12
2001	46	05
2002	40	08
2003	59	06
2004	45	06
2005	51	06
2006	48	13
2007	62	10
2008	69	07
Total	560	105

Panel B – Industry Classification		
GICS Industry Sectors	Rights issue of equity	Rights issue of standalone warrants
Consumer Discretionary	54	03
Industrials	56	05
Financials	63	06
Energy	57	11
Consumer Staples	30	-
Health Care	64	13
Material	171	63
Information Technology	43	03
Telecommunication Services	17	01
Utilities	5	-
Total	560	105

Table 2: Firms' characteristics: rights issue of equity, and rights issue of standalone warrants

This table provides univariate tests across two groups: rights issue of equity, and rights issue of standalone warrants. The table also provides non-parametric, Mann Whitney (MW test) test statistics for the difference in median values of firms' characteristics between rights issue of equity, and rights issue of standalone warrants. BM: the book-to-market ratio measured as book value of assets to market value of assets; MV: the market value of the issuing firm one month prior to the announcement; TOPTOMV: the total proceed to market value; OP: the offer proceeds; RUNUP: 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 top 20 shareholders; BH: the proportion of shares held by blockholders; DEBRATIO: the total debt to total assets; EQUITYTOTA: shareholders equity to total assets; and TA: the total assets. * 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.

		Rights issue of equity	Rights issue of standalone warrants	MW test
BM	Mean	0.75	0.75	0.95
	Median	0.67	0.61	
MV (\$M)	Mean	90.88	19.04	3.24***
	Median	14.01	8.57	
TOPTOMV	Mean (%)	45.05	10.94	11.59***
	Median (%)	26.82	7.68	
OP (\$M)	Mean	14.89	1.44	12.26***
	Median	4.05	0.54	
RUNUP	Mean (%)	-14.00	-0.56	3.64***
	Median (%)	-17.51	-2.90	
IDYRISK	Mean (%)	5.39	6.47	4.38***
	Median (%)	5.03	6.13	
Top 20	Mean (%)	61.75	55.62	3.35***
	Median (%)	62.00	54.68	
BH	Mean (%)	37.75	28.98	3.80***
	Median (%)	36.45	25.27	
DEBRATIO	Mean (%)	15.87	8.72	5.10***
	Median (%)	4.38	0.00	
TA (\$M)	Mean	91.24	14.52	6.50***
	Median	14.88	6.43	
EQUITYTOTA	Mean (%)	62.44	79.11	6.80***
	Median (%)	70.40	93.62	
Sample size		560	105	

Table 3: Decision to issue rights issue of standalone warrants than standalone rights issue of equity

This table provides probit regression analysis using DSW as a dependent variable. DSW takes value of one for standalone warrants and zero for stand alone rights issue of equity. The independent variables are *RUNUP*: 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; *LTA*: the logarithm of the total assets of the issuing firm at the balance sheet date prior to the announcement; *Top20*: the proportion of shares held by top 20 shareholders; *BH*: Blockholders (holders of 5% or more) ownership; *DEBT*: the total debt to total assets; *LTOPTOMV* is the natural logarithm of the ratio of total proceeds to market value. * 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.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
<i>Constant</i>	-0.3712 (-3.38)***	-0.4347 (-2.33)**	-0.6548 (-6.01)***	-1.4003 (-11.68)***	-2.5561 (-15.01)***	-1.0170 (-17.06)***	-0.7542 (-7.57)***	-3.9365 (-5.88)***	-1.8989 (-4.85)***	-1.5116 (-4.77)***	-0.7952 (-3.55)***	0.1213 (0.53)	-0.0225 (-0.15)	0.0781 (0.035)	-0.1165 (-0.84)
<i>LTA</i>	-0.2719 (-6.51)***							-0.6838 (-5.82)***	-0.3676 (-6.26)***			-0.2649 (-5.66)***	-0.2613 (-5.54)***	-0.2640 (-6.25)***	-0.2600 (-6.08)***
<i>Top 20</i>		-0.9633 (-3.19)***							-0.6988 (-1.48)		-0.8052 (-2.36)**	-0.6220 (-1.68)*		-0.8132 (-2.30)**	
<i>BH</i>			-1.0309 (-3.65)***					-1.1031 (-1.36)		-1.5755 (-2.81)**			-0.7166 (-2.16)**		-0.8845 (-2.74)***
<i>IDYRISK</i>				6.7852 (3.70)***				12.7234 (3.10)***	6.6898 (2.74)***	12.7986 (3.30)***	7.577 (3.75)***				
<i>LTOPTOMV</i>					-0.8217 (-10.80)***			-1.8327 (-7.60)***	-0.9596 (-8.53)***						
<i>RUNUP</i>						0.2515 (4.74)***		0.0952 (1.00)	0.0577 (1.00)	0.4047 (4.25)***	0.2448 (4.38)***	0.2412 (4.36)***	0.2415 (4.42)***	0.2594 (4.56)***	0.2585 (4.63)***
<i>DEBT</i>							-0.8417 (-2.64)***	-0.5368 (-1.39)	-0.2157 (-1.04)	-1.4989 (-2.07)**	-0.6286 (-2.10)**	-0.5241 (-2.09)**	-0.4992 (-2.00)**		
<i>McFaden R²</i>	0.0772	0.0164	0.0245	0.0208	0.2858	0.0355	0.0346	0.4309	0.4242	0.1036	0.0953	0.1359	0.1398	0.1211	0.1265
<i>LR statistic</i>	44.78	9.53	14.22	12.05	165.81	20.57	20.08	249.96	246.10	60.13	55.26	78.83	81.09	70.27	73.36
<i>P value</i>	0.0000	0.0020	0.0002	0.0005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.000
<i>N</i>	665	665	665	665	665	665	665	665	665	665	665	665	665	665	665

Table 4: Price Reaction to rights issue of equity and warrant Announcements

This table reports mean and median abnormal returns, and standardized residual test employing the market model for the announcement of standalone rights issue of equity and standalone rights issue of warrants for the announcement period day -1 to day 1. Panel B provides price reaction to rights issue of equity based on discount of the offer price relative to share price ten days prior to the announcement. Panel C provides price reaction to rights issue of standalone warrants based on EPTOSP classifying the sample into in-the money and out-of-the-money. EPTOSP: the exercise price divided by share price two days before announcement date. Panel D provides price reaction to rights issue of standalone warrants based on in-the-money, moderately out-of-the-money and deep-out-of-the-money. This table also provides parametric t-test and ANOVA statistics; and nonparametric Mann-Whitney and Kruskal Wallis test statistics for the difference in mean/median abnormal returns across the different groupings. * 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.

	Rights issue of standalone warrant	Rights issue of equity	t-test (MW test)	
MEAN (%)	1.95	-1.82	2.83***	
MEDIAN (%)	0.59	-0.46	(2.22)**	
SRT	(3.46)***	(-6.46)***		
Sample size	105	560		
Panel B - Rights issue of Equity: Price Reactions and Discount				
	Zero discount or premium	Discount		
MEAN (%)	1.77	-2.37	2.48**	
MEDIAN (%)	0.63	-0.71	(8.31)***	
SRT	(2.22)**	(-7.96)***		
Sample size	66	494		
Panel C - Rights issue of Standalone Warrants: Price Reactions and EPTOSP				
	EPTOSP <1	EPTOSP ≥1		
MEAN (%)	0.04	2.48	1.69*	
MEDIAN (%)	-1.40	0.72	(1.73)*	
SRT	(-0.44)	(4.14)***		
Sample size	23	82		
Panel D - Rights issue of Standalone Warrants: Price Reactions and EPTOSP: In the money, moderately out-of-the-money and deeply out of the money				
	EPTOSP <1	2 >EPTOSP ≥1	EPTOSP ≥2	Anova test (KW tests)
MEAN (%)	0.04	4.45	-2.43	4.01**
MEDIAN (%)	-1.40	2.61	-0.69	(7.11)**
SRT	(-0.44)	(5.82)***	(-1.87)*	
Sample size	23	54	28	

Table 5: Price Reaction to standalone warrant Announcements: the impact of underwriting status, takeover and renounceability

This table reports mean and median abnormal returns, and standardized residual test employing the market model for the announcement of standalone warrants to shareholders for the announcement period day -1 to day 1. Panel A reports the price reaction based on underwriting status. Panel B reports the price reaction based on median takeover of standalone warrants. Panel C reports the price reaction based on renounceability. This table also provides parametric t-test and nonparametric Mann-Whitney test statistics for the difference in mean/median abnormal returns across the different groupings. * 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 – Standalone Warrants: Underwritten versus non-underwritten				
	All	Under written	Non-Underwritten	t-test (MW test)
MEAN (%)	1.95	3.55	0.37	1.74*
MEDIAN (%)	0.59	2.13	-0.23	(1.67)*
SRT	(3.46)***	(3.76)***	(1.14)	
Sample size	105	52	53	

Panel B - Standalone Warrants: Price Reactions Based on Takeup < Median VS Takeup > Median				
	Takeup > Median	Takeup < Median		t-test (MW test)
MEAN (%)	5.30	-0.77		2.38**
MEDIAN (%)	2.74	-1.31		(2.87)***
SRT	(5.43)***	(-1.38)		
Sample size	44	44		

Panel C – Standalone Warrants: renounceable versus non-renounceable				
	Renounceable	Non-renounceable		t-test (MW test)
MEAN (%)	1.92	2.14		0.47
MEDIAN (%)	0.59	0.17		(0.20)
SRT	(1.71)*	(3.08)***		
Sample size	10	95		

Table 6: Interaction of underwriting status and moneyness of warrants

Panel A of this table provide information on firms characteristics and abnormal returns for subgroups classified based in the interaction between moneyness and underwriting status. Panel B provides percentage of shareholders takeup of warrants for these groups.

		Underwritten & EPTOSP <1	Underwritten & 2 >EPTOSP ≥1	Underwritten & EPTOSP ≥2	Non-underwritten & EPTOSP <1	Non-underwritten & 2 >EPTOSP ≥1	Non-underwritten & EPTOSP ≥2	KW test
Panel A – Abnormal returns and Firms’ characteristics								
Abnormal returns (day -1 to +1)	Mean (%)	4.47	6.25	0.71	-3.36	3.80	-6.05	13.50**
	Median (%)	1.13	5.92	0.83	-2.94	1.62	-4.66	
SETDEV	Mean (%)	5.89	6.09	7.78	5.51	6.31	7.75	9.94*
	Median (%)	5.78	5.71	7.22	5.49	6.11	7.34	
TTM (years)	Mean	2.78	3.11	3.59	3.22	2.32	4.14	13.22**
	Median	2.58	3.08	3.16	2.21	2.45	3.55	
BM	Mean	0.55	0.96	0.77	0.42	0.87	0.89	8.33
	Median	0.51	0.75	0.47	0.33	0.66	0.51	
MV	Mean	31.10	14.64	8.40	39.77	21.66	5.04	25.50***
	Median	13.27	6.53	6.37	15.07	13.82	5.35	
EPTOSP	Mean	0.77	1.37	3.59	0.71	1.28	2.76	87.58***
	Median	0.82	1.31	3.23	0.74	1.18	2.70	
IPTOSP	Mean	0.085	0.14	0.18	0.18	0.11	0.27	24.34***
	Median	0.063	0.13	0.11	0.12	0.07	0.28	
RUNUP	Mean (%)	56.58	15.97	-34.13	5.11	5.78	-58.94	20.67***
	Median (%)	52.73	11.31	-38.49	12.78	-10.27	-53.77	
TOPTOMV	Mean (%)	5.82	12.27	14.60	12.26	5.90	17.03	24.61***
	Median (%)	2.81	9.49	9.52	6.65	4.22	13.30	
TOP\$	Mean	0.98	0.78	1.04	4.20	1.40	0.97	6.81
	Median	0.34	0.75	0.61	1.52	0.32	0.75	
N		10	27	15	13	27	13	
Panel B – shareholders takeup								
Takeup	Mean (%)	79.13	81.62	64.29	73.77	69.55	54.95	10.66**
	Median (%)	82.33	85.31	60.09	74.28	72.31	45.15	
N		8	21	15	9	23	13	

Table 7: Cross-sectional regression analysis of abnormal price reaction – Total Sample: Standalone equity and warrants

This table provides cross-sectional regression results explaining the market response to standalone equity and warrant announcements. The dependent variable used in this regression is the three-day abnormal price movement from the day before the announcement to the day after the announcement date of the rights issue employing the market model. Independent variables are LTOPTOMV: the natural logarithm of the ratio of total proceeds to market value; DFU takes value of one for fully underwritten rights issue of equity/standalone warrants and zero otherwise; DRIGHTS takes value of one for standalone rights issue of equity and zero for standalone warrants; DSW takes value of one for standalone warrants and zero for stand alone rights issue of equity. TAKEUP: actual percentage takeup of the standalone equity/warrants; EPTOSP: the exercise price divided by share price two days before announcement date; DEPTOSP12: a dummy variable equal to unity if EPTOSP takes between 1 and 2; DEPTOSP≥2: a dummy variable equal to unity if EPTOSP takes value greater than or equal to 2; DIMOM takes a value of unity if EPTOSP is greater than one otherwise zero; DEBRATIO: the total debt to total assets; RUNUP: 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; LTA: the logarithm of the market value of the issuing firm at the balance sheet date prior to the announcement; Top20: the proportion of shares held by top 20 shareholders; BM: the book-to-market ratio measured as book value of assets to market value of assets; and DDISC: takes value of 1 if rights issue of equity is issued with zero discount or premium and zero otherwise.

	Total Sample														Warrant Sample		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
Constant	-0.0233 (-2.66)***	0.0195 (1.64)	-0.0129 (-0.67)	-0.0237 (-4.04)***	-0.0237 (-4.24)***	-0.0242 (-4.20)***	-0.0361 (-4.43)***	-0.0678 (-4.38)***	-0.0100 (-0.41)	-0.0264 (-1.03)	-0.0010 (-0.40)	-0.0243 (-0.94)	-0.0720 (-4.55)***	-0.0356 (-4.23)***	-0.0811 (-1.06)	-0.1981 (-2.07)**	-0.2079 (-2.12)**
LTOPTOMV	-0.0070 (-1.83)*								0.0012 (0.23)	0.0047 (0.82)	0.0017 (0.33)	0.0049 (0.88)			0.0132 (0.66)	0.0283 (1.19)	0.0275 (1.16)
DEPTOSP12															0.0746 (2.39)**	0.0799 (2.29)**	
DEPTOSP12 *EPTOSP																	0.0539 (2.03)**
DRIGHTS		-0.0383 (-2.93)**	-0.0417 (-2.99)**														
DFU			0.0240 (2.32)**				0.0203 (2.06)**	0.0268 (2.64)***	0.0184 (1.81)*	0.0252 (2.35)**	0.0189 (1.87)*	0.0265 (2.49)***	0.0255 (2.49)***	0.0195 (1.96)*	0.0542 (1.88)*	0.0646 (2.14)**	0.0604 (2.01)**
TAKEUP			0.0335 (2.04)*					0.0412 (2.33)**	0.0184 (1.81)*	0.0355 (1.74)*		0.0314 (1.53)	0.0482 (2.74)***			0.1363 (1.99)**	0.1425 (2.07)**
DRIGHTS*DDISC				0.0414 (4.05)***	0.0415 (4.11)***	0.0401 (4.08)***	0.0431 (4.21)***	0.0558 (4.64)***	0.0503 (4.11)***	0.0600 (4.59)***	0.0485 (4.01)***	0.0569 (4.37)***	0.0573 (4.69)***	0.0429 (4.15)***			
DSW*DIMOM				0.0512 (3.51)***					0.0610 (3.47)***	0.0675 (3.68)***							
DSW*DEPTOSP12					0.0799 (4.39)***			0.0826 (4.54)***	0.0934 (4.61)***		0.0859 (4.18)***	0.1011 (4.52)***	0.0563 (3.72)***	0.0534 (3.68)***			
DSW*DEPTOSP>2						-0.0581 (-1.89)*											
IDYRISK									-0.5157 (-2.60)***	-0.5478 (-2.94)***	-0.4579 (-2.29)**	-0.4880 (-2.57)**			0.2624 (0.54)	0.7375 (1.28)	0.7747 (1.30)
RUNUP									0.0060 (1.09)	0.0059 (1.17)	0.0048 (0.88)	0.0044 (0.89)			0.0069 (0.86)	0.0089 (1.10)	0.0079 (0.97)
BM									-0.0062 (-0.74)	-0.0017 (0.83)	-0.0059 (-0.72)	-0.0009 (-0.12)			-0.0437 (-1.71)*	-0.0633 (-2.38)**	-0.0657 (-2.41)**
DEBRATIO									0.0006 (0.04)	-0.0015 (0.08)	0.0000 (0.00)	-0.0026 (-0.14)			-0.0475 (-0.95)	-0.0698 (-1.17)	-0.075 (-1.24)
TOP20									0.0171 (0.68)	0.0068 (0.24)	0.0125 (0.51)	0.0024 (0.09)			0.0995 (1.48)	0.0843 (1.13)	0.0905 (1.18)
LTA									-0.0007 (-0.18)	-0.0013 (-0.34)	-0.0004 (-0.11)	-0.0012 (-0.31)			-0.0012 (-0.07)	0.0140 (0.89)	0.0155 (0.99)
Adj R ²	0.0021	0.0105	0.0261	0.0215	0.0338	0.0195	0.0384	0.0641	0.0330	0.0518	0.0419	0.0655	0.0472	0.0256	0.0746	0.1585	0.1505
F Statistics	2.42	8.02	6.04	8.29	12.60	9.99	9.83	10.65	3.26	3.80	3.91	4.59	7.99	6.82	1.93	2.66	2.56
P value	0.1203	0.0048	0.0047	0.0003	0.0000	0.0000	0.0000	0.0000	0.0004	0.0000	0.0000	0.0000	0.0000	0.0002	0.0564	0.0075	0.0099
N	665	665	565	665	665	665	665	565	665	565	665	565	565	565	105	88	88

Table 8: Determinants of Standalone warrants Takeup

This table models shareholders takeup of warrants in a Tobit regression setting. The dependent variable is the actual percentage takeup by existing shareholders. The independent variables are *DFU*: dummy variable indicating underwritten standalone warrants; *EPTOSP*: the exercise price divided by share price two days before announcement; *RUNUP*: 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; *LTA*: the logarithm of the market value of the issuing firm at the balance sheet date prior to the announcement; *Top20*: the proportion of shares held by top 20 shareholders; *DEBRATIO*: the total debt to total assets; *LTOPTOMV*: the natural logarithm of the ratio of total proceeds to market value; and *LNOP*: the logarithm of the offer proceeds. * 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.

	1	2	3	4	5	6
<i>Constant</i>	0.8817 (6.47)***	0.9457 (6.76)***	0.8850 (8.25)***	0.6313 (8.50)	0.8931 (15.45)***	0.8914 (15.22)***
<i>DFU</i>	0.1208 (2.57)**	0.1121 (2.39)***	0.1226 (2.64)***	0.1232 (2.50)**	0.1225 (2.72)***	0.1248 (2.67)***
<i>EPTOSP</i>	-0.0401 (-2.40)**	-0.0503 (-3.28)***	-0.0419 (-2.45)**	-0.0479 (-2.91)***	-0.0510 (-3.29)***	-0.0446 (-2.54)**
<i>RUNUP</i>	0.0080 (0.53)	0.0213 (1.42)				
<i>IDYRISK</i>	-2.8454 (-3.06)***	-3.0252 (-3.05)***	-2.8904 (-3.12)***		-2.7034 (-3.16)***	-2.5333 (-3.17)***
<i>LTA</i>	-0.0297 (-1.61)	-0.0210 (-0.73)	-0.0318 (-1.75)*			
<i>Top 20</i>	-0.0389 (0.31)	0.0115 (0.09)				
<i>DEBRATIO</i>	0.0496 (0.62)	0.0757 (1.15)				
<i>LTOPTOMV</i>	-0.0337 (-1.61)		-0.0308 (-1.54)	-0.0370 (-1.78)*		
<i>LNOP</i>		-0.0496 (-2.33)**			-0.0518 (-3.15)***	
Log likelihood	14.07	16.53	13.79	8.38	15.13	11.54
<i>N</i>	88	88	88	88	88	88

Table 9: Determinants of EPTOSP

This table provides cross-sectional regression analysis using EPTOSP as a dependent variable. The independent variables are DFU: dummy variable indicating underwritten standalone warrants; Top20: the proportion of shares held by top 20 shareholders; TTM: the term to maturity of issued standalone warrants; STDEV: standard deviation of daily return for the year prior to the announcement; LTA: the logarithm of the total assets of the issuing firm at the balance sheet date prior to the announcement and LTOPTOMV: the natural logarithm of the ratio of total proceeds to market value. * 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.

	1	2	3	4	5	5	6	7	8	9	10
<i>Constant</i>	1.5010 (13.15)***	2.2245 (6.68)	1.1251 (4.70)***	1.0572 (5.02)***	1.8783 (8.98)***	1.7510 (14.01)***	2.2527 (7.83)***	1.4643 (2.66)***	1.0011 (2.35)**	1.5678 (3.26)***	0.8621 (3.28)***
<i>DFU</i>	0.3959 (1.72)*							0.3209 (1.44)	0.3604 (1.64)		0.4076 (1.81)*
<i>Top 20</i>		-0.9491 (-1.56)						-1.1527 (-1.98)*	-1.2338 (-2.09)**	-1.1708 (-1.97)*	
<i>TTM (years)</i>			0.1854 (2.30)**					0.1824 (2.17)**	0.1783 (2.21)**	0.1901 (2.14)**	
<i>STDEV</i>				9.8406 (2.99)***				9.1594 (2.60)**	10.7831 (2.85)***	9.7041 (2.74)***	10.7116 (2.76)***
<i>LTA</i>					-0.1031 (-1.12)			-0.0363 (-0.42)			
<i>RUNUUP</i>						-0.1400 (-1.85)*		-0.1185 (-1.72)*	-0.1257 (-1.85)*	-0.1065 (-1.67)*	-0.1649 (-2.29)***
<i>LTOPTOMV</i>							0.2027 (2.14)**	0.1221 (1.48)		0.1447 (1.77)*	
<i>Adj R²</i>	0.0187	0.0199	0.0523	0.0321	0.0018	0.0193	0.0273	0.1384	0.1405	0.1348	0.0814
<i>F statistic</i>	2.99	2.10	6.74	4.45	1.19	3.04	3.92	3.39	4.39	4.24	4.07
<i>P value</i>	0.0870	0.1508	0.0148	0.0373	0.2778	0.0841	0.0543	0.0028	0.0012	0.0016	0.0089
<i>N</i>	105	105	105	105	105	105	105	105	105	105	105

Table 10: Decision to issue fully underwritten standalone warrants

This table provides probit regression analysis using DFU as a dependent variable. The independent variables are EPTOSP: the exercise price divided by share price two days before announcement; RUNUP: 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; LTA: the logarithm of the total assets of the issuing firm at the balance sheet date prior to the announcement; and Top20: the proportion of shares held by top 20 shareholders; * Z-statistics are provided 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.

	1	2	3	4	5
<i>Constant</i>	-0.3451 (-1.64)	0.0482 (0.12)	-2.2769 (-2.07)**	-3.0422 (-2.66)***	-2.5547 (-2.06)**
<i>EPTOSP</i>	0.1994 (2.00)**			0.2362 (2.10)**	0.2194 (1.95)*
<i>Top 20</i>		-0.1083 (-0.16)	8.8914 (2.23)**	10.0412 (2.51)**	9.7209 (2.32)**
<i>Top 20Sq</i>			-7.8985 (-2.31)**	-8.6955 (-2.54)**	-8.3254 (-2.31)**
<i>IDYRISK</i>					-1.5548 (-0.26)
<i>LTA</i>					-0.0413 (-0.32)
<i>BM</i>					0.0408 (0.20)
<i>RUNUP</i>					0.0504 (0.57)
<i>DEBTRATIO</i>					0.2673 (0.51)
<i>LTOPTOMV</i>					0.0877 (0.68)
<i>McFaden R²</i>	0.0217	0.0002	0.0370	0.0638	0.0741
<i>LR statistic</i>	3.16	0.0241	5.39	9.28	10.79
<i>P value</i>	0.0752	0.8767	0.0675	0.0258	0.2906
<i>N</i>	105	105	105	105	105

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