Wealth Impact of Unit Rights Offerings to Debt Holders: Evidence from Australia

Siti Nurhidayah Mohd Roslen*[1], Cheng Fan Fah[2], Norhuda Abdul Rahim[3]

Abstract

We examine the debt holders' wealth effect of Australian firms and the factors that determine firms' decision to issue unit rights. The sample consists of 638 offerings observations spanning from year 2000 to 2014. Probability of default has been used as the proxy for debt holders wealth. We also use probit model to gauge determinants of firms' choice in issuing unit rights. As the robustness test, logit model was also presented. Aligned with Sequential Financing Hypothesis by Schultz (1993) and Signaling Hypothesis as in Chemmanur and Fulghieri (1997), we find that firms with small size, low issuance proceeds, high risk, low managerial ownership and positive growth prospect tend to issue unit rights. We also obtain findings that support to Leverage Risk Reduction Hypothesis which suggest that debt holders' return is favorably affected by lower financial leverage.

JEL: G10, F30

Keywords: Unit rights, Debt holders' wealth, Probability of default, Equity warrants, Australian Stock Exchange

[1] Universiti Teknologi MARA, Malaysia. *Corresponding author
[2] Universiti Putra Malaysia
[3] Universiti Putra Malaysia

1.0 Introduction

Studies on wealth impact of unit equity offerings have been concentrated on stock price reactions alone. At time where debt financing has been rapidly developed and used by many corporations, the investigation of debt holders' reactions to equity offerings is also important. Past studies on debt holders reactions to seasoned equity offerings were mainly concentrated on corporate bond returns and seasoned equity offerings (SEO) in general (Kalay and Shimrat, 1987; Eberhart and Siddique, 2002; Elliot, Prevost, and Rao, 2009). The results obtained were mixed. Research by Kalay and Shimrat (1987) suggested that there are negative reactions by shareholders and bondholders as a result of SEO announcements. In contrast, Elliot, Prevost and Rao (2009) found that the bondholders react positively to SEO announcements. This finding is aligned with Eberhart and Siddique (2002) findings which reported the existence of wealth transfer from shareholders to bondholders that happen following SEO announcement as a result of lower default risk.

In this study, we investigate rights issue as a method of SEO. This is because, right issue is one of the most prominent methods in seasoned equity offerings in Australia (Australian Securities Exchange, 2010). Furthermore, we also focus on unit rights issue (rights issues of common stocks with warrants) instead of SEO in general. To our knowledge, there were limited studies on unit equity offerings with warrants in Australia. Past literatures were mainly concentrated on Initial Public Offering (IPO) (How and Howe, 2001; Lee, Lee and Taylor, 2003) except for Balachandran et al. (2017). We also want to shed some light on the reasons for issuing unit rights issue and evaluate the extent the extent to which firm offering decision depends on firm and issue characteristics.

Since most firms issuing unit rights are using non-tradable debt (term loans) to raise debt capital, therefore we have directed our study to debt holders' wealth impact instead of bondholder reactions towards unit rights issues made from year 2000 until 2014 using Australia public listed companies. We find that there is higher debt holders' wealth for unit rights issuers in pre-announcement, during, and post-announcement period.

The present study contributes to the seasoned equity offerings literature by providing empirical evidence on the wealth impact of debt holders for non-tradable debts issuers. The first test involves estimating the probability of issuing unit rights issues (vs. rights issue of common stock alone), conditional upon offer and firm specific characteristics. We then presented the debt holders' wealth changes using probability of default model before, during, and after the unit rights and rights announcements being made. The rest of the paper is structured as follows. Section 2 reviews the relevant literature and develops the hypotheses to be tested. Section 3 provides research methodology, describes the data, sample, variables, and empirical estimation methods. Section 4 presents and discusses the results and findings. Last but not least, Section 5 that concludes the paper.

2.0 Literature Review and the Development of Hypotheses

2.1 Determinants of Firms Decision to Offer Unit Rights Issue

Firms may choose to raise capital using equity in the form of rights offerings alone or in rights. The later method consists of bundles of rights of common stocks and warrants being offered together in a package, but can be traded separately in the secondary market. By issuing common stock in the form of unit, it can create more benefit to shareholders and issuing firm. For the shareholders, rights offerings with warrants will give them the opportunity to subscribe to more shares in the future at the given exercise price (normally lower than market price) before or on the maturity date. For issuing firms, the capital raising activities may results in higher proceeds if the shareholders decided to exercise their rights and warrants. Investors' trading behavior however depends on certain circumstances. In some cases, it may be depending on the usage of the issuance proceeds (Ma and Rath, 2016), market design features and information asymmetry models (Segara and Sagara, 2007), and financial literacy level (Dewi et al., 2020).

Bodies of empirical evidence justify the firm's decisions to issue either rights offering alone or as a unit rights. Some researcher claims that the use of unit equity offerings can help to reduce agency problem of free cash flows (Schultz, 1993). This could be explained by the fact that firm management has to show good performance in order to make the warrants attached to be seen "valuable" by the shareholders who subscribed to the offerings. In another perspective, Chemmanur and Fulghieri (1997) in their Signaling Model suggested that firm's decision to use unit equity offerings is mainly driven by the riskiness of the firm. In addition, many practitioners perceived warrants attached as a sweetener to potentially risky offerings (Simon, 2015). This is because, firms that issue unit equity tend to be smaller in size, younger firm (Jain, 1994), have less income and assets, and less likely to survive (Byoun and Moore, 2003; Schultz, 1993). Furthermore, firms with high level of long-term debt (Byoun and Moore, 2003) unfavorable future operating performance, investment opportunities, liquidity and dividend policy (Adaoglu, 2006) are also more likely to issue unit equity.

We present and examined three hypotheses about the inclusion of warrants in rights issue. The first hypothesis to be examined is Sequential Financing Hypothesis by Schultz (1993). Firms that have high level of free cash flows are prone to high mismanagement of cash flow. These firms may invest in negative net present value investments (Chung, Firth, and Kim, 2005), tend to engage in earning management practices (Bukit and Iskandar, 2009) and overinvestment activities (Richardson, 2006). New equity issuance will not only enable the firm to increase its size (Carpenter and Petersen, 2002) and value, but also can reduce the future agency problem to the extent that it is being used as part of compensation plan to top management in a corporation (Ding, Ho and Chang, 2020). In the case of unit rights issue, the agency problem is expected to be

mitigated as the warrants attached will results in more equity financing which is the benefit from the sequential financing instead of lump sum payment of proceeds.

Due to information asymmetry that exists between insiders and outside investors, the role of information signaling is very important. Among the firm's related information which are taken as a signal to investors include firm's debt to equity ratio (Morellec and Schurhoff, 2011), earnings per share (Lai and Lin, 2020), and firm's capital structure decision (Vo, 2020; Ullah, 2020). The Signaling Model by Chemmanur and Fulghieri (1997) suggested that unit equity offerings were considered as an indicator of issuing firm's riskiness. Firms with high risk tend to use unit equity financing to raise capital. This conclusion could be justified by the findings by Schultz (1993) and Jain (1994) which documented that firms that issues unit equity are smaller in size, have less income, less survival ability, and lower initial return. In contrast to these findings, Mazouz, Saadouni, and Yin (2008) who studied on the wealth effect of unit IPO in Hong Kong has discovered that firms that issue unit IPO will have higher profitability and better asset utilization rate. The positive outlook of firms issuing unit equity offerings could be explained by the favorable information conveyed by the inclusion of warrants in unit equity offerings. Firms which include warrants in their financing package have promising future operating performance, investment opportunities, better liquidity, and favorable dividend policy (Adaoglu, 2006). Despite the differences in terms of firm financial performance following unit equity offerings, one thing which is common about these researchers is they concluded that firms that issue unit equity offerings have higher risk than those firms that issue plain equity. Motivated by the mixed results obtained from past literatures together with limited findings on unit offerings in rights issue, this study will extend the study by examining the signaling effect of unit rights issue from Australia market context.

The third hypothesis to be examined is Leverage Risk Reduction hypothesis by Masulis (1980) which posited that debt holders return are inversely related with firm's financial leverage. As the firm's financial leverage reduce, debt holders' wealth will increase. The negative impact of increasing financial leverage to debt holders' wealth have been further studied in Floyd et al. (2012) and Acharya et al. (2011) who found that firms that uses debt in financing its dividend payment tend to have higher cost of debt. The higher cost of debt is an indicator of higher risk to debt holders. In addition, unexpected increase in financial leverage may also results in wealth transfer from debt holders to shareholders. We expect that through unit rights issue, the debt holder's wealth will be favorably affected since this offering will lead to more equity financing and thus lower debt ratio.

2.2 Unit Rights Issue and its Impact on Debt Holders' Wealth

Being debt holders in a corporation, one is expected to receive a promised amount of interest payment which may be in the form of fixed or floating rate. When it comes to measuring debt

holders' wealth, there are two types of information that normally used by past researchers which are bond's abnormal rate of return and yield spreads. However, most firms that issue unit rights are small and young firms which rarely use corporate bond as their debt financing source. Based on the data collected for Australia market, it was found that most of the firms issuing unit rights are young and new firms which are highly dependent on term loan and leasing methods to support their financial needs. Therefore, unlike past studies that use tradable bond prices (Tsai and Wu, 2014; Kitsabunnarat-Charjuthamard, et al., 2010; Adams and Mansi, 2009; Elliot, et al., 2009, Jun, 2009), bond yield spread (Waisman, Ye, and Zhu, 2015; Chen and King, 2013; Kabir, et al. 2013, and Bradley and Chen, 2011) and CDS yield spread data (Bertoni and Lugo, 2014; Imbierowicz and Wahrenburg, 2013) to calculate the debt holders' wealth in respond to the corporate events identified, this study will be using probability of default measure.

One of the main concerns of debt holders' group is the default risk of the firm. Since the debt holders are the primary claimer of firms' cash flows, therefore, the evidence on the implications of corporate decisions on firms' default risk is particularly important in determining the extent to which these groups of stakeholders are affected by corporate decisions. As stressed before, in the context of bond market, the level of bond risk is easily identifiable by looking at the yield information, coupon rates, as well as the established bond ratings in which bonds with high yield, coupons and low ratings bond are the indications of high-risk bonds, and vice versa for low-risk bonds. However, for corporate long-term loans, most of the valuations of corporate loans are determined by the lending banks that will perform specific credit analysis to identify the creditworthiness of the potential borrowers. As noted in Ju, Jeon, and Sohn (2014), a number of attributes that will be assessed by the lending banks or financial institutions cover the (1) technology-oriented attributes which covers he management, technology, profitability, and marketability, (2) firm-specific characteristics, and (3) the projected economic situation after the loan. These attributes were among the factors that will affect the loan default rates which is also known as the cost of debt for the loan. Usually, credit analysis results generated by all banks are limited to the bank usage and not publicly available for outsiders' view. Given these constraints, we will use the alternative distance to default model as developed by Bharath and Shumway (2008) to measure the debt holders' wealth effect.

3.0 Research Methods

3.1 Data and Sample

We identify all equity issues undertaken by public listed companies in Australia Stock Exchange over the period of 2000 until 2014. We only include issues that involve rights issue of common stocks alone (rights) and rights issue of common stocks with warrants (unit rights). We exclude any confounding events such as earnings announcements and other issues. This screening resulted in a final sample of 638 offerings, which consists of 157 (25%) rights issue with warrants, and 481

(76%) rights issue of common stocks alone. We collect by hand most data available from the Australia Stock Exchange's announcements page. The filing covers the covers the announcement dates, proceeds from the issues, subscription price, the number of existing shares, the underwriters' name, the issuer's ownership structure, and the flotation costs estimated by the company. Share prices are extracted from the Bloomberg Database.

3.2 Variables, Measures, and Empirical Estimation Methods

3.2.1 Proxy Variables for Issuing Firm Characteristics and Offer Characteristics

We use a number of proxy variables to test the aforementioned hypotheses. We predicted that a firm decision to issue rights with warrants is related to the firm's specific characteristics as well as to the attributes of the offering.

Byoun (2003) who studied the determinants of firms' decisions to issue stock-warrant units versus stocks offerings, used firms and market characteristics as independent variables in determining the probability of issuing units or shares alone. The research findings have concluded that stock-warrant unit offerings tend to be issued by smaller, younger firm, firm with high long-term debt, and high managerial ownership.

Besides that, Adaoglu (2006) also studied on the shareholders wealth effect to sweetened and unsweetened rights offerings, concentrating on public listed firms in Istanbul Stock Exchange. In this research, there were five firms' characteristics that were tested in identifying the determinants to firms' decisions to issue sweetened or unsweetened rights offerings. The findings imply that firms that issue sweetened rights offerings have better operating performance, cash position and investment opportunities than unsweetened rights issuers.

Besides considering firm and market characteristics, offer characteristics were also deemed to be important in determining firm's probability to issue unit or plain seasoned equity issues. Factors such as issue size, use of proceeds, the proportion of issue not taken up by existing shareholders, and the presence of underwriter were considered as important in affecting firm's financing method decision (Gajewski, 2007).

For the purpose of conducting this research, we will consider both firm specific characteristics and offer characteristics in the Australian market setting in order to study the probability of firms in using unit rights offerings versus rights issue to raise capital. For firm's specific characteristics, the variables used include the volatility of stocks 90 days before the announcement (VOLATILITY), market to book ratio at a year before the announcement period (GROWTH), long term debt to total asset ratio (LTDA) percentage of managerial ownership before the announcement date (OWNER), number of years of incorporation before the announcement of issue (AGE), and natural log of market value of equity (LMVE). For offer characteristics, we use the

size of proceeds from issuance (PROCEED), use of proceeds (FREECASHFLOW), and the proportion of issue not taken up by existing shareholder (EXTERNAL).

3.2.2 Choice of offer type – logit probit analysis

We develop and estimate a probability model of the firm's choice in issuing unit rights versus rights offering alone. We report estimates of a logit model as a robustness check. The choice of variable is classified as 0 for rights offerings and 1 for unit rights offerings. Based on the review of past literature, firms that are risky and young will have more tendencies to issue unit rights (Schultz, 1993; Chemmanur and Fulghieri, 1997). To measure these characteristics, we used the estimated standard deviation of daily stock returns a year before the offering was made (VOLATILITY). As for the age of the firm, we use the number of years since firms' incorporation year until the year the announcement was made (AGE).

In addition, we also looked into the growth prospects of the issuing firm. The book to market value ratio a year before the announcement period (GROWTH) was used to gauge this characteristic. According to Mayers (1998), firms that issue convertible bond may be able to reduce the overinvestment issue since the financing proceeds will be given in stages instead in lump sum. This is called sequential financing. The same concept can be found in unit rights issue. Upon the exercise of rights and warrants, proceeds of issuance will be received by the firms in stages. In order to convince the shareholders that the rights and warrants given are worth to be exercised, firms have to ensure high growth prospect are achieved. Given this situation, we expect firms that issue unit rights to have better growth opportunity than firms that issue rights alone without any warrants attached.

Byoun and Moore (2003) in their study on stock versus stock-warrant unit issues have discovered that issuers with high managerial ownership are most likely to issue unit offerings. This could be justified by lower agency problem in firms with high managerial ownership. When the agency problem is lower, there will be less benefit to be attained from warrant financing. Derivative instruments such as options (Haugen and Senbet, 1981) and warrants (Kudla, 1984) can be used as a mechanism to reduce agency. Therefore, we expect firms that issue unit rights have lower managerial ownership before the issuance took place (OWNERSHIP).

Besides firms' growth, fraction of equity retained by insiders is also important role in determining firm's choice of unit rights offering. Firm's choice in the method of raising equity capital will affect the issuing firm's ownership structure (Kothare, 1997). Firms with more concentrated ownership have more block holders. These block holders have more information than individual investors. If the firms have more concentrated ownership structure, high subscription of firms' equity issuance by block holders will results in lower bid ask spreads after the issuance took place (Armitage, 2010). This is because, any actions taken by the block holders' group may disclose more and better firm-specific information to the minority shareholders (Gul, Kim, and Qiu, 2010).

The decision taken by the existing shareholders of the issuing firm is linked to the firm's risk. As suggested by Chemmanur and Fulghieri (1997), firm risk has a negative relationship with the fraction of equity retained by insiders. Since unit rights issuers are associated with high-risk characteristics, we expect firms that issue unit rights to have higher proportion of issuance not taken up by existing shareholders (EXTERNAL).

Size is controlled by the natural logarithm of the market value of equity the day before the announcement is made (LMVE). This variable is likely to be correlated with the issue size (PROCEED), as in Gajewski, Ginglinger, and Lasfer (2007). Findings in Byoun and Moore (2003) posited that smaller firms tend to issue unit equity. This could be justified by the level of information released by firms of different sizes. Firms with a small size may be subjected to less financial openness (Park, Lee, and Park, 2020), which makes it more difficult for investors to value the firm. The use of warrants in unit equity offerings may be used as an additional source of information for market participants in making investment decisions. This is because, warrant trading contains useful information about the future stock price of the underlying stocks (Visaltanachoti, Charoenwong, and Ding, 2011). Thus, in this study, we expect small-sized firms and firms with small issuance sizes to have a high probability of issuing unit rights than large-sized firms.

On top of the above factors, we also studied the impact of firm's financial leverage level (LTDA) on the choice of offer type. Following Mayers (1998), we expect firms with high level of debt to use more warrants. Warrants attached can be used to diversify risks and reduce the issuing cost for the company (Zhou and Zhang, 2020). Financial innovation in corporate financing, such as the use of options and warrants integrally linked with hedging and risk management benefits (Rogalski and Seward, 1991). For example, the risk-compensating feature of equity warrant in convertible debt can keep the default risk at a lower level, which is particularly very important when firms have high level of debt (Ming, Yang, and Song, 2018). This could explain why firms with high financial leverage choose to issue units in Byoun and Moore, 2003). Following these literature, we hypothesize that there is a positive relationship between firms' financial leverage level and the probability to issuing unit rights.

Another offer characteristic that we believe will have an impact on the firm's choice to issue unit rights is the intended use of proceeds (FREECASHFLOW). Firms' intended use of proceeds from the offerings will provide insights about the firms' motives and future direction (Bray and Peterson, 2009). Firms that include warrants in their offerings will encourage managers to make optimal investment decisions (Mazouz, Saadouni, and Yin, 2008) because investors need to be assured of the economic value of the firms' investment opportunities in order to exercise their warrants (Schultz, 1993). Since the main focus in this research is to identify the wealth effect of unit rights to debt holders, we will emphasize how firms' decisions to use the proceeds for debt repayment can affect their choice to issue unit rights. We predict that firms that plan to use the proceeds for debt repayment tend to issue unit rights due to their lower default risk.

The estimated probability model to describe firms' probability of issuing unit rights and rights alone is shown in the following equation (1). The choice of variable is defined as 0 for rights offerings, and 1 for unit rights.

$$\text{Unit} = \beta_0 + \beta_1 \text{ Volatility} + \beta_2 \text{LTDA} + \beta_3 \text{ Owner} + \beta_4 \text{ Age} + \beta_5 \text{ LMVE} + \beta_6 \text{ Growth} + \beta_7$$
$$\text{Priorperformance} + \beta_8 \text{ Proceeds} + \beta_9 \text{ Freecashflow} + \beta_{10} \text{External} + \varepsilon \qquad (1)$$

3.2.3 Announcement effects to debt holders-probability of default method

To measure daily creditors' risk, this study follows the alternative distance to default model as developed by Bharath and Shumway (2008). This model still retains the structure of Merton DD distance to default and expected default frequency as shown in equation (2):

$$DD_t = \frac{\ln(E+F)/F) + (r_{it-1} - 0.5 * \sigma_v^2)T}{\sigma_v\sqrt{T}} \qquad (2)$$

Where;

DD_t	The distance to default for firm day t
E	The market value of firm's equity at day t
F	The face value of the firm's debt at day t
r_{it-1}	The risk free rate
σ_v	Approximate volatility of each firm's debt ($\sigma_v = 0.05 + 0.25 * \sigma_E$)
σ_E	Volatility of stock return over the previous year
T	Set to one year to imply one year distance to default

Inspired by the structural default model developed by Merton (1974), Bharath and Shumway (2008) and Crosbie (2003) have defined their distance to default model as the number of standard deviations of the market value of assets away from the default point. For example, a DD of 3.0 implies that default within a year is a three-standard deviation event, assuming that the volatility of the market value of assets follows the recent historical value.

The next step is to compute the default probability (PD), which is the normal distribution of distance to default (i.e., PD =N(-DtD)). The event analysis is conducted for the whole SEO sample and subsequently for each unit rights and rights issues to understand how much change in DtD occurs before, and after the announcement is made. A significant decrease in DtD before the announcement date (t=0) will imply that the firm is closer to default risk, which also means that there is a deterioration in the firm's health prior to the unit rights and rights issue announcements. On the other hand, an increase in DtD is an indication of greater distance to default, which also implies lower credit risk to creditors.

4.0 Results and Analysis of Findings

4.1 Choice of Offer Type

In Table 1, we presented the test results for the choice of the unit rights versus rights offerings in Australian market. The findings were presented in the form of probit and logit model in column 1 and column 2 of Table 1, respectively. Both logit and probit estimates reported in column 1 and column 2 of Table 1 yield the same conclusion (except for Proceeds variable) for all the significant relationship.

Table 1: Estimation results of the probit and logit model

	(1)	(2)
CONSTANT	-1.603***	-2.759***
	(0.00)	(0.00)
VOLATILITY	0.195***	0.337***
	(0.00)	(0.00)
LTDA	-0.000***	-0.000**
	(0.00)	(0.01)
OWNER	-0.024***	-0.004**
	(0.00)	(0.01)
AGE	-0.008	-0.017
	(0.12)	(0.15)
LMVE	-0.028	-0.026
	(0.72)	(0.84)
GROWTH	0.005***	0.008***
	(0.00)	(0.00)
PROCEED	-0.017*	-0.037
	(0.07)	(0.12)
FREECASHFLOW	0.734**	1.379**
	(0.02)	(0.03)
EXTERNAL	-0.001	-0.003
	(0.50)	(0.44)
McFadden R-squared	0.382	0.382
Log-likelihood	-83.19	-83.11

The dependent variable is the dummy variable of 1 if the issuance is unit rights, and 0 if the issuance is rights alone. The variables examined include: VOLATILITY which is the annualized volatility of stocks for 90 days period before the announcement; GROWTH is the market to book value ratio at year-end; LTDA is the long term debt to total assets ratio; OWNER is the percent of managerial ownerships (including directors) before the announcement date; AGE is the number of years from the year of incorporation until the year of announcement; LMVE is the natural log of market value of equity; PROCEED is the gross proceeds from issuance in RM millions; FREECASHFLOW a dummy variable which is equal to one if the proceeds from issuance is used for debt repayment, and EXTERNAL is the proportion of issuance which is not taken up by the existing shareholders. In parentheses are the p-values. The log-likelihood ratio

test statistic
Note: *** Significance at .01 confidence level, **significance at .05 confidence level, * significance at .1
confidence level

Based on the probit regression results in column 1 of Table 1, there are six factors that influence firms' decisions to issue unit rights. Firstly, firms' stocks' return volatility (VOLATILITY) prior to the announcement. VOLATILITY variable was found to be positively related to firms' probability of issuing unit rights, and this relationship is statistically significant at .01 level. That is, an increase in the firms' stock returns volatility prior to the announcement is associated with an increase in the probability of issuing unit rights. This result is consistent with the Signaling Model as in Chemmanur and Fulghieri (1997) and Sequential Financing Hypothesis by Schultz (1993).

Furthermore, results found for firms' long term debt level (LTDA) is providing evidence against the model of convertible financing of Mayers (1998). The negative estimated coefficients of LTDA variable implies that the firms' long term debt level is negatively related to the probability of issuing unit rights and that this relationship is statistically significant at .05 level. Nevertheless, the very small coefficient for LTDA variable in the probit regression indicates that any changes in firms' LTDA ratio will have very little effect on the firms' probability to issue unit rights. For example, on average, when the firm's long term debt level is increasing by 10% (from 74% to 84%), the probability of firms' issuing unit rights will reduce by 0.031% which is indeed very small change. However, unit rights financing is still preferred among Australian for debt repayment purpose as shown by positive and significant relationship between FREECASHFLOW variable and the firms' probability to issue unit rights.

Besides firms' long term debt level, there is also evidence of negative relationship between inside managerial ownership (OWNER) with the probability of firms issuing unit rights. The estimated coefficients of -0.0024 in probit regression model for OWNER variable is found to be statistically significant at .05 level. An increase in managerial ownership by 1% is associated with a decrease in the probability of issuing unit rights by 2.88%, from 13.51% to 13.12%. The possible rationale behind these results is that firms with high managerial ownership will have lower agency problems. This situation will cause the warrants holders to experience less benefit from the warrants attached in the unit rights. This evidence shed light on the Sequential Financing Hypothesis in the Schultz (1993).

In addition to managerial ownership, the Sequential Financing Hypothesis as in Schultz (1993) is further supported by firms' growth prospect (GROWTH). Both probit and logit estimated models present a positive coefficient for Growth variable implying that stronger growth prospect of a firm may results in an increase in probability of issuing unit rights. The coefficient is statistically significant at the .05 level. For firms with average growth rate of five percent, the predicted probability is 13.51%. If the average growth rate increases to 6%, the predicted probability of issuing unit rights will increase to 13.65%. The difference in issuing probabilities between these two hypothetical levels of firms' growth is approximately 1.06%.

In Table 1, the results also show that firms' decision to issue unit rights is significantly explained by the PROCEED variable. However, the significant result is only evident in probit estimated model. The negative and significant coefficient for the PROCEED variable at .1 level indicates that, the firms' probability to unit rights decrease as the size of offerings increase. Firms with smaller size (LMVE), thus smaller offering proceeds size, will prefer to issue unit rights. This result is consistent with the Sequential Financing Hypothesis in Schultz (1993).

4.2 Debt Holders' Wealth Effect Surrounding Unit Rights

Figure 1 and Figure 2 show the cross-sectional distribution of the estimated probability of default for unit rights and rights announcements. These graphical illustrations of the probability of default for the two issuance methods point to three preliminary conclusions. First, even though the PD pattern is moving upward for unit rights, the level is considerably lower than rights issues. Secondly, the slight changes in PD during the pre-announcement year (T=-1) until the post announcement year (T=+1) for both samples are suggesting unit rights and rights announcements do not result in a great change in debt holders' wealth even though the difference between the mean of PD for these two groups were statistically significant. Thirdly, the higher probability of default in rights issue may arise as a result of higher outstanding long-term debt for rights issuers in Australia as compared to firms that issued unit rights. These findings can be indicative measures as to why debt holders should care about the difference in probability of default for firms that issue unit rights and rights as a credible sign of firms' credit risk.
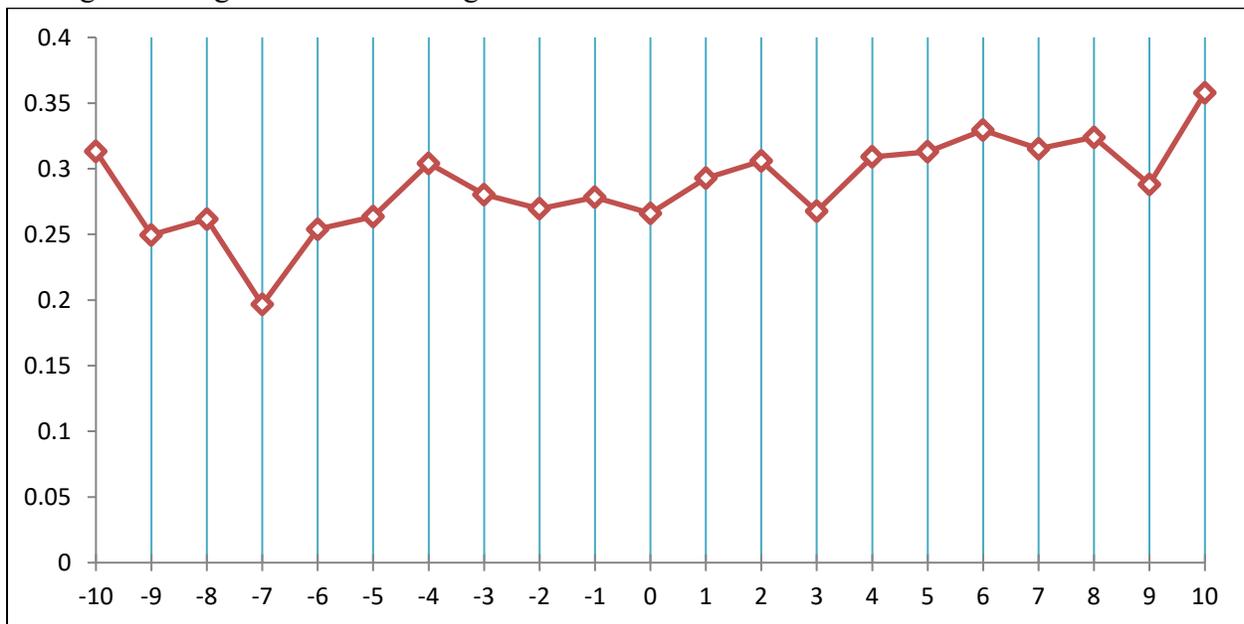
Figure 1: Annual probability of default for unit rights issue adjacent to the events announcement on each of the years in the 10 years window
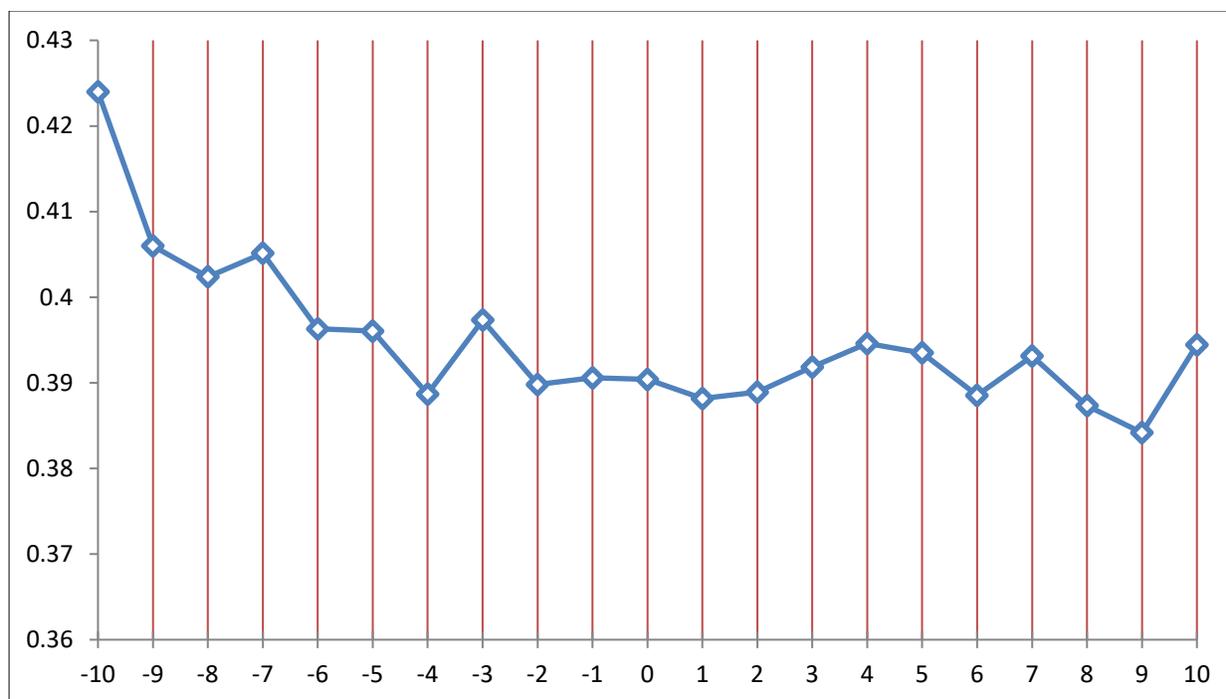
Figure 2: Annual probability of default for rights issue adjacent to the events announcement on each of the years in the 10 years window

Table 2: Probability of default (PD) over 10 years before (T=-10) and 10 years after (T=+10) the announcements of unit rights and rights issues

Year	Unit Rights Issue Mean PD	Right Issue Mean PD	t-value for difference between means[a]
PD(-10)	0.3132	0.4240	-3.99 (0.15)
PD(-9)	0.2495	0.4060	-3.05** (0.01)
PD(-8)	0.2616	0.4024	-5.56*** (0.00)
PD(-7)	0.1965	0.4051	-8.35*** (0.00)
PD(-6)	0.2539	0.3963	-7.38*** (0.00)
PD(-5)	0.2634	0.3961	-5.50*** (0.00)
PD(-4)	0.3041	0.3887	-3.82*** (0.00)

PD(-3)	0.2803	0.3973	-6.09*** (0.00)
PD(-2)	0.2695	0.3898	-7.26*** (0.00)
PD(-1)	0.2782	0.3906	-8.85*** (0.00)
PD(0)	0.2660	0.3904	-8.40*** (0.00)
PD(1)	0.2928	0.3882	-6.57*** (0.00)
PD(2)	0.3058	0.3889	-6.59*** (0.00)
PD(3)	0.2676	0.3918	-6.95*** (0.00)
PD(4)	0.3090	0.3946	-5.32*** (0.00)
PD(5)	0.3129	0.3935	-4.36*** (0.00)
PD(6)	0.3294	0.3885	-2.84*** (0.00)
PD(7)	0.3152	0.3931	-3.52*** (0.00)
PD(8)	0.3240	0.3873	-2.25** (0.03)
PD(9)	0.2881	0.3842	-2.76** (0.01)
PD(10)	0.3578	0.3945	-1.17 (0.25)

Significance levels: *** 1%, ** 5%, * 10%
[a]The null hypothesis for the cross sectional t-test for PD is the announcement of unit rights and right issues will be associated with zero probability of default.

Firms that issue unit rights is expected to have increasing portion of equity capital in their capital structure which will lower down the debt ratio of the company. Lower debt ratio is a signal of lower probability of financial distress problem and thus, lower credit risk which will be favourable to the debt holders. Hypothetically, one would expect that the debt holders' wealth in firms that issue unit rights to be greater than firms that issue rights issue alone.

By analyzing the results presented in Table 2, it can be observed that on average, the probabilities of default for firms that issue unit rights is significantly lower than firms that issue rights issue for

all observed years. The total probability of default during a year before the announcement of unit rights is lower than the rights issue (27.8% and 39%, respectively). Their probabilities of defaults during the announcement year are also significantly different where the unit rights announcements experience lower probabilities of default. Those rights issues were surrounded by a higher set of probabilities of default than unit rights by 12.44% on the year of announcement.

In the results covering the post-event period, that is a year after the announcement was made, the corresponding probabilities of defaults for unit rights was at 29.2%. This finding is significantly different from rights issue at .01 confidence level. The respective probabilities of defaults for post-event periods in rights issue are statistically higher at 38.8%.

These findings indicate that unit rights announcements result in significantly higher debt holders' wealth creations in both pre, during and post-announcement periods. The favourable wealth creation for debt holders in both unit rights and rights announcements perhaps provides evidence that additional equity funds channelled into the firm will lower down the cost of financial distress. These findings are in line to what has been stated in Leverage Risk Reduction Hypothesis, with greater positive effect in firms issuing unit rights.

5.0 Conclusion

This study empirically investigates the debt holders' wealth reactions towards the unit rights issues announced during year 2000 to 2014 of Australian firms and the extent to which firms' decision to issue unit rights depend on firm characteristics as well as offer characteristics. For both types of offerings, our test results largely support the Sequential Financing Hypothesis (Schultz, 1993) and Signaling Hypothesis as in Chemmanur and Fulghieri (1997). The findings indicate that warrants attached in unit rights is useful mechanism to signal firm's future prospects.

We further examine the wealth impact of unit rights offerings on debt holders' wealth. We used the probability of default (PD) measure as a proxy for debt holders' wealth for non-tradable debt. The findings imply that there is an increase in debt holders' wealth during a year before the announcement of unit rights and rights offers. The results from both offers showed a lower probability of default a year before the announcement took place. In addition, the probability of default was also found to be lower for unit rights issuers than rights issuers throughout the 10-yearsyear observation period surrounding the announcement date. This finding is in line with the Leverage Risk Reduction Hypothesis as in Elliott et al. (2009) which suggests that firms with a larger reduction in debt ratio as a result of equity issuance will give more benefit to debt holders' wealth.

We offer two caveats related to our research findings. First, this study uses archival secondary data covering year 2000 until 2014 as the sample period. Some of the years do not have large number

of unit rights offerings which caused our results to not carry over to the broad cross-sectional conclusion of a trend in unit rights issues across the sample years. Second, the measures of debt holders' wealth could be improved by using alternative models beside the proposed PD, which could reduce the influence of stocks' return variability in measuring credit risk for non-tradable debt. This will provide a better overview of debt holders' wealth impact in response to firms that issue non-tradable debt as the main source of debt finance.

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