THE IMPACT OF CALL WARRANT LISTING ON UNDERLYING STOCK RETURNS: THE MALAYSIAN EVIDENCE

Yip Yen Yen
Multimedia University
Jalan Ayer Keroh,
75450 Melaka.
Tel: 06-2523606
Email: yyyip@mmu.edu.my

Abstract

This study analyses the impact of call warrant listing on its underlying stock's returns by employing the event study methodology. The sample of study consists of 41 warranted stocks listed on Bursa Malaysia from March 2003 to March 2007. Overall; the results suggest that call warrant listing has no significant impact on its underlying stock's returns. The outcome of this study is contradicting with those studies based on Western market, in which option listing will tend to improve the performance of the underlying market by producing positive abnormal returns. Such phenomenon infers that whilst call warrant provides an alternative to stock option, it does not expand the opportunity set of investors to the extent that stock option does. Finally, the relatively small free float in Malaysian market could be one of the contributing factors.

Keywords: Bursa Malaysia, Derivatives, Call warrants

1. Introduction

The beneficial impact of derivative instruments on their underlying asset has been widely debated over the past decades. One school of thought claims that derivative instruments complete an otherwise incomplete market, expand the information set available to market participants and enable a more efficient risk allocation among securities and investors. In contrast, another school of thought claims that derivative instruments encourage speculation in the spot market, resulting in decreased liquidity and increased spot price volatility. Addressing these concerns, this study investigates into one aspect of derivative – namely, the call warrant. The aspect which has been selected for investigation is the impact of call warrant listing on the underlying stock returns.

This study contributes to the literature in several ways. Firstly, existing literatures on derivative market largely focused on Western option market especially United States. It has been widely accepted that option introduction will generally associate with significant increase in underlying stock's return. Hence, this study is keen to find out the sustainability of this result on call warrant in Malaysia environment. Secondly, there have been some worries that the existence of derivative instruments may increase the volatility of stock returns due to more speculation and the hedging activity of traders. Since Malaysian derivative market is still at its infancy stage, market regulators may use the results of this study as reference in establishing proper market regulations to ensure the smooth running and healthy development of Malaysian derivative market. Finally, the present study is motivated to provide information on Malaysian call warrant market, about which very little information is presently available. The Malaysian experience can add new evidence to current literature and shed light on international portfolio management.

The remainder of this study is organised as follows. Next section provides an overview of Malaysian warrant market. Third section explains the theoretical background. Forth section summarises the results of previous studies. Fifth section describes the data and method employed. Sixth section discusses the empirical results. Finally, seventh section presents some concluding remarks.

2. Overview of Malaysian Warrant Market

Warrant is financial derivative which 'derive' its value from other assets. The underlying asset may be any asset including a single stock, a basket of stocks, an index, a currency, a commodity or future contracts. Warrant gives the buyer the right, but not the obligations, to buy or sell an underlying asset at a pre-determined price (commonly referred to as the strike price or exercise price) on or before a specified date (commonly referred to as the expiry date or maturity date). Currently, all warrants listed on Bursa Malaysia are on the 'buy side' and are all stock-based (that is, the underlying asset is a stock). In Malaysia, prior to the amendment of Section 57 of the Companies Act 1965, warrants were known as Transferable Subscription

Rights (TSRs). With the amendment of the said Act, the term 'TSR' is now obsolete. There are two major types of warrants traded on Bursa Malaysia: call warrant and company-issued warrant (or, simply, warrant) .

A call warrant is issued by a third party. The issuer is likely to be an investment bank, or a substantial shareholder of the company. A call warrant does not result in new shares being issued by the company when exercised. However, the issuer will have to supply the shares to the warrant holder who exercises his call warrant. A company – issued warrant is usually issued in conjunction with a fund-raising activity. This type of warrant usually acts as a sweetener in association with a bond or equity issue and normally has an exercise period up to 10 years. Warrant can be either American or European style. An American style warrant can be exercised at any time during the term of the warrant, while an European style warrant can only be exercised on the maturity date. When warrants are exercised, the issuing company satisfies the exercise by issuing new stocks to the warrant holders, and hence causes dilution in ownership for existing shareholders. The advantage of such warrants to an investor is the opportunity to share in the future growth of profits of the company, while for the issuing company, the offer of warrants might reduce the rate of interest on a bond issue and may also provide an element of additional capital, if the warrants are exercised. According to Sidek (1990), consolidated Plantation Bhd. was the first Malaysia company to issue warrants in 1980. These warrants expired in 1984, the same year in which the authorities prohibited the issuance of such security by public listed companies. This prohibition was lifted at the beginning of 1990.

Recently, call warrant market in Hong Kong, Taiwan and Singapore have achieved a stunning growth. In contrast, Malaysia still lagged behind its regional peers . In order to reinforce Malaysia's role as business hub, a proper development of the warrant market is important for Malaysia because it widens the product breath and deepens the market by generating additional liquidity to the underlying market. As such, the results of this study may serve as reference for market regulators to come out with appropriate market regulatory framework to ensure a healthy development of the market which is necessary for sustainable growth and long-term success.

3. Theoretical Background

Option Pricing Theory, pioneered by Black & Scholes (1973) and further developed Merton (1973), has accustomed us to think about options are redundant securities. In such setting, the presence or absence of options will have no impact for the riskiness of the financial markets or the volatility of the underlying assets since options provide no new investment opportunities beyond what is available from the underlying assets. Those researchers claim that an investor can replicate the payoff of the option through dynamic trading strategy - a situation in which the option position could be replicated through a portfolio comprising of the stock and (riskless) bond. Among the assumptions required are the absence of market imperfections like transaction costs or margin requirements, and the ability to sell short with full use of the proceeds. As the assumptions of perfect capital market do not hold true in practice, thus

Ross (1976) argues that options are not necessarily redundant. He states that the introduction of options expands the opportunity set of investors by enabling investors to achieve new payoff patterns and thus making the incomplete market more complete. As such, the required rate of return could be reduced and causes an increase in the price of underlying assets.

On the other hand, it has been suggested that derivative instruments may have a destabilizing effect on the underlying market. The rationale behind this argument is that the existence of derivative instruments enables investors to achieve higher leverage gain than if they purely invested in underlying stocks. As such, the existence of option may cause trading volume to be diverted from the underlying stock to the corresponding option and therefore creates price pressure in the underlying market (Skinner, 1989).

Given such conflicting views, it is an empirical issue as to whether the listing of a call warrant has a price impact on the underlying stock.

4. Literature Review

Conrad (1989) examines the impact of option listing during the period from 1974 to 1980 by using a sample of 96 optioned stocks from Chicago Board of Option Exchange (CBOE) and the American Option Exchange (Amex). Conrad finds that cumulative returns of the underlying stocks remain abnormally high, at least thirty trading days after option listing date. As such, she concludes that option listing on individual stock appears to be associated with a permanent price increase and suggests that options are not completely redundant. Detemple & Jorion (1990) analyze the effect of option listing on stock returns by studying a sample of 300 stocks listed on CBOE and Amex between 1973 and 1986. Comparable with Conrad's results, they find evidence of significant price increase amounts to 2.8% in the optioned stocks around option listing date. They contend that option markets have a real effect on equilibrium prices and allocation. Haddad and Voorheis (1991) examine the impact of initial option trading by analyzing price returns of underlying shares during the period surrounding the day of initial option trading. Their study is an event study based on 327 options obtained from CBOE database from 1973 to 1986. By employing market model, the results of their study suggest that option introduction produces excess returns on the event day. To add into the positive price impact literature is another study conducted by Gjerde & Saettem (1995) based on Norway market. Their result indicates that option listing is associated with a temporary price increase on the introduction day. Besides option, listing of call warrant also tends to demonstrate similar influence towards the underlying stock price. In Hong Kong, by using a sample of 165 call warrants issued between 1989 and 1997 on The Stock Exchange of Hong Kong (SEHK), result from Chen & Wu (2001) is consistent with earlier studies based on Western market. They, too, find that warrant listings lead to a significant positive and permanent price effect on its underlying stocks.

The results of study from United Kingdom seem to be consistent with the negative price effect argument. Based on 39 options listed by London Traded Options Market between 1978 and 1989, Watt, Yadav & Draper

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(1992) observe a steady price decline after option listing. Another study conducted by Kabir (1999) in Netherlands has produced similar evidence. Based on a total of 56 options listed on 47 different stocks from 1978 to 1993, he observes a significant decline in stock prices with option introductions. In Australia, based on 83 call warrants listed on Australia Stock Exchange (ASX) between 1991 to 2000, Aitken & Segera (2004) detect a significant negative price decline on the warranted stocks on the announcement date and the first trading date of call warrants.

5. Data and Method

This study uses data collected from several sources. Daily prices of underlying stocks and Kuala Lumpur Stock Exchange Composite Index (KLCI) are obtained from the Thomson Financial DataStream database, while call warrants data are extracted from Bursa Malaysia's website. The listing date for all securities in the sample is the date that call warrants are first issued on the underlying stocks. As at 31 March 2007, there are 59 call warrants listed on Bursa Malaysia. A condition imposed on each valid security in the sample is that it must have trading data for 197 trading days before and 15 trading days after each call warrant issuances. Following 18 exclusions, the final sample consists of 41 call warrant issuances.

To determine whether the listing of a call warrant has an effect on returns, an event study methodology is employed. Common practice in the event study is to separate the estimation window from the event window. The event window (considered as the test period) consists of 31 days period surrounding the warrant listing day , i.e. $t = -15$ to $+15$, whereby $t = 0$ is the warrant listing date. The estimation window consists of 182 days of the trading preceding the event window, i.e. $t = -197$ to -16.

Figure 1: Event Time Frame

The market model is applied to estimate the daily excess stock returns. It involves the following steps: 1) prediction of "normal" return within the event window in the absence of the event; 2) estimation of the abnormal return within the event window where the abnormal return is defined as the difference between the actual and the expected returns (predicted "normal" returns); and 3) testing whether the abnormal return is statistically different from zero.

The market model assumes a linear relationship between the return of any stock to the return of market portfolio:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it}$$
(1)

Where t is the time index, $i = 1,2,…,N$ stands for stock; R_{it} return on stock i on period t ; R_{mt} are the return on market index during period t, whereby the Kuala Lumpur Stock Exchange Composite Index has been used as the market index in this study; α_i and β_i are market model parameters and ε_{it} is the error term for stock i.

The daily return on each of the stock is computed by using the following formula:

$$R_{it} = \ln (P_{it} / P_{i(t-1)})$$
(2)

whereby,

R_{it} = The return on security i for day t
P_{it} = Price of stock i for day t
$P_{i(t-1)}$ = Price of stock i for the day before day t

The daily market return is computed by using the following formula:

$$R_{mt} = \ln (I_{mt} / I_{m(t-1)})$$
(3)

whereby,

R_{mt} = The return on market index for day t
I_{mt} = Market index for day t
$I_{m(t-1)}$ = Market Index for the day before day t

The market model expected stock return is written as follows:

$$E(R_{it}) = \alpha_i + \beta_i(R_{mt})$$
(4)

In order to investigate if warrant listing induces any abnormal returns for each stock on each day in the event period, the actual returns are compared with the market model expected returns. The difference between these two returns is interpreted as the abnormal return of a stock.

The abnormal returns for stock i on event day, t, the AR_{it} is computed as follows:

$$AR_{it} = R_{it} - E(R_{it}) \quad \text{or}$$
$$AR_{it} = R_{it} - (\alpha_i + \beta_i R_{mt})$$
$$(5)$$

whereby,

R_{it} = Actual return on stock i for day t
R_{mt} = Return on market index for day t
α_i, β_i = Ordinary least squares estimations over the estimation window, i.e. t = -197
      through -16 preceding the start of the event window.

After computing the abnormal returns for all securities in the sample, the average of abnormal returns (AAR_t) should be calculated during the test period (event day –15 to +15). It is then measured by

$$AAR_t = \frac{1}{N} \sum_{i=1}^{N} AR_{it}$$
$$(6)$$

whereby,

AR_{it} = abnormal return of stock i for day t
N = number of securities in the sample

AAR_t need to be tested for their statistical significance by using the t-test.

The above tests are intended to test the hypotheses as follows:

H1o: There is no significant difference on price of the underlying stock before and after the listing of call warrant.
H1:   There is significant difference on price of the underlying stock before and after the listing of call warrant.

6. Analysis and Discussion

In order to determine whether call warrant listing has an impact on its underlying stock's return, an event study with 31 days event window (15 days before warrant listing and 15 days after warrant listing, whereby day 0 as the actual warrant listing day) has been employed. Table 1 reports the average daily abnormal returns (AARs) with the associated t-statistics. Column 2 in Table 1 shows the AAR for the 41 stocks. From the table, it shows that the more than 50% of AARs within the 31 days event window are negative in number (16 days out of 31 days). From the analysis, AAR one day before warrant listing is 0.24 %, it declines to 0.17% on the call warrant listing day. The negative effect goes on until day 3, but manages to pick up on day 4 by

producing the AAR of 0.32%. Yet, the trend begins to weaken for the subsequent days. At a level of significance of 5 percent, the t-statistics for AARs with a sample size of 41 are calculated for each of the trading days within the event window. The critical t value for a two–tail test is +/- 2.0211. Since the critical value exceeds overall t-statistics within the event window (except for day 2), the null hypothesis, which states that call warrant listing has no impact on the underlying stock's abnormal returns cannot be rejected. The results suggest that warrant listing is not to be associated with price increases/decreases in the underlying stock, at least not for the 31 days within the event window.

Table 2 reports the number and percentage of companies which experience positive abnormal returns at a given event day. From the table, the average number of firms which experience abnormal returns within the event window is 19, constitutes of 46% of the overall sample. The results demonstrate that less than 50% of firms out perform the market. This further gives an indirect hint that there is no price impact due to warrant listing.

7. Conclusion

Overall, evidences obtained from this study indicate that call warrant listing possesses insignificant impact on underlying stock's returns. The outcome of this study contradicts with those studies based on Western market, particularly the United States environment in which option listing will tend to improve the performance of the underlying spot market by producing the positive abnormal returns. Such phenomenon infers that whilst call warrant provides an alternative to stock option, it does not expand the opportunity set of investors to the extent that stock option does. Another explanation postulated is that Malaysian call warrant market is shallower and less mature; therefore, its impact does not mirror the Western pattern. In some cases, this could have been attributable to difference in characteristics between traded option which is the basis for the United States research, and call warrant, on which much of the research in other markets are based. Finally, lower market participant rate in Malaysian warrant market as compared to stock market can be considered as one of the contributing factors.

Table 1. Average abnormal returns and its respective t-statistics around call warrant listings.

Event Day	AAR	Standard Deviation	AAR (t-stat)
Day -15	0.1593%	0.0166	0.6156
Day -14	0.3025%	0.0140	1.3821
Day -13	0.3310%	0.0146	1.4528
Day -12	0.0722%	0.0177	0.2615
Day -11	0.1250%	0.0179	0.4473
Day -10	-0.0109%	0.0141	-0.0494
Day -9	0.0920%	0.0112	0.5240
Day -8	-0.3444%	0.0183	-1.2077
Day -7	0.0679%	0.0113	0.3839
Day -6	-0.1409%	0.0112	-0.8089
Day -5	0.2069%	0.0148	0.8963
Day -4	0.0103%	0.0113	0.5844
Day -3	-0.0399%	0.0156	-0.1632
Day-2	-0.0916%	0.0171	-0.3429
Day -1	0.2360 %	0.0114	1.3232
Day 0	0.1744%	0.0189	0.5918
Day 1	-0.1685%	0.0130	-0.8285
Day 2	-0.5548%	0.0136	-2.6189**
Day 3	-0.0215%	0.0174	-0.0749
Day 4	0.3164%	0.0150	1.3417
Day 5	-0.3233%	0.0156	-1.3313
Day 6	-0.3172%	0.0140	-0.1452
Day 7	-0.3402%	0.0169	-1.2917
Day 8	-0.0886 %	0.0148	-0.3829
Day 9	-0.5645%	0.0246	-1.4718
Day 10	-0.2328%	0.0270	-0.5525
Day 11	0.0385%	0.0155	0.1586
Day 12	-0.0069%	0.0153	-0.0291
Day 13	-0.3692%	0.0139	-1.6992
Day 14	0.2220%	0.0123	1.1571
Day 15	0.2735%	0.0116	1.5106
**significant at 5% level			

Table 2. Number and percentage of companies with positive abnormal returns at event days

Event Day	Number of Firms	*Percent > 0
Day -15	22	54%
Day -14	24	59%
Day -13	22	54%
Day -12	26	63%
Day -11	18	44%
Day -10	22	54%
Day -9	23	56%
Day -8	20	49%
Day -7	21	51%
Day -6	13	32%
Day -5	19	46%
Day -4	17	41%
Day -3	17	41%
Day -2	16	39%
Day -1	25	61%
Day 0	15	37%
Day 1	18	44%
Day 2	15	37%
Day 3	18	44%
Day 4	19	46%
Day 5	16	39%
Day 6	12	29%
Day 7	12	29%
Day 8	17	41%
Day 9	17	41%
Day 10	12	29%
Day 11	20	49%
Day 12	20	49%
Day 13	19	46%
Day 14	25	61%
Day 15	23	56%
Mean	19	46%

*This refers to the percentage of companies with positive abnormal returns at a given event day

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