



# Investment banks' stock ratings, call warrant issuance, and responses from heterogeneous investors: Evidence from Taiwan

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## ABSTRACT

We investigate the responses of the different types of investors on stock rating change announcements made by investment banks around call warrant issuances in Taiwan. The unique characteristics of the Taiwan warrants market allow investment banks to make stock rating change announcements around call warrant issuances for the same stocks they rate. In Taiwan, investment banks are also dealers of call warrants, and thus, the profit and loss results from their warrant business are potentially in conflict-of-interest for their stock ratings. Another feature of the Taiwan stock market allows us to disentangle the types of investors initiating the stock trades. We identify three types of investors: institutional investors, experienced retail investors, and ordinary retail investors. Our findings suggest that institutional investors are able to “see-through” the conflict-of-interest in investment banks; experienced investors are able to partially “see-through” the conflict-of-interest, and ordinary retail investors are unable to “see-through” the conflict-of-interest of investment banks.

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## 1. Introduction

Analyzing and acting on information is critical in the investment decision process. Ordinary retail investors, however, are neither equipped with the required expertise nor sufficiently informed to do the analysis so stock ratings by analysts become useful. Therefore, stock rating change announcements by analysts can move stock price and influence the buying and selling behaviors of the investors. The findings of Bauman, Datta, and Iskandar-Datta (1995); Womack (1996); Greene and Smart (1999); Pruitt, Van Ness, and Van Ness (2000); Barber, Lehavy, McNichols, and Trueman (2001); Cornell (2001); Hong and Kubik (2003); Bradshaw (2004); Chen and Cheng (2004); Ferreira and Smith (2006); Barber, Lehavy, McNichols, and Trueman (2006); Green (2006); and Ma, Sun, and Tang (2009) all show that analysts' recommendations result in abnormal returns on the recommended stocks.

We argue that focusing only on the reaction of stock price to stock rating change announcements does not give a complete picture because it does not address the motivation of the parties releasing the stock rating information. In addition, it is unclear how different types of investors may or may not “see-through” the noisy signals embedded in the stock rating information. For instance, Dugar and Nathan (1995) contend that financial incentives push institutional investors to maximize their self-interest and release investment recommendations in favor of themselves. Carleton, Chen, and Steiner (1998) report that analysts in the U.S. investment research industry, on average, deliver upward-biased stock rating recommendations. The degree of bias is the largest among brokerage firms with underwriting business for the firms they cover. Michaely and Womack (1999) conclude that it is more likely for analysts who work closely with specific investment banks to recommend investors to buy stocks sold by those banks.

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More recently, [Bradley, Morgan, and Wolf \(2007\)](#) and [Ljungqvist, Marston, Starks, Wei, and Yan \(2007\)](#) document that many analysts face striking conflicts of interest when they make investment recommendations. The emerging literature on analysts' recommendations all suggests that stock rating announcements may be noisy. We stipulate that, given the noisy signals in the ratings, sophisticated investors are unlikely to take the rating information at face value.

The objective of this study is to examine the responses of different types of investors on stock rating change announcements made by investment banks around call warrant issuances in Taiwan. The Taiwan warrant and equity markets are unique in two aspects. First, unlike the U.S. and other mature financial markets, Taiwan's warrants are issued by investment banks without *a priori* knowledge of the underlying company. Investment banks are dealers of the warrants. They market and handle the exercise operation of the warrants. That is, investment banks have a sizable financial stake on their warrants. At the same time, the same investment banks may have analysts giving stock rating recommendations to the public on the warrant-issuing stock. Hence, around the warrant-issuing period, the stock rating announcements are noisy. The announcements may or may not reflect the genuine stock rating from the investment bank analyst. For instance, the analyst may be under pressure to make an upgrade announcement before a call warrant is issued. In doing so, the analyst can help his company market the warrant to the public because the call warrant price is positively related to the stock price. Second, Taiwan requires traders to identify themselves as institutional investors (investment banks and brokerage firms) or retail investors when they trade. In addition, only retail investors can engage in margin trading. Hence, we can use trading statistics to examine how institutional investors, margin trading (experienced) retail investors, and ordinary retail investors respond to the noisy signal of the stock rating announcements around the warrant issuance period. The unique Taiwan environment offers a natural setting for examining the following two research questions: Are ordinary retail investors, experienced retail investors, and institutional investors able to “see-through” the conflict-of-interest behavior of investment banks making the stock rating announcements, and do stock rating upgrades and downgrades drive the behavior of the three investor-types differently? We seek to find answers to these two research questions.

In terms of the conflict-of-interest behavior of investment banks, we find that institutional, experienced retail, and ordinary retail investors are able to “see-through”, partially “see-through”, and unable to “see-through” the noisy signals of the conflict-of-interest, respectively. Institutional and ordinary retail investors behave consistently in stock rating upgrades and downgrades while experienced retail investors behave differently in stock rating upgrades and downgrades. Our results suggest that there is a pecking order of investment sophistication among the three groups of investors with the highest sophistication in institutional investors, the lowest sophistication for ordinary retail investors, and the experienced retail investors are somewhere between the two groups.

## 2. Taiwan warrant market, conflict-of-interest behavior, and data

### 2.1. Taiwan warrant market

[Chiang, Lee, and Hsieh \(2000\)](#) provide a general perspective on the Taiwan warrant market. Therefore, we primarily discuss the warrant market after 2000. The Taiwan warrant market began trading locally in August 1997. As suggested by Chiang et al., Taiwan's warrants are covered warrants. That is, warrants are issued by investment banks instead of the involved companies. Investment banks issue both call and put warrants and also serve as the market makers. To make warrants easier to market, investment banks choose only blue-chip local stocks to issue warrants. Such a practice enhances the liquidity of warrants in the secondary market. Warrants are traded in the Taiwan Stock Exchange. The longest maturity of warrants is one year, and they are American style. When a call warrant is exercised, the investment bank needs to buy from the market or use its already owned stock to cover its position. Hence, unlike in U.S. and western countries, the warrant exercises do not increase the outstanding shares of the underlying company stock.

[Table 1](#) presents warrant summary statistics since 1997. During 1997 to 2002, the Taiwan warrant market was small in terms of issue volume, issue value, market value, and trading volume. The warrant market began to take off in 2003. Nonetheless, the put warrant segment continues to be small relative to the call warrant segment of the market. The annual issue volume of call warrants reached 71.49 billion units, carrying an issue value of NT\$100.31 billion in 2008 (US\$1 is approximately exchanged into NT\$30). The whole warrant market had a trading volume of 300.08 billion units and a trading market value of NT\$275.82 billion at the end of 2008. Overall, the Taiwan warrant market exhibits fast growth in recent years as suggested by the much larger annual averages in call warrant issue volume, issue market values, whole market trading volume, and whole market trading value during 2004–2008 than those of the full period yearly averages. We plot the yearly summary statistics in [Figs. 1 and 2](#), and the graphs support the conclusion that Taiwan has experienced explosive growth in the warrant market in recent years.

### 2.2. Investment banks' conflict-of-interest

The warrant market structure in Taiwan allows investment banks to be warrant issuers as well as dealers. They also do buy-side stock analyses, and thus, make stock rating change announcements. We contend that a conflict-of-interest may result in such arrangement.

Suppose an investment bank needs to market its new warrant. Because of the sizable financial stake, the investment bank analyst is likely under pressure to provide a stock rating upgrade *before* the stock call warrant issuance. The value of a call

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