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Asymmetric information and conversion price reset policy: The case of Chinese convertible debt

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ABSTRACT

This paper studies a firm's decision to reset the conversion price of convertible debt when the manager has asymmetric private information. Reset provisions are present uniquely in East Asian issues of convertible debt, and in practice allow a firm's management to lower the conversion price. We develop a signalling model in which a conversion price reset conveys unfavorable private information about the firm. This is because a firm will reset only if it cannot afford debt repayment. We conduct an event study with data on the equity prices of Chinese convertible bond issuing firms. We argue that conversion price resets exhibit negative announcement effects.

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1. Introduction

A convertible bond is a hybrid security that combines a pure bond with a call option, granting the bondholder the right to buy the underlying stock of the issuer at a predetermined price. The price at which a convertible bondholder may exchange the bond for equity shares is called the conversion price, and is usually fixed.

However in Japan and China, qualifying, or trigger conditions¹ allow the issuer to lower the conversion price after issuance. A lower conversion price permits a convertible bondholder to exchange for more shares, diluting the value of existing shares. Lowering the conversion price therefore amounts to a wealth transfer from existing shareholders to convertible bondholders.

Why would an issuing firm give a portion of the pie to convertible bondholders, if its goal is to act in the interest of the existing shareholders? One plausible reason is to avoid the cost of financial distress. Many convertible issues in Asia give the bondholders the right to sell their bonds back to the issuer if certain qualifying conditions are satisfied. A typical qualifying

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¹ We name these qualifying conditions reset clauses, which were perhaps first added to Japanese banks' convertible issues in the 1990s. At that time Japanese banks were under great pressure to hold more capital in the aftermath of the bursting of real estate bubbles. They found that allowing the conversion price to be reset helped attract more investors. See [Nelken \(2000\)](#) for an illustration. The reset clauses were later adopted in Chinese convertible issues.

condition, for example, is that the stock price of the issuer falls below the conversion price to a significant degree (say, 30%) and for a certain length of time (say, 20 out of 30 consecutive trading days). This put option protects the bondholders, because conversion into shares may never occur when the share price is far below the conversion price. Should bondholders decide to exercise their put option, the issuer would face financial pressure to come up with enough cash to service the premature debt. In this case, the issuer may lower the conversion price in order to prevent the qualifying conditions from being satisfied. For convertible issues in China, the trigger conditions for resetting the conversion price are less stringent than the qualifying conditions for puts, and are always satisfied earlier. In the above example, suppose the share price has been 30% lower than the conversion price for 19 out of 30 consecutive days. The qualifying conditions for puts would be satisfied if this continues for one more day, unless the firm resets the conversion price on day 19. The reset provision therefore may be used to eliminate the potential cost of financial distress arising out of the put option being exercised.

In this paper, we argue that this is indeed the major motivation for conversion price resets. Assuming that firms operate in the interest of existing shareholders, a reset announcement signals unfavorable private information because a firm will only lower the conversion price under financial distress. Under normal circumstances, bondholders will convert voluntarily only when the stock price is high enough that the value of converted equity exceeds the face-value of the bond. So if cash flows are sufficiently high, the firm will not lower the conversion price because such a reset would dilute the existing shareholders' stakes. Resets are only beneficial for shareholders when cash flows are low, since repaying the fixed face value may require liquidating assets. In this environment, a reset encourages the bondholders to convert debt into equity and allows the shareholders to avoid liquidity costs.

Inspired by [Harris and Raviv \(1985\)](#), we rationalize this intuition in a simple signalling model. A firm has a new investment opportunity which may be either successful or unsuccessful. If the project is successful, then the investment generates enough cash to repay the debt. Otherwise, the money arising from the investment is insufficient to cover debt repayment, so the firm will have to liquidate standing assets to make up for the difference. The managers have private information about the outcome of the investment. Acting in the interest of the existing shareholders, the managers decide whether to reset the conversion price of outstanding convertible debt.

We show that there exists a separating equilibrium where resetting signals that the firm's investment was unsuccessful. A firm whose investment was successful will signal its quality by not resetting the conversion price. Neither successful nor unsuccessful firms have an incentive to mimic one another.

The model is assessed using data from Chinese financial markets, since in China all convertible bonds have resettable conversion prices. We find that the stock price of Chinese convertible debt issuers falls upon the announcement of a reset. Although the stock price briefly rebounds a few days after the announcements, we show that this recovery does not reverse the price decrease that occurs immediately afterwards. Since the negative price reaction around the announcement date is permanent, we conclude that reset announcements do indeed signal bad news.

From a theoretical point of view, this reset decision has rarely been studied in the literature. Early studies such as [Ingersoll \(1977\)](#) and [Brennan and Schwartz \(1977\)](#) focus on the valuation of convertible debt. Starting from [Myers and Majluf \(1984\)](#), attention has shifted to studying convertible debt under asymmetric information. Besides [Harris and Raviv \(1985\)](#) who use a signalling model to analyzing a firm's call decision, [Stein \(1992\)](#) extends the framework of [Myers and Majluf \(1984\)](#) and explains why firms issue convertible bonds. Recent studies such as [Chakraborty and Yilmaz \(2011\)](#) apply contract theory to study convertible debt as a financing choice under asymmetric information. [Qiu and Zhang \(2013\)](#) incorporate convertible bonds with reset clauses in Stein (1992)'s model and find that the adverse selection problem associated with bad firms may be worsened when firms can lower the conversion price. Almost all existing studies focus on convertible bonds with fixed conversion prices. Our paper contributes to the literature by formally modelling the reset clause under asymmetric information.

From an empirical point of view, the effect of a conversion price reset on a stock's price has also received little attention. Most empirical studies related to convertible bonds are on the announcement effect of either convertible issues ([Dann and Mikkelsen, 1984](#)) or convertible calls ([Asquith, 1995](#); [Mikkelsen, 1981](#)) on the stock price. Our study contributes to the empirical literature by documenting a negative price reaction to the announcement of conversion price reset.

The rest of this paper is organized as follows. [Section 2](#) presents the model and the theoretical analysis. The empirical investigation is in [Section 3](#). [Section 4](#) concludes.

2. The signalling hypothesis

In this section, we present a signalling model and show that there exists a separating equilibrium where each type of firm chooses an action that truthfully reveals its type.

2.1. The model

Following [Harris and Raviv \(1985\)](#), we consider a publicly traded company that has issued convertible debt to finance a new investment opportunity. Since we focus on the optimal reset policy and its effect on the stock price, we take the issuance of the convertible debt as given. We further assume that the company was all equity financed before the debt was issued, and normalize the number of existing shares to unity.

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