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A theory of mandatory convertibles: distinct features for large repeated financing

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ABSTRACT

In recent years, mandatory convertibles (MCs) have become a popular means of raising capital, especially for large projects. This paper is the first theoretical paper to investigate MCs using the incomplete-contract approach. We show that MCs can be an efficient instrument in sequential financing. MCs have some distinct features compared to other convertibles, such as mandatory conversion, a high dividend rate, and capped capital appreciation. We show in theory that these features are designed to achieve efficiency.

KEYWORDS:

Mandatory convertibles | sequential financing | mandatory conversion | capped capital appreciation

JEL CLASSIFICATIONS:

G32 G31

Previous article View issue table of contents **Next** article

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Notes

1 Given the distribution function of the project output , the distribution function F of output is , where is the probability of an event. If is random, all the results hold except that F is replaced by the joint distribution function of . We can also allow the randomness of to be resolved earlier or later than .

2 We follow the incomplete-contract approach proposed by Grossman and Hart (1986). Refer to their paper on the concepts of ‘a variable being ex ante nonverifiable but ex post observable’, ‘an ex post decision being ex ante uncontractible’, ‘ex post renegotiation’, and ‘an efficient bargaining outcome’.

3 Adding another random shock in the second period will add a lot of technical complication. Such a complication is unnecessary for the purpose of this paper.

4 We will have Riemann–Stieltjes integrals of the form , where is a real-valued function and y is the variable of integration. A sufficient condition for this integral to be well defined is: is continuous and bounded on interval . We can also allow to be discontinuous on a measure zero set if we treat as a Lebesgue–Stieltjes integral (Horst 1984).

5 Here, is the total equity holding for all the investors who are holders of the two MCs issued at and (or equivalently, is the representative investor’s equity holding). Hence,

is the total payoff to the new shareholders and is the total payoff to the original shareholders. Although we do not explicitly mention dividends on common stock, the firm may pay them. No matter whether such dividends are paid or not, the investors' total income from the equity share should be . Hence, a reader can simply assume no dividends on common stock. However, if there is a random stock in the second period, the timing of a dividend payment is relevant and it reflects risk sharing, which would force us to specify dividends on common stock explicitly.