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Short-selling restrictions, takeovers and the wealth of long-run shareholders

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ABSTRACT

In this paper we consider a situation in which a firm may be able to influence the investors' ability to short-sell its stock. We analyze the effect short-selling restrictions have on the market price and the subsequent effect generated on the market for corporate control. More precisely, we argue that short-selling restrictions may lead to exclusion of pessimistic beliefs and may therefore inflate prices. Thus, if a company is poorly managed and has a stock with strong short-selling restrictions, a profitable takeover will not emerge because of the high stock price. The raider may not have the incentives to acquire the company as its price will be above its fundamental value, conditional on takeover, even accounting for the potential benefits of takeover. We then argue that such effects are detrimental to long-run shareholders and that a value-maximizing strategy is to have a stock with no short-selling restrictions.

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1. Introduction

In this paper we are interested in the relationship between short-selling restrictions, overvalued equity, managerial decision-making, takeovers and the welfare of long-run shareholders.¹

We first consider a simple model in which a firm may be able to influence the investors' ability to short-sell its stock, by influencing the supply and demand (e.g., initially choosing with whom to place convertible securities—placing with hedge funds would increase demand, as they hedge their positions, and placing with other institutions would increase supply and decrease demand). We analyze the effect short-selling restrictions have on the market price and the subsequent effect generated on the market for corporate control. More precisely, we argue that short-selling restrictions may lead to exclusion of pessimistic beliefs and may therefore inflate prices (as in Miller, 1977). Thus, if a company is in a poor situation (be it because of the economy or because the manager is doing something wrong) and has a stock with strong short-selling restrictions, a profitable takeover will not emerge because of the high stock price. The raider may not have the incentives to acquire the company as its price will be above its fundamental value, conditional on takeover, even accounting for the potential benefits of takeover. We then argue that such effects are detrimental to long-run shareholders and that a value-maximizing strategy is to have a stock with no short-selling restrictions.

In another, more elaborate, model we allow for additional effects through direct managerial decision-making. I.e., we enhance the initial model by allowing the manager to choose an effort level. So, now we make a clear distinction between

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¹ The ideas in this paper are related to, among others, the following articles: Bebchuk (2003); Cohen et al. (2007); Diamond and Verrecchia (1987); Duarte et al. (2006); Ferreira and Laux (forthcoming); Harrison and Kreps (1978); Jensen (2004); Lamont (2004) and Scheinkman and Xiong (2003).

the situation that a firm is poorly managed and the economy is doing well vis-à-vis a situation where the manager is doing well but the economy is doing poorly and hence the company is suffering for reasons outside management's control. The manager's effort choice is costly and depends on his compensation package. Effort affects the long-run expected value of the firm, and therefore may also affect prices. We then analyze the model trying to understand how effort choice, takeovers and short-selling constraints interact to generate overvalued equity in the short-run, less takeovers and lower long-run values of the firm.

As a final note the reader should be aware that, even though we write and analyze the model in terms of takeovers, there is nothing special about this. One could think about an alternative interpretation where instead of a takeover what happens is that the board fires the manager when it appears profitable to do so. I.e., the board would replace the manager whenever the expected value generated by his replacement is higher than what the market currently assess as this manager's added value, which is the same condition under which takeovers may happen.

2. Simple model

We start with a simple model where we abstract from managerial decision-making. We do this just to stress the effects that short-selling constraints may have on prices, takeovers and the welfare of long-run shareholders.

2.1. Company

Imagine a situation where a firm can be either well managed and have positive prospects or poorly managed and have negative prospects. What we have in mind is a situation where both the manager's ability as well as the stochastic nature of the economy may influence firm's value. For simplicity we model this by assuming that with probability p the firm is overall good – the manager is doing a good job and the economy is strong – and with complementary probability $(1 - p)$ the firm is bad but can be improved—manager is performing poorly and the economy is weak.

When the firm is bad, firm value can be enhanced by replacing management, but not to the point of turning it into a good company, since the economy is not strong. If the company is good replacing the manager does not enhance or destroy value. This idea translates into the following assumptions. If the company is good, then its expected value is equal to μ_G . Notice that this is independent of who is managing the firm. If the company is bad then its expected value is equal to μ_M if management is replaced and μ_B otherwise. Furthermore, we assume that $\mu_G > \mu_M > \mu_B$.

We model the replacement of the manager as a takeover. More precisely, we assume that with probability q a raider exists and with complementary probability no such agent is present. If a raider exists then with probability t he decides to takeover the firm and with probability $1 - t$ he does not. Notice that t is an endogenous variable that will depend on market price at the time of takeover. Clearly, takeover only takes place if the price is below the expected value of the firm conditional on takeover, i.e., μ_M . The situation of this firm is summarized in the picture below. Finally, we assume that in the long-run there cannot be a separation between price and fundamental value. Therefore, we assume that, at some point, all investors learn the true state of the economy and incorporate such information on their beliefs and, hence, prices converge to a firm's expected fundamental value (Fig. 1).

The situation described above is the same for all firms in the economy. The only difference across firms is the cost to investors of short-selling its stock. We take a very simplified approach by assuming that a company's stock either can be freely short-sold or not at all. So, one company has a stock traded in a completely perfect market, while the other company's stock is traded in a market where investors are short-sale constrained.

2.2. Short-selling restrictions, investors and market prices

We model the easiness of short-sales as a choice variable for the company, so the board may take actions that lead the firm to have a stock that is freely traded or one that is traded with short-sale restrictions.

Independently of the type of market we have two types of investors (in addition to the raider): informed traders/arbitrageurs and irrational/overconfident traders. The informed traders know whether the company is good or bad and understand that a raider may takeover the company and replace management, therefore enhancing value. We also assume that these traders, as a group, have unlimited wealth. Therefore, the informed traders believe that the company's expected value is μ_G if the state is good and $(1 - q)\mu_B + q(1 - t)\mu_B + qt\mu_M$ if the state is bad; where the last expression incorporates the fact that if the company is bad a takeover might take place. The irrational traders are uninformed and do not anticipate takeovers, and we assume that they always assign μ as the company's expected value, with $\mu_G > \mu > \mu_M > \mu_B$.

We also assume that these irrational traders are small relative to the informed traders. The idea here is that these traders are not big enough to generate inefficiency if the informed traders are able to trade freely. So, whenever informed traders trade freely price equals fundamental values, i.e., the beliefs of these traders

We are now ready to analyze market prices and the decision to takeover under perfect markets and under short-selling restrictions.

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