



# Free cash flow, over-investment and corporate governance in China<sup>☆</sup>



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## ABSTRACT

We investigate whether and how free cash flow and corporate governance characteristics affect firm level investments, using a sample of 865 Chinese listed firms. Consistent with the agency cost explanation, we find that firms' over-investment is more sensitive to current free cash flow and that over-investment is more pronounced in firms with positive free cash flows. Also, we find that certain corporate governance characteristics are significantly related to firm level investment. Further, we divide the full sample into two subsamples: over-investment firms and under-investment firms. For over-investment firms, our evidence indicates that higher state-ownership concentration boosts over-investment, while firms with higher proportion of tradable shares, larger board size of supervisors or higher leverage mitigate over-investment. For under-investment firms, our evidence shows that firms with higher state-ownership concentration, larger board size of directors or higher proportion of outside directors are associated with severer under-investment, while firms with higher leverage or higher proportion of tradable shares alleviate under-investment.

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## 1. Introduction

Using a sample of Chinese listed firms, this paper examines whether and how free cash flows and corporate governance characteristics are associated with firm level investments. In perfect capital markets, there would be no link between free cash flows and firm level investments (Modigliani and Miller, 1958). However, prior research has documented a positive relation between them (Hubbard, 1998). There are two explanations for the relation: one is information asymmetry; the other is agency costs. For the information asymmetry explanation, Myers and Majluf (1984) show that, in imperfect capital markets, information asymmetries increase the cost of capital and it is costly for firms to raise external finance. Hence, external financing constraints force firms to reduce feasible investments and to invest more in the presence of internally generated free cash flows due to its lower cost of capital (Fazzari et al., 1988; Hoshi et al., 1991; Whited, 1992; Hubbard, 1998). Another explanation is agency costs. Agency costs stem from the separation of corporate ownership and control, exhibiting over-investment where managers in

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firms with free cash flows have strong incentive to invest in negative NPV projects (Jensen, 1986; Stulz, 1990). The agency cost explanation indicates that management is likely to invest in projects which are beneficial from a management perspective but may not be good for corporate owners, especially when the monitoring to management is weak. Richardson (2006) examines firm level over-investment of free cash flow, and finds that over-investment is concentrated in firms with the highest levels of free cash flow, which is consistent with the agency cost explanation. The evidence also suggests that certain corporate governance structures appear to mitigate over-investment. His study is based on a large sample from the *Compustat* annual database. Further, his study uses an accounting-based framework to measure over-investment and free cash flow, thereby allowing a more powerful test of the agency cost explanation.

Our paper is different from prior research in two ways: first, we apply Richardson's accounting-based constructs of over-investment and free cash flow to a sample of 865 Chinese listed firms. Second, we study both over-investment and under-investment, while Richardson (2006) focuses mainly on over-investment. We choose Chinese listed firms as the research target because prior literature studying the links between free cash flow, over-investment and corporate governance of Chinese firms is very limited. Huang et al. (2011) also examine the effect of agency cost using the data from Chinese listed companies. However, they focus on the relationship between top executives' overconfidence and investment-cash flow sensitivity, and find that agency cost has a significant impact on the relationship. Our paper does not address executives' overconfidence. We focus on the relationship between free cash flow, corporate governance, and over-investment or under-investment.

Further, we choose Chinese listed firms as the research target, because China's capital market and the corporate governance of Chinese firms are unique. First, we need to know China's unique stock market and government supervision. China's stock market was established in early 1990s by the government as a vehicle to convert its "socialist planning economy" into a "socialist market economy". Since China's *Company Law* was enacted in 1994, Chinese firms have been undergoing the corporate governance reform. This reform effort was driven by Chinese government, especially by the China Securities Regulatory Commission (CSRC hereafter). It was also motivated by Chinese firms' voluntary efforts in order to reduce the dependence of financing on state-owned banks. Usually Chinese firms may have one or more of the following six different types of shares: state shares, legal person shares, employee shares, A-shares (traded in Renminbi, the currency in mainland China), B-shares (traded in foreign currencies), and H-shares (traded on the Hong Kong Stock Exchange). State and legal person shares are not tradable, but they can be transferred to domestic institutions upon approval from the CSRC. Also, in order to protect outside investors' interest, the CSRC prescribed strict rules for Chinese listed firms to issue seasoned equity offerings (SEO). Thus, China's stock market is an imperfect capital market heavily regulated by the government. It constrains Chinese listed firms from financing in external capital markets, widening the gap between the costs of external and internal funds. Because of this, Chinese listed firms' investment expenditure depends more on internally generated cash flows rather than external funds.

Second, corporate governance in mainland China is a two-tier board system. Corporate governance varies between countries, especially regarding the board system. There are countries that have a one-tier board system like the U.S., and there are others that have a two-tier board system like Germany. In a one-tier board, all the directors (both executive directors as well as non-executive directors) form one board, called the board of directors. In a two-tier board, there is an executive board (all executive directors) and a separate supervisory board (all non-executive directors). China's corporation law stipulates a limited liability company has a board of directors and a board of supervisors. Regarding Chinese requirements of a board of supervisors, under Articles 52 to 57 of the *Company Law of the People's Republic of China*: a limited liability company requires setting up a board of supervisors, which shall comprise at least 3 persons. A limited liability company, which has relatively less shareholders or is relatively small in scale, may have 1 or 2 supervisors, and does not have to establish a board of supervisors. The board of supervisors shall include representatives of shareholders and representatives of the employees of the company at an appropriate ratio which shall be specifically stipulated in the Articles of Association.

In our study, the sample period is between 2001 and 2004. We select this sample period because the corporate governance data start only from 2001. Besides, the non-tradable shares reform started in 2005, which significantly changed the incentives of controlling shareholders. Therefore, we exclude the period after 2004 in this study. Consistent with the agency cost explanation, we find that Chinese firms' over-investments are more sensitive to current free cash flow, and that firms with higher free cash flow have higher over-investment impulse.

We further investigate whether corporate governance characteristics are associated with over-investment using the full sample. Our evidence shows that certain corporate governance characteristics, such as larger board size of supervisors, appear to mitigate over-investment. Next, we extend our study to examine whether corporate governance characteristics are associated with firm level investment by dividing the full sample into two subsamples: over-investment firms and under-investment firms. We define firms with positive Richardson's measure of over-investment as over-investment firms, and firms with negative Richardson's measure of over-investment as under-investment firms. For over-investment firms, our evidence indicates that higher state-ownership concentration boosts over-investment, while firms with higher proportion of tradable shares, larger board size of supervisors or higher leverage mitigate over-investment. For under-investment firms, our evidence shows that firms with higher state-ownership concentration, larger board size of directors or higher proportion of outside directors<sup>1</sup> are associated with severer under-investment, while firms with higher leverage or higher proportion of tradable shares alleviate under-investment.

<sup>1</sup> An outside director (also sometimes known as an independent director) is a director (member) of a board of directors who does not have a material or pecuniary relationship with company or related persons, except sitting fees. Outside directors do not own shares in the company.

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