North American Journal of Economics and Finance 38 (2016) 54–69

Contents lists available at ScienceDirect

North American Journal of Economics and Finance

journal homepage: www.elsevier.com/locate/ecofin

Overinvestment, inflation uncertainty, and managerial overconfidence: Firm level analysis of Chinese corporations

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ARTICLE INFO

Article history:
Received 25 February 2016
Received in revised form 2 July 2016
Accepted 5 July 2016

JEL classification:
G30
D81
E31
E60
G18

Keywords:
Overinvestment
Inflation uncertainty
Managerial overconfidence

ABSTRACT

We study corporate investment by considering both external economic factor and managerial behavior, in particular the dynamic interaction between inflation uncertainty and managerial overconfidence by employing a sample of Chinese companies. The empirical findings demonstrate that lower inflation uncertainty increases over-investment, and managerial overconfidence exacerbates such effect. Further analysis shows that over-investment in state-owned enterprises (SOEs) is mainly driven by managerial overconfidence, and the negative association between inflation uncertainty and overinvestment is due to managerial overconfidence. The effect of managerial overconfidence is mute in non-state-owned enterprises (non-SOEs). In addition, we find asymmetric impact of inflation uncertainty on corporate over-investment during different economic cycles.

1. Introduction

Since corporate investment is one of the important factors affecting macroeconomic output growth, one of the primary targets of monetary policy is to keep inflation low and stable, because price instability increases contracting costs and decreases economic efficiency (Reagan & Stulz, 1993). Similarly, a stable price level enables firms to recognize the best investment opportunities and invest in projects with the highest returns (Beaudry, Caglayan, & Schiantarelli, 2001). It is known that the change of price plays an important role in corporate investment behavior and literature has shown that inflation and its uncertainty would influence corporate output and investment behavior. Investment decisions, however, are made by managers, and price changes in the economy can affect managers' judgment. Failing to consider the managers' role would miss an important link between investment decisions and inflation. From the perspective of behavioral finance and through the lens of managers' internal traits, we are thus motivated to explore this specific mechanism of how price changes affect corporate investment decisions. The dynamic effect of the interaction between managerial overconfidence and inflation uncertainty better describes

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http://dx.doi.org/10.1016/j.najef.2016.07.001
1062-9408/

the corporate investment decision, in particular in a country where private enterprises and state-owned enterprises (hereafter, SOEs) encounter very different agency problems and exhibit divergent investment behaviors.

To this end, in this paper we explore the impact of managerial overconfidence on corporate investment decisions in the presence of inflation uncertainty for Chinese firms. Many researches on psychology and corporate finance have already documented that overconfident managers tend to overestimate (underestimate) the probability of achieving good (poor) corporate performance, which leads to incorrect evaluations, unrealistic expectations and risky decisions (Cooper, Woo, & Dunkelberg, 1988; Johnson & Fowler, 2011; March & Shapira, 1987). Furthermore, compared with other managerial characteristics, managers' overconfidence is more susceptible to the influence of the external environment. More importantly, it is a well-documented measurable managerial characteristic and has significant explanatory power for corporate financial policies (Malmendier, Tate, & Yan, 2011).

At the macro-level, inflation uncertainty is one of the most important external factors firms face when making investment decisions. It is also one of the major monetary targets the Federal Reserve attempts to minimize. A number of recent papers focus on how macroeconomic variables affect corporate behavior on the micro level. For example, Baum, Chakraborty, and Liu (2010) study the influence of macroeconomic uncertainty on the capital structure of U.S. firms. Using quarterly reports, Duchin, Ozbas, and Sensoy (2010) examine the impact of 2007–2008 financial crisis on corporate investments in the U.S. Similarly, Gulen and Ion (2016) look at how economic policy uncertainty affects corporate investment in the U.S. using quarterly data. Tong and Wei (2011) analyze the impact of international capital inflow on corporate performance during the financial crisis. Claessens, Tong, and Wei (2012) study the impact of financial crisis on corporate investment and return based on firm-level data.

We contribute to the literature in two aspects. First, for the first time in the literature our paper studies a specific mechanism of price uncertainty affecting corporate investment behavior from the perspective of managerial overconfidence. Chinese managers are prone to overconfidence because of the implicit government backing. We show that these two factors impact corporate investment decisions not only through their own impact but also their interaction effect. Clearly, the effect of macroeconomic factors on corporate investments depends on managerial decision; while managerial behavior is not independent of external environment. An important link is missing if one studies the relation between price uncertainty and corporate investment decision without considering differences in managerial behavior. Second, given the different organizational structure of Chinese firms, i.e., the existence of many SOEs, it is interesting to examine over-investment problem in China. The recent jittery in world financial markets highlights the importance of investments in Chinese firms. More importantly, we are the first to study over-investment issue at the firm level in China from both the aspect of managerial traits and inflation uncertainty. Due to differences in agency problem that results from government role, managerial attitude and behavior could be quite different between a SOE and a private enterprise.

We summarize our findings as follows. First, adopting inflation uncertainty as an explanatory variable in a model for corporate investment behavior, we find that the regression coefficient is significantly negative; demonstrating that a lower (higher) level of inflation uncertainty increases (reduces) corporate overinvestment. The intuitive explanation is that under a highly uncertain external environment, it is very difficult for management to have a clear view of the change in the future product market, and therefore they will not easily make investment decisions.

Second, we test the impact of managerial overconfidence on corporate investment distortions for Chinese firms. Studies using Chinese data are scant. The ownership structure of Chinese firms makes it interesting to examine the impact of managerial overconfidence on corporate investment conditional on the ownership structure. The empirical literature points to a positive link between managerial overconfidence and corporate overinvestment (Huang, Jiang, Liu, & Zhang, 2011; Malmendier & Tate, 2005). In line with the methodology of Lin, Hu, and Chen (2005), we measure managerial overconfidence based on earnings forecast biases and the regression coefficient turns out to be significantly positive, which supports the view that managerial overconfidence leads to overinvestment. Furthermore, subsample analyses on SOEs and non-state-owned enterprises (hereafter, non-SOEs) reveal some interesting findings. It is especially evident that in SOEs managerial overconfidence contributes to corporate overinvestment, although no obvious evidence is found showing that inflation uncertainty impact overinvestment for this group of firms. In other words, our finding suggests investment of non-SOEs is more sensitive to inflation uncertainty than SOEs, while private enterprises (or non-SOEs) are less sensitive to managerial overconfidence than SOEs.

Third, since managerial optimism is not independent of external environment, we study the effect on investment efficiency from the interaction of managerial overconfidence and inflation uncertainty. We find that while the coefficient of inflation uncertainty stays negative, the coefficient of the interaction term is significantly positive, indicating that managerial overconfidence can weaken the negative effect of inflation uncertainty on overinvestment. This implies that with higher inflation uncertainty, overinvestment declines less in firms whose managers are overconfident. In other words, during periods of low inflationary uncertainty, corporations are more likely to over-invest and managerial overconfidence exacerbates overinvestments. Lastly, we also find asymmetric influences of economic cycles on the relation between inflation uncertainty and overinvestment.

To corroborate our findings, we then carry out a battery of robustness tests. In terms of methodologies and potential endogeneity concerns, we implement a logit model and a two-stage-least-squares (2SLS) model with inflation uncertainty instrumented. For the measurement of managerial overconfidence, we also use some alternative proxies. For the alternative measurement of inflation uncertainty, we compute the conditional variance of the growth rate of GDP deflator in a GARCH