

R&D Spending and Financial Constraints: evidence from Chinese listed companies

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Abstract

We examine whether private Chinese firms' lack of access to the capital market contributes to their lower R&D spending compared with that of state-owned Chinese firms. Using data on publicly listed Chinese firms for the period of 2009 to 2011, we estimate an accelerator model of investment for both R&D and physical investment. The well documented bias of China's state-dominated banking system against private Chinese firms naturally gives rise to a hypothesis that the private firms' investment be more sensitive to cash flow than that of the state-owned firms. To address the potential confounding influence of cash flow being also correlated with growth opportunity, we consider two means of identification: change in the provincial level bank lending - leading to a difference-in-difference-in-differences type of estimator - and an instrumental variable estimator. For the latter approach, we use non-operating income and expenses as instruments for cash flow. Our results indicate that 1) private Chinese firms' investment, whether it is R&D or physical investment, is more sensitive to cash availability than state-owned Chinese firms are; and 2) R&D investment is less sensitive to cash availability than physical investment is.