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Real Estate Risk, Corporate Investment and Financing Choice

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Xiaoying Deng [1], Seow Eng Ong [2] & Meijun Qian [3]

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Abstract

This paper empirically examines how real estate risk impacts corporate investment and financing decisions. Using a panel of United States firms from 1985 to 2013, we document that real estate risk is negatively associated with firms' long-term investments and long-term external financing in equity and debt. The results are robust to different risk measurements and in particular salient during the financial crisis period when the endogeneity between risk and investment is less of a concern. The effect on firm leverage, however, depends on risk measures. Overall, in contrast to previously documented positive effects of the real estate value, real estate risk exposure exhibits mostly the opposite effects on

investment, financing and capital structure. This difference is consistent with option value determinants. Findings in this paper shed new lights on the impact of real estate holding on corporate decisions, offer a new explanation for the underperformance of hedge funds' real estate strategies, and confirm the theoretical predictions in Deng et al. (2015).

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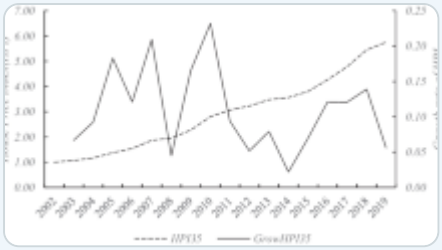

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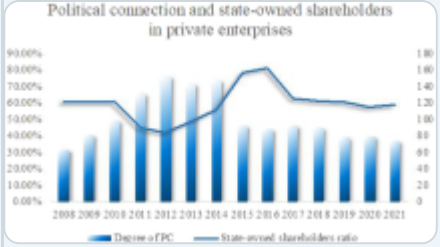

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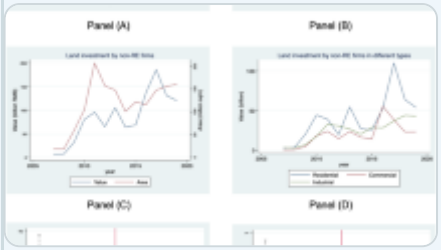

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Notes

1. High adjustment cost associated with real estate assets is documented both in business media press and academic research papers. For example, WSJ (3/26/01) expressed analysts' concerns about Hilton and Starwood in particular because "owning hotels is more risky than managing or franchising them because of the cost of carrying and maintaining property". In term of magnitude, Tuzel (2010) set the adjustment cost parameter for real estate investment to 2.4 but other investment 0.8, after calibrations to match the volatilities of structures and equipment investment growth.

2. The literature has demonstrated that, the value of real estate assets is positively associated with corporate investments through collateral functions in the lending channel. Gan 2007a uses the Japanese land market collapse in

1990s as a natural experiment, to show that through the lending channel, Japanese firms that hold lands suffer from the credit crunch more severely, especially when the firms have no alternative external financing channel. Gan (2007b) further shows the real effect of the collateral value loss. Manufacturing firms reduce their investment significantly as firms with larger losses in collateral value obtain a smaller loan amount.

3. The analysis on Japan however is restricted to the time-series dimension of the valuation changes. There is no characterization of the microeconomic mechanism through which firm-level collateral value changes due to the asset risk. The financing frictions during the collapse of Japanese land market may also bias the effect upward.

4. The FTSE NAREIT Composite REITs index is a market capitalization-weighted index of all tax-qualified publicly-traded REITs, including equity REITs (EREITs), hybrid REITs (HREITs), and mortgage REITs (MREITs). Observations of the index returns are available at the National Association of Real Estate Investment Trusts (NAREIT), www.nareit.com.

5. We infer equity issuance by observing the change of the shares (scaled by multiple stock price and divided by book value of total assets at the end of the year). As firms may repurchase or issue shares for option compensation, we require the change of equity to be larger than 1% to be quantified as equity issuance equal 1, otherwise 0.

6. This paper report regression results where the specification does not include industry fixed effect, although our key results are robust to industry fixed effects and the table are available upon request. This report decision is made to keep our paper focused by avoiding distraction by an interesting finding on a control variable that is not central to this paper's focus but important for the broad literature: Contrary to the existing literature that real estate value has a positive relation with investment, when we include the risk of the real estate and industry in the analyses, the coefficients on this control variable become

negative. This finding cast new light or possibly doubts on the existing studies. That is, the existing evidence on the effect of real estate value might be likely due to the failure of control real estate risk and industry at the same time. Given its impact, we think, if to report, it is better to be companied by a rigorous further investigation, which practically needs another differently focused and carefully executed paper. Since it is not the focus of our paper and has no impact on our results, we decide to report results without losing this paper's own focus.

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Author information

Authors and Affiliations

School of Public Economics and Administration, Shanghai University of Finance and Economics, 777 Guoding Road, Shanghai, 200433, China
Xiaoying Deng

Department of Real Estate, National University of Singapore, 4 Architecture Drive, Singapore, 117566, Singapore
Seow Eng Ong

Research School of Finance, Actuarial Studies and Statistics, Australian National University, CBE 26C, Kingsley, Acton, ACT 2601, Australia
Meijun Qian

Corresponding author

Correspondence to Xiaoying Deng.

Appendix

Table 8 Variable definitions

Table 9 The industry distribution of the sample firms

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