

Information asymmetry and sustainability in real estate markets

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Chapter 7

Conclusion

This dissertation explores two subjects in the field of real estate finance. The first topic addresses asymmetric information in the commercial real estate market. It investigates how the distance of owners to their asset and how real estate advisors impact the financial performance of office buildings. The second topic assesses the financial implications of the energy and environmental performance of buildings in the U.S. commercial real estate market and the Dutch affordable housing sector.

The first chapter of my dissertation investigates the economic effects of owner distance in the commercial real estate market. Whereas the importance of investor proximity has been extensively investigated in the finance literature, no such study has been performed for real estate. Coval and Moskowitz (2001), for example, show that mutual fund managers exhibit a preference for locally headquartered firms and that these managers earn an abnormal return by doing so. First, I observe a clear pattern in owner distance: far-away owners tend to invest in higher quality assets, possibly to alleviate concerns about informational asymmetries. Second, owner distance is met with a significant discount in the effective rental level of an asset, especially so in case of lower quality assets. In addition, measuring owner distance as straight-line distance shows that this effect is non-linear. The effective rental premium decreases the fastest over short distances, while owner distance does not seem to matter anymore once the owner is far away from the asset. Third, I document that retaining a local property manager, with the market knowledge and expertise to manage the asset, mitigates the distance discount far-away owners face.

Related to the finding in the first chapter that property managers are able to partly mitigate the rent discount borne by the owner being far away from her asset, the second chapter of my dissertation focuses on the added value of real estate advisors in the commercial real estate market. More specifically, this chapter examines how the size and reputation of real estate advisors is related to the financial outcomes of rental and sales transactions. Real estate advisors are heavily employed in the real estate market to rent, buy, manage, and sell assets. In 2015 alone the total value of commercial property transactions in the U.S. office market was USD 72 billion (CoStar Group, Inc., 2016).

Prior research on the impact of real estate brokerage has focused primarily on the residential real estate market. A well-known study by Levitt and Syverson (2008) documents that real estate agents keep their own homes longer at the market and sell them at a premium, suggesting that they use their superior market knowledge and expertise to their own advantage. I investigate

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the impact of real estate advisors, in a variety of capacities, on the rent and transaction value of office buildings in the U.S. Whereas the largest leasing agents and property managers are able to achieve higher rental levels (no effect on occupancy rate), the largest listing and buying brokers underperform relative to their smaller competitors. This raises the question why these real estate advisors have such a large market share. In line with the mergers and acquisition literature I document that the largest commercial real estate advisors are involved in the most complex deals and although these large transaction advisors do not seem to achieve better deals for their clients in terms of pricing, they are able to buy and sell assets more quickly.

The second main topic of my dissertation examines the implications of energy and environmental building performance on the financial performance of buildings. Chapter three contributes to our understanding of the economic implications of environmental building certification in the U.S. office market. The effects of certification and quality disclosure in different industries have been documented quite extensively. In general, certification and disclosure programs provide information to the market that is otherwise hard to obtain. For example for the restaurant industry, Jin and Leslie (2003) investigate the impact of the introduction of restaurant hygiene quality grade cards in Los Angeles. The authors document that since the introduction of the legislation the hygiene score of restaurants has increased substantially and consumers are sensitive to changes in hygiene quality.

The adoption of environmental building certification programs in the U.S. office market has increased rapidly over the last decade, and the market share of certified office space has increased from less than 6 percent at the end of 2005 to almost 40 percent at the end of 2014. Previous studies that examined the implications of environmental building certification programs assessed these buildings at a single point in time comparing certified buildings to similar non-certified buildings. These studies have been criticized for the lack of comparability of certified and non-certified buildings, since the observable building characteristics, and likely also the unobservable characteristics, of these buildings differ quite dramatically across certified and non-certified buildings. By tracking the rental growth for a set of certified and non-certified office buildings over time I construct a constant quality measure of financial performance. The results of these repeated rent indices show that there is no significant difference in rental growth between environmentally certified and non-certified buildings.

Nevertheless, despite the absence of a difference in rental growth this does not preclude the possibility that the rental levels and transaction prices of environmentally certified buildings are significantly different from those of non-certified buildings. In line with this hypothesis, and corroborating previous research, the performance attribution analysis shows that environmentally certified office buildings command higher rents and transaction price as compared to otherwise similar office buildings. Moreover, I document significant heterogeneity in the determinants of this so-called "green" premium. Local climate conditions, electricity prices and certification levels and scores affect the premium significantly.

Whereas there is growing academic evidence for the presence of a rent, occupancy, and transaction price premium for environmentally certified buildings, little is known about the implications this may have on the financing costs of these assets. When the inherent risk in these investments is lower due to a more stable occupancy rate, higher rents and sale prices, and higher liquidity this should also impact the financing costs. In addition, while the "green" premium is an incentive to invest in these assets, a decrease in the financing costs of these assets

may be another incentive to invest in environmentally certified assets.

Chapter five of this dissertation analyzes the cost of capital for environmentally certified buildings. I analyze the spreads on commercial mortgages collateralized by environmentally certified assets and the spreads on corporate debt for U.S. REITs, both at issuance and while trading in the secondary market. The results show that the spread on commercial mortgages collateralized by environmentally certified assets is significantly lower relative to the spreads on mortgages for similar non-certified buildings. In addition, an increasing share of environmentally certified assets in a REITs' portfolio also lowers the spreads on corporate bonds. This holds for the time at which the bond is issued as well as while the bond is traded in the secondary market.

Housing represents the largest share of the total real estate market, and in the housing market a large part of the building stock consists of affordable housing, especially so in the Netherlands. In relative terms, the affordable housing sector in the Netherlands is the largest in Europe: almost one third of the housing market consists of affordable housing. Importantly, only some four hundred institutions own this substantial part of the housing stock. Hence, incentivizing these owners to improve the energy and environmental performance of their dwellings has the potential to make a large difference in the energy and environmental performance of the total Dutch housing stock.

However, affordable housing institutions, given their societal function, are severely restricted in adjusting the rental rate of their dwellings to reflect investments in energy efficiency. Since the affordable housing institutions in the Netherlands are allowed to sell part of their stock in the private market, one way for these institutions to recoup part of their investment is at the time of sale. Chapter five of this dissertation investigates the financial implications of energy efficiency in the affordable housing sector in the Netherlands, by analyzing homes sold by affordable housing institutions. I document that homes with high energy efficiency sell for a 2.0-6.3 percent premium as compared to otherwise similar homes. Combining the premium for high energy efficiency with the transaction increments related to the overall quality of a dwelling, shows that when part of a larger renovation package these investments can be cost-effective.