Exchange rate exposure of REITs

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ABSTRACT

In this paper, I examine how foreign exchange rate movements affect U.S. real estate investment trusts (REITs) returns. I document that REITs' returns are adversely affected by U.S. dollar appreciation, regardless of the measurement of the exchange rate changes, of the REIT size and of macro-economic factors. The exchange rate exposures, however, vary significantly among the REIT types and REITs' property. U.S. dollar appreciation adversely affects equity REITs returns while leaving no significant impact on mortgage REITs and hybrid REITs returns. The exchange rate exposure is especially prominent among health care, industrials-office, residential, retail and self-storage REITs. The findings unveil an important source of risk that REITs are exposed to, demanding more attention from REIT portfolio managers and investors alike.

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1. Introduction

Existing studies highlight market returns, size, book-to-market ratio,1 investor sentiment,2 inflation,3 and interest rate changes4 as the key factors that affect the returns of REITs. Stylized facts suggest additionally that exchange rate changes can impact tourism (lodging and resorts), retail shopping and real estate sector revenues, and consequently the performance of U.S. real estate investment trusts (REITs).

For example, when the U.S. dollar weakened against the euro in 2007, there was an influx of European visitors to U.S. theme parks, which in turn brought about more businesses for hotels, restaurants and rental cars.5 When the Chinese yuan appreciated against the U.S. dollars in the years 2011–2012, the number of Chinese visitors to the United States increased from less than 400,000 in 2007 to almost 1.5 million in 2012. These visitors reportedly spent much more in each trip as compared to U.S. domestic travelers, totaling almost $9 billion spending in their visits to the United States.6

The examples above illustrate how depreciation of the U.S. dollar against other currencies can favorably attract international tourists and investors who provide more businesses for hotels, resorts, apartments, and offices owned and managed by REITs. In this perspective, REITs' revenues should be significantly affected by changes in exchange rates. Appreciation in the U.S. dollar can sway away these international customers, while depreciation in the U.S. dollar can lower the costs and basically offers a bargain for these customers.

In this paper, I examine how foreign exchange rate movements affect the returns of REITs. I document that REITs are not immune from foreign currency risk; REIT returns are adversely affected by appreciation of the U.S. dollar, regardless of how I measure the exchange rate changes, and regardless of the REIT size and of the existence of macro-economic factors. Additionally, I document that the exchange rate exposures vary significantly among the different REIT types. While the excess returns of mortgage REITs are negatively associated with the U.S. dollar appreciation, the excess returns of mortgage REITs and hybrid REITs are insignificantly associated with the U.S. dollar appreciation. The exchange rate

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1 See Peterson and Hsieh (1997) and Hsieh and Peterson (2000).
3 See Glascock et al. (2002).
4 See Swanson et al. (2002).

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exposure is especially prominent among health care, industrials-office, lodging-resorts, residential, retail and self-storage REITs.

This study contributes to both streams of existing literature on REITs and on exchange rate exposure in the following ways. First, while there is substantial evidence of exchange rate exposures of non-financial firms, banks5 and insurance companies,6 there is no study on the exchange rate exposures of REITs to the best of my knowledge. Practitioners armed with stylized facts, however, suggest significant potential impacts of exchange rate changes on REIT firms’ revenues and cash flows. This study creates a bridge between stylized facts and the empirical evidence on the exchange rate exposures of REITs.

Second, the findings unveil an important source of risk that REITs are exposed to, which has been largely ignored by the literature and by REIT investors and managers alike. Prior studies by Horng and Wei (1999) and Ergüçl, Sezer, and Sirmans (2008) suggest minimal evidence of attention of REIT firms to exchange rate risk. These two studies collectively document that about half of the REITs engage in hedging activities. Interest rate derivatives account for 80%, and foreign currency derivatives for a mere 2% of the derivative use of these firms. The documented exposure of REITs to exchange rate changes in this study calls for more attention from REITs managers and investors on managing this source of risk.

Third, the findings emphasize how even service firms and non-multinational firms are not immune from currency value changes in the increasingly globalized environment. Increased globalization and trade and open door policies of many countries allow more international customers to have access to U.S. immobile services and products right in the U.S. territory. Such dynamics at the same time expose purely domestic U.S. firms to currency risks.

The rest of the paper is organized as follows. I summarize the relevant literature and develop the testable hypotheses on the impact of exchange rate changes on REIT returns in Section 2. I describe the data and methodology in Section 3. Section 4 presents the empirical results and Section 5 concludes the paper.

2. Literature review and hypothesis development

Theoretically, exchange rate fluctuations can affect the cash flows of both multinational and domestic firms. As the U.S. dollar appreciates, a multinational firm with future receivables from international business (e.g. U.S. exporters) sees its U.S. dollar-denominated receivables shrink. A multinational firm with future foreign payables (e.g. U.S. importers), on the other hand, enjoys lower U.S. dollar-denominated payables. In addition, exchange rate changes can affect the relative prices of goods sold in different countries and thus the competitiveness of both multinational and domestic firms. An appreciation of the U.S. dollar makes U.S. products and services more expensive (from the international customers’ perspectives) and less competitive in both the domestic markets and foreign markets; revenues and cash flows suffer as a consequence.

Muller and Verschoor (2006) provide an excellent summary of the empirical findings on the sensitivity of firm value to exchange rate changes, suggesting that the empirical evidence is mixed at best. Two main reasons are cited for the inconsistency in the empirical evidence. First, hedging activities by firms might mask the documented exchange rate exposures (see Aretaž & Bartram, 2010; Bartov & Bodnar, 1994; Crab, 2002; Doukas, Hall, & Lang, 2003). Second, firms might be importing from and exporting to different countries at the same times, resulting in the positive exposures and negative exposures to offset each other and thus lowering the overall firm exposure to exchange rate changes (see Allayannis, 1995; Gao, 2000). All of the existing studies on exchange rate exposures focus only on non-financial firms, banks and insurance companies.

To the best of my knowledge, this is the first paper that examines the exchange rate exposures of REITs. I posit that a depreciation of the U.S. dollar against other currencies can favorably attract international tourists and investors who, being powered by their strengthening currencies, now find travels and business operations to the U.S. a bargain. These foreign consumers provide more businesses for hotels, resorts, apartments, and offices owned and managed by REITs. In this way, REITs’ revenues and cash flows should be positively affected by U.S. dollar depreciation, which in turn affects REITs’ returns. Appreciation in the U.S. dollar, on the other hand, discourages international tourists and investors to visit the U.S., since lodging, hotel, resorts, apartments, offices and storage in the U.S. are now much more expensive. Loss of revenues from this significant base of international customers means lower cash flows and returns to REITs that manage lodging, hotel, resorts, apartments, offices and storage.

In addition, REITs that generate a significant portion of their revenues overseas can see their U.S. dollar-denominated foreign revenues shrink when the U.S. dollar appreciates in value. Healthcare REITs are a perfect example for such situation since these REITs generate more than 50% of their revenues overseas.10 As these firms transfer their foreign revenues back to the U.S., their dollar-denominated revenues are favorably boosted by U.S. dollar depreciation. This leads to the first testable hypothesis:

H1 (\(\star\)). REITs excess returns are negatively associated with U.S. dollar appreciation.

Campbell and Lapham (2004) document that the exchange rate between U.S. dollar and Canadian dollar affects the establishments and employment of retail trade businesses (including food stores, gasoline service stations, eating places and drinking places) located along the U.S. and Canada border area. As the Canadian dollar appreciates relative to the U.S. dollar, Canadian shoppers find it a bargain to drive to the stores on the other side of the U.S. border for shopping and dining, resulting in more business establishments and employments in these businesses to cater to such increased demand. Chandra, Head, and Tappata (2014) document that a 10% appreciation in the U.S. dollar or Canadian dollar raises the propensity to travel across the border by 8%. Canadian travelers are more responsive to their home currency appreciation than U.S. travelers. These aforementioned two studies suggest how exchange rate changes can influence border businesses, specifically tourism and shopping. I expand these two studies by exploring the effects of exchange rate movements on REITs, which own and manage hotels, resorts, apartments, and offices in the whole U.S. territory rather than just in border locations.

Exchange rate changes might not affect all REITs in similar manners. REITs that generate significant source of their revenues from overseas operations or from foreign customers might very likely be affected by changes in exchange rates. Mortgage REITs, on the other hand, generate their revenues from originating and purchasing mortgages and mortgage-backed securities. As such, their performance relies significantly on interest rate changes and on domestic market factors.

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7 See Muller and Verschoor (2006) for an excellent survey of this stream of literature.
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