The Puzzle of

Listed Real Estate Companies

DISSERTATION

zur Erlangung des Grades eines Doktors der Wirtschaftswissenschaft

(Dr. rer. pol.)

eingereicht an der

Fakultät für Wirtschaftswissenschaften

der Universität Regensburg

von

Dominik Wagner

Tag der Disputation

20. Januar 2021

Berichterstatter

Prof. Dr. Steffen P. Sebastian

Prof. Dr. Wolfgang Schäfers

Acknowledgements

This thesis presents the results of my research at the Department of Real Estate at the University of Regensburg. It is important to me to express my deep gratitude to several people who either directly contributed to the results or supported me in different ways to achieve the completion of this dissertation project.

First of all, I would like to thank my doctoral father Prof. Dr. Steffen P. Sebastian for his valuable guidance and steady support through his own by numerous discussions and internal feedback channels and through the possibility to attend on international renowned conferences. I am also very grateful to Prof. Dr. David H. Downs for discussions along our joint articles of which I personally built up more elaborated academic expertise. It was an honor and a pleasure to work with him. A special thanks to Prof. Dr. Wolfgang Schäfers, who kindly accepted to be my second supervisor for this thesis. I also thank my other co-authors Prof. Dr. René-Ojas Woltering and Pascal Frömel as well as many colleagues at the University of Regensburg and at international conferences for helpful comments. I also thank my alma mater, the University of Regensburg, for educating me as a B.Sc. Economics and M.Sc. Business Administration and therefore providing a basis for excellent research conditions. In this context, I would also like to mention the generous support on various instances of the Universitätsstiftung Hans Vielberth and the International Real Estate Society as well as Union Investment for a scholarship.

Finally, deepest thanks go to my parents Herta and Erwin Wagner for their unconditional support and encouragement in my entire life. And foremost to my life companion Annalena Gebsattel for her unlimited love, patience and getting through difficult phases together.

Contents

List of Figures

List of Tables

Chapter 1

Introduction

The economic role of real estate in a broader sense is unquestionable of major importance for global wealth. The real estate sector comprises large shares of gross-domestic product output and growth across all countries worldwide and generates jobs in a large scale. Its multi-dimensions range in all branches and translate in manifold private and commercial direct and indirect investment vehicles and serves as research objectives in large varieties of academic disciplines. Sebastian et al. (2012) summarize direct and super-categories of indirect instruments for real estate and assess open ended funds and companies as most meaningful.[1] Schäfers (1997) also highlights the magnitude of corporate real estate and reveals its hidden value for generating return profiles. In the case of Germany the share added value to the economy is estimated to 19% and provides 10% of all employees in 2018, which depicts a persistent trend for years (Feld et al., 2020). Real estate activities including the construction sector constitute 16.5% to the overall European GDP (EPRA and INREV, 2018). In the U.S., it is not solely a strong contributor to the economy but also a major factor in downturn periods. While housing on its own contribute approximately 5% to GDP growth in normal times, it causes up to 26% of the magnitude in GDP de-

[1] For example, Pfnür (2013) and Schulte et al. (2016) provide a comprehensive basis knowledge of the entire real estate sector in general and illustrate its extensive interrelations to economies and market players for Germany and Europe. Another suitable source for a broad introduction in U.S. real estate markets, corporate valuation and performance measures is documented in Geltner et al. (2013). Those sources also introduce Real Estate Investment Trusts (REITs) in profound detail, which are the scope of this dissertation.

creases during recession periods. Besides, real estate's scope also affects the demand side of private households and further influences their consumption behavior through channels of interacting prices and rents. Teuben and Bothra (2020) report annually the market size of professionally managed global real estate investments amounts to 9.6 trillion U.S. Dollar, which is both an associated increase of 7.9% and persistent development over one decade. In particular, the European Central Bank also reports of growing market sizes and increasing contribution to GDP due to corporate real estate firms (Santos-Rivera and Gonzalez Dominguez, 2018). Comparing the figures of 2009 and 2017 their impact raised across all observed European member states on average and range between 2 and 7 percent. The market capitalization and the number of listed corporate real estate firms grew as well in that time span. It also depicts a trend towards going public as the relation between private and public firms almost doubled in the real estate sector across European countries and in the U.S. As of 2020, the European Real Estate Association (EPRA) reports 70% of its index constituents operate as a Real Estate Investment Trusts (REITs).[2]

Legislators anticipate market consolidations as one can observe more and more countries pursuing to introduce so-called REIT-regimes to provide the possibility for companies to opt for this special firm structure. For European and Asian Markets, this ongoing trend started in the early 2000 and is likely to continue as outlined by Sotelo and McGreal (2016). Today 37 legal authorities introduced REIT like structures. The national rules concentrate along a variety of corporate governance but, in essence, allow market participants to classify REITs as transparent and internationally recognizable passive, buy and hold, property vehicles of high quality assets exhibiting strictly defined minimum rates of dividend payout obligations. Roth and Kaspar (2016) classify regimes along developed and emerging markets and evaluate their maturity through twelve categories. In general, North American, European, and Asian countries play the decisive role in a global context.

[2] A special tax-exempted corporate form for (listed) property companies. Depending on the national rules, the companies need to fulfill different obligations on investment, financing, distribution policy and board structure to qualify for this tax-free status. Country portraits are reported annually by EPRA (2020).

These classifications are consistently in line with market assessments of EPRA, PwC and other observers.

Given this internationally allocated weight, REITs are regularly subject to studies from practitioners as well as in academic discourse. Both streams agree in an overall positive performance of REITs compared to both other real estate vehicles and competing asset classes. Nevertheless, in a recent paper, Ghosh and Petrova (2020) document a strong link between alternating formal requirements and total returns of REITs. However, the benefits of real estate as an asset class are often attributed to a beneficial risk-return profile deriving from stable rental income and a relatively low correlation with other asset classes such as stocks, bonds and cash equivalents. Although one need to keep in mind that threats of direct real estate investments may not diversify entirely, when pooling them together in a portfolio under the form of real estate funds and companies (Sebastian, 2003), the REIT format favors interests of private and institutional investors for small and diversified investments. For example, inflation-hedging benefits and shrinking idiosyncratic risks. Studies of Kallberg et al. (1996) measure that partial portfolio allocations of 9% in direct real estate adds to the total returns of equity, bonds and cash holdings, while Bekkers et al. (2009) state similar risk-reward exposures between direct commercial real estate and REITs. Delfim and Hoesli (2019) find that REITs are a suitable addition along direct investments for medium- and long-term horizons and should account for up to 20% in an investment portfolio.

For all these empirical evidences and manifold reasons along distinguishing levels of interest, this dissertation is dedicated to investigating the international REIT universe and deriving substantial causalities for market participants. In particular, this work seeks to provide an explanation on the following three dimensions:

I. Factors driving and preventing dynamics in global dispersion of the REIT structure adoption

II. Characterize the conversion-related M&A activity and investigating the resulting post-conversion performance

III. Study the role of uncertainty on managerial decision making to revoke the REIT structure

These major directions subsume various specific research questions and derived hypotheses, which are subject to separated chapters of this dissertation, each reflecting one academic article outlined as follows.

Chapter 2 seeks to identify beneficial and debilitating factors for listed property companies to opt for the REIT status. The here embedded study reveals frequently but dispersed occurrences on an international scale which is unique to the literature. The employed control variables reflect the national regime heterogeneity and allow more consistent conclusions. The results are based on 80 REOC-to-REIT conversions along FTSE EPRA NAREIT global real estate index constituents across 13 developed real estate markets. This allows to draw upon a qualitative robust and representative sample of eligible companies. The causal inference highlights only a small impact of stylized regime facts, such as the tax benefit, but reveals herding and managerial moral hazard connections. In particular a strong connection between the market sided undervaluation and personal wealth of firm's decision makers.

Chapter 3 analyzes the conversion-related portfolio realignments as well as capital inflows and measures the following long-run performance implications. As we know from the academic literature, legislative shocks induce an increasing amount of M&A activity (Harford, 2005), which, in turn, capture substantial share so economic growth as men-

tioned above. So far, the phenomenon of REIT conversions are no subject to current academic analyses, according to Glascock et al. (2018). This article addresses this gap. The findings are grounded on the identified conversion events of the previous chapter 2. The results show a doubled amount of M&A activity, which are driven by the attracted equity inflows due to the REIT status. The conducted deals are motivated from strategic firm realignment rather than fulfilling regulatory requirements. More M&A active companies achieve superior risk-adjusted returns.

Chapter 4 aims the opposite direction and examines why decision makers decide to refrain the REIT format. It is an analysis of the REIT structure robustness in regard to macroeconomic uncertainty. Combining these two streams implies both a unique research goal to the literature and further an extension to the existing literature, especially for the theories of environment, agency issues, financial distress and negative value gap. Given the timing of deselecting the status, unpredictable market conditions drive firm executive to choose more flexible firm structures. The empirical study is based on both all historical and still active listed U.S. REITs since the regime establishment in 1960 of which over 10% decided to deselect its REIT format. The methodical approaches utilize recent developed measures of uncertainty for this purpose. The causal inference reveals that incalculable market conditions motivate both healthy and distressed firms to opt for a looser firm structure. This scales with the duration of uncertain periods.

This dissertation is structured as follows. The following three chapter reflect the above reviewed academic articles. Each indicates additionally the progress of submission to an academic journal at the beginning. The final chapter of this dissertation brings all findings together, sums the joint contribution and practical implications as well as provides a scientific outlook for motivating future research.

Chapter 2

The REIT Conversion Puzzle

– This paper is the result of a joint project with

René-Ojas Woltering, David H. Downs and Steffen P. Sebastian –

Abstract

Real Estate Investment Trusts (REITs) are a globally recognized form of real estate ownership that offer tax benefits at a corporate level. Despite their clear advantages, however, a significant share of potentially eligible Real Estate Operating Companies (REOCs) do not opt for conversion to a REIT structure. This paper examines 80 *REOC-to-REIT conversions across* 13 *countries. We find REIT conversions are generally driven by the extent of country-specific tax benefits. They are also more likely following prior conversions by other REOCs, and in countries with a larger share of extant REITs. REIT conversions may be motivated by NAV discounts, especially if management's compensation is highly equity-based. This illustrates the importance of aligning the interests of management and shareholders. On the other hand, relatively restrictive REIT criteria, such as the disclosure and taxation of hidden values during the conversion process, are associated with significantly lower conversion probabilities. Countries that have eased REIT criteria have subsequently seen significantly more conversions.*

2.1 Chapter Introduction

Since their establishment in the U.S. in 1960, Real Estate Investment Trusts (REITs) have continually gained in popularity around the world. They currently exist in almost 40 countries, with many more in the process of adopting REIT regimes (EPRA, 2018a). In 2020, China announced the introduction of a public REIT structure for its infrastructure property companies (Reuters, 2020). The key advantage of a REIT structure relative to a Real Estate Operating Company (REOC) is liberation from corporate income taxes. The nuances of the regulations that govern REIT status differ across countries, but all require the majority of assets and/or income to be derived from real estate. REITs are also required to distribute most of their earnings to investors in the form of dividends.

As a result of these common characteristics, REITs have become a globally recognized form of real estate ownership for retail and institutional investors seeking liquid vehicles to invest in high-quality properties (Downs et al., 2019). The literature provides clear evidence in favor of REIT conversions, i.e., REOCs adopting the REIT structure. For example, Damodaran et al. (1997) document a significant increase in net income for U.S. REOCs following adoption of a REIT structure. Delcoure and Dickens (2004) find that U.S. REITs have lower systematic risk and lower agency costs than REOCs. Moreover, Bond and James (2004) and Rehkugler et al. (2012) find that European REITs trade at significantly higher NAV premiums than REOCs. Damodaran et al. (2005), Brounen et al. (2013), and Piao et al. (2017), using U.S. data, all find positive cumulative abnormal returns following the announcement of a REOC-to-REIT conversion. Beracha et al. (2019) observe increasing efficiency among U.S. REITs in the past ten years and estimate an associated reward through a higher market valuation of 4% annually. Given these distinct benefits, it is thus puzzling that the share of REITs relative to REOCs remains low in many countries. Why do the managers of potentially eligible REOCs forgo the advantages of REIT structures, in particular, the valuable tax benefits?

This paper examines the determinants of the REOC-to-REIT conversion decision. The extant literature has tended to focus on post-conversion effects. For example, Damodaran et al. (1997) examine changes in operational performance following organizational form changes, especially REIT conversions and deconversions (REITs reverting back to REOCs). The authors conclude that their empirical evidence is consistent with REOCs trading off the tax benefits and reduced agency costs of the REIT structure against the associated constraints on investment and dividend policy. However, they provide no direct evidence about what factors influence the conversion decision. Ling et al. (2020) examine the value implications of REIT conversions and deconversions, and find a positive announcement effect related to conversions. They also identify tax rates and the dividend yield as factors in the 29 U.S. REIT conversions in their sample.

This study contributes to the literature by providing the most comprehensive analysis to date of the factors that impact a REOC's decision to adopt a REIT structure, as well as which barriers prevent REIT conversions. Our empirical analysis is based on 215 REOCs across 13 countries, of which 80 converted to REITs over the January 1999 – December 2018 period. This global setting enables us to capitalize on substantial cross-country heterogeneity with respect to tax incentives and local REIT regime requirements. We also analyze the managerial motivations behind REIT conversions, such as undervalued share prices, peer-following behavior, and compensation-related incentives.

We first empirically analyze the REOC-to-REIT conversion decision using a panel logit model. The dependent variable is binary, and indicates whether a REOC converts to a REIT in a given period. Since we are interested in the circumstances surrounding the decision, we consider the time lag between the decision and conversion dates. Carlock and Wilkin (2018) argue that the entire conversion process can take up to 18 months. We also account for the fact that the conversion decision precedes initiation of the process, so we lag all explanatory variables by two years. This structure maximizes R-squared, although

our results are robust to shorter and longer lag structures. We use heteroscedasticity and autocorrelation robust standard errors to estimate the regression results. All model specifications control for the extent to which a REOC has fulfilled the regulatory REIT requirements in its country.

We document that the tax benefit appears to be a motivator for REIT conversions. The higher the pre-conversion tax rate paid by a REOC, the higher its probability of adopting the REIT structure. On the other hand, the estimated taxation of hidden reserves triggered by a potential conversion is associated with significantly lower conversion probabilities. It is therefore a clear barrier for some conversions. These findings contribute to the literature by providing direct evidence for the hypothesis that the REIT–conversion decision is a cost-benefit trade-off.

Note further that our regression results reveal a negative relationship between the REIT–conversion decision and a REOC's NAV spread. The NAV spread can be interpreted as the degree of over- or undervaluation relative to a firm's intrinsic value as approximated by its NAV. NAV discounts are associated with higher conversion probabilities. This suggests that REOCs may attempt to achieve a more favorable public market valuation by converting to a REIT. In contrast, NAV premiums may signal affirmation of a REOC's current business strategy, which could be hindered by the constraints associated with converting to a REIT.

Turning to market dynamics, we find that REOCs are more likely to convert to REITs when the share of existing REITs in a country is higher. REIT conversions are also more likely to occur following recent conversions by other REOCs in the same country. Both results suggest herd-like behavior in the REIT–conversion decision. Lastly, we explore the role of managerial incentives in the conversion decision. Empire-building CEOs may be disincentivized to a certain extent from conducting conversions. This is due to constraints

on reinvestment options as REITs in all countries, such as, e.g., requirements to distribute large portions of income to shareholders. REITs are thus prohibited from reinvesting earnings to increase company size, to which CEO base salaries are potentially linked. This requirement may be less of a concern if the CEO's remuneration is connected to the degree of shareholder value creation, rather than to firm size. We provide evidence that higher equity-based compensation, in the presence of NAV discounts, leads to an even stronger tendency to convert to a REIT structure.

Our research is relevant for many market participants in the listed real estate sector. As the direct beneficiaries, REOC investors have a major interest in understanding conversion determinants. Financial market regulators will also be interested in the circumstances under which REIT regimes can reach high levels of adoption. Because we account for differences in national REIT regimes, regulators can draw upon the international experience to identify critical factors for the adoption rate of REIT regimes. Note that, in additional country-level Poisson regressions, we find that easing REIT criteria is associated with significantly more conversions in subsequent periods. This suggests that REIT regime reforms may incentivize conversions if REITs fail to gain traction in a country. Finally, governments and tax authorities are interested in the factors explaining the adoption rates of REIT regimes. From a fiscal perspective, REITs promise a potentially reliable tax income stream resulting from the taxation of dividends at an individual investor level. In contrast, the tax income stream from REOCs may be higher overall, but more volatile and postponed to future fiscal periods as REOCs typically make use of the option to retain earnings and accumulate hidden reserves.

The remainder of this article is organized as follows. The next section reviews the related literature, and develops testable implications about the REIT–conversion decision. Section 2.3 introduces our data and methodology, while the empirical results are in Section 2.4. The final Section offers our conclusions.

2.2 Related Literature and Hypotheses

2.2.1 Cost-Benefit Trade-Off

Listed real estate companies in countries with REIT regimes can opt to convert to a REIT structure. The question for REOCs is whether they should sacrifice flexibility in investment allocation and profit policy to gain tax-exemption at a company level, as well as other select benefits. The answer may depend on each country's regulatory restrictiveness, market sentiment, the actions of peers, and firm-specific factors. In this subsection, we first address the direct implications of REIT conversions, in particular, the tax benefits and the direct tax costs.

Gyourko and Sinai (1999) provide a detailed discussion of the benefits and costs of REITs in general. They highlight the substantial tax savings as a key advantage. Damodaran et al. (1997) examine organizational form changes for real estate corporations, business trusts, MLPs, and REITs, and compare pre- and post-transition financial characteristics. The authors conclude that firms seem to trade the (dis)advantages of looser and tighter regimes against each other, conditional on their distress level. Their findings indicate taxes are a factor in organizational form changes.

While tax savings are the clearest motivator for REIT conversions, the degree of the advantage differs among individual REITs. REOCs in countries with higher corporate tax rates may have a stronger incentive to convert than those in countries with relatively low tax rates. Among REOCs within the same country, there can be further differences. For example, some REOCs use substantial levels of financial leverage to maximize their interest tax shield and minimize their income tax burden, whereas other REOCs choose more conservative financial structures. Chiang et al. (2018) also point out differences in organizational requirements, tax treatments, and external financing practices across the REIT sector. Gyourko and Sinai (1999) argue that REITs also benefit from not having to follow

inefficient capital structures in order to generate large deductible tax shields and the associated hiring costs for consultants, attorneys, and accountants. In turn, we argue that the REIT–conversion decision may be driven by the effective firm-specific income tax rate.

Depending on the regulatory regime, there may be direct costs triggered by the REIT–conversion process. Many REIT regimes require taxation of unrealized capital gains in the property portfolio as a part of the conversion process (see, for example, Mueller, 2010 and Brounen et al., 2013). Another example comes from the U.K., which, until 2012, imposed a 2% conversion charge on the gross market value of assets. Depending on firm-specific circumstances, the costs can serve as a barrier for REIT conversions. Together, we formulate our first pair of hypotheses, as follows:

Hypothesis 1: ***Cost-Benefit Trade-Off***

Hypothesis 1a: *The REIT–conversion decision is positively correlated with a REOC's effective income tax rate.*

and

Hypothesis 1b: *The REIT–conversion decision is negatively correlated with the direct costs associated with the conversion (e.g., taxation of unrealized capital gains).*

2.2.2 Market Valuation

REITs and REOCs derive the vast majority of their value from the real estate assets on their balance sheets. This makes them arguably easier to value than most non-real estate companies. To this end, financial analysts that cover REITs and REOCs commonly use the NAV, which can be thought of as a "sum of the parts" valuation. At least in theory, there are few reasons why the price of a REOC would deviate substantially from the market value of its real estate and other assets less debt. In fact, Patel et al. (2009) provide evidence that temporary share price deviations from the NAV tend to revert back to a long-term mean.

And Woltering et al. (2018) find that an investment strategy of buying REITs and REOCs with the highest NAV discounts, while shorting those trading at the highest premiums, can produce significant abnormal returns.

We note that shareholders and the management of individual REITs trading at substantial NAV discounts may find little consolation in the literature's observation that substantial deviations of share prices from NAV tend to be temporary. Consistent with this idea, Downs et al. (2019) find that U.S. REITs are more likely to be targeted by activist investor campaigns when their share prices are low relative to NAV.

The literature also suggests that REIT status can have a positive impact on price-to-NAV ratio. Rehkugler et al. (2012) and Bond and James (2004) find that REITs tend to trade at higher price-to-NAV ratios than REOCs. Moreover, Damodaran et al. (2005) and Piao et al. (2017) document positive cumulative abnormal returns of REOCs following REIT–conversion announcements. Beracha et al. (2019) observe efficiency gains among U.S. REITs in the 2010–2017 period and report a reward through market valuation of 4% annually. Together, these findings suggest that REOCs may achieve a more favorable market valuation, and therefore decrease potential NAV discounts, by converting to REITs. However, the opposite may be true for REOCs that trade at significant premiums to NAV, because they have fewer incentives to initiate potentially costly changes of their organizational forms. More importantly, the constraints associated with REIT structures may restrict this successful business strategy that has thus far been positively perceived by the market. Consequently, we posit that REOCs trading at a high price-to-NAV would be less inclined to convert. Hypothesis 2 reflects the potential impact of a REOC's stock market valuation on the REIT–conversion decision:

Hypothesis 2: *The REIT–conversion decision is negatively correlated with a REOC's NAV spread.*

2.2.3 Herd Behavior

In addition to company-specific factors, the REIT–conversion decision may also be influenced by marketwide trends. For example, the academic literature documents various forms of herding behavior among market participants. According to Wylie (2005), herding occurs when a group of economic agents do not act solely on their own private information, but instead rely on the choices of other members of their group or peers. Choi and Sias (2009) find strong evidence of herding among institutional investors, who tend to follow each other into and out of certain investment sectors. Venezia et al. (2011) examine herding in the context of individual stock holdings, and provide evidence for it among both institutional and private investors.

The REIT–conversion decision, likewise, may be a function of peer group behavior. For example, when a REIT regime is first introduced in a country, decision makers are likely to observe the actions of their peers before moving ahead on their own. As soon as several REOCs in a country have converted, the decision makers of the remaining REOCs may feel compelled to convert as well. Consistent with this idea, Roth and Kaspar (2016) identify market trends, corporate structure, and the regulatory environment as three of the twelve key areas of focus for REIT managers. Accordingly, our third hypothesis reflects the potential impact of herd behavior on the REIT–conversion decision:

Hypothesis 3: *The REIT–conversion decision is positively correlated with prior conversion decisions by industry peers.*

2.2.4 Managerial Motivation

Note that a REIT conversion may be in the best interest of shareholders, but the decision is made by the REOC's management. Whether they tend to act in the best interest of investors may be a question of how interests are aligned. The literature documents a variety

of potential conflicts of interest between management and shareholders (see, for example, Jensen and Meckling, 1976 and Chiang et al., 2018). In the context of the REIT–conversion decision, a conflict can arise from the structural constraints the REIT structure imposes on management's discretion to use cash flows. Ghosh and F. Sirmans (2005) find that management compensation in the REIT sector tends to be linked to firm size. This creates an incentive for so-called empire-building behavior, i.e., a tendency to retain earnings and increase assets under management, rather than distributing cash flows to investors (Graff, 2001).

The literature also documents that appropriate incentive structures lead to an alignment of interests between management and shareholders. A prominent solution to motivate managers is to link their personal wealth to operating efficiency. This can be achieved by tying bonus payments to performance criteria. Another approach is equity-based compensation, which ties the manager's wealth to that of shareholders. Ghosh and F. Sirmans (2005) find that equity-based compensation positively impacts measures such as return on assets, capital, and equity. Consistent with this idea, Damodaran et al. (2005) find that the average insider stock ownership of executives from firms that have changed to stricter organizational forms is 25.6%. In contrast, it is only 2.5% for firms that have changed to looser structures. In order to test whether and how managerial incentives impact the REIT–conversion decision, we formulate our fourth hypothesis as follows:

Hypothesis 4: *The REIT–conversion decision is positively correlated with the level of equity-based compensation of key executives.*

2.3 Data and Methodology

2.3.1 Sample of REIT Conversions

To ensure that the REOCs in our sample are actually potential candidates for REIT conversions, we base our empirical analysis on constituents of the FTSE EPRA/NAREIT Developed Real Estate Index between January 1999 and December 2018. The index includes listed real estate companies that derive at least 75% of total EBITDA from relevant real estate activities, which are defined as the ownership, trading, or development of income-producing real estate. Financing, construction, and property management of real estate are not included under relevant activities. Note that EPRA has minimum free-float market capitalization requirements. Because our sample is based on historic index constituents that are updated on a monthly basis, it is free from survivorship bias (EPRA, 2018a).

In total, our sample is comprised of 215 listed REOCs across 13 countries with REIT regimes: Belgium, Canada, France, Germany, Italy, Netherlands, South Africa, Spain, the U.K., the U.S., Japan, Hong Kong, and Singapore. Although South Africa is an emerging market, we include it as Africa's most developed country, and because of its significant number of REIT conversions. Australia is not part of our sample because there are no REOCs during our sample period. Ten of the thirteen countries have at least one REIT conversion. The exceptions are Japan, Hong Kong, and Singapore. However, we include REOCs from these countries as counterfactuals, from which we hope to gain information about why they did not convert.[1]

[1]The identification strategy aims to achieve a suitable counterfactual group among the representative property firms gathered by EPRA/NAREIT. Nadauld (2009) analyzes property companies participating in the creation of a REIT on a global scale. The author collects a sample from various sources and reports of limited evidence or even counter-intuitive results. Therefore, it is a prime goal for this paper to utilize a proper counterfactual by using only self-converting listed property companies fulfilling the EPRA rules and by requiring 24 months of listing (as in Ooi et al., 2007). In the end, the sample comprises converted and never-converted listed real estate companies. For the Asian Markets, we investigate spin-offs documented by EPRA and found only 3 relevant events in which an established REOC has created a new REIT. Therefore, we decided to keep a clearly defined counterfactual setting and consequently excluded those firms. Moreover, deselecting the REIT structure occurs very infrequently on an international scale and is not the focus of the current study.

Table 2.1: Distribution of the Listed Real Estate Companies (REOCs and REITs)

Country	REOCs		REITs	
	overall	*never converted*	*converted*	*overall*
Belgium	3	0	3	9
Canada	10	0	10	37
France	14	2	12	16
Germany	18	17	1	3
Italy	4	1	3	3
Netherlands	3	0	3	8
South Africa	17	3	14	20
Spain	6	4	2	4
UK	83	59	24	39
USA	20	1	18	222
Japan	9	9	0	54
Hong Kong	22	22	0	13
Singapore	7	7	0	12
Total	215	125	90	440

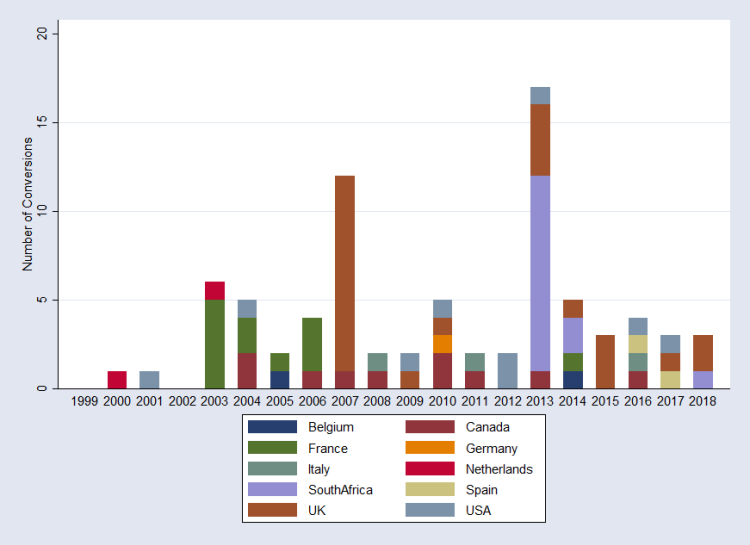
Note: This table shows the distribution of REOCs, REITs, and REIT conversions by country and in aggregate over the January 1999 – December 2018 sample period. The first column gives the overall number of REOCs, which is split up into those that never convert (column 2) and those which converted to REITs during our sample period (column 3). Column 4 gives the overall number of REITs, including converted REOCs.

We identify conversion events by tracking both the IPO date and the REIT–conversion date. In the case of U.S. companies, this information comes from CRSP share code changes. For all other countries, we use the S&P Global Market Intelligence database. We carefully screen company reports to complement the data. In total, we observe 90 REIT conversions. Since we lag all explanatory variables in our main set of tests by 24 months, we lose ten conversions. We end up with a total of 80 REIT conversions.

Table 2.1 shows the distributions of REOCs, REITs, and REIT conversions by country and in aggregate. The first column reports the overall number of REOCs, followed by the number that did not convert (column 2), and the number that converted during our sample period (column 3). Column 4 reports the overall number of REITs, including con-

versions. We note that 41.9% of all REOCs in our sample converted during the sample period. Furthermore, we observe a strong dispersion in REIT conversions across individual countries. In Belgium, Canada, and the Netherlands, all REOCs converted. The vast majority of REOCs in France, Italy, South Africa, and the U.S. also converted. In contrast, few or no conversions took place in the other countries.

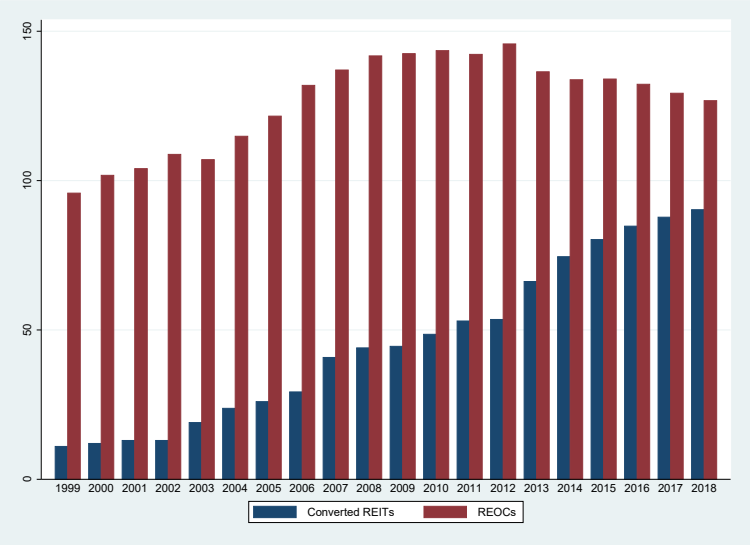
Figure 2.1: REIT Conversions, By Country, Over Time



Note: This figure shows the number of country-level REOC-to-REIT conversions per year over our 1999 – 2018 sample period.

Figure 2.1 shows the number of REIT conversions by country and year. The graph reveals rather continuous conversion activity throughout the sample period. Consistent with Hypothesis 3, the figure also shows that country-level REIT conversions tend to occur in clusters. For example, between 2003 and 2006, we observe a high level of conversions in France. U.K. conversions occurred in two waves between 2007 and 2010, as well as between 2013 and 2018. South African conversions are clustered between 2013 and 2014. REIT conversions in the U.S. and Canada tend to be more evenly distributed.

Figure 2.2: Number of Listed Real Estate Companies Over Time



Note: This figure shows the aggregate number of REOCs (red bars) and converted REITs (blue bars) per year over our 1999 – 2018 sample period.

Figure 2.2 shows the aggregate number of REOCs (red bars) and converted REITs (blue bars) over our sample period. Despite the steady increase in the number of conversions, a substantial number of potentially eligible REOCs refrained from converting.

2.3.2 Research Design and Variable Definitions

Our primary objective in this paper is to study the determinants of REOC-to-REIT conversions. Our dependent variable is binary. It equals one if REOC i from country j converts to a REIT in quarter t and is zero in all previous quarters. Once a REOC converts to a REIT, it leaves our sample. This allows us to estimate the likelihood of conversion, rather than explaining the REIT structure. Our approach is consistent with Lewis et al. (2011), who measure the adoption of clean technology in a farming context. Our panel logit model, shown in Equation 2.1, estimates the impact of the explanatory variables on

REIT–conversion probability[2]:

$$
\begin{aligned}
Conversion_{i,j,t} = \alpha_0 \\
&+ \beta_1 Effective\ Tax\ Rate_{i,t-8} + \beta_2 Exit\ Tax\ Costs_{i,t-8} \\
&+ \beta_3 NAV\ Spread_{i,t-8} \\
&+ \beta_4 REIT\ Market\ Share_{j,t-8} + \beta_5 Previous\ Conversions_{j,t-1} \\
&+ \beta_6 Cash\ Compensation_{i,t-8} + \beta_7 Equity\ Compensation_{i,t-8} \\
&+ \beta_8 NAV\ Spread_{i,t-8}\ x\ Equity\ Compensation_{i,t-8} \\
&+ \beta_9 Asset\ Test_{i,t-8} + \beta_{10} Distribution\ Test_{i,t-8} \\
&+ \beta_{11} Gearing\ Test_{i,t-8} + \beta_{12} Ownership\ Restrictions_{j,t-8} \\
&+ \beta_{13} Size_{i,t-8} + \epsilon_{i,j,t}
\end{aligned}
\tag{2.1}
$$

Carlock and Wilkin (2018) posit that the entire conversion process lasts from 12 to 18 months. Since we are interested in explaining the REIT–conversion decision, rather than the conversion date, we lag our explanatory variables by at least 6 quarters. An assessment of the trade-offs precedes initiation of the conversion process. Thus, to mitigate endogeneity concerns, we lag all explanatory variables, except Previous Conversions, by two years.[3] In additional robustness tests reported in Table A.2 in the Appendix, we use shorter time lags and find qualitatively similar results.

Next, we use company-specific and sectorwide variables to model the REIT–conversion decision. First, we examine whether and to what extent the decision is driven by a cost-benefit trade-off (Hypothesis 1). Prior studies have found that corporate taxation is the major benefit associated with the REIT structure for shareholders (see, for example, Gyourko and Sinai, 1999). Holding all else equal, REOCs with higher tax rates should be more inclined to convert than those with lower rates (Hypothesis 1a). REOCs' actual tax rates are not only impacted by their countrywide corporate income tax rates, but also by

[2]Appendix Table A.1 summarizes the expected empirical implications.

[3]REOCs generally track the activities of their market competitors. Consequently, this variable captures the information on recent REOC-to-REIT conversions over the past two years.

local community tax rates and company-specific factors such as loss carryovers and other deductible tax easements. Therefore, we use the individual REOC's effective tax rate as a proxy for the tax advantage. We calculate this measure as income tax expense divided by total pre-tax income (obtained from Refinitive's Thomson Reuters Datastream database).

Subsequently, we account for the costs associated with a REIT conversion - a potential barrier to adopting the REIT structure (Hypothesis 1b). Conversion costs can be split into 1) the one-time costs of aligning the company with REIT qualification requirements, and 2) any ongoing costs for additional REIT corporate compliance requirements. Because we cannot directly observe hypothetical current and future expected costs, we focus on the potentially significant conversion costs. For example, all countries, except Singapore, Hong Kong, and South Africa, require an "exit tax" on the hidden reserves that can result from the difference between current market values of properties and their balance sheet values. The U.K. does not require an exit tax, but applied a conversion charge prior to 2012. Holding all else equal, REOCs with a higher exit tax should be less inclined to adopt the REIT framework. We approximate exit tax costs by multiplying a REOC's price-to-book ratio (or price-to-NAV ratio in the case of U.S. REITs) by its effective tax rate. The underlying rationale is that hidden reserves are captured by a relatively high market valuation. For example, the NAV can be a lagged measure of true fundamental value in rapidly rising or falling real estate markets because properties are only reappraised every twelve months. Thus, the stock market valuation may reflect the impact of future reappraisals.[4]

Hypothesis 2 tests whether undervalued REOCs use REIT conversions to reduce structural NAV discounts, which are relative discounts due to the organizational form. In contrast, REOCs trading at NAV premiums should show lower probabilities of conversion because they lack the market valuation incentive to change their organizational form. We

[4]Brähler and Schmidt (2014) show properties reported under IFRS accounting standards contain 20% hidden reserves on average. We believe the market's assessment is a good proxy for the difference between the true market value and the reported value.

calculate the NAV spread to measure the impact of market valuation on a REOC's REIT–conversion probability as follows:

$$NAV\ Spread_{i,t} = \frac{Market\ Value\ of\ Equity_{i,t}}{NAV_{i,t}} - 1 \tag{2.2}$$

All of our sample countries, except the U.S., use NAV marked-to-market (IFRS versus GAAP). Under IFRS accounting, property values are based on regularly updated appraisal values, so the book value of equity is a good proxy for NAV. In contrast, U.S. REOCs report according to U.S. GAAP accounting, where property values are reported on the balance sheet by historical costs less cumulatively depreciated acquisition costs. Consequently, the book value of equity is not a good proxy for NAV for U.S. REOCs. For this reason, we calculate U.S. REOC NAVs from S&P Global Market Intelligence data (formerly SNL Financial). Specifically, we average the NAV estimates generated across financial analysts for each REOC as that REOC's proxy NAV.

We use two proxies to test for the presence of peer-following behavior in the REIT–conversion decision (Hypothesis 3). First, we test whether a higher share of REITs in a country increases the REOC's likelihood of following its peers. We measure the share of converted REITs in terms of total market capitalization relative to the combined market capitalization of converted REITs and REOCs in each country ($REIT\ Market\ Share_{j,t-8}$). Second, we calculate the rolling sum of REIT conversions in a country over the prior 24 months in order to test for peer-following behavior among REOC executives, or "REIT waves" ($Previous\ Conversions_{j,t-1}$). An alternative explanation of our herding proxies is that these variables capture an advantageous policy environment or business cycle for REIT conversions.

We then test for the role of managerial incentives in the REIT–conversion decision (Hypothesis 4) with remuneration data from S&P Capital IQ. We hypothesize that empire-building executives are less inclined to convert to REIT because REIT regulations imply giving up flexibility to maximize firm size. We use the cash compensation of key executives to proxy for a compensation structure that may incentivize empire-building behavior. Kim and Wiley (2019) and Graff (2001) document that cash remuneration of key executives and firm size are positively correlated. This provides an incentive for executives to maximize their future earnings by increasing firm size.[5] We follow Pennathur and Shelor (2002) and Alshammari (2004), and define cash remuneration as the sum of base salary, bonuses, and other cash payments per fiscal year. We then normalize cash compensation using the firm's enterprise value.

In contrast, key executives may be more inclined to strive for becoming a REIT when their compensation is equity-based, and thus more aligned with the interests of shareholders. The agency-conflict-reducing mechanism of linking compensation to stock performance is well-documented (see, for example Ghosh and F. Sirmans, 2005 and Damodaran et al., 2005). Following Pennathur and Shelor (2002) and Price et al. (2015), we use the natural logarithm of equity compensation, which includes stocks, grants, and awards paid and credited, but excludes options. We expect a positive impact of equity-based compensation on REIT–conversion probability. Moreover, we include an interaction term between equity compensation and a REOC's NAV spread to test whether conversions are more likely to occur under the combined presence of NAV discounts and higher degrees of equity-based compensation. Our rationale for this test is that, when the discount to NAV is higher, key executives have more reasons to expect to benefit from share price appreciation, and in turn to earn more equity-based compensation.

[5] According to Hope and Thomas (2008) and Jensen (1986), a major motivation for empire building are executives striving for cash compensation and status. As a consequence, they may take actions that are at odds with the maximization of shareholder value (Hall, 1999). We focus our attention on this behavior as opposed to lesser, competing theories.

We control for the degree to which REOCs have already fulfilled country-specific REIT criteria as a determinant. Our reasoning here is that a conversion may be more likely if a REOC is already poised to fulfill the legal requirements. At the same time, we also need to control for the fact that REOCs that are further from fulfilling the criteria are more likely to have a lower probability of adopting the REIT structure, regardless of their situation in our hypotheses. We note that a challenge with using our international dataset is that the REIT qualification criteria differ across countries. To achieve comparability across countries, we measure the degree to which a REOC has already fulfilled the criterion relative to the country-specific REIT regulation ratio. If a country has no particular rule about a specific REIT criterion, the corresponding variable is set to zero, which implies no lack of fulfillment on the criterion. Country-specific regulation ratios are time-varying because the REIT requirements can change over time, which happened in several instances. Equation 2.3 shows the sample calculation for the so-called "asset tests", according to which a REIT's qualifying assets must represent a minimum fraction of its total assets. For example, at least 75% of a German REIT's assets must be invested in real estate. In the U.S., qualifying assets may include real estate, cash, cash items, and government bonds. The variable $Asset\ Test_{j,t-8}$ represents the percentage deviation of a REOC's qualifying assets relative to its respective country-specific regulation ratio:

$$Asset\ Test_{i,t} = \frac{Qualifying\ Assets\ Ratio_{i,t} - National\ Regulation\ Ratio_{j,t}}{National\ Regulation\ Ratio_{j,t}} \tag{2.3}$$

For the "distribution tests", REITs are similarly required to fulfill country-specific ratios for dividend distributions relative to taxable income. As in Equation 2.3, we measure an individual REOC's current deviation from the country-specific required ratio. The "gearing test" also measures the deviation of a REOC's financial leverage from the country-specific

regulation. We capture any prevailing rules of ownership restrictions using an indicator variable that equals one if country *j* exhibits certain ownership rules at time *t* for minimum free-float or block-holding limits. An example from the U.S. is the "five or fewer" rule (see, for example, Downs et al., 2019 and Chiang et al. (2018)).

Our final control variable is firm size, as larger firms may benefit from economies of scale and scope during the REIT–conversion process. For example, their relative costs for obtaining and maintaining REIT status may be lower. We measure firm size as the natural logarithm of a REOC's total market capitalization.

2.3.3 Summary Statistics

Table 2.2 provides descriptive statistics for our explanatory variables around REIT–conversion dates. The first set of descriptive statistics is for REOCs that convert to REITs. Values are measured 24 months before the official adoption of the REIT structure, and thus reflect the approximate point in time of the REIT–conversion decision. The second set shows the descriptive statistics for the same firms 24 months after conversion. The third and final set is for non-converting REOCs. To ensure comparability, the respective numbers are stacked and averaged over the REIT–conversion dates.[6]

The average effective tax rate of REOCs 24 months prior to their REIT conversion is 21.73%. Two years after conversion, this percentage drops to 6.12%. Note that the post-conversion effective tax is not zero, however. This is because REITs may face taxation on earnings that are not distributed, or be penalized for not meeting REIT criteria in the form of taxes. REOCs that do not convert tend to have a lower average effective tax rate (17.15%), indicating that the REIT tax structure may offer a lower incentive to use this ben-

[6]Consistent with Ke (2015), we winsorize the NAV spread at 5% and 95% levels to remove outliers. In addition, REIT test variables and management compensation measures are winsorized at the 1% and 99% levels.

efit (Hypothesis 1a).

Our proxy for exit tax costs for REOCs 24 months before conversion is -0.06. This suggests that converting REOCs on average do not seem to possess significant hidden reserves that would be taxed in the case of a conversion. Once a REOC converts to a REIT, it can no longer be taxed for its hidden reserves, so the number drops to zero. On the other hand, REOCs that do not convert have significantly higher exit tax costs on average. This observation is consistent with cost-based barriers to REIT conversions (Hypothesis 1b).

Converting REOCs trade at NAV premiums. Lending support to Hypothesis 2, we find that, post-conversion, the average NAV spread significantly increases (31% vs. 56%). REOCs that do not convert tend to trade close to their NAVs. Hence, they have a market valuation-based incentive to change their organizational form. However, the fact that REITs trade at higher positive levels of NAV spreads is also documented by Rehkugler et al. (2012) and Bond and James (2004).

Before conversion to a REIT, average *REIT Market Share* per country in our sample is 32.26%. At the corresponding conversion dates, it increases to 59.18% for REOCs that do not convert. Average REIT market share increases substantially two years after REIT conversion (71.31%). By the time of the REIT–conversion decision, there are on average 1.11 prior REIT conversions in the same country. Two years after conversion, this number has increased to 4.45. For non-converting REOCs, it is 2.97.

Cash-based compensation relative to enterprise value shrinks on average after conversion (2.57 vs. 0.74). In contrast, equity-based compensation of key executives almost doubles. Non-converting REOCs obtain relatively low levels of cash- and equity-based compensation on average compared to those that convert.

Moreover, prior to conversion, converting REOCs are substantially closer to fulfilling the financial requirements associated with obtaining a REIT structure than non-converting REOCs. This suggests it is important to control for these factors in testing our hypotheses. The asset test measures a REOC's percentage deviation from the minimum required ratio of real estate and other qualifying assets relative to total assets in its country. And converting REOCs are substantially closer to fulfilling the asset test than non-converting REOCs (-2.86% vs. -11.15%). The same holds for the distribution test, where converting REOCs are -9% below the requirement versus -60.65% for non-converting REOCs. Moreover, prior to conversion, converting REOCs pass the gearing test, as their leverage ratios are on average 8% below the maximum ratio in their countries. In contrast, non-converting REOCs exhibit, on average, a leverage of 1% below the maximum leverage ratio. Also prior to conversion, 54% of converting REOCs are located in countries where the REIT structure is subject to ownership restrictions. REOCs that do not convert tend to be more exposed to ownership restrictions (97%). Thus, this factor may be a barrier to REIT conversions. The descriptive statistics for our final control variable, *Size*, are relatively similar for REIT converters versus non-converters.

Appendix Table A.3 provides the correlation matrix of the explanatory variables. All correlation estimates are well below the threshold of 0.8, suggesting multicollinearity should not be a concern.

Table 2.2: Sample Characteristics

	REOCs before REIT Conversion				REOCs after REIT Conversion				REOCs w/o REIT Conversion			
	mean	sd	p25	p75	mean	sd	p25	p75	mean	sd	p25	p75
Cost-Benefit Trade-Off												
Effective Tax Rate [%]	21.73	15.19	7.22	33.01	6.12	8.64	0.25	9.50	17.15	20.46	3.03	24.41
Exit tax costs [level]	-0.06	0.88	0.00	0.23	0.00	0.00	0.00	0.00	0.16	0.21	0.03	0.22
Market Valuation												
NAV Spread [%]	30.62	131.60	-16	30.5	56.28	216.90	-20	11	4.26	108.71	-42.08	8.86
Herd Behavior												
REIT Market Share [%]	32.26	34.82	0.00	62.45	71.31	21.69	54.77	90.58	59.18	7.69	59.76	59.76
Previous Conversions [level]	1.11	1.89	0	2	4.45	3.90	1	7	2.97	0.63	3.14	3.14
Executive's Incentives												
Cash Compensaiton [level]	2.57	11.18	0.14	1.43	0.74	1.45	0.12	0.98	1.36	1.90	.13	1.66
Equity Compensation [level]	3.36	5.53	0.00	8.45	6.27	6.70	0.00	13.47	2.22	3.91	0.00	4.09
Share of Equity Compensation [%]	3.52	7.97	0.00	1.69	9.27	12.99	0.00	15.52	2.72	6.74	0.00	1.22
Control Variables												
Asset Test [%]	-2.86	30.18	-9.40	17.20	3.18	23.44	-.34	17.70	-11.15	36.96	-32.19	20.54
Distribution Test [%]	-9.00	83.47	-78.54	26.16	15.34	81.09	-30.79	44.03	-60.65	47.90	-100.00	-31.4956
Gearing Test [%]	-7.99	18.73	0	0	-8.34	17.03	0	0	-.76	8.43	0	0
Ownership Restrictions [level]	0.54	0.50	0	1	0.61	0.49	0	1	0.97	0.17	1	1
Size [level]	14.22	1.59	13.18	15.55	14.79	1.34	13.76	15.89	13.27	1.05	12.41	14.00

Note: This table provides descriptive statistics on our explanatory variables around REIT–conversion dates. The first set shows descriptive statistics only for REOCs that later converted to REITs exactly 24 months before their official adoption of the REIT structure. The second set shows descriptive statistics for the same companies, but twenty-four months post-REIT conversion. The third and final set of descriptive statistics is for REOCs that did not convert. The respective numbers are averaged over all technical REIT–conversion dates. Detailed variable definitions are in section 2.3.2.

2.4 Empirical Results

2.4.1 Company-Specific Determinants and Market Dynamics

Our empirical results regarding a REOC's conversion decision are organized into several subsections. In this subsection, we test our first three hypotheses using the full sample of 4,603 observations. The respective panel logit regression results are in Table 2.3. The model (*i*) results in the first column focus on the set of control variables. The subsequent models (*ii*) – (*iv*) successively introduce the variables used to test Hypotheses 1 – 3. All regression results are estimated controlling for panel-specific heteroscedasticity and autocorrelation. We also control for the introduction of REIT regimes with an indicator variable that equals one in the two years following the introduction of a REIT regime in a country.[7]

Our empirical conclusions concerning the hypotheses are based on the statistical significance of the coefficients in model (*iv*), our main model. As proposed in Downs et al. (2017), we analyze the economic implications graphically, again based on the model (*iv*) results. Figures 2.3 – 2.7 show how REIT–conversion probabilities change as a function of the respective explanatory variables, while all other explanatory variables are held constant at their pre-conversion means (as shown in Table 2.2).

Before analyzing the tax, managerial, and other incentives and barriers to obtaining the REIT structure, we first focus on our control variables. They measure the extent to which a REOC has already fulfilled the criteria for REIT status. Model (*i*) reveals that the coefficient on $Asset\ Test_{i,t-8}$ is positive and statistically different from zero. Hence, a REOC whose share of real estate assets exceeds the minimum for REITs in its country has a higher conversion probability than those below the threshold. Similarly, the coefficient on $DistributionTest_{i,t-8}$ is positive and significant.

[7] An anonymous referee has suggested that the presentation of our results would benefit from considering business cycles and alternative linear model specifications. To address these concerns, we perform robustness checks using linear probability models where we control for country, individual and year fixed effects. The results are remarkably robust and therefore not reported but they are available from the authors upon request.

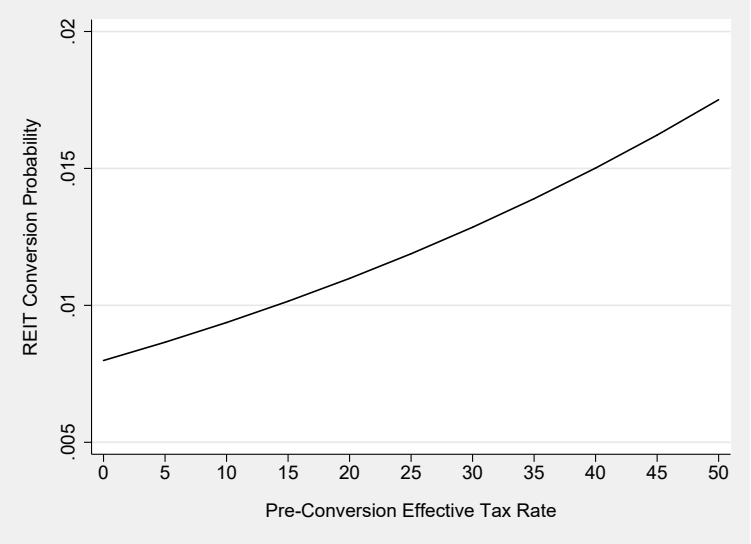
Table 2.3: Logit Estimation Results of REOC-to-REIT Conversion Likelihood

	model i	model ii	model iii	model iv
Cost Benefit Trade-Off				
Effective Tax Rate		0.014**	0.013**	0.016**
		(0.006)	(0.007)	(0.007)
Exit Tax Costs		-0.359***	-0.552***	-0.564***
		(0.101)	(0.167)	(0.161)
Market Valuation				
NAV Spread			-0.064**	-0.048***
			(0.028)	(0.018)
Herd Behavior				
REIT Market Share				0.033***
				(0.007)
Previous Conversions				0.400***
				(0.066)
Control Variables				
Asset Test	0.012**	0.011	0.011	0.011
	(0.006)	(0.007)	(0.007)	(0.007)
Distribution Test	0.004***	0.004**	0.004**	0.004**
	(0.001)	(0.002)	(0.002)	(0.002)
Gearing Test	0.003	-0.003	-0.003	-0.004
	(0.004)	(0.006)	(0.006)	(0.009)
Ownership Restrictions	-1.091***	-1.364***	-1.405***	-1.926***
	(0.306)	(0.389)	(0.396)	(0.475)
Size	-0.247***	-0.120	-0.126	-0.010
	(0.068)	(0.086)	(0.088)	(0.110)
Constant	-0.217	-2.938**	-2.799**	-5.448***
	(1.048)	(1.370)	(1.405)	(1.902)
Observations	4603	4603	4603	4603
Pseudo R^2	0.165	0.251	0.261	0.303

Note: This table shows the panel logit regression results of a REOC's decision to convert to a REIT. The unit of observation is the operating status in each quarter. The dependent variable equals one if REOC i from country j converts to a REIT in quarter t, and zero in all previous quarters. Explanatory variables are the company-specific *Effective Tax Rate*, *Exit Taxes* triggered by uncovering hidden reserves and *NAV Spreads*, as well as country-level *REIT Market Share* and number of *Previous REOC-to-REIT Conversions* in the same country. Control variables are country-specific *REIT criteria* and company *Size*. All independent variables are lagged by two years. The regression results are estimated controlling for a REIT regime introduction indicator variable, and using panel-specific heteroscedasticity and autocorrelation robust standard errors clustered at the company level (in parentheses). ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

This suggests that REOCs that exceed the minimum share of real estate-related income distributions also obtain a higher conversion probability.[8]

Figure 2.3: Marginal Effects of Company Effective Tax Rates



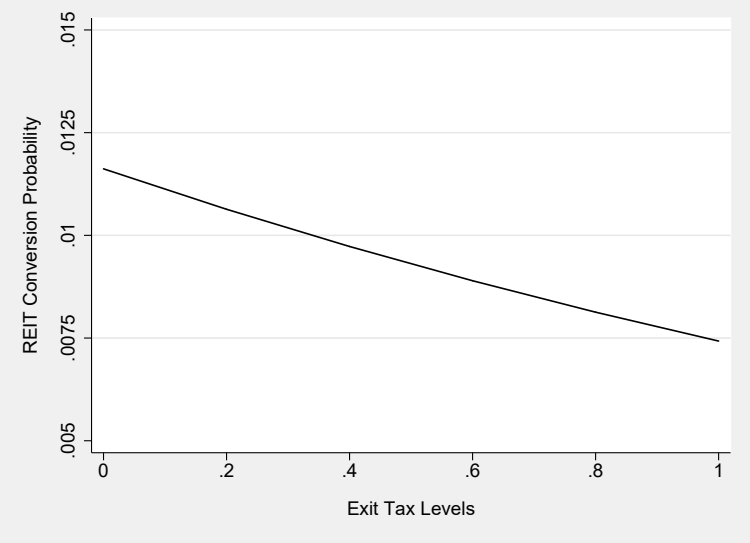
Note: This figure shows how the REIT–conversion probability changes as a function of company-specific effective tax rate. The predicted probabilities are based on the regression results in Table 2.3, model (*iv*), where all other explanatory variables are held constant at their pre-conversion means, as shown in Table 2.2.

In contrast, the coefficient on $GearingTest_{i,t-8}$ is not statistically different from zero. Thus, we find no evidence that restrictions on the extent to which REITs can use financial leverage pose any substantial barrier to REIT conversions. On the other hand, the coefficient on the $OwnershipRestrictions_{j,t-8}$ variable is negative and significant, suggesting that major limitations on concentrations of shareholders are a barrier to REIT conversions in those countries. The impact of our control variables that capture formal REIT criteria are all robust across different model specifications except for Asset Test, which is only sig-

[8] Appendix Table A.4 provides a direct comparison of our logit regression results using the distribution test versus an approximate regulatory payout rule based on the dividend yield (Ling et al., 2020). Importantly, the distribution test yields superior results in an international context.

nificant in model (*i*). Our final control variable is REOC size, which we use to capture potential scale economies in the REIT–conversion decision. The impact of $Size_{i,t-8}$ is not statistically different from zero in models (*ii*) – (*iv*).

Figure 2.4: Marginal Effects of Exit Tax Costs

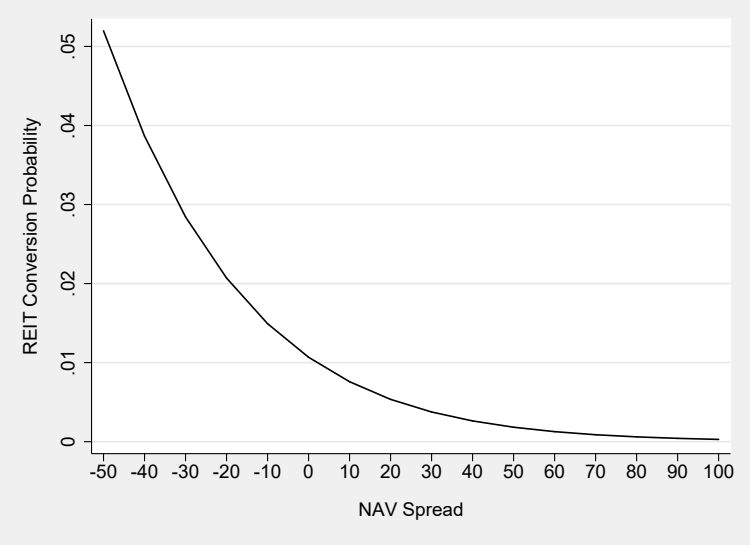


Note: This figure shows how the REIT–conversion probability changes as a function of company-specific exit taxes. The predicted probabilities are based on the regression results in Table 2.3, model (*iv*), where all other explanatory variables are held constant at their pre-conversion means, as shown in Table 2.2.

Model (*ii*) introduces the explanatory variables used to test whether and to what extent the REIT–conversion decision is a cost-benefit trade-off. The coefficient on *Effective Tax* $Rate_{i,t-8}$ is positive and statistically different from zero. REOCs with higher effective tax rates are more inclined to convert. This finding supports the tax benefit argument for REIT conversion (Hypothesis 1a). Ling et al. (2020) also address some determinants of REIT conversions. Using a sample of 29 U.S. REIT conversions, they find that non-REITs with high income tax ratios are more likely to convert. Figure 2.3 shows that the REIT–conversion probability increases from 1% to 1.5% as the effective pre-conversion tax rate increases

from 15% to 40%. Model (*ii*) introduces $Exit\ Tax\ Costs_{i,t-8}$, another proxy for the costs associated with REIT conversions. Consistent with Hypothesis 1b, the coefficient is negative and statistically significant. Figure 2.4 shows that the conversion probability substantially decreases as the exit taxes rise. In summary, our results are consistent with the notion that the REIT–conversion decision is a cost-benefit trade-off.[9]

Figure 2.5: Marginal Effects of NAV Spreads



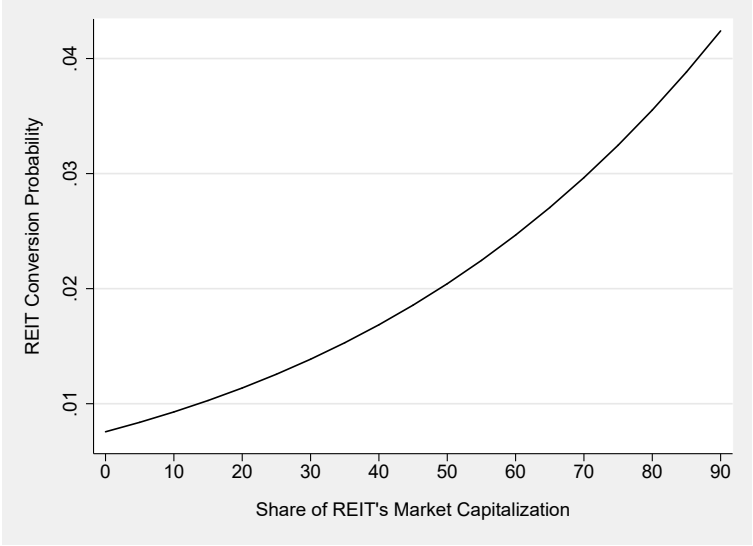
Note: This figure shows how the REIT–conversion probability changes as a function of company-specific net asset value (NAV) spreads. The predicted probabilities are based on the regression results in Table 2.3, model (*iv*), where all other explanatory variables are held constant at their pre-conversion means, as shown in Table 2.2.

Model (*iii*) introduces $NAV\ Spread_{i,t-8}$ to test whether a REOC's stock market valuation relative to its fundamental value has an impact on REIT conversions. Consistent with Hypothesis 2, the coefficient on $NAV\ Spread_{i,t-8}$ is negative and significant at the 5% and 1% levels. The larger the NAV discount, the higher the REIT–conversion probability. Fig-

[9] We incorporate initial costs of conversion measured by exit taxes triggered by a necessary taxation upon the realization of hidden reserves. The results remain robust if we extend these costs by the conversion charge of 2% applied in the U.K.

ure 2.5 shows that REOCs trading at a NAV discount of 30% have a conversion probability of 3%, whereas this probability drops more than sixfold for REOCs trading at a 30% premium to NAV. Our results are consistent with the hypothesis that the REIT–conversion decision is driven by a desire to achieve a more favorable market valuation, as well as by tax considerations. In fact, REOCs may attract new investors when adopting the REIT structure and the additional demand for shares could help trigger more favorable market valuations. Investors' attraction to REITs even during crisis periods is well documented (see, for example, Devos et al., 2013). Eichholtz and Kok (2007) also note that the introduction of REIT structures tends to increase capital flows to the real estate sector. And comparable evidence is provided by Banerjee et al. (2016), who find that companies that choose to go public early in hot IPO markets do so in order to strengthen their corporate identity and open up more fully for new investors.

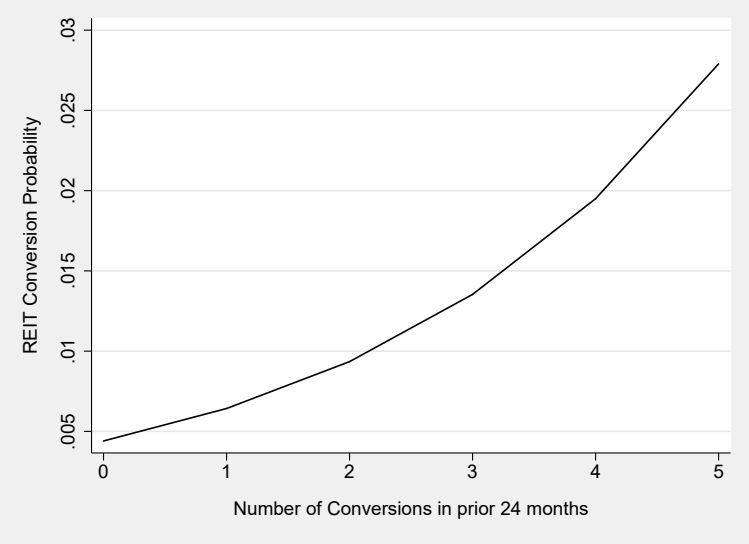
Figure 2.6: Marginal Effects of REIT Market Share



Note: This figure shows how the REIT–conversion probability changes as a function of REIT market share in country j. The predicted probabilities are based on the regression results in Table 2.3, model (*iv*), where all other explanatory variables are held constant at their pre-conversion means, as shown in Table 2.2.

Model (*iv*) completes the analysis by introducing two variables that proxy for the impact of herding or peer-following behavior in the REIT–conversion decision (Hypothesis 3). The first, $REIT\ Market\ Share_{j,t-8}$, measures the share of converted REITs in a country. As the market share of REITs increases, remaining REOCs may be more inclined to follow their industry peers and convert. Consistent with this hypothesis, the coefficient on $REIT\ Market\ Share_{j,t-8}$ is positive and statistically significant. In an additional test, using the proportion of all REITs for a shorter time period, we find qualitatively similar results (unreported). Figure 2.6 shows that the conversion probability is only 1% for REIT market shares of 10% – 20%. In contrast, for high REIT market shares of 70% – 90%, that percentage increases to between 3% – 4%.

Figure 2.7: Marginal Effects of Previous Conversions



Note: This figure shows how the REIT–conversion probability changes as a function of previous REIT conversions that occurred within 24 months in the same country, *j*. The predicted probabilities are based on the regression results in Table 2.3, model (*iv*), where all other explanatory variables are held constant at their pre-conversion means, as shown in Table 2.2.

REOC executives may be more inclined to convert when they observe their peers doing so. Accordingly, our second proxy for the impact of herding is the rolling sum of REIT conversions in the same country over the prior two years. Consistent with Hypothesis 3, the coefficient on $Previous\,Conversions_{j,t-1}$ is positive and significant across all model specifications. Figure 2.7 shows the conversion probability is approximately 0.5% when there are zero conversions by other REOCs in the same country in the prior 24 months. This probability doubles to 1% with two prior conversions, and again to 2% with four prior conversions. Taking both results together, we assume a higher acceptance of the national REIT regime among the existing listed property companies captures the policy environment and facilitates the individual decision-making towards conversion.[10]

2.4.2 Managerial Incentives

Table 2.4 extends the previous subsection's analysis to test for the impact of managerial incentives on the REIT–conversion decision. In particular, we introduce the cash and equity compensation of key executives to proxy for their incentive structures. The compensation measures are calculated across a rolling two-year window in order to smooth period volatility in the remuneration structure. We include the variables with a time lag of two years. Relative to Table 2.3, the number of observations in this analysis decreases by about one-quarter to 3,431. This decrease is due to the fact that compensation structures are not available for all REOCs in our sample.

To ensure comparability, we rerun the regression of Table 2.3, model (*iv*), applying it this time to our smaller subsample. The respective regression results shown in Table 2.4, model (*i*), are qualitatively and quantitatively robust compared to the full sample results. All major explanatory variables maintain their signs and statistical significance.

[10] Leary and Roberts (2014) state that it is challenging to disentangle peer mimicking behaviors from the country-wide unobserved factors that simultaneously drive firm behaviors within the same industry, i.e., disentangling rational and behavioral motives is beyond the scope of the current study.

Table 2.4: Extended Logit Estimation Results of REOC-to-REIT Conversion Likelihood

	model i	model ii	model iii	model iv
Cost Benefit Trade-Off				
Effective Tax Rate	0.024***	0.024***	0.024***	0.026***
	(0.008)	(0.008)	(0.008)	(0.008)
Exit Tax Costs	-0.833***	-0.832***	-0.883***	-0.833***
	(0.259)	(0.260)	(0.269)	(0.309)
Market Valuation				
NAV Spread	-0.193*	-0.193*	-0.216**	-0.158
	(0.102)	(0.102)	(0.105)	(0.120)
Herd Behavior				
REIT Market Share	0.032***	0.031***	0.031***	0.032***
	(0.009)	(0.009)	(0.009)	(0.009)
Previous Conversions	0.394***	0.393***	0.394***	0.399***
	(0.073)	(0.073)	(0.072)	(0.075)
Executive's Incentives				
Cash Compensation		-0.000	-0.000	-0.000
		(0.000)	(0.000)	(0.000)
Equity Compensation			0.031	0.020
			(0.034)	(0.032)
NAV Spread $\times$ Equity Compensation				-0.036***
				(0.012)
Control Variables				
Asset Test	0.013	0.013	0.014	0.014
	(0.008)	(0.008)	(0.009)	(0.009)
Distribution Test	0.005**	0.005**	0.005**	0.004*
	(0.002)	(0.002)	(0.002)	(0.002)
Gearing Test	0.000	0.000	-0.000	-0.003
	(0.010)	(0.010)	(0.010)	(0.010)
Ownership Restrictions	-1.804***	-1.796**	-1.819***	-1.644**
	(0.694)	(0.704)	(0.689)	(0.675)
Size	0.127	0.130	0.116	0.143
	(0.145)	(0.151)	(0.152)	(0.158)
Constant	-7.440***	-7.480***	-7.353***	-7.985***
	(2.566)	(2.627)	(2.625)	(2.780)
Observations	3431	3431	3431	3431
Pseudo R^2	0.258	0.258	0.260	0.272

Note: This table shows panel logit regression results for a REOC's decision to convert to a REIT, including the impact of managerial incentives. The unit of observation is the operating status of each REOC in each quarter. The dependent variable equals one if REOC i from country j converts to a REIT in quarter t, and zero in all previous quarters. Explanatory variables are company-specific *Effective Tax Rate*, *Exit Taxes*, triggered by uncovering hidden reserves and *NAV spreads*; country-level *REIT Market Share*; number of *Previous REOC-to-REIT Conversions* in the same country; and *Cash- and Equity-Based Compensation* of each REOC's key executives. Control variables are country-specific *REIT criteria* and company *Size*. The regression results are estimated controlling for a REIT regime introduction indicator variable, and using panel-specific heteroscedasticity and autocorrelation robust standard errors clustered at the company level (in parentheses). ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Since cash compensation can be linked to empire-building behavior, we examine whether it is negatively correlated with REIT conversions. Our reasoning is that the REIT structure limits the freedom of key executives to retain earnings and grow firm size organically. Table 2.4, model (*ii*), shows that the coefficient on $Cash\,Compensation_{i,t-8}$ is not statistically different from zero. Table 2.4, model (*iii*), introduces $Equity\,Compensation_{i,t-8}$ as an additional variable to test whether an alignment of interests between management and shareholders through this mechanism increases the REIT–conversion probability (Hypothesis 4). It is not statistically different from zero.

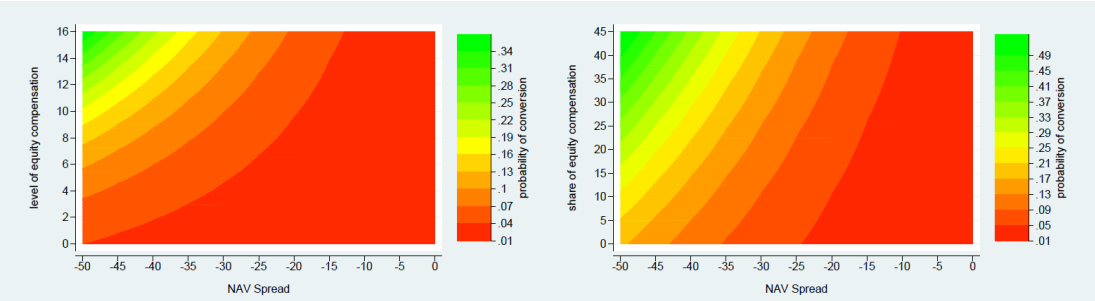
In a scenario where compensation is highly equity-based, and a REOC trades at a substantial discount to NAV, executives may have an incentive to convert. Conversion can trigger an increase in their wealth through the stock compensation channel. Accordingly, REIT conversions may be more likely under the combined presence of a NAV discount and a high degree of equity-based compensation. For this reason, we include an interaction term between equity compensation and the NAV spread in Table 2.4, model (*iv*), which is negative and statistically significant. The negative coefficient indicates that REIT conversions are more likely under the combined presence of high NAV discounts (negative NAV spreads) and a high degree of high equity-based compensation. This result, which is arguably a stronger test than considering either cash or equity compensation without the NAV spread interaction effect, provides strong evidence in favor of Hypothesis 4.[11]

Because the interpretation of interaction terms in non-linear models is not straightforward, we follow Greene (2010) and use graphical illustrations to analyze the economic implications. Figure 2.8 shows how the REIT–conversion probability changes for different combinations of NAV discounts, ranging from 0% to 50%, as well as for equity-based compensations ±2 standard deviations around the mean. The resulting probability is illus-

[11] We calculate the measures for cash- and equity-based compensation based on the literature (Price et al., 2015, Pennathur and Shelor, 2002. Similarly, we find the share of equity to total compensation is significant at the 5% level. The regression results for the share of equity-based compensation are available from the authors upon request.

trated in color. As shown in the legends to the right of the graphs, green denotes relatively high conversion probabilities above 20%, while red denotes conversion probabilities below 4%. Moreover, the left-hand (right-hand) graph shows the level (share) of equity-based compensation relative to total compensation. The higher the level and share of equity-based compensation for REOC executives, and the lower the NAV spread, the higher the REIT–conversion probability. Both graphs reveal that combinations of high equity-based compensation and high NAV discounts are associated with REIT–conversion probabilities of up to 49%. The graph on the right-hand side also shows that it is not only the absolute amount of equity-based compensation, but also the relative share, that drives REIT conversions. The evidence in Figure 2.8 supports Hypotheses 2 and 4.

Figure 2.8: Interaction Effect of the NAV Spread and Equity-Based Compensation



Note: This figure shows how the REIT–conversion probability changes for a range of combinations of NAV spreads and equity-based compensation. The predicted probabilities are based on the regression results in Table 2.4, model (*iv*), where all other explanatory variables are held constant at their pre-conversion means, as shown in Table 2.2. The resulting REIT conversion probability is illustrated in color. The left-hand graph is based on the level of equity compensation; the right-hand graph is based on the share of equity-based compensation relative to total compensation.

2.4.3 Spillover and Reform Effects

We are also interested in potential spillover effects across countries, as well as the effect of REIT regulatory reforms within countries. In this subsection, we examine the number of REOC-to-REIT conversions at the country level. Consequently, we replace the binary

endogenous variable, which captures the conversion decision, with a count data variable to denote the number of conversions per country. We model country-level REIT conversions using a Poisson regression framework that accommodates count variable regressions. Our results are estimated using fixed effects and standard errors clustered at the country level. The results are robust even if the underlying Poisson distribution is arbitrarily misspecified and serial correlation is present (Wooldridge, 2005). The model we use is in Equation 2.4:

$$\begin{aligned} Conversions_{j,t} = \alpha_0 \\ &+ \beta_1 Tax\ Rate_{j,t-8} \\ &+ \beta_2 NAV\ Spread_{j,t-8} \\ &+ \beta_3 REIT\ Market\ Share_{j,t-8} \\ &+ \beta_4 Previous\ Conversions_{j,t-1} \\ &+ \beta_5 Spillover_{j,t-8} \\ &+ \beta_6 Reform_{j,t-8} \\ &+ \epsilon_{j,t} \end{aligned} \tag{2.4}$$

Our country-level model builds on Equation 2.1. We follow Khorana and Servaes (1999), and replace company-specific variables with country-level averages. For example, *Tax Rate* represents the cross-sectional mean of the effective tax rate of all firms in country j during quarter t. Likewise, $NAV\ Spread$ is country-level NAV spread in quarter t. $REIT\ Market\ Share$ and number of *Previous Conversions* have already been defined at a country level. $Spillover$ measures the number of REIT conversions globally less the number of conversions for respective country j. Since we expect market participants to track each other's activity, we incorporate the number of global conversions in this way. A similar approach is used in Diebold and Yilmaz (2009) as a country-to-country approach across time. Finally, Reform is a dichotomous variable that equals one if regulatory REIT requirements in country j have eased over the prior 12 months. Several reforms have been established in each country since their respective REIT regime introductions. Because it

is not always possible to clearly determine whether a reform makes a regime more attractive for participants, we define a reform variable that equals one only if the reform change clearly facilitates conversion for domiciled companies. For example, Spain abolished leverage limits, and the U.K. ceased charging 2% of the gross market value of properties for converting.

Table 2.5 reports the regression results for the spillover and reform effects analysis. Model (*i*) builds on the Table 2.3 results, this time focusing on country-level. The coefficient on $Tax\ Rate_{j,t-8}$ is positive and significant across all three models, (*i*) – (*iii*). Consistent with Hypothesis 1a, higher corporate tax rates are associated with a higher number of conversions. This result suggests the REIT structure is particularly attractive to REOCs in countries with higher corporate tax rates. Moreover, the coefficient on country-level $NAV\ Spread_{j,t-8}$ is again negative and significant. Thus, the lower the stock market valuation of REITs in general in a country, the higher the probability of REOC-to-REIT conversions. This result is consistent with Hypothesis 2. While the coefficient on $REIT\ Market\ Share_{j,t-8}$ is no longer significant at a country level, the positive and significant coefficient on $Previous\ Conversions_{j,t-1}$ is consistent with Hypothesis 3. Prior conversions in the same country significantly influence the number of country-level REIT conversions.

Model (*ii*) introduces the variable $Spillover_{j,t-8}$. The coefficient is positive and statistically significant. This implies that the number of REIT conversions in a country has a positive impact on REIT conversions in other countries. Thus, "REIT waves" can spill over to other countries. The effect remains significant in model (*iii*).

Model (*iii*) includes the variable $Reform_{j,t-8}$, which captures the presence of any easing in countries' regulatory requirements. The coefficient is positive and statistically significant. We interpret this to suggest that an easing of regulatory requirements in obtaining

and maintaining REIT status is associated with an increase in REOC-to-REIT conversions.

Table 2.5: Spillover and Reform Effect on REOC-to-REIT Conversions

	model i	model ii	model iii
Tax Rate	0.129***	0.126***	0.124***
	(0.040)	(0.042)	(0.044)
NAV Spread	-0.046***	-0.048***	-0.049***
	(0.009)	(0.009)	(0.009)
REIT Market Share	-0.006	-0.007	-0.008
	(0.004)	(0.005)	(0.006)
Previous Conversions	0.303***	0.303***	0.302***
	(0.025)	(0.026)	(0.027)
Spillover		0.107**	0.099*
		(0.052)	(0.052)
Reform Easement			0.735*
			(0.422)
Observations	630	630	630

Note: This table reports fixed effects Poisson regression results that explain the number of REOC-to-REIT conversions at a country level. The unit of observation is the number of conversions in each country j at each quarter t. *Tax Rate* is the cross-sectional mean of the effective tax rate of all firms in country j. *NAV Spread* is the country-level NAV spread in quarter t. *REIT Market Share* is the share of converted REITs in terms of total market capitalization relative to the combined market capitalization of converted REITs and REOCs in a country. *Previous Conversions* are the rolling sum of REOC-to-REIT conversions in a country over the prior 24 months. *Spillover* measures the number of global REIT conversions less the number of conversions in respective country j. *Reform* is a dichotomous variable that equals one if the regulatory REIT requirements in country j have eased over the prior 12 months. The regression results are estimated using panel-specific heteroscedasticity and autocorrelation robust standard errors clustered at the country level (in parentheses). ***,**, and * denote significance at the 1%, 5%, and 10% levels, respectively.

2.5 Chapter Résumé

The fact that such a large percentage of REOCs do not opt for conversion to REITs seems puzzling. Prior studies have documented the benefits of REIT conversion, and described the cost-benefit trade-offs. These prior studies have speculated that the tax benefits of a REIT structure are the primary reason for REOCs to convert. But, to date, no study has provided a comprehensive examination of the factors that influence conversion.

Our study addresses this gap in the literature by examining several specific hypotheses regarding REOC-to-REIT conversion. By exploring the determinants using international data, we are able to capture cross-country and country-specific effects. We construct a unique dataset of listed property companies over the January 1999 – December 2018 period. We analyze 215 REOCs, of which 80 converted to REITs and 125 did not. Our analysis identifies a number of economically and statistically significant incentives and barriers that we show drive the REIT–conversion decision.

Capitalizing on a high degree of heterogeneity in corporate income tax rates across time and countries, we document that REIT–conversion probability is linked to the extent of tax benefits. This result is not surprising, but substantial tax savings alone are not sufficient to trigger a conversion. We also show that high restructuring costs are associated with lower conversion probabilities. Together, these results are consistent with our hypothesis that the REIT–conversion decision is a cost-benefit trade-off.

Our findings also support the hypothesis that the REIT–conversion decision is impacted by peer-following behavior. If a national REIT regime is well established and accepted among market participants, as measured by a high REIT market share, the likelihood of conversions increases. Moreover, REOCs are more likely to convert if peers in the same country have converted. And country-level results provide evidence of spillover

effects from REIT conversions in other countries.

We confirm our hypothesis that managerial incentives can have a positive impact on the REIT–conversion decision. While neither of our remuneration measures is statistically significant on its own, we find a negative and statistically significant impact for the interaction between equity-based compensation and the NAV spread. Specifically, in the presence of a lower NAV spread, the alignment of interests between management and shareholders via equity-based compensation leads to higher REIT–conversion probabilities. We document up to a 30% higher likelihood of REIT conversions for high levels of equity-based compensation. In other words, REIT conversions seem to be motivated by the personal incentive structures of REOC executives when they seek to enhance their wealth through a REIT conversion.

Finally, our country-level results also suggest that REOCs are incentivized to higher levels of REIT regime adoption following the easing of regulatory restrictions. This result may be of particular interest to regulators, taxing authorities, and policymakers, because, arguably, REIT conversion generates higher and more stable tax revenues.

Chapter 3

Strategic Transactions Around REIT-Conversions?

– This paper is the result of a joint project with
Pascal Frömel, René-Ojas Woltering, David H. Downs and Steffen P. Sebastian –

Abstract

This paper examines conversion-related M&A activity and the post-conversion performance of 80 *Real Estate Operating Companies (REOCs) that chose to adopt Real Estate Investment Trust (REIT) status. We observe distinctly higher M&A activity in the years around conversion dates and relatively higher premiums in conversion-related deals. The REIT format attracts equity inflows from investors more readily than the REOC format, which explains the increase in post-conversion M&A activity. Overall, converted REITs realize positive excess returns. We find that lower (higher) M&A activity pre-conversion translates into superior absolute (risk-adjusted) post-conversion performance, which illustrates the benefits from such strategic company realignments.*

3.1 Chapter Introduction

Real Estate Operating Companies (REOCs) and Real Estate Investment Trusts (REITs) regularly engage in strategic transactions in the form of mergers and acquisitions.[1] However, existing M&A research in the REIT sector only focuses established REITs, and, so far, lacks an explicit in-depth analysis of the deal environment that accompanies the (REOC-to-) REIT conversion process. Moreover, despite increasing research interest in REIT conversions (Ling et al., 2020) and the market entry of REITs (Chan et al., 2019), the related restructuring process has not yet been explored from a scientific perspective.

This study aims to fill this gap by investigating conversion-related M&A activities. First, we categorize deal types, as well as the role of each respective REIT in the observed deals, and provide a distinct view of the internal and external reorganization activities. Second, we identify the determinants that drive the pursued transactions. Third, we examine whether REITs are willing to pay a substantial premium to achieve the desired portfolio allocation, and we assess the M&A-related long-term performance of companies that adopted REIT status.

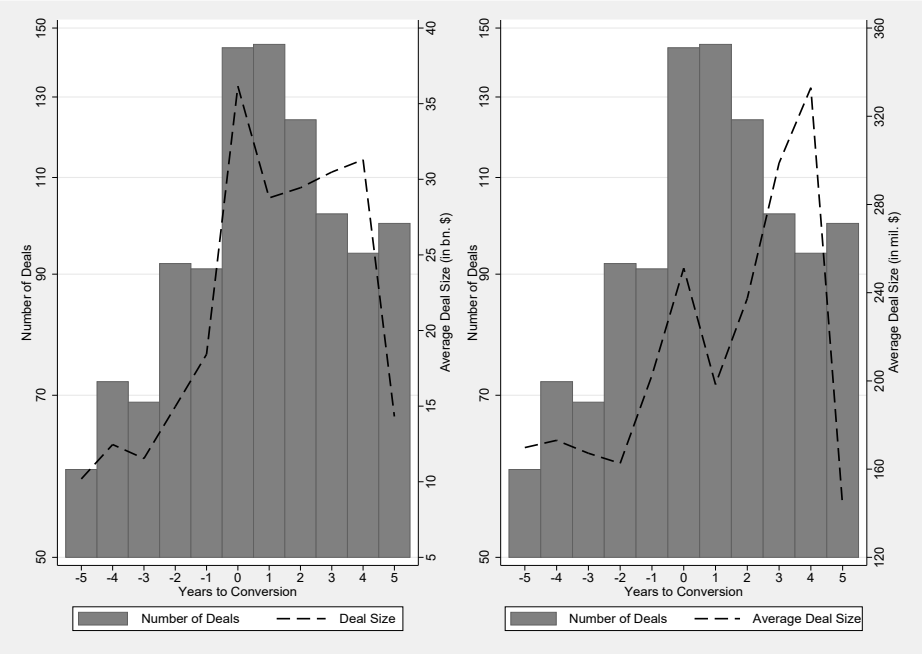
This work aims to provide a better understanding of the strategic decision making surrounding one common goal: preparing for the REIT market. By focusing on established REOCs that opted to convert, we are able to characterize the realignments of those companies more precisely. We can also track their evolution in terms of both assets and capital structures, as caused by the increased attractiveness to equity investors.

We gather a unique, partially hand-collected dataset to examine the M&A environment of REIT conversions at a global level. The global setting allows us to observe and

[1] See Glascock et al. (2018) for a comprehensive review. Following Mulherin and Womack (2015), we use the terms "mergers," "acquisitions," and "takeovers," as well as "target" and "seller," interchangeably throughout this article.

explore differences and commonalities in post-conversion performance across countries. Our dataset comprises conversions of listed real estate companies across nine large markets for the 1999-2018 period. All firms are index constituents of the FTSE EPRA/NAREIT Global Real Estate Index.

Figure 3.1: Number of Sample Deals and (Average) Deal Size Around Conversion Dates



Note: This figure shows the aggregate number of deals (bars) and corresponding deal values (lines) within the window of -5 *to* 5 years around the conversion date. The left-hand (right-hand) graph shows total (average) deal value.

We note that a remarkably high amount of strategic transactions occur among converting entities around their respective election date (Figure 3.1). In particular, we observe an increase in the number of M&A transactions conducted during the conversion period that appear dissociated from the general M&A environment in the industry. We also observe a sharp increase in average post-conversion deal size. Similarly to the number of post-conversion deals, this is attributable to the inflows that result from the adoption of the REIT structure. The corporate finance literature shows that regulatory shocks, usually

in the form of changes in prevailing antitrust regimes, tend to cause waves of acquisitions (e.g., Harford, 2005; Martynova and Renneboog, 2008). Since many REIT conversions take place in close proximity to the introduction of a REIT regime, we discover and examine an M&A-inducing regulatory shock that is both unique to the real estate sector and new to the literature.

We find that restructuring activity interacts with long-term performance. Converted REITs in the largest REIT markets are associated with positive post-conversion returns, and firms with the lowest levels of restructuring outperform entities with higher pre-conversion activity. Higher levels of transaction activity, in turn, lead to beneficial risk-adjusted returns.

These novel insights into the M&A environment of REIT conversions should be of enduring interest to market protagonists. It is valuable for investors and REIT executives to fully understand how restructuring relates to conversions, and how restructuring around conversions impacts post-conversion performance. Enhanced knowledge about the firm-level process of adopting the REIT form, and about the market consolidation effects of REIT regimes, is also advantageous for governments and tax authorities, because they create and enforce the respective legal frameworks.

The remainder of this article is organized as follows. Section 3.2 provides a brief review of the related literature and develops our research hypotheses. Section 3.3 introduces the data, while Section 3.4 focuses on conversion-related M&A activity. Post-conversion performance is discussed in Section 3.5. Section 3.6 concludes.

3.2 Related Literature and Hypotheses

The testable implications of M&A activity along REIT conversions build on the general finance and real estate literature. Research on strategic transactions in the property sector predominantly focuses on established REITs, but lacks an analysis of the deal environment accompanying the conversion processes. In particular, the entire restructuring process and how it interacts with post-conversion performance has not yet been the subject of any scientific inquiries.

We note that M&A deals in the property sector are more homogeneous than those in other branches. The underlying rationale for the decision making may not be evident for every transaction. However, in the context of REIT conversions, REOCs pursue an organizational form change into REITs that implies a defined goal. Given the companies' geographic domiciles, the respective legislation demands the fulfillment of certain criteria regarding the attainment of REIT status. For our analysis, the most relevant criterion is that REITs must hold a specific level of qualifying real estate assets.[2] If a firm is closer to this legal requirement, its related restructuring expenses should be *ceteris paribus* lower. Therefore, REOCs are subject to potential restructuring on a company level that may affect asset allocation.

Moreover, Freybote and Qian (2015) document that REIT mergers tend to be strongly incentivized by acquiring strategically relevant properties for managers. Similarly to evidence for IPOs in Malmendier and Tate (2008), REOCs may use the opportunity of a REIT conversion to signal their ability to form higher-quality portfolios. In general, the M&A deals of REITs involve deal premiums (cumulative abnormal returns) of lower than 10%. For example, Sahin (2005) and Womack (2012) report premiums of about 5%, Ling and

[2]This refers to the criterion Asset Test, which is defined as the proportion of qualifying real estate to overall assets. The ratio must exceed a nationally defined threshold, for example, 75% in the U.K. EPRA (2018b) lists the most recent regime requirements for REITs. Note that those criteria may change over time.

Petrova (2011) find about 7%, and Campbell et al. (2001) find between 1% and 3%. In the case of regulatory incentivized transactions or strategic restructuring, converting REOCs are likely willing to purchase a certain portfolio to gain a higher amount above market value. Taking those aspects together, we formulate our first pair of hypotheses as follows:

M&A Rationale

Hypothesis 1a: *Deals are conducted to meet the REIT criterion, Asset Test.*

and

Hypothesis 1b: *Converting REOCs are willing to pay a premium to acquire the desired portfolio allocation.*

Gyourko and Sinai (1999) describe the net benefits (tax savings over capital raising costs) of the U.S. REIT structure. To date, over 30 countries have introduced REIT regimes in order to facilitate capital flows to the real estate sector (Eichholtz and Kok, 2007). In addition, REITs are increasingly used by investors who seek real estate exposure (Downs et al., 2019). Adopting the status is regularly rewarded by a positive market valuation. For example, Damodaran et al. (2005), Piao et al. (2017), and Ling et al. (2020) find positive announcement effects result from signaling a REIT conversion.

The prevailing literary evidence suggests that REIT frameworks are also associated with higher inflows, which may in turn lead to higher levels of M&A activity and larger relative deal size, i.e., relative to the companies average deal size.[3] Putting those aspects together, we formulate our second hypothesis as follows:

Hypothesis 2: *Conversion-induced increases in inflows lead to higher numbers of deals and an increase in excess deal size.*

[3] $Average\ Deal\ Size_{i,t} = Aggregate\ Deal\ Size_{i,t} / Number\ of\ Deals_{i,t}$. See Appendix B for detailed variable definitions.

Numerous studies have analyzed mergers and acquisitions of real estate firms. However, they tend to focus on returns around takeover events and the pre- and post-merger performance of targets and acquirers in the (U.S.) REIT sector. As Sahin (2005) and Ratcliffe et al. (2018) note, studies on the long-run post-acquisition performance of REIT acquirers find no persistent evidence of positive effects on REIT performance or even negative impact of acquisitions on acquirers' returns in the years following an acquisition, as described in Campbell et al. (2009). Thus, if the conversion process is accompanied by an increased number of acquisitions, and if long-lasting adverse performance of acquirers accompanies REIT takeovers, we presume that, on average:

Performance Implications

Hypothesis 3a: *Converted REITs will exhibit relatively high performance in the post-conversion period.*

and

Hypothesis 3b: *Higher M&A activity implies lower long-term performance for converting REITs.*

3.3 Data and Descriptive Statistics

Our empirical analysis is based on the constituents of the FTSE EPRA/NAREIT Global Real Estate Index, which is comprised of listed firms with relevant real estate activities.[4] The observation period ranges from the index's introduction in 1999 through 2018. The constituent list is updated on a monthly basis, and is not subject to survivorship bias. Moreover, by focusing on index firms, we ensure a high degree of data quality and comparability at the multinational level.

[4]The index provider defines relevant real estate activities as the ownership, trading, and development of income-producing real estate (Russell, 2019).

For REOCs, we identify conversion events by tracking the year of listing and the year of REIT election. Those dates are collected partially via the S&P Global Intelligence database, using CRSP share code changes for U.S. firms, and hand-collected from company reports. We include firms with at least 24 months of listings in order to exclude entities that pursued conversion from inception.[5] For the purpose of our analysis, we exclude countries that had no conversions during our sample period, which leaves us with 90 conversion events.

Table 3.1: Number of (Converted) REITs Across Countries

Country	All REITs	Converted REITs	Sample
Belgium	9	3	3
Canada	37	10	10
France	16	12	11
Germany	3	1	0
Italy	3	3	3
Netherlands	8	3	2
S. Africa	20	14	13
Spain	4	2	2
U.K.	39	24	21
U.S.	222	18	15
Total	361	90	80

Note: This table illustrates the multinational REIT conversion sample. The second column shows the overall number of historical and actual REIT constituents of the FTSE EPRA/NAREIT Global Real Estate Index. Of those, the third column reports the identified converted REITs. The last column gives the number of converted REITs that have available M&A data.

[5]Our sample companies remain stable from 12 months onward. In line with Ooi et al. (2007), we require 24 months of listings in order to analyze the conversion process of sample REITs from an initial equilibrium position.

We obtain data on the existence and the nature of the deals, for a total of 80 converted REITs from nine countries from the Securities Data Company (SDC) Mergers and Acquisitions database. Table 3.1 provides an overview. Using the entire observation period, ± 5 years around the event, we are able to track M&A activities in common business cycles during restructuring times (two years prior to conversion date), and during the post-conversion era.[6] We observe asset deals, where parts of the assets, the majority of assets or the entire assets of the respective party change hands and share deals i.e. the acquisitions of partial and remaining interest, of 100% of stocks and mergers. This yields a total amount of $1,093$ transactions where a sample REIT is involved on the acquirer or target side.

Table 3.2: Number of Sample Deals per Deal Type

	Deal Type		Role of the REIT			
Years to Conversion	Asset Deals	Share Deals	Acquirer	Acquirer Parent	Target	Target Parent
-5	27	33	40	2	4	10
-4	32	40	50	2	2	13
-3	29	40	44	5	2	11
-2	35	57	41	15	5	24
-1	39	52	42	16	3	22
0	57	87	78	16	3	35
1	62	83	75	16	6	40
2	56	68	69	13	7	28
3	44	58	58	4	4	22
4	47	47	53	11	1	23
5	55	45	49	11	2	27
Total	483	610	599	111	39	255

Note: This table reports the number of deals within the window of -5 *to* 5 years around the conversion date. Deals are classified as asset deals where parts of the assets, the majority of assets or the entire assets of the respective party change hands and share deals i.e., the acquisitions of partial and remaining interest, of 100% of stocks and mergers (second and third columns). The fourth through seventh columns show the role of the sample REIT (acquirer, acquirer parent, target, or target parent).

[6]The average time span from REIT election announcement to actual conversion is two years, as documented in Carlock and Wilkin (2018).

Within the eleven years time span, we observe a substantial increase in deal activity for the years where the REIT conversion takes place. The average number of deals settled by the observed entities in the years of the conversions is about two times as large as during the preceding years. This is accompanied by an increase in total deal volume. The average deal volume reaches its high point four years after a conversion has taken place (Figure 3.1), which is disassociated from the evolution of the overall M&A market in the respective economies.

Table 3.2 reports the number of deals in each period by deal type and role of the sample REIT in the respective deal. The acquisition of shares is predominant (56% of deals). In 55% of the observed transactions, a sample REIT directly acquires the assets or shares of another entity. Only a small fraction of deals (3.7%), conducted by 25 sample firms, can be characterized as internal restructuring activities, i.e., when the sample REIT is simultaneously engaged on the acquirer and target side of a deal. This can happen reciprocally, or as the parent of the respective deal party. Highest prevalence among internal deals exhibit acquisitions from immediate subsidiaries (Table 3.3).

Table 3.3: Number of Internal Sample Deals

Deal Description	Number of Firms
REIT buys from subsidiary	34
REIT buys from parent	2
REIT sells to parent	1
REIT buys from subsidiary of subsidiary	3
Total	40

Note: This table shows deals within concerns. The first column refers to the role of the sample REIT in the deal; the second lists the aggregate number of deals.

3.4 Conversion-Related M&A Activity

3.4.1 Strategic Restructuring

In order to control for potential structural differences between more (less) active sample firms, we build portfolios and characterize them along the quartile-levels of restructuring activity, i.e. number of conducted deals (Table 3.4). As shown in Table 3.5, a comparison of typical M&A-related firm-level variables for high and low restructuring entities two years prior to conversion does not show substantial ex ante divergence. From a regulatory perspective, 49 firms already hold adequate qualified real estate portfolios. The remainder of the sample firms are sufficiently close to the necessary benchmark ratio (on average, 0.2% below).

Table 3.4: Distribution of Sample Deals and Firms Across Quartiles

	Full Sample		Acquirer Subsample	
Quantile	# Deals	# Firms	# Deals	# Firms
0.25	5	26	2	25
0.5	29	36	10	36
1	78	18	31	19

Note: This table shows the overall number of deals and the number of deals in which the sample REIT appears as an acquirer. Sample REITs are grouped into pre-conversion (two-year) M&A activity quartiles. The number of deals reflect the thresholds of each quartile, e.g., the first line (25% quartile) displays 26 firms conducting 5 or fewer deals in the full sample. The middle quartiles are given in aggregate.

To definitely rule out a related regulatory requirement as key driver, we empirically analyze how the Asset Test impacts the decision to reallocate the property portfolio. Detailed variable definitions are provided in Appendix B.

Table 3.5: Two-Sample t-Test for High and Low Restructuring Quartiles

	Low	High	High-Low
Leverage	0.497	0.395	-0.102
M/B Ratio	1.683	1.938	0.255
Asset Test	11.905	-0.195	-12.100
Age	13.738	20.629	6.891
Market Cap	601.092	1695.208	1094.117
Total Debt	608.785	1615.682	1006.897
Total Assets	1189.059	3650.925	2461.866

Note: This table displays the arithmetic means of typical M&A-related firm characteristics according to the upper and lower trading activity quartiles for the U.K. and the U.S. for the two years pre-conversion. The last column reports the difference between the quartiles. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Our analysis is geared in two directions. For this reason, we use a Poisson estimation on number of deals, and a linear panel regression on relative deal size. The results are in Table 3.6. Controlling for firm-level characteristics, we find no significant impact of the Asset Test requirements on either variable in any considered model specification.[7] Thus, in contrast to Hypothesis 1a, we conclude that M&A deals are not subject to the Asset Test.[8] Consequently, the desire to form high-quality property portfolios in advance of conversion may drive M&A activity and deal volume, and these transactions may be perceived as strategic.

[7]Model *ii* uses country fixed effects, respectively, to account for heterogeneity between systems. We use robust standard errors clustered on company-level throughout the paper.

[8]The proximity to the fulfillment of the asset test criterion might impact the decision to convert at all. For our further analyses only converters are relevant, hence such potential endogeneity does not impair the results.

Table 3.6: Regression Results for the Impact of the Asset Test

	Deal Number		Relative Deal Size	
	i	ii	i	ii
Key Variable				
Asset Test Criterion	-0.006	-0.010	-0.002	-0.002
	(0.008)	(0.007)	(0.002)	(0.002)
Control Variables				
Cash	4.616***	5.264***	1.017**	0.715**
	(1.227)	(1.394)	(0.406)	(0.284)
Leverage	0.075**	0.075**	0.017**	0.010*
	(0.035)	(0.037)	(0.008)	(0.006)
Leverage Squared	-0.001**	-0.001**	-0.000**	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Return on Assets	-6.263*	-3.055	2.597	2.018
	(3.772)	(4.710)	(2.166)	(1.815)
M/B Ratio	0.009***	0.013***	0.000	0.000
	(0.003)	(0.005)	(0.000)	(0.000)
Dividend Yield	0.015	0.037	0.010	0.019
	(0.044)	(0.053)	(0.014)	(0.016)
Size	-0.061	0.174	-0.044**	0.020
	(0.116)	(0.145)	(0.020)	(0.036)
Age	0.031***	0.019	0.002	-0.003
	(0.012)	(0.015)	(0.002)	(0.004)
Constant	-1.668	-4.548*	0.233	-0.527
	(2.332)	(2.655)	(0.436)	(0.642)
Country FE	No	Yes	No	Yes
Observations	235	235	120	120
Adj. / Pseudo R^2	0.1136	0.1514	0.1161	0.1589

Note: This table shows the Poisson and linear panel regression results on the Number of Deals and Relative Deal Sizes within the window of -5 *to* 1 year around the conversion date. The unit of observation is Deal Number (first and second columns) and Relative Deal Size (third and fourth columns). Models *i* lag all explanatory variables by one period; Models *ii* also use country fixed effects. We use robust standard errors clustered on company-level, which are given in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

But what is the instantaneous return on those deals? To answer this question, we follow the common event study approach to obtain information on the deal premium. A fraction of 37 deals qualifies for this part of our analysis. Those deals are acquisitions of public targets with sufficiently high market liquidity. For this subsample of M&A deals, following the typical approach, we derive cumulative abnormal returns (CARs) using an estimation period of 120 days to 20 days prior to deal announcement, and a symmetric event window of ± 5 days. We estimate predicted returns by using the market model as the most appropriate approach documented in the real estate literature. Compared to prior results in the REIT literature, we find a high average premium of approximately 9.1% (surveyed by Glascock et al., 2018).[9]

This indicates a relatively high willingness to pay for the REITs from the excerpt of our converted REITs M&A sample. Internal differentiation between pre- and post-REIT-conversion deals reveals that the premiums tend to be larger on average for pre-conversion deals (10.3% versus 8.1%). Based on these findings, one can conclude that the restructuring process involves transactions that are primarily conducted to build attractive portfolios and that are relatively expensive. Consistent with Hypothesis 1b, we find that REITs pay higher prices to achieve this goal, which means that converting REOCs accept short-term return compression. Section 3.5 shows how this pays off in the long run.

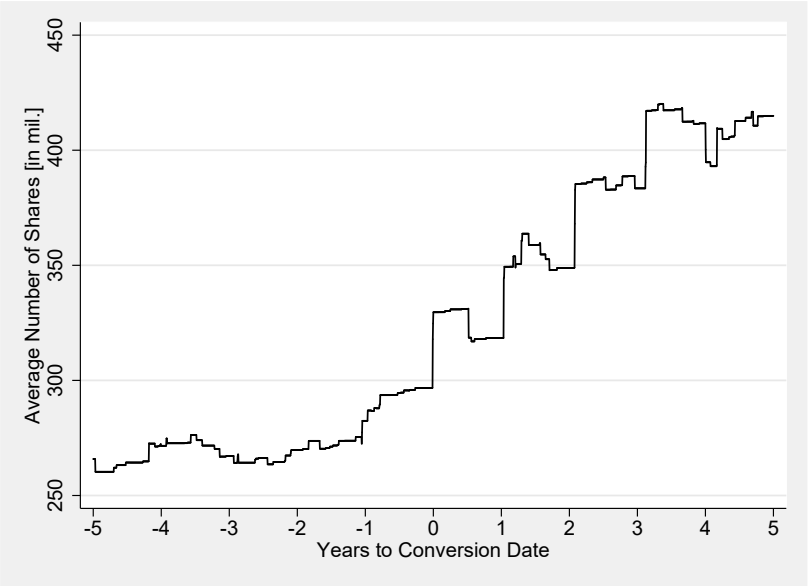
3.4.2 Conversion-induced Deals

The observation of a remarkable increase in absolute and average deal size over the four subsequent years post-conversions motivates an in-depth analysis of those deals. Figure 3.2 shows the average number of outstanding shares in the five-year horizon around REIT conversion dates. It illustrates how the level of equity rises simultaneously during this period. The persistently increasing number of outstanding shares reflects the possibility issue

[9] If we vary the event window, we find 8.3% for ± 2 days.

and place shares as REIT more easily. Because we observe deals in relative time around the conversion dates in nine countries, we conclude that equity issuance is not driven by market dynamics.

Figure 3.2: Inflows Around REIT Conversions



Note: This figure shows the average number of outstanding shares for all sample companies within the window of -5 *to* 5 years around the conversion date.

The subsequent part of our inferential analysis tests the effect of increasing inflows on M&A activity and deal size for the set of acquirers (acquirer subsample in Table 3.4). We proxy for inflows by changes in equity. We use the number of shares (corrected for stock splits) to capture the full picture of all equity-affecting issues such as SEOs, ATMs, and stock repurchases (following Harrison et al. (2011). We perform a Poisson regression to test the influence of inflows on the higher number of transactions, and then employ two-step estimation techniques to disentangle the possible effect of REIT status on inflows. We therefore use REIT status and firm-specific characteristics to estimate the logarithmized number of outstanding shares (NOSH) in a first stage. We define an indicator variable

that equals 1 if the company operates as a REIT in period t, and 0 otherwise. The change in these linearly predicted inflows serves as a key explanatory variable for the number of transactions. Equation 3.1 represents the second stage of our model.

$$
\begin{aligned}
Number\,of\,Deals_{i,t} = \alpha \\
&+ \beta_1 Inflows_{i,t} + \beta_2 Inflows_{i,t-1} \\
&+ \sum_{k=1}^{K} \gamma_k Firm\text{-}level\ control_{k,i,t} \\
&+ \sum_{c=1}^{C-1} \delta_c D_{c,i} + \epsilon_{i,t}
\end{aligned}
\tag{3.1}
$$

$Number\,of\,Deals_{i,t}$ is the number of completed transactions of company i in period t. $Inflows_{i,t}$ reflects the difference in each company's logarithmized number of shares between period t and $t-1$ predicted from the first stage incoporating the lagged REIT status. Firm-level controls are explanatory variables that are homogeneously and frequently documented in the general and REIT M&A literature. We control for country-specific effects (country-dummy $D_{c,i}$) to account for time-invariant heterogeneity in different REIT markets (e.g., Dogan et al., 2019). In addition, we estimate the effect of inflows on excess deal size, which is defined as the percentage deviation from the average deal size of each company by a linear panel regression.

Table 3.7: Regression Results for Inflows, Number of Deals, and Excess Deal Size

	NOSH	Deal Number	Excess Deal Size
Key Variables			
REIT status	0.130***		
	(0.032)		
$\widehat{Inflows}$		0.662**	0.648**
		(0.299)	(0.314)
L1 $\widehat{Inflows}$		0.858*	-0.056
		(0.447)	(0.222)
Control Variables			
Cash	-0.180	2.053*	-0.299
	(0.172)	(1.169)	(0.760)
Return on Assets	0.899	-7.378**	-5.958
	(0.561)	(2.980)	(6.137)
M/B Ratio	-0.001	0.001	-0.009
	(0.001)	(0.003)	(0.025)
Dividend Yield	0.010**	0.012	-0.058
	(0.005)	(0.022)	(0.035)
Size	0.447***	0.390***	(0.087)
	(0.028)	(0.085)	(0.222)
Age	-0.010	-0.019	-
	(0.009)	(0.013)	-
Leverage	-0.000	0.030	0.038
	(0.001)	(0.019)	(0.027)
Leverage^2		-0.000**	-0.000
		(0.000)	(0.000)
Constant	4.988***	-8.519***	-1.645
	(0.466)	(1.367)	(3.076)
Country FE	Yes	Yes	Yes
Firm FE	No	No	Yes
Observations	659	495	225
Adj. / Pseudo R^2	0.4783	0.1524	0.1054

Note: This table gives the results of the two-stage Poisson and linear panel regressions within the window of -5 *to* 5 years around the conversion date. Model *i* represents the first stage, which explains the number of outstanding shares (by REIT status). Model *ii* represents the second stage, which explains number of deals (by inflows). Model *iii* reports the linear panel (FE) regression results, which explain excess deal size (by inflows). We use robust standard errors clustered on company-level, which are given in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Next, we describe how the number of M&A deals relates to the inflows triggered by REIT conversions. Table 3.7 shows the results of our corresponding set of estimations. The first column refers to the first-stage estimation, which identifies REIT status as highly statistically significant contributor to inflows, besides certain firm characteristics. On average, REIT status induces c.p. approximately 13% higher annual inflows. The second-stage estimation reveals a significantly positive influence of predicted inflows on deal activity, at a 5% level for contemporaneous inflows and a 10% level for one-period lagged inflows.

Because our observations are on an annual basis, we note that the contemporaneous inflows are as reasonable as those in the preceding year. Lagged inflows also strengthen the causal inference on the direction of the effects. The results in Table 3.8, with a statistically significant combined effect of inflows, corroborate our findings. Increased inflows also explain the observed increase in excess (above average) deal size which is characteristic for the post-conversion period. As shown in the last column of Table 3.7, the increase in REITs' equity leads them to conduct larger deals. On average, excess deal size increases by 0.6 percentage points for each percentage point increase in net inflows. Overall, the results are consistent with Hypothesis 2.

Table 3.8: Combined Effect of Inflows

Coef.	Std. Err.	z	p-value	[95% Conf.	Interval]
1.520	.596	2.55	0.011	0.351	2.689

Note: This table shows the combined effect of the contemporaneous and one-year lagged inflows on the number of M&A deals around REIT conversions estimated in Model *ii*.

3.5 Post-Conversion Performance

Lastly, we investigate long-term post-conversion performance for REITs with different levels of conversion-related restructuring activities via a buy-and-hold abnormal return (BHAR) approach. We form portfolios from the lowest to the highest M&A activity quartile according to the number of deals conducted during the two years prior to the conversion date (Table 3.4). We track the performance of converted REITs over three, four, and five years post-conversion. In addition, we compute the Sharpe (1966) ratios for those periods in order to capture risk-adjusted performance with respect to individual trading activity. We calculate BHARs in accordance with Barber and Lyon (1997) and Lyon et al. (1999), where the BHAR of REIT i is:

$$BHAR_i = \prod_{t=1}^{T}(1 + r_{i,t}) - \prod_{t=1}^{T}(1 + r_{PF,t}) \tag{3.2}$$

$r_{i,t}$ is the individual daily total return of company i at day t, and $r_{PF,t}$ represents the total return of each country's EPRA real estate index. Similarly to previous BHAR analyses of REITs by Sahin (2005), Campbell et al. (2009), and Ratcliffe et al. (2018), the benchmark portfolio reflects an eligible peer group of the respective REIT market.

The results of the BHAR analysis in Table 3.9 show significantly positive abnormal returns for converting REOCs in the three countries with the largest numbers of conversions – the U.K., the U.S., and South Africa. This indicates they have realized the advantage of changing the legal organizational form. The results are supportive of Hypothesis 3a. The findings on positive BHARs are in line with evidence in Damodaran et al. (2005) and Piao et al. (2017), but in contrast to Sahin (2005), Campbell et al. (2009), and Ratcliffe et al. (2018), who do not find positive excess returns in M&As of established REITs.

Building on the positive BHARs, we form three converted REIT portfolios for the two largest developed - thus sufficiently homogeneous - REIT markets in our sample according to trading activity – the U.K. and the U.S. Table 3.4 reports that 26 firms from the lower quartile conduct up to five deals during the observation window; the 18 most active conduct up to 78 deals over that time span. The high (low) group comprises the firms in the upper (lower) quartile of trading activity, while the medium group captures the 50% of firms with moderate pre-conversion M&A activity.

Table 3.9: Post-Conversion Performance Across Countries

	U.K.	U.S.	SA	FR	CA
3y	0.073	0.351*	0.564***	-0.111	-0.158
	(0.347)	(0.669)	(0.405)	(0.861)	(0.507)
4y	0.177*	0.644**	0.927***	-0.587	-0.145
	(0.427)	(0.797)	(0.808)	(1.261)	(0.570)
5y	0.263**	0.764***	0.872***	-0.533	-0.120
	(0.446)	(0.786)	(0.784)	(1.889)	(0.652)

Note: This table shows abnormal buy-and-hold returns (BHAR) for the five countries with the largest number of conversions. Beginning from the conversion date, we observe post-conversion windows of 3, 4 and 5 years. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively. Standard errors are in parentheses.

As shown in Table 3.10, despite their overall positive post-conversion performance, the entities with the highest levels of restructuring tend to underperform relative to converted REITs with low M&A engagement in terms of BHARs. The underperformance is persistent over the three time horizons. This may imply that the benefit from a conversion is offset in part by the costs of conducting the strategic transactions i.e. the high premiums paid. This can be explained by the neutral or negative post-acquisition performance to acquirers

documented in the REIT and general finance literature (e.g., Glascock et al. (2018); Betton et al. (2008)), and it corroborates Hypothesis 3b.

Table 3.10: Post-Conversion (Risk-Adjusted) Performance by M&A Activity Quartile

	Simple BHAR				Risk-Adjusted BHAR			
	Low	Medium	High	High-Low	Low	Medium	High	High-Low
3y	0.487***	0.120	0.138	-0.349**	0.187	0.162	0.102**	-0.084
	(0.231)	(0.663)	(0.506)	(0.141)	(0.267)	(0.220)	(0.216)	(0.111)
4y	0.848***	0.525*	0.201	-0.647***	0.224	0.164	0.092**	-0.132
	(0.457)	(0.523)	(0.633)	(0.234)	(0.302)	(0.176)	(0.182)	(0.130)
5y	0.926**	0.611*	0.281*	-0.645**	0.230	0.145	0.103**	-0.127
	(0.591)	(0.494)	(0.612)	(0.279)	(0.315)	(0.164)	(0.182)	(0.135)

Note: This table shows simple and risk-adjusted abnormal buy-and-hold returns (BHARs over three relative time horizons for the U.K. and the U.S.). We calculate the risk-adjusted returns from the Sharpe (1966) ratio. The first through third columns for both return types show the results according to M&A activity quantiles. The respective fourth column for each states the difference between the upper and lower quartiles. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively. Standard errors are in parentheses.

Computing excess portfolio returns entails comparing the returns of single assets with those of a set of assets. Holding the latter is generally less risky for investors. Thus, some of the excess return may simply be due to the related risk premium. A key benefit of M&A activity is the composition of an adequately diversified property portfolio in advance of a REIT conversion.[10] Therefore, in the next step, we derive long-run excess returns using the Sharpe (1966) ratio, which accounts for the return volatility of the asset and the benchmark portfolios. Table 3.10 shows the results for risk-adjusted returns. We conclude that, as opposed to the simple buy-and-hold strategy, the considerable difference between high and low restructuring entities is no longer apparent. This implies that investors who benefit from the advantageous performance of low restructuring firms must accept higher risk. Simultaneously, the results show that only high restructuring REITs generate positive risk-adjusted abnormal post-conversion performance. Due to lower raw BHARs, this indi-

[10]For established U.S. REITs, Huerta-Sanchez et al. (2020) find no significant difference in market returns for the type of acquisition (asset vs. share deals).

cates there is reduced risk associated with investments in those firms. Together, it reveals a strategic advantage of high restructuring REITs, which explains the decision to conduct numerous M&A transactions preceding the adoption of REIT status.

3.6 Chapter Résumé

This article examines M&A activity related to REOC-to-REIT conversions on a multinational level. Drawing on a unique dataset of internationally listed FTSE EPRA/NAREIT property companies over the 1999-2018 period, we analyze 80 companies that elect REIT status. We find several interesting key insights:

First, REIT conversions generate an increased amount of M&A activity. This, in turn, leads to a high amount of restructuring deals that are tied closely to the conversion date, and to a high share of large-volume deals in the four years post-conversion. We find that REOCs are willing to pay a premium of approximately 9.2% above market valuation in order to acquire desired portfolios for strategic – but not regulatory – realignment. Second, adopting REIT status enhances equity inflows, which drives post-conversion M&A transaction activities and volume. Third, REIT converters in established REIT markets outperform their peers over the long run. Converters with lower restructuring activity exhibit even higher performance, and REOCs that undergo high restructuring show beneficial risk-adjusted returns.

Taken together, our results indicate that converting REITs tend to conduct substantial restructuring efforts during the pre-conversion period. Subsequently, they can follow a rapid path of growth through large-scale reinvestment of the inflows attracted by their REIT status, and exhibit demonstrably better performance than their peers.

Chapter 4

The Role of Uncertainty on Firm Structure Choices of listed Property Companies

– This paper is the result of a single-author project –

Abstract

Despite the benefits of REIT structures, the inherent restrictions of this regime limit the potential flexibility of companies. This may be a crucial point in unpredictable and uncertain macroeconomic environments. This paper examines 641 *listed U.S. property companies, of which* 50 *deselected their REIT status from* 1960 *to* 2019*. In the long run, I observe clustered deconversion events following uncertain time frames, which translates to an* 8.8% *associated increase in the likelihood caused by uncertainty. Controlling for a broad set of firm-level characteristics, the results highlight the short-run effects of macroeconomic uncertainty that drive the decision for distressed firms, and a significant effect regarding the duration of those time spans on both financially healthy and distressed companies.*

4.1 Chapter Introduction

Economic shocks may force companies to react quickly and rethink corporate alignments. U.S. history contains several examples of such crises. A prominent paradigm shift took place with the Global Financial Crisis (GFC), which induced a Great Recession along all branches and sectors, and especially affected direct and indirect property channels. Although each economic shock may be different, they all feature one common characteristic: They generate uncertainty.[1]

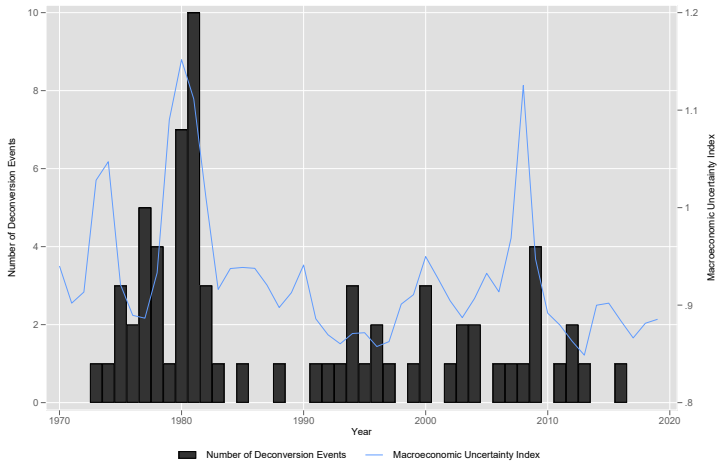
In contrast to GFC, the recent COVID-19 pandemic has generated enormous uncertainty among market participants, which is expected to continue since it originates from the real economy. On the basis of historical data, Oxford Economics (2020) estimates a recovery time of approximately two years in terms of pre-crisis total return levels of EPRA index constituents. The authors emphasize the high degree of uncertainty for future projections in all property sectors, although the commercial sector has been hit significantly harder than the residential sector. Strobel et al. (2020) and Jackson and Orr (2019) find a causal connection between declining house prices and uncertainty shocks. Papastamos et al. (2018) also document an increasing dispersion of rental forecasts through economic uncertainty.

These findings raise the question of whether and how this transmission channel affect company structure choices, i.e., whether it can drive established Real Estate Investment Trusts (REITs) to restructure their frameworks and opt for greater flexibility. Figure 4.1 shows that, after increasing levels of macroeconomic uncertainty, U.S. REITs tend to deselect their corporate structure, preferring to change to a regular C corporation. Moreover, recent firm announcements suggest an ongoing trend in this direction. As the COVID-19

[1] In this article, uncertainty refers to the recently published measure of macroeconomic uncertainty by Jurado et al. (2015). Another documented metric is the political uncertainty index of Baker et al. (2016), which serves as a robustness measure here because it does not cover the entire observation horizon.

pandemic persists, long-established REITs have begun announcing their re-evaluation of alternative corporate structures, which may "risk a company's ability to maintain the status for U.S. federal income purposes" (Kite Realty Group Trust, 2020), and "limit the capital allocation strategies" (CoreCivic Inc., 2020). CoreCivic, Inc. has already announced it will revoke its status in 2021. At the request of its shareholders, Geo Group, Inc. is also evaluating a potential change in legal status (Nasdaq Inc., 2020).

Figure 4.1: Macroeconomic Uncertainty and Deconversion Events



Note: This figure shows the observed number of country-level REIT deconversions (bars) and the index of macroeconomic uncertainty (blue line) developed by Jurado et al. (2015) per year over the 1960 – 2019 sample period.

Recent academic literature has explored the value implications of switching company structures. For example, Ling et al. (2020) find negative abnormal returns for deconverting REITs, while Chan et al. (2019) estimate positive stock price reactions for incumbent REITs after deconversion. In general, the literature reports a comparatively positive market valuation of listed REITs over Real Estate Operating Companies (REOCs) due to framework effects (see Downs et al., 2019; Bond and James, 2004; Piao et al., 2017; and Rehkugler et al., 2012). Damodaran et al. (1997) document positive cumulative abnormal returns around

announcement dates for financially distressed companies that switch to a looser structure. Chan et al. (2019) also provide a broad market overview, and report that 40 publicly listed entities converted to a REIT structure, while 74 deconverted, over the 1973 - 2011 period.

This article is motivated by the literary and empirical evidence to analyze how uncertain macroeconomic environments impact a company's decision to revoke its REIT structure. I aim to link two important streams of theoretical and empirical research for what is, to the best of my knowledge, the first time: Uncertainty, and firm structure choice in the listed property sector. It also augments the links among market participants, evaluators, and federal authorities on how organizational form changes interact with insecure market conditions.

From a theoretical perspective, the REIT framework provides a unique opportunity for this purpose, because the legal rules imply a trade-off between the benefits of status and the liberty of managerial decision making. For this reason, my empirical analysis is based on the sample of all U.S. REIT listings documented in the Center for Research in Security Prices (CRSP) database. The population consists of 686 REITs over the 1960 to 2019 period, of which 50 involved deconverting events. I focus on the U.S. market, because deselection of REIT structures occurs very infrequently internationally, as measured by corresponding events listed in the FTSE EPRA NAREIT Global Real Estate Index. My empirical approach uses three different estimation techniques.

First, I examine the sample on an aggregate level, using a Poisson model on different sets of past country-level characteristics. I aim to capture the rational causality that the decision-making precedes the initiation of opting for a different company structure. The results describe a statistically significant effect of an increase in macroeconomic uncertainty over the prior 1.5 years on the number of deconversion events. This translates into an increasing likelihood of 8.8% for each percentage increase in the macroeconomic

uncertainty index.

In light of these findings, I further analyze the impact on a disaggregate level. Controlling for a broad set of exogenous firm- and country-level variables in both random and fixed effects logit regressions, I confirm my previous findings for an increase in uncertainty 1.5 years prior to the official revocation date. This time frame also seems reasonable compared to case studies reviewed in Appendix C. It can take time to respond to market situations and evaluate alternative alignments. However, this may differ for distressed firms. To address this issue, I classify distressed firms' conditions using well-documented proxies. I find statistically significant short-term effects of macroeconomic uncertainty compared to their healthy counterparts. These results are robust to varying proxies as well as in both estimation procedures.

A third scope lies in the duration of the uncertain environment. For this reason, my analysis utilizes a Cox proportional hazard model. This approach corroborates the findings on the disaggregate level. It further reveals positive statistically significant effects of the duration itself, which hold for healthy and financial distressed firms.

The remainder of this article is organized as follows. Section 4.2 reviews the theoretical framework and links it to case studies. Section 4.3 introduces the sample data, while my methodological approaches and empirical results are presented in Section 4.4. Section 4.5 concludes.

4.2 Theoretical Framework

In reviewing the literature, various theories may be applicable to changing the organizational form of listed property companies. Table 4.1 reports some of the documented

frameworks, and ties their potential relevance to the context of the analyzed deconversion events.

Agency Theory

Management typically has some personal incentives to diversify a firm's portfolio and increase its value beyond simply optimizing shareholder value (Jensen and Meckling, 1976; Amihud and Lev, 1981; and Murphy, 1985). However, if they act against shareholders' interests, this would signify a conflict between executives and owners, i.e., the principal-agent theory. Bethel and Liebeskind (1993) hypothesize that corporate restructuring depends primarily on a company's ownership structure. Their findings suggest that the composition of management boards influences the willingness to restructure. The specification of this generalized theory explains changes in the management board and even the corporate constitution through the voting power of blockholders (Pound, 1992).

The choice of whether to retain or distribute earnings when restructuring a firm may also imply a major conflict between executives and shareholders, and may influence a firm's legal status. For example, the REIT framework limits how a firm can use its net income, and mandates paying most income out as dividends, instead of accumulating earnings to finance restructuring activities. Hence, agency theory may serve to explain corporate restructuring, especially if a company revokes its taxable status as a REIT due to the demands of stockholders for reasons of restructuring.

Environmental Theory

Bowman and Singh (1993) posit that a company can overcome a financial crisis by downsizing and refocusing its business model. The environmental explanation of corporate restructuring, a generalized theoretical approach postulated by Bethel and Liebeskind (1993), hypothesize that corporate restructuring is usually the result of regulatory changes or adjustments in competitive conditions. Examples include modifications of M&A regu-

lations or changes in tax treatments. Thus, the external circumstances that influence corporate environments can differ between the aggregate environment, which describes general market conditions, and the task environment, which characterizes the specified setting of individual firms (Castrogiovanni, 2002).

Building on these findings, Schoenberg et al. (2013) specify the environmental theory by exploring subcategories of a corporate turnaround strategy motivated by changes in external circumstances. Such a turnaround strategy would aim to realign a company's business model to focus on the former core activities considered fundamental to surviving an economic downturn (Arogyaswamy et al., 1995), and to develop a competitive strategy adjusted to future market conditions.

REIT regulations specifically mandate asset allocation requirements and legislation concerning the realization of earnings, i.e., a REIT is not as flexible in its revenue generation as a lesser regulated C corporate structure. Hence, the environmental theory may provide a suitable basis from which to explain corporate restructuring, especially in an economic downturn. It could justify any changes to a company's business model and culture to negate the REIT requirements.

Financial Distress Theory

The financial distress theory postulated by Damodaran et al. (1997) and Koh et al. (2015) hypothesizes that a firm that recognizes a threat of financial distress will respond immediately by restructuring activities. Within the scope of this theory, financial distress is defined as a situation in which the market value of a company's total assets is less than the total value of its liabilities (Chen et al., 1995). The main restructuring activities surrounding financial distress compromise the enhancement of efficiency on company business models and stricter cost control mechanisms.

Table 4.1: Literary Theories on Corporate Restructuring

Theory	Agency	Environmental	Financial Distress	Negative Value Gap	Free Cash Flow
Posit	managers incentives differ from shareholders aspiration on growth and diversification	external circumstances require an adaption of the business model to future market conditions	companies in financial distress realign business model to control costs and increase profitability	misalignment of the firm's portfolio leads to lack of ability to reach optimal values	company's ability to generate FCF as measurement for restructuring needs
Main Reason for Restructuring Activities	correction of past inefficient management	adapt business model to changed regulatory or competitive conditions	avert bankruptcy	resistance to takeover bids	increase competitive advantage
Sources et al.	Bethel and Liebeskind (1993); Gibbs (1993), Jensen and Meckling (1976)	Bethel and Liebeskind (1993), Boyne and Meier (2009); Schoenberg et al. (2013)	Koh et al. (2015); Damodaran et al. (1997); Chen et al. (1995)	Firend and Shaki (2008)	Gibbs (1993); Jensen (1986)
Relevance	yes	yes	yes	potentially	no

Note: This table summarizes major documented theories of corporate restructuring. The first line explains the underlying rationale of each theory. The second line reports the main motivation driving the organizational form change. Section sources lists potential articles describing theories in detail. The final category concludes the importance for the scope of this article.

Denis and Kruse (2000) find that positive abnormal future returns are typically associated with the restructuring processes of firms exhibiting financial distress. Because REIT requirements tightly control earnings distributions and asset allocation, the financial distress theory may be applied to explain corporate restructuring that is justified by a company altering its corporate structure to one featuring less regulation than a REIT.

Negative Value Gap Theory

Firend and Shaki (2008) postulate the negative value gap theory. They hypothesize that the existence of a significant negative discrepancy between a company's reported optimal market value and that estimated by shareholders is one reason to undertake a corporate restructuring. An emerging negative value gap results from a misalignment of a company's portfolio of assets. The market for corporate control reacts as competitors or arbitrage specialists, who detect existing value gaps, begin takeover preparations. Executive management may then need to undertake operational or strategic restructuring activities to eliminate the value gap, minimize the takeover threats, and ensure competitiveness. On the other hand, the REIT framework may increase transparency, which can lead to higher market valuations (Bond and James, 2004; Rehkugler et al. (2012)). It may also provide a barrier to hostile takeovers (Downs et al., 2019).

Overall, the negative value gap theory may provide some explanation of why some firms opt to change structure. However, its predictive power seems limited for listed property companies.

Free Cash Flow Theory

According to Jensen (1986), a company's free cash flow is captured by its investment ability, level of constant cash flows, financial leverage, and asset diversification. Gibbs (1993) describes the free cash flow theory as a method by which to evaluate a company's need for restructuring by assessing the single indicators independently of each other. Invest-

ment ability is measured by a firm's ability to extract efficient rents from the market. The amount of operating cash flow influences dependence on capital markets, and therefore a company's monitoring costs. The level of financial leverage is a determinant of bankruptcy risk, and asset diversification represents a firm's ability to extend its growth opportunities outside its core business.

These four subcategories identify the value creation potentials that need to be exploited to ensure a firm's competitive advantage. The free cash flow theory helps explain a company's need for enhancements regarding its ability to generate diverse and stable cash flows. However, as noted earlier, REITs are limited in their ability to diversify revenue streams, so this theory is outside the scope of this study.

The Appendix contains two detailed case studies of companies that revoked their REIT status. I review these two events to provide insights into individual firms' decision-making processes. In both cases, the deselecting event occurred in the aftermath of severe macroeconomic uncertainty. Ultimately, both firms opted for a looser organizational structure to ensure greater freedom to strategically diversity of their businesses.

Case Study A: At the beginning of March 2016, this trust's management board announced its desire to expand its business of self-managed leisure facilities and realign its firm structure. Approximately one month later, the shareholders received the board's proxy statement in advance of the annual meeting. It described the decision to change the company's legal status in order to use forwarded net operating losses to offset future earnings and federal income taxes. The board implemented a tax preservation plan to support the changes. At the annual shareholder meeting two months later, the shareholders approved the board's plan by an outstanding acceptance of the proxy statement proposals. At the same meeting, the trust changed its name to Drive Shack Inc., effective January 1, 2017. On February 23, 2017, nine months after the meeting and almost twelve months after the board's first announcement, the company enrolled as a C corporation.

Case Study B: Beginning in early 1978, a private investor and his companies acquired shares of a REIT with the goal to increase future stock prices. Approximately one year and three increases in shareholdings later, the new shareholders scheduled an extraordinary meeting to change the executive board of the trust. At this meeting, they also announced they would change the trust's investment strategy. The board intended to liquidate some of the real estate assets in order to invest in shareholdings of financial securities companies located in Illinois. The board justified the changes by a targeted growth of company value. Those changes included a required revocation of the REIT status, which was proposed by the board about six months after the extraordinary shareholder meeting in May 1979. Seven months passed before the shareholders approved the board's intention to relinquish the REIT status at the annual meeting in December 1979. Eight months after that, the change in legal status took effect with the beginning of the company's new financial year in August 1980.

4.3 Data

4.3.1 U.S. Firm Sample

This paper focuses on the U.S. REIT regime from 1960 to 2019. The empirical analysis is based on all REIT listings from the Center for Research in Security Prices (CRSP) database, which comprises stock companies traded on all relevant American stock exchanges. In total, the database contains 686 REITs. To reliably identify firm structure changes, I screen for differences in the CRSP share code variable, where the second digit denotes a company as a REIT. This yielded 72 deconverting events, which is consistent with Chan et al. (2019)'s findings. Subsequently, I obtained data for 641 of those sample firms from COMPUSTAT, including 50 deconverting entities.

The final sample is comprised of listed property companies that operate in a formal structure as a REIT. The underlying rationale is to achieve a suitable counterfactual group.

This is because, as Greenstone et al. (2010) illustrates, a well-chosen research design and solid sample construction control for overloading empirical analyses with exogenous variables and minimize potential omitted variable biases. The authors draw their causal inference to identify the key determinants by sampling the observed firms only at their latest stage in the decision-making process. Ling et al. (2020) also uses companies that operate only under the REIT framework for their empirical work. For this reason, REOCs that converted to REITs are included as well but only for their full years as REITs.

Eichholtz and Kok (2007) find increasing capital flows to the real estate sector after introducing REIT regimes. As a result, I note an increasing number of countries that permit REIT structures.[2] This, in turn, raises the question of whether REITs tend to retain their corporate structure on an international scale. I screen the FTSE EPRA NAREIT Global Real Estate Index's Corporate Action list for delisting and reclassification events outside the U.S. I also obtain REIT status information from S&P Global Intelligence, and identify 7 events in which a REIT deselected its status but continued to operate as a listed property company. Given this small sample size, this paper analyzes decision-making only of U.S. REITs.

4.3.2 Sample Characteristics

A substantial number of deconverting events (more than 10%) are observable among U.S. listed REITs. Thus, this choice, made by key executive managers and approved at shareholder meetings, occurs relatively frequently. In particular, I observe clusters during both the pre- and post- (so-called) new REIT era, which is marked by various reforms facilitating the framework. The most cited reform includes the introduction of the UPREIT structure. Moreover, those events are more concentrated around uncertain time spans. Figure 4.1 (Appendix Figure C.1) illustrates the aggregate number of deconversions, as well as the

[2]EPRA (2020) provides an overview of national REIT regimes in its annual Global REIT Survey.

macroeconomic uncertainty index (alternative proxy indexes), over the sample period.

Table 4.2: Panel A – Summary Statistics of Country Variables

	mean	median	sd	p25	p75
Absolute Values					
Macroeconomic Uncertainty Index	0.91	0.90	0.06	0.87	0.92
Component Political Uncertainty Index	109.64	102.66	33.45	83.44	127.02
News-based Uncertainty Index	117.23	107.94	45.13	84.33	141.44
Duration	11.73	11.00	6.56	6.00	20.00
Consumer Sentiment Index	88.15	91.20	11.68	80.00	95.80
Prior Deconversions	1.97	2.00	1.62	1.00	3.00
Reform	0.19	0.00	0.39	0.00	0.00
REIT Market Capitalization	12.38	12.54	2.23	10.76	14.08
Growth Rates [in %]					
Macroeconomic Uncertainty Index	-0.04	-0.11	1.69	-0.94	0.79
Component Political Uncertainty Index	2.94	1.29	25.73	-14.92	13.75
News-based Uncertainty Index	6.84	-2.15	40.97	-18.84	20.35
Consumer Sentiment Index	0.52	0.38	7.70	-3.94	3.93
REIT Market Capitalization	1.79	1.95	26.14	-6.59	10.69

Note: This table summarizes the statistical characteristics of the exogenous country-level variables along the 1960-2019 observation period on a quarterly basis. The first set shows absolute values; the second group shows growth rates. $MacroeconomicUncertaintyIndex$ implies the unpredictable future expressed as the residual after regressing 132 times series. $ComponentPoliticalUncertaintyIndex$ is a weighted index based on uncertainty from reports in the ten largest newspapers, tax changes made by the Congressional Budget Office, and forecasts of FED surveys. $News-basedUncertaintyIndex$ includes over 1,000 U.S. newspapers of various sizes. $Duration$ gives the length of the respective uncertain environment of the Macroeconomic Uncertainty Index. $Consumer\ Price\ Index$ measures the market sentiment of booms and busts. $REIT\ Market\ Capitalization$ aggregates REIT market values. $Prior\ Deconversions$ are the rolling sum of recent deconversion events over the previous two years. $Reform$ is an indicator variable that captures various federal adjustments since the new REIT era.

I use "uncertainty" here to refer to the Jurado et al. (2015) index, which expresses the residual value of forecasts on 132 financial and real time series. This translates into a purely unpredictable future growth rate. Another prominent proxy is the political uncertainty measure constructed by Baker et al. (2016). One of its metrics is a three-component weighted index based on uncertainty from reports in the ten largest newspapers, tax law

changes made by the Congressional Budget Office, and forecasts of FED surveys. A similar metric involves a purely news-based uncertainty index, which incorporates over 1,000 U.S. newspapers of various sizes and locations and uses word algorithms to track uncertainty. In both cases, the resulting index values cover the period beginning in 1985, and serve for robustness tests throughout further analyses. In contrast to Strobel et al. (2020)'s findings on house prices, I find that, in the context of this study, the increase in uncertainty affects companies' individual decision-making, rather than the overall level of uncertainty.

My analyses use company-specific and sectorwide variables to control for factors that influence decision-making. Table 4.2 shows descriptive statistics across country variables on a quarterly frequency. The uncertainty measures on average depict the same direction, although the alternative uncertainty proxies exhibit higher volatility. In general, higher values imply higher levels of uncertainty. A typical economic cycle measured by the macroeconomic uncertainty index in both directions spans 11 quarters. On average, the rolling sum of *Prior Deconversions* is 2. Since market participants track each other's activity, this may imply potential spillover effects or a constant refusal rate of the framework. In contrast, the *REIT Market Capitalization* has increased on average by approximately 2% annually since 1960.

Table 4.3 groups summary statistics for deconverting REITs and the counterfactual group consisting of REITs. The table supports stylized facts due to each firm structure, whereby deconverting REITs are assumed to refer to typical characteristics of REOCs. All absolute dollar values are inflation-adjusted. *Asset Test* is the excess ratio above a set threshold of 75%. It is defined as the proportion of qualifying real estate to overall assets. However, its validity is somewhat limited, as qualifying assets include cash, cash equivalents, and government bonds. The payout levels are obviously rather divergent. Deconverting REITs on average undercut the necessary distribution by 76.9%.

Table 4.3: Panel B – Summary Statistics of Firm Variables

	Deconverting REITs					REITs				
	mean	median	sd	p25	p75	mean	median	sd	p25	p75
Asset Test	5.76	17.86	29.83	0.35	25.65	3.51	8.60	24.18	-4.14	18.74
Distribution Test	-76.90	-100.00	75.94	-100.00	-100.00	3.23	5.26	147.77	-100.00	63.74
Leverage	60.69	69.22	30.35	38.11	86.52	48.66	46.91	24.42	32.47	65.18
Company Tax Rate	11.81	0.00	16.64	0.00	33.50	2.29	0.00	8.12	0.00	0.00
Profit	8.02	0.31	92.90	-0.71	2.77	14.76	2.84	79.80	0.20	14.02
P/B Ratio	1.20	0.86	1.01	0.51	1.53	1.60	1.35	0.99	0.94	2.00
Firm Size	3.97	3.77	2.07	2.48	5.08	5.71	5.90	2.14	4.19	7.31
Salary/Firm Size Ratio	1.19	0.00	3.17	0.00	0.54	0.35	0.00	4.21	0.00	0.17
Bonus/Firm Size Ratio	0.31	0.00	1.72	0.00	0.00	0.20	0.00	4.76	0.00	0.00
Total Cash / Firm Size Ratio	1.49	0.00	4.13	0.00	0.78	0.54	0.00	8.51	0.00	0.21
Equity Compensation /Firm Size Ratio	0.43	0.00	4.28	0.00	0.00	0.36	0.00	3.20	0.00	0.15

Note: This table lists the statistical characteristics of firm-level variables along the 1960-2019 observation period on a quarterly basis. The left (right) group reflects (never) deconverting entities. *Asset Test* measures the amount of deviation from a required ratio of qualifying assets. *Distribution Test* similarly calculates the deviation from the required payout ratio. *Leverage* gives the share of total liabilities to assets. *Company Tax Rate* is the ratio of a company's paid taxes to its pre-tax income. $Profit$ is a company's gain or loss. P/B *Ratio* mirrors the relation between share price and book equity value per share. *FirmSize* is the natural logarithm of market capitalization. *Salary* gives fixed compensation, while *Bonus* captures further cash components and both together, plus other cash compensation amounts to *TotalCashCompensation* as reported. *EquityCompensation* reflects total annual non-cash compensation as defined by Capital IQ. All compensation variables are CPI-inflation-adjusted and normalized by firm size.

And, as a result of comparatively lower profits, the leverage levels are higher for de-converters. The compensation structure describes structural differences, and shows that cash-related remuneration on average exceeds equity-based parts. This is even more apparent on a normalized basis (1.19 vs. 0.35).

Table 4.4 shows the average of annual company characteristics around individual event dates. The overall picture is of declining operating numbers, in particular, profits and firm size, accompanied by high leverage levels. This implies a misalignment of the business concept. As a result, decreasing CEO compensation and a persistent retention of earnings occurs even in positive years. Taken together, the sample exhibits structural divergences across both groups of listed real estate operating companies. Thus, the REIT sample serves as an adequate counterfactual to examine the extent to which macroeconomic uncertainty can influence the decision-making process, once controlled for these obvious stylized characteristics.

Appendix Table C.2 provides a correlation matrix of the explanatory variables. In general, the correlation estimates are below a threshold of 0.8, suggesting multicollinearity is not a concern. However, there may be an issue with *Firm Size* and *REIT Market Capitalization*, although the results remain robust after omitting each variable. There is also a high univariate correlation between *Macroeconomic Uncertainty Index* and *News − based Political Uncertainty Index*. In this case, those measures represent alternative proxy variables and are not included in any model simultaneously.

Table 4.4: Panel C – Deconverting Firm Variables Around Event Time

	-3	-2	-1	0	1	2	3	4	5
Asset Test	9.61	-2.48	-11.81	11.43	3.44	-23.02	14.2	13.56	15.47
Distribution Test	-86.58	-93.03	-75.91	-93.76	-94.39	-95.63	-84.51	-94.71	-83.12
Leverage	69.51	69.64	69.63	64.94	64.3	57.7	61.46	63.6	61.83
Company Tax Rate	3.57	5.15	4.87	12.03	12.21	16.29	15.26	19.46	21.61
Profit	3.11	-4.28	-2.77	-11.16	-3.67	3.95	-4.66	2.53	3.66
P/B Ratio	0.76	0.87	0.95	0.81	1.2	1.04	1.18	1.06	1.22
Firm Size	3.31	3.38	3.24	3.05	3.33	3.62	3.69	3.7	3.83
Salary/Firm Size Ratio	6.43	0.51	0.42	0.56	0.54	1.5	0.71	0.86	0.38
Bonus/Firm Size Ratio	4.45	0	0	0.34	0.07	0.55	0.54	1.61	0.76
Total Cash / Firm Size Ratio	10.88	0.51	0.42	0.9	0.61	2.05	1.25	2.47	1.14
Equity Compensation /Firm Size Ratio	0.24	0.01	0	0.08	0.13	1.27	0.02	0.11	0.06

Note: This table gives the statistical averages of deconverting firm-level variables on relative time around each individual event date. *Asset Test* measures the amount of deviation from a required ratio of qualifying assets. *Distribution Test* similarly calculates the deviation from the required payout ratio. *Leverage* gives the share of total liabilities to assets. *Company Tax Rate* is the quotient of a company's paid taxes to its pre-tax income. $Profit$ is a company's gain or loss. P/B *Ratio* mirrors the relation between share price and book equity value per share. *FirmSize* is the natural logarithm of market capitalization. *Salary* gives fixed compensation, while *Bonus* captures further cash components and both together, plus other cash compensation amounts to *TotalCashCompensation* as reported. *EquityCompensation* reflects total annual non-cash compensation as defined by Capital IQ. All compensation variables are CPI-inflation-adjusted and normalized by firm size.

4.4 Methodology and Empirical Results

My objective in this paper is to explain how a REIT's decision to deselect the REIT structure is linked to an uncertain market environment. The empirical analysis consists of three approaches. The first subsection examines the aggregate level. The second subsection summarizes my findings on an individual company level. And the third section investigates how the duration of macroeconomic uncertainty affects decision making.

4.4.1 Aggregate Level

I first denote the aggregate number of deconversion events at a country level. Therefore, the endogenous variable is a count data variable. Following Khorana and Servaes (1999) and Downs et al. (2017), I model country-level REIT deconversions using Poisson regressions. The sample of listed property companies translates to 166 quarterly event occurrences estimated with the following model in equation 4.1:

$$\begin{aligned} Number\,of\,Deconversions_t = {} & \alpha_0 \\ & + \beta_1 Uncertainty_{t-l} \\ & + \sum_{k=1}^{K} \gamma_k Controls_{t-l} \\ & + \epsilon_t \end{aligned} \tag{4.1}$$

$Number\,of\,Deconversions_t$ is the number of completed deconversion events of U.S. REITs in period t. $Uncertainty_{t-l}$ is the key variable measuring the growth rate of macroeconomic uncertainty in period $t-l$, where l is the lag length. Vector γ_k comprises k-fold exogenous control variables, as the environmental theory suggests. These variables capture the consumer sentiment index, REIT market size, and the sum of prior deconversion events in a preceding two-year window. In addition, the model controls for the time-specific effect of the major framework shift by introducing the so-called UPREIT structure. Standard errors are robust to serial correlation.

Table 4.5: The Impact of Uncertainty on Country-Level Deconversions

	(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)
Uncertainty	3.952	15.703**	10.953	19.504***	24.044***	22.114**	7.254	9.144
	(8.251)	(7.147)	(7.564)	(7.199)	7.312)	(9.159)	(8.803)	(8.612)
Consumer Price Index	1.668	0.847	-1.720	-1.846	2.612*	-3.797*	0.477	0.595
	(1.657)	(1.680)	(1.827)	(1.813)	(1.543)	(1.939)	(1.767)	(1.787)
REIT Market Capitalization	-0.373***	-0.338***	-0.317**	-0.329***	-0.387***	-0.335***	-0.337***	-0.319**
	(0.127)	(0.129)	(0.127)	(0.124)	(0.122)	(0.121)	(0.124)	(0.124)
Prior Deconversions	0.088	0.131	0.118	0.041	-0.054	-0.089	0.029	0.038
	(0.120)	(0.119)	(0.116)	(0.120)	(0.128)	(0.130)	(0.128)	(0.129)
Reform	-1.264**	-1.277**	-1.140**	-1.226**	-1.342**	-1.147**	-1.045**	-1.052**
	(0.549)	(0.574)	(0.563)	(0.567)	(0.552)	(0.546)	(0.527)	(0.535)
Constant	2.884*	2.417	2.176	2.347	3.058**	2.479*	2.458*	2.230
	(1.506)	(1.536)	(1.511)	(1.467)	(1.425)	(1.419)	(1.451)	(1.458)
Observations	166	165	164	163	162	161	160	159
Pseudo R^2	0.055	0.063	0.059	0.088	0.101	0.107	0.046	0.046

Note: This table reports the Poisson regression results, which denote the number of REITs that opted to revoke their REIT status. The unit of observation is the number of deconversions at quarter t. The key explanatory variable is *Uncertainty*, which implies the unpredictable future expressed as the residual after regressing 132 time series. *Consumer Price Index* measures the market sentiment of booms and busts. *REIT Market Capitalization* aggregates REIT market values. *Prior Deconversions* are the rolling sum of recent deconversion events over the previous two years. *Reform* is an indicator variable that controls for the new REIT era. The regression results are estimated using robust standard errors given in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Table 4.5 gives the results. Models *i-viii* reflect the corresponding quarterly time lags. For example, Model *i* lags all explanatory variables by one quarter. Overall, the coefficients on macroeconomic uncertainty exhibit robust significance for the second and fourth to sixth lags, indicating a persistent impact in the time span surrounding the decision-making process. The time frame of 4-6 quarters also seems reasonable, given the case studies (Appendix C). Table 4.6 then shows the combined effect of macroeconomic uncertainty across time. The impact is significant on a 1% alpha level (*i*). On average, a 1-percentage point increase in macroeconomic uncertainty is associated with a 8.763% higher likelihood of a deconversion event (*ii*).[3]

[3]Varying equation 4.1 with the alternative proxies of uncertainty yields qualitatively similar results. Considering the frequency of the number of deconversion events, a zero-inflated Poisson model in a robustness test corroborates the initial results.

Table 4.6: Combined Effect of Macroeconomic Uncertainty

	Coef.	Std. Err.	z	p-value	[95% Conf.	Interval]
(*i*)	34.409	13.116	2.62	0.009	8.702	60.116
(*ii*)	8.763	3.610	2.43	0.015	1.688	15.837

Note: This table shows the combined effect of macroeconomic uncertainty on the aggregate number of deconversions. Model (*i*) refers to the raw Poisson estimation from Table 4.5. Model (*ii*) calculates the marginal effects.

4.4.2 Individual Level

Given the country-level significance, the goal of this section is to further analyze the impact of macroeconomic uncertainty on a disaggregated level to capture the individual decision-making process. The analysis is thus twofold. The first set estimates the impact of uncertainty controlling for company-specific and countrywide characteristics. The second set distinguishes the level of financial distress, according to the theories in Table 4.1. Moreover, both sets of estimations use pooled logit and fixed effects specifications, respectively (Models *i* and *ii*). The linear predictor of the panel logit model in Equation 4.2 estimates the impact of macroeconomic uncertainty on the REIT deconversion probability:

$$\begin{aligned} Deconversion_{i,t} = \alpha_0 & \\ & + \beta_1 Uncertainty_{t-l} + \beta_2 Distress_{i,t-1} + \beta_3 Uncertainty_{t-l} x Distress_{i,t-1} \\ & + \sum_{k=1}^{K} \gamma_k Firm - Controls_{i,t-l} + \sum_{k=1}^{K} \delta_k Country - Controls_{t-l} \\ & + \theta_i + \epsilon_{i,t} \end{aligned} \tag{4.2}$$

Note that the dependent variable is binary. It equals 1 if REIT i deconverts to a REOC in quarter t, and is 0 in all previous quarters. Once this event occurs, the firm leaves our

sample. This approach follows that of Lewis et al. (2011), and ensures we estimate the likelihood of deconversion, rather than explaining factors of each organizational form. The key variable of interest is $Uncertainty_{j,t-l}$, which is the growth rate of the uncertainty index documented in Jurado et al. (2015). The subscript $t-l$ represents a time lag length of l quarters. The factor $Distress_{i,t-1}$ is an indicator variable that equals 1 if the company is in financial distress. Vector γ_k comprises commonly used firm-level control variables. Vector δ_k consists of the significant countrywide control variables from the estimation in Table 4.6, which are unreported. θ_i captures individual firm fixed effects to additionally control for unobserved heterogeneity. Standard errors are clustered at the company level and robust to heteroscedasticity and serial correlation.

Table 4.7 shows the regression results. In light of the previous findings, the first two columns are estimated using the sixth lag of macroeconomic uncertainty. This lag length yields a positive coefficient, which is statistically significant on a 5% alpha level. It implies that a previous increase in macroeconomic uncertainty is associated with a higher probability of deconversion. The results hold for both estimation specifications, and the control variables are reasonable.

The second set of estimations explicitly capture the financial condition of distressed firms. The literature documents various proxies for financial distress. For example, Garlappi and Yan (2011) and Vassalou and Xing (2004) find stronger book-to-market effects for firms with a high likelihood of default. This is consistent with Chen et al. (1995) and evidence from Chung et al. (2012), who also identify a firm's standard deviation as a reliable proxy for financial distress. Adams et al. (2015) confirm that highly volatile stock prices may also signal distressed firms. In this analysis, I define firm financial distress using these two prominent proxies, namely, price-to-book ratio, and stock price volatility. Considering Damodaran et al. (1997), the preceding three years to the individual event are a reasonable time span for financial distress identification.

Table 4.7: The Impact of Uncertainty on Firm-Level Deconversions

	Full Sample		Distressed Firms			
	(i)	(ii)	(i)	(ii)	(iii)	(iv)
Macroeconomic Uncertainty						
Uncertainty	12.074**	12.989**	-13.305	-0.172	-11.162	-1.729
	(6.043)	(6.527)	(9.409)	(9.142)	9.437)	(9.023)
Distressed Firm			0.854***	–	-0.444	–
			(0.334)		(0.450)	
Distressed Firm × Uncertainty			21.463**	16.439*	23.376**	18.443*
			(10.869)	(9.520)	(9.319)	(11.013)
Control Variables						
Distribution Test	-0.003***	-0.002	-0.003***	-0.005**	-0.003***	-0.004*
	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)	(0.002)
Leverage	0.017*	0.022	0.006	-0.032***	0.007	-0.032***
	(0.010)	(0.013)	(0.008)	(0.009)	(0.008)	(0.009)
Company Tax Rate	0.013	0.054**	0.046***	0.130***	0.046***	0.121***
	(0.014)	(0.021)	(0.009)	(0.022)	(0.010)	(0.022)
P/B - Ratio	-0.293	0.382	-0.473	-0.488	-0.731*	0.235
	(0.331)	(0.285)	(0.343)	(0.332)	(0.408)	(0.322)
Firm Size	-0.328***	-0.709***	-0.334***	-0.956***	-0.374***	-0.852***
	(0.092)	(0.270)	(0.102)	(0.234)	(0.117)	(0.219)
Profit	-0.002	-0.001	-0.002***	-0.002**	-0.002***	-0.001
	(0.001)	(0.001)	(0.000)	(0.001)	(0.000)	(0.001)
Observations	22,571	893	25,739	1,026	25,739	1,026
Distress Identifier	–	–	B/P	B/P	Volatility	Volatility
Firm Fixed Effects	No	Yes	No	Yes	No	Yes
Country Controls	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo R^2	0.14	0.13	0.19	0.27	0.18	0.24

Note: This table shows the panel logit regression results of a REIT's decision to revoke its status. The unit of observation is the operating status in each quarter. The dependent variable takes a value of 1 if REIT i deselects its REIT status in quarter t, and is 0 in all previous quarters. The key explanatory variable is *Uncertainty*, which implies an unpredictable future expressed as the residual after regressing 132 economic and financial time series. *DistressedFirm* is a dichotomous variable indicating a company is distressed if the three-year average of the distress identifier can be sorted to the lowest quartile before the event date. *Prior Deconversions* is the rolling sum of recent deconversion events over the previous two years. *Distribution Test* similarly calculates the deviation from the required payout ratio. *Leverage* gives the share of total liabilities to assets. *Company Tax Rate* is the quotient of a company's paid taxes to its pre-tax income. *P/B Ratio* mirrors the relation between share price and book equity value per share. *FirmSize* is the natural logarithm of market capitalization. *Profit* is a company's gain or loss. Significant countrywide controls from Table 4.5 are also incorporated. In the Full Sample (Distressed Firms) section, all independent variables are lagged by 6 (1) quarters. The regression results are estimated with (i) random, and (ii) fixed effects specifications. These control for unobserved heterogeneity and use panel-specific heteroscedasticity and serial correlation robust standard errors clustered at the company level and given in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Therefore, a company is defined as distressed if the three-year average of each proxy can be allocated to the first quartile in the three years prior to the event date.

The right side of Table 4.7 shows the respective results. The corresponding exogenous variables reflect a short-term lag structure of one period. Only $Uncertainty_{t-1}$ turns insignificant, from which I conclude that increasing levels of macroeconomic uncertainty in proximity to the event is not relevant to decision making. Consistent with this interpretation, a company's distress status, as measured by the $P/BRatio$, is highly relevant. Moreover, the interaction of macroeconomic uncertainty and a company's distress level is statistically significant and positive correlated with the decision to deselect REIT status in this short-term context. This result holds for both proxies of distressed firms. As in the full sample case, there is no apparent effect of macroeconomic uncertainty for longer periods. Taken together, these results suggest that uncertainty has an effect on deconversion events in preceding time frames. The sixth quarter seems to be a particular trigger on a disaggregate level. But, once a firm is distressed, increasing uncertain macroeconomic environments drive the desire to achieve more flexibility in order to realign their business models. Both results are consistent with the company statements in Appendix C and the theoretical frameworks of financial distress and environmental theory.[4] In particular, the explicit inclusion of macroeconomic uncertainty provides new evidence for the theoretical literature.

4.4.3 Duration Effects

The previous findings indicate a likely causal connection between macroeconomic uncertainty and the decision to choose a more flexible company framework. In this section, I

[4]Considering the relevance of agency theory, Appendix Table C.1 shows additional regression results. The estimation draws on remuneration data from S&P Capital IQ, which is available from 1992 onward, excluding sufficient ownership data for deconverting entities. Therefore, only a fraction of observed deconverting firms can be included. The calculus follows Price et al. (2015). However, the results support theory, and indicate that lower equity and cash compensation may facilitate an executive's desire to deselect REIT status.

analyze the impact of the length of the uncertain environment. I use a Cox proportional hazard model, in which a company only experiences the hazard once it deselects the REIT structure.

I define duration as the measured length of the summed quarters. In particular, every single quarter counts toward the actual duration if the growth rate of macroeconomic uncertainty adds to the preceding trend, and the sum along the duration exceeds an overall threshold of 1% growth. This threshold reflects the 80th percentile.[5] For example, a 1% positive increase in t and a subsequent increase of 0.5% in $t+1$ gives a duration of 2.

Table 4.8 gives the results. Model *i* incorporates explanatory and control variables of equation 4.2. The estimated hazard ratio exceeds an absolute value of 1, and the coefficient is statistically significant at the 1% level. Therefore, this third estimation technique also indicates that uncertainty is associated with an increase in the likelihood of deselecting the REIT structure. Model *ii* analyzes how the duration impacts the decision. On average, it has a positive effect for either environment. The interaction between duration and uncertainty depicts a significantly positive correlation, which is plausible since lasting duration strengthens the surroundings. Model *iii* reveals that financial distress itself may not drive the decision making. But, in combination with longer-lasting uncertainty, it has a statistically significant positive impact, complementing the previous results.

[5] As in Strobel et al. (2020), I find that a variation of percentiles, as well as using absolute index values, yields qualitatively similar results for duration effects.

Table 4.8: The Impact of Enduring Uncertainty on Deconversions

	(i)	(ii)	(iii)
Macroeconomic Uncertainty			
Uncertainty	6.522***	6.843***	6.484***
	(2.677)	(2.593)	(2.543)
Duration		1.156***	1.131***
		(0.061)	(0.049)
Duration x Uncertainty		1.144**	
		(0.078)	
Distressed Firm			0.949
			(0.335)
Duration x Uncertainty x Distressed Firm			1.127**
			(0.068)
Control Variables			
Distribution Test	0.999	0.999	0.999
	(0.001)	(0.001)	(0.001)
Leverage	1.009	1.009	1.006
	(0.007)	(0.007)	(0.007)
Company Tax Rate	1.028***	1.017	1.017
	(0.011)	(0.012)	(0.011)
P/B Ratio	0.748	0.744	0.715
	(0.151)	(0.190)	(0.188)
Firm Size	0.762***	0.839*	0.805**
	(0.056)	(0.080)	(0.069)
Profit	0.996***	0.995***	0.997*
	(0.002)	(0.002)	(0.002)
Observations	344	344	344
Country Controls	Yes	Yes	Yes
Pseudo R^2	0.225	0.30	0.30

Note: This table shows the Cox proportional regression results of a REIT's decision to revoke its status. The unit of observation in this hazard model is the time until this operating status changes. The dependent variable takes the value of 1 if REIT i deselects its REIT status in quarter t, and is 0 in all previous quarters. The key explanatory variable is *Uncertainty*, which implies an unpredictable future expressed as the residual after regressing 132 economic and financial time series. *Duration* is a metric in quarters, reflecting the length of the underlying trend of uncertainty. *DistressedFirm* is a dichotomous variable indicating a company is distressed if the three-year average of the distress identifier can be sorted to the lowest quartile before the event date. *Prior Deconversions* is the rolling sum of recent deconversion events over the previous two years. *Distribution Test* similarly calculates the deviation from the required payout ratio. *Leverage* gives the share of total liabilities to assets. *Company Tax Rate* is the quotient of a company's paid taxes to its pre-tax income. *P/B Ratio* mirrors the relation between share price and book equity value per share. *FirmSize* is the natural logarithm of market capitalization. *Profit* is a company's gain or loss. The regression results are estimated by controlling for significant countrywide exogenous variables, estimated and given in Table 4.5, and using robust standard errors clustered at the company level and given in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively. A hazard ratio more (less) than 1 represents a higher (lower) probability of deconversion from the baseline.

4.5 Chapter Résumé

This article examines the impact of macroeconomic uncertainty on the revocation of a company's REIT structure. The data consists of all U.S. listed real estate investment trusts for the sample period of $1960 - 2019$. I analyze 641 companies, of which 50 chose to deselect REIT status. The analysis identifies an economically and statistically significant impact of macroeconomic uncertainty that affects the individual decision-making of REIT status revocation.

Overall, my results indicate that deconverting REITs opt to change their framework in order to achieve more flexibility to realign their business concepts. This conclusion is based on anecdotal and empirical evidence. The number of REIT deconversions on a country level is influenced by uncertainty over several preceding market peaks. The combined effect translates to an 8.8% higher likelihood per 1% point increase in uncertainty. On a firm level, this impact is linked to a company's condition. In general, longer periods of uncertainty affect individual decision-making more strongly. Once a company experiences financial distress, the short-term effects of macroeconomic uncertainty drive the desire for more flexibility. In addition, the duration of these market environments increases this impact for both firm types.

Chapter 5

Conclusion

This dissertation circles all around listed property companies and their puzzling behavior both towards and backwards opting for the REIT format on an international scale. REIT conversions hereby refers to the decision of established and operating property companies to aim for the REIT status rather than spin-off single firm parts or entirely refrain the REIT format. Deconversions are exactly the opposite. This sample construction allows to draw a strong causal inference on the underlying factors influencing the individual decision making. This setup is enriched by using qualitative databases tracking and quantifying the property firms of interest here. The results along the analyses are of major importance for investors, market participants, federal regulators and legislators. The findings attribute to the existing literature on various instances and enriches the academia through novel research questions.

Chapter 1 provides a brief introduction in the economic importance of real estate in general and its eclectic connection along private, corporate and federal levels. Moreover, corporate real estate and property companies capture and will further play an increasing role across the global context. This elucidates why this dissertation analyses the international property company sector. Chapter 2 examines determinants for opting the REIT format. In essence, it is a cost-benefit trade-off, but only to a smaller extent than so far lit-

erately assumed. In fact, market dynamics like herd behavior and valuation influence on higher degrees. Moreover, in situations of high undervaluation and high levels of managerial equity compensation, the probability for decision makers to opt for the REIT format increases exponentially. Chapter 3 investigates the conversion-induced M&A activity and performance implications. The analyses reveal distinct higher conducted acquisitions and sales of portfolios in proximity of switching operating structures. Those deals are driven by increased attractiveness of equity investors and accompanied capital inflows initiated by the REIT format. In general, those converting entities outperform their competitors in the long run of 3 to 5 years, while more M&A active firms also achieve higher risk-adjusted returns. Hence, higher restructuring firms diversify investor's risks and still outperform the market. Chapter 4 utilizes a recent published measure of macroeconomic uncertainty for the U.S. market to study the impact on refraining the REIT format. In a robust manner, it shows that unpredictable economic conditions increase the probability for choosing a more flexible structure of a real estate operating company. This holds for both healthy and distressed firms and is amplified the longer such uncertain periods last.

This dissertation seeks to strengthen the understanding of so far underrepresented incorporation of converting and deconverting property companies in the literature. The joint contribution of the thesis is that missing to take the nature of market entry of REITs into account implies missing significant structural differences across competitive REITs and REOCs as outlined along this dissertation. These differences affect private and institutional investors, legislators and other market participants like corporate executives in adjusting their future expectations. However, as in every empirical study this dissertation face limitations deriving from different sources, but mainly driven by data issues, as well. Once providers support more granular data for example on property level for real estate companies in Europe and Asian markets especially in the periods before they become REITs, this work could be extended through research questions in regard of geographical and concentration considerations, as demonstrated by Zhang and Hansz (2019). The documented

uncertainty impact also could be transferred to an international scale once there are comparable metrics available. Future research may wish to address these concerns.

Bibliography

Adams, Z., R. Füss, and F. Schindler (2015). The Sources of Risk Spillovers among US REITs: Financial Characteristics and Regional Proximity. *Real Estate Economics 43*(1), 67–100.

Alshammari, T. (2004). Board Composition, Executive Remuneration, and Corporate Performance: the case of REITS. *Corporate Ownership & Control 2*, 104–118.

Amihud, Y. and B. Lev (1981). Risk Reduction as a Managerial Motive for Conglomerate Mergers. *The bell journal of economics*, 605–617.

Arogyaswamy, K., V. L. Barker, and M. Yasai-Ardekani (1995). Firm Turnarounds: an integrative two-stage model. *Journal of management studies 32*(4), 493–525.

Baker, S. R., N. Bloom, and S. J. Davis (2016). Measuring Economic Policy Uncertainty. *The quarterly journal of economics 131*(4), 1593–1636.

Banerjee, S., U. Güçbilmez, and G. Pawlina (2016). Leaders and followers in hot IPO markets. *Journal of Corporate Finance 37*, 309 – 334.

Barber, B. M. and J. D. Lyon (1997). Detecting long-run abnormal stock returns: The empirical power and specification of test statistics. *Journal of Financial Economics 43*(3), 341–372.

Bekkers, N., R. Q. Doeswijk, and T. W. Lam (2009). Strategic Asset Allocation: Determining the Optimal Portfolio with Ten Asset Classes . *The Journal of Wealth Management 12*(3), 61–77.

Beracha, E., Z. Feng, and W. Hardin III (2019, 10). REIT Operational Efficiency and Shareholder Value. *Journal of Real Estate Research 41*, 513–553.

Bethel, J. E. and J. Liebeskind (1993). The Effects of Ownership Structure on Corporate Restructuring. *Strategic Management Journal 14*(S1), 15–31.

Betton, S., B. E. Eckbo, and K. S. Thorburn (2008). Corporate takeovers. In *Handbook of Empirical Corporate Finance:291–429*, pp. 291–429. Elsevier.

Bond, S. and S. James (2004). An Evaluation of Property Company Discounts in Europe. Working Paper , University of Cambridge.

Bowman, E. H. and H. Singh (1993). Corporate Restructuring: Reconfiguring the Firm. *Strategic Management Journal 14*(S1), 5–14.

Boyne, G. A. and K. J. Meier (2009). Environmental Change, Human Resources and Organizational Turnaround. *Journal of Management Studies 46*(5), 835–863.

Brähler, G. and S. Schmidt (2014). Hidden Reserves Under IFRS-Empirical Insights. *International Review of Management and Business Research 3*(2), 1073.

Brounen, D., R. J. Mahieu, and H. op 't Veld (2013). The Effects of Shifting Tax Regimes An International Examination of the REIT Effect. Working paper, Tilburg University.

Campbell, R. D., C. Ghosh, and C. Sirmans (2001). The information content of method of payment in mergers: Evidence from real estate investment trusts (REITs). *Real Estate Economics 29*(3), 361–387.

Campbell, R. D., E. Giambona, and C. Sirmans (2009). The long-horizon performance of REIT mergers. *Journal of Real Estate Finance and Economics 38*(2), 105–114.

Carlock, B. J. and T. Wilkin (2018). Roadmap for a REIT IPO or conversion. Technical report, PricewaterhouseCoopers.

Castrogiovanni, G. J. (2002). Organization Task Environments: have they changed fundamentally over time? *Journal of Management 28*(2), 129–150.

Chan, S. H., J. Chen, and K. Wang (2019). Does a firm's entry or exit affect competitors' value? evidence from the reit industry. *Real Estate Economics 47*(1), 214–262.

Chen, Y., J. F. Weston, and E. I. Altman (1995). Financial Distress and Restructuring Models. *Financial Management*, 57–75.

Chiang, K. C., R.-L. DeWitt, D. Folkman, and L. Jiao (2018). REIT Governance, Entrepreneurial Control, and Corporate Value. *Journal of Real Estate Research 40*(2), 241–265.

Choi, N. and R. Sias (2009). Institutional Industry Herding. *Journal of Financial Economics 94*, 469–491.

Chung, R., S. Fung, and S.-Y. K. Hung (2012). Institutional Investors and Firm Efficiency of Real Estate Investment Trusts. *The Journal of Real Estate Finance and Economics 45*(1), 171–211.

CoreCivic Inc. (2020; accessed July 12, 2020). *CoreCivic Suspends Quarterly Dividend While It Evaluates Corporate Structure and Capital Allocation Alternatives*. http://ir.corecivic.com/news-releases/news-release-details/corecivic-suspends-quarterly-dividend-while-it-evaluates.

Damodaran, A., K. John, and C. H. Liu (1997). The Determinants of Organizational Form Changes: Evidence and Implications from Real Estate. *Journal of Financial Economics 45*(2), 169 – 192.

Damodaran, A., K. John, and C. H. Liu (2005). What Motivates Managers?: Evidence from Organizational Form Changes. *Journal of Corporate Finance 12*(1), 1 – 26.

Delcoure, N. and R. Dickens (2004). REIT and REOC systematic risk sensitivity. *Journal of Real Estate Research 26*, 237–254.

Delfim, J.-C. and M. Hoesli (2019). Real estate in mixed-asset portfolios for various investment horizons. *The Journal of Portfolio Management 45*(7), 141–158.

Denis, D. J. and T. A. Kruse (2000). Managerial Discipline and Corporate Restructuring following Performance Declines. *Journal of financial economics 55*(3), 391–424.

Devos, E., S.-E. Ong, A. C. Spieler, and D. Tsang (2013). REIT Institutional Ownership Dynamics and the Financial Crisis. *The Journal of Real Estate Finance and Economics 47*(2), 266–288.

Diebold, F. X. and K. Yilmaz (2009). Measuring financial asset return and volatility spillovers, with application to global equity markets. *The Economic Journal 119*(534), 158–171.

Dogan, Y. Y., C. Ghosh, and M. Petrova (2019). On the determinants of REIT capital structure: Evidence from around the world. *Journal of Real Estate Finance and Economics 59*(2), 295–328.

Downs, D. H., S. P. Sebastian, and R.-O. Woltering (2017). Real Estate Fund Openings and Cannibalization. *Real Estate Economics 45*(4), 791–828.

Downs, D. H., M. Straska, and H. G. Waller (2019). Shareholder Activism in REITs. *Real Estate Economics 47*(1), 66–103.

Eichholtz, P. and N. Kok (2007). The EU REIT and the Internal Market for Real Estate. *Available at SSRN 1081198*.

EPRA (2018a). EPRA Global REIT Survey 2018. Technical report, European Public Real Estate Association.

EPRA (2018b). EPRA global REIT survey 2018. https://www.epra.com/public-affairs/global-reit-survey. Accessed on 2019-01-02.

EPRA (2020). *EPRA Global REIT Survey 2020*. https://prodapp.epra.com/media/$EPRA_{G}lobal_{R}EIT_{S}urvey_{2}020_{1}597930925323.pdf$.

EPRA and INREV (2018). Real estate in the real economy. Technical report, European Public Real Estate Association (ERPA) and European Association for Investors in Non-Listed Real Estate Vehicles (INREV).

Feld, L., A. Schulten, S. Müller, C. Wandzik, and S. Harald (2020). Frühjahrsgutachten Immobilienwirtschaft 2019 des Rates der Immobilienweisen. Technical report, Im Auftrag des ZIA Zentraler Immobilien Ausschuss e.V. Berlin.

Firend, A. and M. Shaki (2008). Corporate Restructuring and Agency Theory. *International Journal of Business and Management Research 1*(1), 4–69.

Freybote, J. and L. Qian (2015). The impact of asset location on REIT merger decisions. *Journal of Property Research 32*(2), 103–122.

Garlappi, L. and H. Yan (2011). Financial Distress and the Cross-section of Equity Returns. *The journal of finance 66*(3), 789–822.

Geltner, D., N. G. Miller, J. Clayton, and P. Eichholtz (2013). *Commercial real estate analysis and investments*, Volume 3rd Edition. South-western Cincinnati, OH.

Ghosh, C. and C. F. Sirmans (2005). On REIT CEO compensation: does board structure matter? *The Journal of Real Estate Finance and Economics 30*, 397–428.

Ghosh, C. and M. Petrova (2020). The Effect of Legal Environment and Regulatory Structure on Performance: Cross-Country Evidence from REITs. *The Journal of Real Estate Finance and Economics*, 1–42.

Gibbs, P. A. (1993). Determinants of Corporate Restructuring: The relative Importance of Corporate Governance, Takeover Threat, and Free Cash Flow. *Strategic Management Journal 14*(S1), 51–68.

Glascock, J. L., Y. Zhang, and T. Zhou (2018). A review and extension of merger and acquisition research between REITs and general corporations. *Journal of Real Estate Literature 26*(2), 223–253.

Graff, R. (2001). Economic analysis suggests that REIT investment characteristics are not as advertised. *Journal of Real Estate Portfolio Management 7*(2), 99–124.

Greene, W. (2010). Testing hypotheses about interaction terms in nonlinear models. *Economics Letters 107*(2), 291 – 296.

Greenstone, M., R. Hornbeck, and E. Moretti (2010). Identifying Agglomeration Spillovers: Evidence from Winners and Losers of Large Plant Openings. *Journal of Political Economy 118*(3), 536–598.

Gyourko, J. and T. Sinai (1999). The REIT vehicle: its value today and in the future. *Journal of Real Estate Research 18*(2), 355–375.

Hall, B. J. (1999). *A better way to pay CEOs?*, pp. 35–46. Boston, MA: Springer US.

Harford, J. (2005). What drives merger waves? *Journal of Financial Economics 77*(3), 529–560.

Harrison, D. M., C. A. Panasian, and M. J. Seiler (2011). Further evidence on the capital structure of REITs. *Real Estate Economics 39*(1), 133–166.

Hope, O.-K. and W. B. Thomas (2008). Managerial Empire Building and Firm Disclosure. *Journal of Accounting Research 46*(3), 591–626.

Huerta-Sanchez, D., T. Ngo, and M. K. Pyles (2020). Equity versus Asset Acquisitions in the REIT Industry. *Journal of Real Estate Research 42*(1), 1–35.

Jackson, C. and A. Orr (2019). Investment decision-making under Economic Policy Uncertainty. *Journal of Property Research 36*(2), 153–185.

Jensen, M. C. (1986). Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers. *The American Economic Review 76*(2), 323–329.

Jensen, M. C. and W. H. Meckling (1976). Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure. *Journal of financial economics 3*(4), 305–360.

Jurado, K., S. C. Ludvigson, and S. Ng (2015). Measuring Uncertainty. *American Economic Review 105*(3), 1177–1216.

Kallberg, J. G., C. H. Liu, and D. W. Greig (1996). The Role of Real Estate in the Portfolio Allocation Process. *Real Estate Economics 24*(3), 359–377.

Ke, Q. (2015). What affects the discount to net asset value in the UK-listed property companies? *Journal of Property Research 32*, 1–18.

Khorana, A. and H. Servaes (1999). The Determinants of Mutual Fund Starts. *The review of financial studies 12*(5), 1043–1074.

Kim, D. and J. A. Wiley (2019). NAV Premiums & REIT Property Transactions. *Real Estate Economics 47*(1), 138–177.

Kite Realty Group Trust (2020; accessed July 13, 2020). *Second Quarter Financial Supplemental*. http://ir.kiterealty.com/Cache/IRCache/119e1b4a-6d9c-f261-2b7d-b9da233c963c.PDF?O=PDF&T=&Y=&D=&FID=119e1b4a-6d9c-f261-2b7d-b9da233c963c&iid=4092324.

Koh, S., R. B. Durand, L. Dai, and M. Chang (2015). Financial Distress: Lifecycle and Corporate Restructuring. *Journal of Corporate Finance 33*, 19–33.

Leary, M. T. and M. R. Roberts (2014). Do peer firms affect corporate financial policy? *The Journal of Finance 69*(1), 139–178.

Lewis, D. J., B. L. Barham, and B. Robinson (2011). Are there Spatial Spillovers in the Adoption of Clean Technology? The Case of Organic Dairy Farming. *Land Economics 87*(2), 250–267.

Ling, D., S. Ray, A. Tidwell, and L. Xu (2020). Value Implications of REITing and DeREITing. Working Paper, Revise/Resubmit Journal of Real Estate Finance and Economics.

Ling, D. C. and M. Petrova (2011). Why do REITs go private? differences in target characteristics, acquirer motivations, and wealth effects in public and private acquisitions. *Journal of Real Estate Finance and Economics 43*(1-2), 99–129.

Lyon, J. D., B. M. Barber, and C.-L. Tsai (1999). Improved methods for tests of long-run abnormal stock returns. *Journal of Finance 54*(1), 165–201.

Malmendier, U. and G. Tate (2008). Who makes acquisitions? CEO overconfidence and the market's reaction. *Journal of Financial Economics 89*(1), 20–43.

Martynova, M. and L. Renneboog (2008). A century of corporate takeovers: What have we learned and where do we stand? *Journal of Banking and Finance 32*(10), 2148–2177.

Mueller, M. (2010). Komparative Untersuchung der EU-REIT-Regime. Technical report, Darmstadt Technical University, Department of Business Administration, Economics and Law, Institute for Business Studies (BWL), Publications of Darmstadt Technical University, Institute for Business Studies (BWL).

Mulherin, J. H. and K. S. Womack (2015). Competition, auctions & negotiations in REIT takeovers. *Journal of Real Estate Finance and Economics 50*(2), 151–180.

Murphy, K. J. (1985). Corporate Performance and Managerial Remuneration: An Empirical Analysis. *Journal of accounting and economics 7*(1-3), 11–42.

Nadauld, T. D. (2009). Essays in Real Estate Finance. *Doctrol Dissertation, The Ohio State University*.

Nasdaq Inc. (2020; accessed July 18, 2020). Why The GEO Group Stock Fell 10% at the Open on June 17. https://www.nasdaq.com/articles/why-the-geo-group-stock-fell-10-at-the-open-on-june-17-2020-06-17.

Ooi, J., J. Webb, and D. Zhou (2007). Extrapolation theory and the pricing of REIT stocks. *Journal of Real Estate Research 29*(1), 27–56.

Oxford Economics (2020). Impact of the COVID-19 Crisis on European Listed Real Estate. Technical report, Oxford Economics, European Public Real Estate Association (EPRA).

Papastamos, D., G. Matysiak, and S. Stevenson (2018). A Comparative Analysis of the Accuracy and Uncertainty in Real Estate and Macroeconomic Forecasts. *Journal of Real Estate Research 40*(3), 309–346.

Patel, K., R. A. Pereira, and K. V. Zavodov (2009). Mean-reversion in REITs discount to NAV & risk premium. *The Journal of Real Estate Finance and Economics 39*(3), 229.

Pennathur, A. K. and R. M. Shelor (2002). The Determinants of REIT CEO Compensation. *The Journal of Real Estate Finance and Economics 25*(1), 99–113.

Pfnür, A. (2013). *Betriebliche Immobilienökonomie*. Springer-Verlag.

Piao, X., B. Mei, and W. Zhang (2017). Long-term Event Study of Timber Real Estate Investment Trust Conversions. *Forest Policy and Economics 78*, 1 – 9.

Pound, J. (1992). Beyond Takeovers: Politics comes to Corporate Control. *Harvard business review 70*(2), 83–93.

Price, S. M., J. M. Salas, and C. F. Sirmans (2015). Governance, Conference Calls and CEO Compensation. *The Journal of Real Estate Finance and Economics 50*(2), 181–206.

Ratcliffe, C., B. Dimovski, and M. Keneley (2018). The performance of REIT acquirers in the post-merger period. *Journal of Real Estate Portfolio Management 24*(2), 107–120.

Rehkugler, H., F. Schindler, and R. Zajonz (2012). The Net Asset Value and Stock Prices of European Real Estate Companies. *Zeitschrift für Betriebswirtschaft, ZfB-Special Issue Real Estate Finance 82(1)*, 53–77.

Reuters (2020 (accessed April 30, 2020)). *China launched a pilot scheme for REITs in the infrastructure sector*. Thomson Reuters. https://www.reuters.com/article/china-securities-reits/china-launched-a-pilot-scheme-for-reits-in-the-infrastructure-sector-idUSB9N2BX02D.

Roth, H. and M. Kaspar (2016). Global perspectives: 2016 REIT Report. Technical report, EY Global.

Russell, F. (2019). Ground rules, FTSE EPRA NAREIT global real estate index series. Technical report, FTSE, EPRA & NAREIT. Accessed on 2019-12-16.

Sahin, O. (2005). The performance of acquisitions in the real estate investment trust industry. *Journal of Real Estate Research 27*(3), 321–342.

Santos-Rivera, l. and P. Gonzalez Dominguez (2018). Financial Stability Review. Technical report, European Central Bank.

Schäfers, W. (1997). *Strategisches Management von Unternehmensimmobilien: Bausteine einer theoretischen Konzeption und Ergebnisse einer empirischen Untersuchung*, Volume 3. Müller.

Schoenberg, R., N. Collier, and C. Bowman (2013). Strategies for Business Turnaround and Recovery: a Review and Synthesis. *European Business Review*.

Schulte, K.-W., S. Bone-Winkel, and W. Schäfers (01 Jan. 2016). *Betriebswirtschaftliche Grundlagen*. Berlin, Boston: De Gruyter Oldenbourg.

Sebastian, S. P. (2003). *Inflationsrisiken von Aktien-, Renten-und Immobilieninvestments-Eine theoretische und empirische Analyse kollektiver Kapitalanlagen an Finanzmärkten in Deutschland, Frankreich, Großbritannien und der Schweiz*, Volume 16. Uhlenbruch.

Sebastian, S. P., B. I. Steininger, and M. Wagner-Hauber (2012). Vor-und nachteile von direkten und indirekten immobilienanlagen.

Sharpe, W. F. (1966). Mutual fund performance. *Journal of Business 39*(1), 119–138.

Sotelo, R. and S. McGreal (2016). *Real estate investment trusts in Europe*. Springer.

Strobel, J., B. Nguyen Thanh, and G. Lee (2020). Effects of Macroeconomic Uncertainty and Labor Demand Shocks on the Housing Market. *Real Estate Economics 48*(2), 345–372.

Teuben, B. and H. Bothra (2020). Real Estate Market Size 2020: Annual Update on the Size of the Professionally Managed Global Real Estate Investment Market. *MSCI. June*.

Vassalou, M. and Y. Xing (2004). Default Risk in Equity Returns. *The journal of finance 59*(2), 831–868.

Venezia, I., A. Nashikkar, and Z. Shapira (2011). Firm specific and macro herding by professional and amateur investors and their effects on market volatility. *Journal of Banking & Finance 35*(7), 1599 – 1609.

Woltering, R.-O., C. Weis, F. Schindler, and S. Sebastian (2018). Capturing the value premium – global evidence from a fair value-based investment strategy. *Journal of Banking & Finance 86*, 53 – 69.

Womack, K. S. (2012). Real estate mergers: Corporate control & shareholder wealth. *Journal of Real Estate Finance and Economics 44*(4), 446–471.

Wooldridge, J. M. (2005). Simple solutions to the initial conditions problem in dynamic, nonlinear panel data models with unobserved heterogeneity. *Journal of applied econometrics 20*(1), 39–54.

Wylie, S. (2005). Fund Manager Herding: A Test of the Accuracy of Empirical Results Using U.K. Data. *The Journal of Business 78*(1), 381–403.

Zhang, Y. and J. A. Hansz (2019). Industry concentration and us reit returns. *Real Estate Economics*.

Appendices

Appendix A

Additional Material of Chapter 2

Table A.1: Empricial Implications on the Likelihood of REIT Conversion

Proxy / Hypothesis	H1	H2	H3	H4	Controls
Effective Tax Rate	increase				
Exit Tax Costs	decrease				
NAV Spread		decrease			
REIT Market Share			increase		
Previous Conversions			increase		
Cash Compensation				decrease	
Equity Compensation				increase	
Asset Test					increase
Distribution Test					increase
Gearing Test					decrease
Ownership Restriction					decrease
Size					increase

Note: This table summarizes the major empirical implications of the explanatory factors along our Hypotheses.

Table A.2: Robustness Test on Different Lag Choices

	model i	model ii	model iii
Cost Benefit Trade-Off			
Effective Tax Rate	0.021***	0.022***	0.026***
	(0.007)	(0.008)	(0.008)
Exit Tax Costs	-0.518**	-0.633***	-0.833***
	(0.224)	(0.214)	(0.312)
Market Valuation			
NAV Spread	-0.097	-0.038	-0.158
	(0.061)	(0.082)	(0.121)
Herd Behavior			
REIT Market Share	0.023***	0.036***	0.032***
	(0.006)	(0.009)	(0.009)
Previous Conversions	0.369***	0.446***	0.399***
	(0.053)	(0.078)	(0.075)
Executive's Incentives			
Cash Compensation	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)
Equity Compensation	-0.021	0.012	0.020
	(0.033)	(0.031)	(0.032)
NAV Spread $\times$ Equity Compensation	0.002	-0.025***	-0.037***
	(0.012)	(0.009)	(0.013)
Observations	3639	3535	3431
Control Variables	Yes	Yes	Yes
Pseudo R^2	0.268	0.278	0.272

Note: This table shows panel logit regression results for a REOC's conversion decision for different time lags between the decision date and actual conversion date, including the impact of managerial incentives. The unit of observation is the operating status of each REOC each quarter. The dependent variable equals one if REOC i from country j converts to a REIT in quarter t, and zero in all previous quarters. Explanatory variables are company-specific *Effective Tax Rate*, *Exit Taxes*, triggered by uncovering hidden reserves and *NAV Spreads*; country-level *REIT Market Share*; number of *Previous REOC-to-REIT Conversions* in the same country; and *Cash- and Equity-Based Compensation* of each REOC's key executives. Control variables are country-specific *REIT criteria* and company *Size*. Each column refers to a lag length. Column (1) reports results with all independent variables lagged by six quarters. Columns (2) and (3) increase the lag length by one quarter, respectively. The regression results are estimated controlling for a REIT regime introduction indicator variable, and using panel-specific heteroscedasticity and autocorrelation robust standard errors clustered at the company level (in parentheses). ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Table A.3: Cross-Correlation Matrix of Explanatory Variables

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1) Effective Tax Rate	1.000											
(2) Exit Tax Costs	0.242	1.000										
(3) NAV Spread	-0.123	0.298	1.000									
(4) Previous Conversions	-0.294	-0.083	0.015	1.000								
(5) REIT Market Share	-0.388	-0.271	0.214	0.388	1.000							
(6) Cash Compensation	0.029	-0.067	-0.036	0.112	0.069	1.000						
(7) Equity Compensation	0.134	-0.062	0.241	-0.222	0.036	0.067	1.000					
(8) Asset Test	-0.338	-0.052	0.173	0.098	0.245	-0.013	0.021	1.000				
(9) Distribution Test	-0.439	-0.270	0.314	0.066	0.451	-0.056	0.217	0.362	1.000			
(10) Gearing Test	0.080	0.018	0.056	0.174	0.282	0.067	0.059	-0.040	0.033	1.000		
(11) Ownership Restrictions	-0.018	0.100	-0.398	0.143	0.188	0.092	-0.026	0.148	-0.095	0.427	1.000	
(12) Size	0.161	0.065	0.044	-0.456	-0.422	-0.196	0.179	-0.121	-0.025	-0.303	-0.536	1.000

Note: This table contains the correlation coefficients of quarterly data over our 1999 – 2018 sample period. Detailed variable definitions are in section 2.3.2.

Table A.4: Logit Estimation Results on Distribution Test vs. Dividend Yield

	Regulatory REIT criteria		Full model	
	model i	model ii	model iii	model iv
Control Variables				
Distribution Test	0.003***		0.004**	0.003*
	(0.001)		(0.002)	(0.002)
Dividend Yield	0.037	0.040		0.063
	(0.038)	(0.030)		(0.060)
Asset Test	0.010**	0.011***	0.011	0.011
	(0.004)	(0.004)	(0.007)	(0.007)
Gearing Test	0.004	0.004	-0.004	-0.004
	(0.004)	(0.004)	(0.009)	(0.009)
Ownership Restrictions	-0.955***	-1.132***	-1.926***	-1.822***
	(0.279)	(0.275)	(0.475)	(0.506)
Size	-0.221***	-0.219***	-0.010	0.009
	(0.058)	(0.057)	(0.110)	(0.116)
Cost Benefit Trade-Off				
Effective Tax Rate			0.016**	0.019***
			(0.007)	(0.007)
Exit Tax Costs			-0.564***	-0.512***
			(0.161)	(0.149)
Market Valuation				
NAV Spread			-0.048***	-0.046**
			(0.018)	(0.016)
Herd Behavior				
REIT Market Share			0.033***	0.035***
			(0.007)	(0.007)
Previous Conversions			0.400***	0.400***
			(0.066)	(0.066)
Constant	-0.607	-0.631	-5.448***	-6.107***
	(0.899)	(0.888)	(1.902)	(2.148)
Observations	4603	4603	4603	4603
Pseudo R^2	0.165	0.160	0.303	0.305

Note: This table provides a direct comparison of our logit regression results using *Distribution Test* versus the approximate regulatory payout rule by *Dividend Yield* (Ling et al., 2020). The panel logit models estimate a REOC's decision to convert to a REIT. The unit of observation is the operating status each quarter. The dependent variable equals one if REOC *i* from country *j* converts to a REIT in quarter *t*, and zero in all previous quarters. Explanatory variables are the company-specific *Effective Tax Rate*, *Exit Taxes*, triggered by uncovering hidden reserves and *NAV Spreads*, as well as country-level *REIT Market Share* and number of *Previous REOC-to-REIT Conversions* in the same country. Control variables are the remaining country-specific *REIT criteria* and company *Size*. The regression results are estimated controlling for a REIT regime introduction indicator variable, and using panel-specific heteroscedasticity and autocorrelation robust standard errors clustered at the company level (in parentheses). ***, **, and * are significant at the 1%, 5%, and 10% levels, respectively.

Appendix B

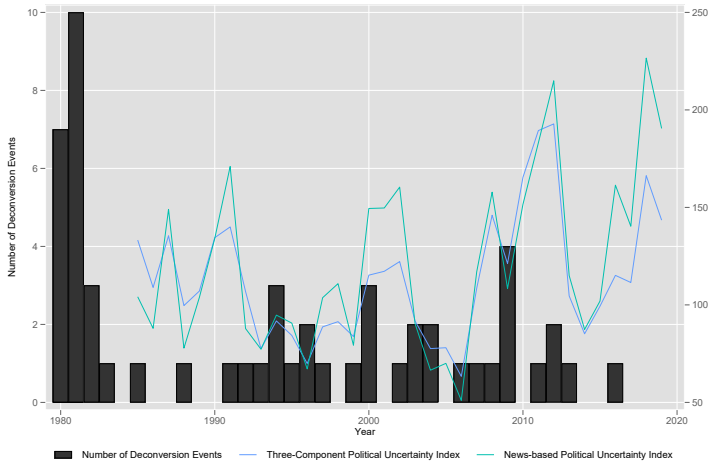
Variable Definitions of Chapter 3

- Dependent Variables
  - $Number\ of\ Deals_{i,t} = Number\ of\ Deals\ of\ firm\ i\ in\ period\ t$
  - $Average\ Deal\ Size_{i,t} = Aggregate\ Deal\ Size_{i,t}\ /\ Number\ of\ Deals_{i,t}$
  - $Relative\ Deal\ Size_{i,t} = Aggregate\ Deal\ Size_{i,t}\ /\ Total\ Assets_{i,t}$
  - $Excess\ Deal\ Size_{i,t} = log(Aggregate\ Deal\ Size_{i,t}\ /\ Average\ Deal\ Size_{i,t})$
  - $Inflows_{i,t} = log(\hat{NOSH}_{i,t}\ /\ NOSH_{i,t})$
- Explanatory Variables
  - $Cash_{i,t} = Cash_{i,t}\ /\ Total\ Assets_{i,t}$
  - $Return\ on\ Assets_{i,t} = EBITDA_{i,t}\ /\ Total\ Assets_{i,t-1}$
  - $M/B\text{-}Ratio_{i,t} = Market\ Value\ of\ Equity_{i,t}\ /\ Book\ Value\ of\ Equity_{i,t}$
  - $Dividend\ Yield_{i,t} = Dividends\ per\ Share_{i,t}\ /\ Earnings\ per\ Share_{i,t}$
  - $Size_{i,t} = log(Total\ Assets_{i,t})$
  - $Age_{i,t} = Years\ since\ IPO_{i,t}$
  - $Leverage_{i,t} = Total\ Debt_{i,t}\ /\ Total\ Assets_{i,t}$
  - $Leverage\ Squared_{i,t} = Leverage_{i,t}^2$
  - $Asset\ Test_{i,t} = \frac{Qualifying\ Assets\ Ratio_{i,t} - National\ Regulation\ Ratio_{j,t}}{National\ Regulation\ Ratio_{j,t}}$; $country\ index\ j$

Appendix C

Robustness Test and Case Studies of Chapter 4

Figure C.1: Political Uncertainty and Deconversion Events



Note: This figure shows the number of country-level REIT deconversions (bars) and alternative proxies for uncertainty developed by Baker et al. (2016) per year over the 1960 – 2019 sample period.

Table C.1: The Impact of Empire-Building on firm-level Deconversions

	(i)	(ii)	(iii)	(iv)
CEO Salary	-0.080			
	(0.079)			
CEO Equity Compensation		-0.002**		
		(0.001)		
High Cash Firms			-1.297**	
			(0.628)	
Switching High Cash Firms				1.937***
				(0.456)
Uncertainty	10.908	12.712	13.293**	13.668**
	(8.086)	(7.963)	(6.068)	(6.505)
Distribution Test	-0.002	-0.002*	-0.004***	-0.004***
	(0.001)	(0.001)	(0.001)	(0.001)
Leverage	0.061	0.063	0.032	0.061
	(0.195)	(0.190)	(0.099)	(0.102)
Company Tax Rate	-0.038	-0.039	0.020	0.016
	(0.032)	(0.031)	(0.014)	(0.013)
P/B Ratio	-0.002*	-0.002**	-0.000	-0.000
	(0.001)	(0.001)	(0.000)	(0.000)
Firm Size	-0.187*	-0.123	-0.368***	-0.237**
	(0.109)	(0.098)	(0.096)	(0.104)
Profit	-0.001*	-0.002**	-0.001**	-0.001**
	(0.001)	(0.001)	(0.000)	(0.001)
Constant	-2.013	-2.565*	-1.759*	-4.492***
	(1.483)	(1.341)	(0.934)	(1.149)
Observations	8,311	9,716	22,571	22,571
Pseudo R^2	0.163	0.171	0.137	0.176

Note: This table shows the panel logit regression results of a REIT's decision to revoke its status. The unit of observation is the operating status in each quarter. The dependent variable takes the value of 1 if REIT i deselects its REIT status in quarter t, and is 0 in all previous quarters. The explanatory variables are remuneration-related measures. *CEOSalary* is the CPI-adjusted and normalized by firm size amount of cash compensation. *CEOEquityCompensation* is comprised of grants and stocks, and is also normalized and inflation-adjusted. *High Cash Firms* is an indicator variable that takes the value of 1 if the cash compensation is sorted to the highest quartile in the three years prior to the event on average. *Switching High Cash Firms* is a dichotomous variable that equals 1 if the cash compensation on average is sorted to the highest quartile in the three years following the event. *Uncertainty* implies an unpredictable future, expressed as the residual after regressing 132 economic and financial time series. *Prior Deconversions* is the rolling sum of recent deconversion events in the previous two years. *Distribution Test* similarly calculates the deviation from the required payout ratio. *Leverage* gives the share of total liabilities to assets. *Company Tax Rate* is the ratio of a company's paid taxes to its pre-tax income. *P/B Ratio* mirrors the relation between share price and book equity value per share. *FirmSize* is the natural logarithm of market capitalization. *Profit* is a company's gain or loss. In the Full Sample (Distressed Firms) section, all independent variables are lagged by 6 (1) quarters. The regression results are estimated controlling for significant countrywide exogenous variables, and are given in Table 4.5. They use panel-specific heteroscedasticity and serial correlation robust standard errors clustered at the company level, and given in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Table C.2: Cross-Correlation Matrix of Explanatory Variables

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
(1) Macroeconomic Uncertainty Index	1.000															
(2) 3 Component Political Uncertainty Index	0.539	1.000														
(3) News-based Uncertainty Index	0.526	0.978	1.000													
(4) Consumer Sentiment Index	-0.399	-0.531	-0.538	1.000												
(5) Prior Deconversion	-0.300	-0.470	-0.523	0.054	1.000											
(6) REIT Market Capitalization	0.076	0.087	0.103	0.016	-0.255	1.000										
(7) Asset Test	-0.072	-0.010	-0.030	0.093	-0.010	-0.050	1.000									
(8) Distribution Test	-0.148	-0.155	-0.127	0.054	0.056	0.355	-0.014	1.000								
(9) Leverage	0.012	-0.014	-0.004	-0.121	0.131	-0.357	-0.180	-0.329	1.000							
(10) Company Tax Rate	0.075	0.041	0.058	0.002	-0.069	0.070	-0.187	0.015	0.109	1.000						
(11) Profit	-0.079	-0.065	-0.056	0.029	0.008	0.526	-0.009	0.293	-0.194	0.132	1.000					
(12) P/B Ratio	0.027	-0.041	-0.044	0.040	-0.023	0.429	-0.018	0.303	-0.389	0.077	0.364	1.000				
(13) Firm Size	0.064	0.072	0.100	-0.038	-0.208	0.856	-0.122	0.194	0.135	0.125	0.456	0.161	1.000			
(14) CEO Salary	-0.022	-0.044	-0.055	-0.076	0.105	-0.525	0.067	-0.172	0.112	-0.043	-0.154	-0.147	-0.505	1.000		
(15) CEO Equity Compensation	0.171	0.252	0.218	0.045	-0.154	-0.065	0.083	-0.068	-0.192	-0.073	-0.102	0.010	-0.172	0.157	1.000	
(16) Duration	-0.170	0.112	0.187	0.009	-0.404	0.199	0.002	-0.009	-0.101	0.056	0.050	-0.051	0.194	-0.180	-0.055	1.000

Note: This table reports the pairwise correlation coefficients of the included variables over our 1960-2019 sample period on a quarterly frequency.

Case Studies

Drive Shack, inc.

Newcastle Investment Corporation was a U.S. stock corporation with REIT taxable status headquartered in New York. Its main business consisted of investing in and actively managing traditional and entertainment golf assets, as well as real estate-related assets. The trust was managed by a subsidiary of Fortress Investment Group LLC, a global operating investment management company.

While announcing its full year 2015 financial results in a press release on March 8, 2016, including earnings of approximately $38 million, the investment trust also indicated a desire to expand its self-managed business of golf and entertainment leisure properties. On March 24, 2016, the shareholders received the company's proxy statement ahead of the annual stockholder meeting. It included a proposal of the intended changes in business activities, as well as the suggested appointment of Ernst & Young LLP as an independent registered public accounting firm for fiscal year 2016 and a targeted realignment of the company's legal status.

The management board also proposed the qualified reelection of long-serving directors in order to amplify its investments in leisure properties. Management sought shareholders' approval for the appointment of one of the seven directors, who had served on the board since February 2016, to contribute its specialist knowledge and experience while helping to prepare the company's realignment. To preserve its ability to use the net operating losses by carrying them forward, the board of directors adopted the company's tax benefit preservation plan, applicable for the duration of one year. This plan contained the likelihood of a significant company shareholder change. A structural change in stock ownership is defined as an increase of the collective amount of a minimum of 50 percentage points over a defined period of time of one year for investors that hold a minimum of 5% of outstanding common shares. The discharged tax benefit preservation plan triggered a significant dilution in voting power and economic interests of the stock owner if one investor tried to increase its collective stock ownership above 4.9%. Simultaneously, the executive board explicitly clarified that the plan was not a response to any specific takeover threat or accumulation endeavors of the company's stock.

On May 18, 2016, at the annual stockholder meeting, the shareholders approved the adoption of the tax benefits preservation plan, as well as the change in legal status from a REIT to a C corporation. The board also sought shareholders' approval to change the company's name from Newcastle Investment Corp. to Drive Shack Inc. With this transformation, the company disposed of approximately $160 million of net operating losses to carry forward and offset future earnings. The board of directors opted to forward the remaining net operating losses to extinguish U.S. federal income taxes related to future earnings originated by its go-forward business. The board's desire to convert the company's business plan and the concomitant amendment to change the name to Drive Shack Inc. were approved outright by shareholders. They expressed unconditional approval of

the previously published proxy statement, dated March 24, 2016.

On December 29, 2016, the company changed its name to Drive Shack Inc., and the company's investment focus changed from commercial real estate to leisure properties, especially to golf facilities located in the U.S. The executive board justified the shift of its business plan by driving shareholder value through pursuing investment opportunities in the golf and leisure business.

On February 23, 2017, the company revoked its election as a REIT. Effective January 1, 2017, the company's legal status changed to a C corporation, anticipating that the conversion of legal status would ensure the necessary level of transparency for shareholders. In its 2016 annual report, published March 2, 2017, the company removed all REIT-related compliance requirements from its general investment guidelines, and informed its shareholders that it was now subject to U.S. federal corporate income taxes. The renamed company supported growth by an acquisition pipeline of 25 properties for development, and $130 million in increased liquidity on its balance sheet. Furthermore, Drive Shack Inc. aimed to monetize approximately $120 million of its remaining debt business until the end of fiscal year 2017 in order to fund its go-forward business.

Bayswater Realty and Capital Corp.

Bayswater Realty and Capital Corporation, originally established under the name Baird & Warner Mortgage and Realty Investors in 1971, was a trust owning apartments and office buildings in the Midwest of America. In 1979, the company was acquired by Carl Icahn, a private investor, who renamed it after a section of Queens, New York, where he had grown up.

In 1971, the Baird & Warner Mortgage and Realty Investors trust was established in Chicago, Illinois. The adviser to the company was Baird & Warner Inc., a Chicago-based real estate company, originally founded in 1855. The brokerage formed the company to raise capital for increasing demands from developers, especially for industrial, office, and housing properties. Effective March 27, 1972, it began business activity as a real estate investment trust. Its main business was to invest in short-term mortgages and real estate equity. It acquired, financed, held, and disposed of real estate-related assets. On March 10, 1978, Icahn & Co. Inc. bought approximately 88,200 shares of beneficial interest, causing a structural change in the company's shareholder composition. On June 11, 1978, Icahn & Co. Inc., along with Mr. Icahn as a private investor, acquired approximately 222,025 shares of beneficial interest, continuing the strategy of increasing corporate control.

By December 1978, Icahn owned an approximately 22.5% stake in Baird & Warner Mortgage and Realty Investors. He paid about $7.50 per share, or $1.75 million in total, with an intuition that the stock price was undervalued. On April 2, 1979, Icahn & Co. Inc., Mr. Icahn as a private investor, and Leonard & Blossom Press jointly acquired a 33.2% share of Baird & Warner Mortgage and Realty Investors by a takeover of 348,125 shares of beneficial interest. With this transaction, Mr. Icahn announced that he was striving for

board membership.

In reaction, the remaining trustees proposed liquidating the fund in total before Mr. Icahn could gain control. However, justified by his sizeable share, Icahn used a bylaw of the trust and called in an extraordinary shareholder meeting. He announced an election to substitute the board, and his intention to restructure the trust. In May 1979, at that shareholder meeting, the executive board sought shareholders' approval to replace the incumbent trustees with a list led by Mr. Icahn. The remaining shareholders approved, and the trust changed its board. Also at that meeting, the newly formed executive board announced it would be changing the company's business plan to invest in non-real estate-related assets. The new business plan included shareholdings in other Illinois companies funded by the liquidation of real estate assets. The board justified this change in direction by declaring the potential to greatly enhance its value, which necessitated revoking its REIT status.

Therefore, in view of the upcoming regular shareholder meeting, the board proposed changing the trust's legal status from a REIT to an investment company. This would allow further shareholdings and investments apart from real estate. At the regular meeting in December 1979, the company's shareholders voted to revoke the taxable REIT status and to change its business activity. In March 1980, the trust acquired a 1.1% stake in Hammermill Paper Co. The trust's taxable status as a REIT terminated effective August 1, 1980, with the beginning of the company's new financial year.

On July 2, 1981, the trust effectively merged into the newly founded corporation, Bayswater Realty and Capital Corporation, which appeared as the successor to the former REIT. That company was founded specifically to facilitate the conversion to a C corporation. Mr. Icahn, the acquirer of the trusts through a proxy fight, closed the acquisition and the simultaneous renaming of the trust. Under its new name and corporate structure, the company's board continued its changed business plan, and liquidated another substantial percentage of its real estate investments. With some of that liquidity, the company started investing in securities. With another part, the company acquired a 14.3% stake in Marshall Field & Co., a Chicago-based upscale retailer, at the beginning of 1982.

In 1984, the executive board proposed the liquidation of a substantial share of its assets, and the revocation of the company's legal status as an investment company. The proceeds of the liquidation were to be paid out as an extraordinary dividend. At a special shareholder meeting on April 3, 1984, the shareholders approved the board's intention. On April 20, 1984, the company's assets consisted mainly of real estate and a wholly owned subsidiary named BRC Option Trading Corporation, which appeared as a market maker on the Chicago Board Options Exchange. Furthermore, the board published the company's intention to refocus its business activities on the real estate sector.