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Evidence from Synergistic Forecasts**

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Abstract

In this study, we provide new insights into why REIT mergers occur by analyzing hand-collected synergy forecasts provided by merging firms' insiders. The data represents 92 merger announcements from 1994-2010, where the bidder is a US publically traded REIT. Unique and rigorous regulatory requirements for REITs keep their cross sectional differences small compared to firms in other more diverse industries. As such, it is expected that synergies would be smaller for REIT mergers relative to non-REIT transactions. Our analysis bears out this finding as the magnitude of total synergies for REIT mergers is much lower than those found across other sectors. However, for the same homogeneity reasons, we expect and find that REITs are able to find greater synergies than non-REIT firms on the operating cost side and, as such, can take considerable advantage of economies of scale. In all, we find support for the idea that management forecasts indeed reflect potential synergies and are economically significant. Details on merger characteristics such as geographic and property type focus as well as tax and revenue synergies are also examined.

Keywords: Mergers, Synergies, and Real Estate

JEL Codes: G34, L85

Why Do REIT Mergers Take Place? Evidence from Synergistic Forecasts

1. Introduction

The theoretical and empirical literature on mergers and acquisitions is numerous.ⁱ Most studies focus on shareholder wealth effects, mainly using an event study methodology. However, as noted by Ling and Petrova (2011) in a recent paper, “the empirical research on why mergers occur is much less developed and largely inconclusive” (p. 100).

Motives for takeovers can be numerous and their verification is often ambiguous. A consistent finding is that reasons for corporate takeovers do not seem to be static, but rather dependent upon the stage of a given merger market environment (merger wave) that they are executed in (Martynova and Renneboog, 2008). Merger motives may also not be mutually exclusive, with management many times having more than one rationale to engage in a merger (Berkovitch and Narayanan, 1993). The synergy theory states that a combined company is expected to operate more efficiently than the individual stand-alone entities through the realization of synergies, which can be multifaceted. The relevance and existence of synergies for mergers and acquisitions in a specific, regulated industry, namely the real estate industry, is a particularly controversial question among academics and practitioners. Especially Real Estate Investment Trusts (“REITs”), which are the most common form of publicly listed real estate corporations in the US, are of special interest.

Several studies measuring abnormal returns for bidding and target firms in real estate mergers document that wealth effects in real estate mergers tend to be materially lower than those detected in other sectors. The lower magnitude of returns is regularly explained by the

limited potential for synergies from real estate mergers. Eichholtz and Kok (2008), for example, argue that the homogeneity of assets of real estate companies decreases the potential for synergy profits emerging from merged operations. They also reason that the homogeneity of operations in real estate mergers does not allow for large value-creating synergies. Campbell (2002) suggests that the required uniformity of REIT asset composition largely eliminates the potential for vertical integration synergies through mergers. Ultimately, the relative magnitude of synergies in real estate mergers compared to those in mergers in other industries is an empirical issue and conclusive empirical evidence for those hypotheses does not exist to date.ⁱⁱ

An issue closely related to this controversy is the long-lasting question of size and economies of scale for real estate companies and especially for REITs. Linneman (1997), for example, argues that the sources of competitive advantage for REITs with increasing size includes economies of scale, lower capital costs, and superior sources of capital. Campbell, Gosh and Sirmans (1998) also name market power – which is probably the most controversial aspect of the size-related benefits – as potential source of competitive advantage for larger REITs. Zell (1997) adds that larger REITs also have higher earnings growth potential. Despite the existence of an alternative stream of literature (see, for example, Vogel, 1997), it is generally accepted that scale economies and the potential for gains in operating efficiencies do exist. Results concerning the sources and the magnitude of these efficiencies, however, are mixed and the debate continues (see Anderson, Lewis, and Springer, 2000, for a literature review on operating efficiencies in real estate). The previous empirical findings are relevant to our study for the following reasons: The most relevant sources of scale economies are general and administrative (G&A) expenses and management fees, both of which constitute the smaller components of total REIT costs (see, for

example, Bers and Springer 1998a). Scale effects in REIT capital costs, the main cost category, seem to exist (see, for example, Ambrose, Highfield and Linneman, 2005).

A definitive conclusion on the question whether synergies in the real estate industry truly exist is beyond the scope of this study. However, we attempt to provide new insights into the role of synergies as an M&A motive in the real estate industry, exploiting a largely unexplored source of information, namely the synergy forecasts provided by merging firms' insiders. For this purpose, we collect and analyze news stories and press-releases for 191 M&A deals of real estate companies (92 thereof with publicly-traded REITs as bidder) that were announced between 1994 and 2010. Whenever available, we retrieve management forecasts of synergies.

Studies based on an event study framework using abnormal returns around announcements to infer merger motives have not managed to conclusively determine the motivation underlying real estate mergers. Perhaps most directly to this point is that the results are mixed and at best, inconclusive. Moreover, recent research seems focused almost exclusively on the replacement of inefficient management as merger motive, thereby neglecting other potential reasons for takeovers (see, for example, Eichholtz and Kok, 2008, and Womack, 2010).ⁱⁱⁱ However, two recent studies have extended the pure event study approach by measuring bidder and target performance and their characteristics prior to the takeover announcement, which has not been done for real estate mergers before (see Eichholtz and Kok, 2008, and Ling and Petrova, 2011).

We contribute to the existing body of literature in several ways. First, we use a relatively new and rarely applied source of information (i.e., managerial synergy forecasts), which has never been analyzed for real estate mergers to-date, to determine the role of synergies as an

economic rationale for real estate mergers. Second, we provide empirical evidence of the potential order of magnitude of the synergies in real estate mergers, thereby contributing to the long-lasting controversy on whether synergies in real estate mergers are really of much smaller magnitude than in mergers in other industries. Third, we use factors suggested in prior works to proxy for the potential existence of synergies in order to explain any synergy projections. We thus attempt to gain insights into the underlying sources of merger-related gains projected by the merging firms' insiders. By comparing the results obtained here with the results of studies analyzing the sources of merger- and also purely size-related efficiency gains, we are able to determine the economic significance and therefore also the reliability of the synergy forecasts.

While admittedly, our sample size is small compared to most other M&A studies in finance, the sample has the major advantage that all events are drawn from the same industry, which is highly regulated and this forced to be somewhat homogenous. This has several advantages compared to studies using a broad sample containing events from different industries. Anecdotal evidence, supported by various academics as well as practitioners, stating that synergies in real estate mergers are rather small compared to mergers in other industries can be validated comparing our results to those of studies analyzing mergers across multiple industries (see, for example, Bernile and Bauguess, 2010, and Dutordoir, Roosenboom and Vasconcelos, 2010). Besides, factors commonly expected to influence the decision of publicly announced synergy projections can be mostly omitted by focusing on a rather homogeneous group of acquirers (i.e., publicly-traded REITs). Our results and interferences concerning the importance of synergies in REIT mergers are thus expected to be more reliable and significant than those of other studies.

Finally and perhaps most importantly, the examination of one industry allows us to focus on the variables of interest suggested by the literature to explain the potential for synergy creation without explicitly controlling for the multitude of other factors that can influence results in studies that include mergers across multiple industries. Predominant industry effects have hindered other studies analyzing firm-level data from multiple industries using managerial synergy forecast from gaining precise insights into the expected value drivers underlying merger gains.^{iv} To help isolate firm-level determinates of merger and acquisition offers, we subsequently focus our investigation on takeovers where the bidder is a publicly-traded REIT. In our study, the fact that all publicly-traded REITs in the US are subject to the same regulatory restrictions and therefore operate in the same unique institutional setting does guarantee that the incentives to disclose or not to disclose synergy forecasts are similar for all bidders. And, the imposed setting of strict regulations does enable us to analyze the expected sources of merger-related gains for firms operating in a regulated framework.

The remainder of this paper proceeds as follows. In Section 2 “Development of Hypotheses“, we develop the hypotheses for our subsequent empirical analyses. Section 3 “Data and Descriptive Results“ describes the sample selection procedure, and presents some important descriptive results concerning the frequency of synergy forecasts and the expected sources of value creation. The most important peculiarities of the obtained forecasts are also described. Section 4 “Research Methodology and Empirical Results“ discusses the methodology and results of our analysis of the forecasted synergies. First, the procedure used to evaluate the forecasted synergies is described, followed by a presentation of the empirical results on the gains implied by insiders’ synergy projections. Differences between merger bids accompanied by synergy projections and those without projections are subsequently discussed and finally factors

explaining the variation in the forecasted synergies presented. Lastly, Section 4 “Conclusion and Discussion“ provides a review of our findings and some makes some concluding remarks.

Section 2. Development of Hypotheses

In line with the previous literature, we expect the strict rules REITs have to comply with in order to obtain and subsequently maintain their preferred tax status to have an impact on the availability of synergies from REIT mergers.^v There are several provisions concerning REIT assets and operations that are likely to have an influence. The requirement that the majority of REITs’ assets must consist of real estate assets in a broader sense (i.e., real estate, mortgages, and shares in other REITs) and cash and cash equivalents (i.e., cash and government securities) restricts REITs’ potential to diversify their investment strategy and therefore also their options to acquire other firms owning diverging assets. The potential to create synergistic gains from diversifying into other asset classes is therefore expected to be severely limited for REIT mergers. Requirements concerning operations of REITs are expected to have an even bigger impact. Most of REITs’ gross income must come from real estate activity (i.e., rents, mortgages, and gains from the sale of real estate) and properties must not be held primarily for sale in the ordinary course of business of REITs. This provision restricts REITs’ potential to acquire other firms in order to expand into upstream or downstream activities, thereby eventually creating synergies from vertical integration.

The REIT legislation thus puts severe restrictions on the ancillary businesses that REITs could otherwise be engaged.^{vi} It can be difficult for REITs to provide a broad range of full-scale services to tenants and third parties. The tax code prevents them from providing many additional services that could eventually allow REITs to take advantage of cross-selling opportunities on a

big scale, thereby earning additional revenues. Those restrictions do not apply to non-REIT (real estate) companies. We consequently do not expect revenue (growth) synergies, often also named revenue enhancements, to play a vital role in REIT mergers. However, we expect REITs to be able to achieve significant cost synergies through horizontal integration of other REITs. Regulations concerning the type of assets and operations of REITs lead to a high degree of homogeneity between combining REITs and consequently a likely availability of substantial cost savings, primarily in form of economies of scale in overhead costs.

We therefore hypothesize that the regulatory enforced homogeneity of operations and assets of REITs, overall, only allows for relatively small synergistic gains. The order of magnitude of the announced total synergies (i.e., cost synergies, revenue growth synergies, etc.) should consequently be smaller for REIT mergers and acquisitions compared to takeovers in the rest of the corporate world. The strict regulatory framework, however, is simultaneously expected to limit REITs' potential for growth and therefore enhanced profitability in the absence of merger activity. As mentioned by Hardin and Hill (2008), contemporaneous research on REIT capital formation finds substantial limitations that REITs have in generating sufficient internal cash flow to materially increase assets under management and subsequent funds from operations. Ott, Riddiough and Yi (2005), for example, show that retained earnings account for barely 7% of the capital used by REITs for additional property investments. The reason behind this limitation is that by regulatory design tax qualified REITs are forced to distribute at least 90% (95% prior to 2001) of taxable net income to shareholders as dividends in order to maintain their preferable tax status.^{vii} REITs therefore have difficulties growing from internally generated funds due to mandatory pay-outs (Brau et al., 2011). Merging assets and operations do consequently enable REITs not only to substantially increase their asset base at a single point in time, thereby

spreading overhead costs over a bigger asset base, but also to generate substantial additional cost synergies from cutting redundant costs at the target level (e.g. public company costs). Therefore, synergies should be quoted and quantified more often in REIT M&A deals than in deals outside the real estate industry, as enhanced operational efficiency from mergers should be key to success for REITs. We expect the forecasted synergies to stem mainly from cost savings.

We also expect the potential and therefore the forecasting frequency and the magnitude of the projected synergies to vary with entity and deal characteristics. Focused REIT mergers, with respect to geographic proximity and property type, should for example exhibit more frequent synergy forecasts with a bigger magnitude than diversifying REIT mergers. Moreover, we expect certain pre-merger cost categories that are generally associated with economies of scale in REITs to have a dominant impact on the potential for the generation of synergistic gains from mergers. In line with previous studies on economies of scale in REITs, we hypothesize that general and administrative expenses and interest expenses are the most relevant sources for cost savings.

Section 3. Data and Descriptive Results

Sample Selection

The initial sample consists of real estate mergers and acquisitions (including privatizations) announced between January 1, 1994 and December 31, 2010. To construct our sample, we obtained from SNL Financial a list of all real estate M&A deals for the given time period.^{viii} SNL generally classifies deals based on the business of the target (i.e. the company or asset being sold) and applies the following restrictions for deals in its real estate M&A database: The target is a REIT or REOC currently covered by SNL (pure construction and development

firms are not included). At least one of the entities involved in the deal (bidder and/or target) must be a US firm. Only whole-company deals (no asset level transactions or minority interest deals) are included. Jointly, the firm and transaction restrictions produced an initial sample of 192 real estate M&A deals downloaded from SNL.

Subsequently, while verifying the occurrence of all M&A events in Factiva, we validate all critical firm and deal characteristics (i.e., REIT status of the bidder and target, deal size, announcement date, etc.) in the initial sample downloaded from SNL, reviewing all deal related news stories and press releases obtained from sources on Factiva. Deals with missing or incorrect information are subsequently complemented or corrected. We further restrict the corresponding sample to acquisitions of a majority interest or mergers where the bidder holds less than 50% of the target's common stock on the announcement date (AD) and the deal has come to a resolution as of December 31, 2010 (i.e., completed or terminated, not pending). Finally, the corresponding sample, from now on called "full real estate sample", consists of 191 M&A transactions, since one pending transaction had to be excluded (all other stated requirements are fulfilled for the remaining takeovers).

For each deal, we inspect news stories and press releases for a time period beginning one year prior to the deal announcement and ending three month after the transaction is completed or terminated to retrieve insiders' projections of merger-related gains. Deal-specific news stories and press releases are from sources on Factiva. In accordance with prior literature, we focus on the disclosure of synergy estimates by bidding firms. Following Dutordoir, Roosenboom and Vasconcelos (2010), we verify that the synergy forecast is provided by a chief executive of the acquiring firm, not by other parties (e.g., stock analysts or journalists).

Forecasting Frequencies

Management forecasts of synergies are publicly available in 37 cases, or 19% of the full real estate sample. In all 37 deals with voluntary managerial synergy disclosures, the disclosure is made simultaneously with the news of the announcement of the deal (i.e., either on the announcement date of the merger or the following business day). The disclosures of synergies are either included in a news article or press release distributed by the acquiring firms or they are announced in a conference call and then reproduced by the media. In accordance with prior studies, we only consider estimates in which quantified projections, in absolute dollar terms or in certain percentages or ratios that can be converted into dollar terms, are made by the acquiring firm managers.^{ix}

The finding that management forecasts of synergies are publicly available in merely 19% of our sample does at the first glance not support our expectation that synergies are quoted more regularly in real estate M&A deals than in takeovers in other industries. Bernile and Bauguess (2010) collect and analyze news stories and press-releases for 3,935 M&A deals between firms listed on US exchanges that were announced between 1990 and 2005. They find that 23% of the deals are accompanied by management forecasts. Dutordoir, Roosenboom and Vasconcelos (2010) use a sample of 2,794 M&A deals involving US public firms over the period 1995 to 2008 and retrieve synergy information disclosed by the firms' management around the deal announcement date. For 17% of these deals, managers release a synergy estimate together with the deal announcement. Both studies use a diverse sample, containing mergers across multiple industries. Whereas Bernile and Bauguess (2010) do not impose any restriction concerning bidder or target industry on their sample, Dutordoir, Roosenboom and Vasconcelos (2010) explicitly exclude utilities.

Our result of 19% fits quite well within this range. Our sample, however, exhibits a crucial difference compared to those of other studies. We, so far, have not restricted our sample to deals among public companies. Insiders' incentives to provide synergy forecasts, just like all other kinds of voluntary disclosures, are in fact determined by several factors, in particular by whether the bidding firm is listed on stock exchange (see Dutordoir, Roosenboom and Vasconcelos, 2010, for a theoretical and empirical analysis of the general determinants of voluntary synergy disclosures). In acquisitions by public companies, merger offers generally need some form of shareholders' approval of bidder shareholders. This is not the case for private bidders not listed on a stock exchange, in our sample this is mainly private investment funds. It is hence unlikely that private bidders have the same incentives to voluntarily disclose synergy estimates, since they do not have to sell the deal to the public or more precisely to their shareholders. Publicly disclosing synergy forecasts would rather strengthen target companies' negotiation power in claiming higher takeover premiums.

In contrast, for public bidders, not producing any forecasts concerning synergistic gains should not be a feasible option, assuming the transaction is in fact expected to create incremental merger-related gains. Public acquirers will have to sell the deal to their shareholders since they have to rationalize why they are willing to pay a premium above the pre-acquisition price of the target companies. Premiums are generally paid up-front for an uncertain amount of incremental cash flows sometime in the future. Management of public bidders should therefore declare to their shareholders how much incremental merger-related cash flow they expect to generate that shareholders of the bidding company cannot obtain by simply buying targets' shares on their own. Not making any public synergy forecasts should consequently only be reasonable if no (material) synergies or even negative wealth effects are in fact expected from the merger.^x

Empirical evidence is consistent with our assessment that not disclosing synergies is interpreted negatively by the market. Houston, James and Ryngaert (2001), Bernile and Bauguess (2010), and Dutordoir, Roosenboom and Vasconcelos (2010) find that the market responds positively to deals with higher projected synergies, as evidenced by the fact that managerial synergy disclosures have a significant positive impact on announcement returns.

As we are interested in an unbiased analysis of merger motives in the real estate industry, we restrict our sample to deals with public bidders but do not impose any restrictions concerning targets, since limiting our sample to M&A deals with public targets only would further decrease our sample size and hence limit the validity of our results. This limits our sample to 109 deals. As expected, the percentage of deals accompanied by management synergy forecasts increases significantly to 34% (35 cases). To further limit the impact of the diverse determinants on disclosure decisions of merging firms insiders, we additionally limit our sample to deals in which the bidder is a US company and has a REIT status. The unique laboratory of REITs, in this context describing the fact that all publicly-traded REITs in the US are subject to the same regulatory restrictions and therefore operate in the same unique institutional setting, does allow for keeping the determinants of synergy disclosures similar for all bidders. This restriction further limits our sample, from now on called “REIT sample”, to 92 deals. Forecasts of synergies are publicly available in 32 cases, or 35% of the REIT sample.^{xi}

This value is much higher than the 23% and 17% found in the two studies using a broad sample across multiple industries. A closer comparison to the results obtained for M&A deals in different industries by Bernile and Bauguess (2010) reveals the real order of magnitude of the variation. The authors find considerable variation in the fraction of deals accompanied by management projections across industries. However, there is only one industry with a higher

disclosure frequency than the one found in our REIT sample, namely utilities with 43%. This is no surprise, since mergers among highly regulated utilities are often subject to particular regulatory approval processes. These processes regularly require merging utilities to pass through part of their synergies to their customers. Because of these required commitments, it is likely that they may have diverging incentives for public synergy projections compared to firms in other industries. For this reason, Dutordoir, Roosenboom and Vasconcelos (2010) explicitly exclude utilities from their sample. Chemicals and energy firms, both industries with an obvious potential for scale effects in production, show similar disclosure frequencies like our sample of REIT mergers with 33% respectively 31%. M&A deals among financial institutions often deemed as industry with extremely high synergistic potential, exhibit a disclosure frequency of only 28%, a value considerable lower than our result for REITs. Frequencies in all other industries are well below those in REITs, ranging from 25% for manufacturing to 11% for durable goods. Our expectation that synergies are quoted and quantified more often in REIT mergers than in mergers in the conventional corporate world outside the real estate industry is thus supported. We paraphrase this finding as an indicator for the validity of our hypotheses that expected synergies are in fact an important merger motive for REITs.

Table 1 presents the distribution of offers by calendar year. It also shows that the use of voluntary synergy disclosures has increased over time, even though the increase was not continuous. While in 1994 and 1995 none of the deals were accompanied by a synergy forecast, the percentage of mergers accompanied by a forecast amounts to 75% in 2002 and 2005. This finding is somewhat different to those of prior studies for conventional corporations in other industries detecting rather steadily increasing forecasting frequencies over the years. Our finding could be random and merely result from the relatively few number of deal announcements in

some years. Alternatively, it could suggest that the general increase over the years can only be attributed to the changing regulatory environment concerning investor communication rules to a lesser extent than often proclaimed (see Chen, 2008, for an overview of the impact of regulation of takeovers and security holder communications on disclosure of synergy forecasts).

[Please insert Table 1 about here]

Bernile and Bauguess (2010) argue that the increase in the relative frequency of synergies forecasts may be on the one hand due to the changing characteristics of deals announced in each period. On the other hand, the authors also note that the trend coincides with reforms that likely affected management incentives to provide synergy forecasts. They explicitly name the Private Securities Litigation Reform Act, passed by the US congress in 1995, and the adoption of the SEC of the Regulation of Takeovers and Security Holder Communications (Reg MA), effective January 2000, as likely factors. Reg MA removes previous regulatory constraints on pre-filing communication with investors about forthcoming merger transactions. The SEC emphasized throughout Reg MA the requirement that all written communications are filed with the SEC as of the date they are used, since the SEC was concerned by the practice of selective disclosure of material information at that time. Regulation Fair Disclosure (Reg FD), which became effective in October 2000, was designed to address the selective disclosure issue by prohibiting corporations from privately disclosing material information to select investors or securities market professionals without simultaneously disclosing the same information to the public.

Dutordoir, Roosenboom and Vasconcelos (2010) find evidence for their prediction that the credibility of synergy disclosures increases after the introduction of Reg FD and that the disclosure should therefore also have a stronger market impact after the introduction of Reg FD.

Chen (2008), however, shows that the increase in disclosure frequency is not driven by Reg FD alone by analyzing a sub-sample of stock-for-stock mergers that are exempt from Reg FD. Our findings that disclosure frequency in REIT M&A deals, which are traditionally mostly stock financed, also increases over time casts at least some additional doubt on the assessment that disclosure frequency is driven predominantly by Reg FD.

Alternatively, there also seem to be purely economic reasons for the gradually but irregularly increasing disclosure frequency in REIT mergers given the almost complete absence of synergy forecasts in the early years of our sample. A detailed review of the deal-specific news stories and press releases surrounding the deals in the early stage of the modern REIT era (1994-1997) reveals that most merging REITs in this time period were mainly concerned with obtaining a critical firm size and therefore market capitalization. This is no surprise when taking into account the relatively small size of most REITs at this point in time and the consequential severely limited liquidity of their stocks. Most business combinations were likely motivated primarily by management and investors' desire to have more liquidity in their stock positions. By making themselves more liquid, REITs are generally expected to be able to attract more institutional investment capital and automatically drive down capital cost (Below, Stansell and Coffin, 2000, and Ciochetti, Graft and Shilling, 2002, deliver evidence for the hypothesis that institutional investors prefer larger and more liquid REIT stocks). The often expected effect that an increased asset base, resulting from a merger, will also lead to operating cost savings seems to have been an ancillary, rather than a primary, effect at this early consolidation stage in the REIT industry.

As time passed, the REIT industry in general consolidated and matured and REITs' size increased significantly, the desire to generate operating cost savings from merging operations

seems to have become a much more common reason for takeovers, as evidenced by the generally increasing disclosure frequency in our sample. The hypothesis that small REITs are mainly concerned with growing size in terms of market cap when engaging in M&A transactions is consistent with our finding that independent from the year a deal is executed, in only 17.9% of the deals in our sample with buyer market caps below \$500 million exhibit synergy disclosures while this is the case for 40% of the deals with buyer market caps above \$1 billion.

Sources of Value Creation

The most common source of expected synergies in our REIT sample is savings in operating costs, which account for 29 of the 32 disclosure events or 91% of the merger bids accompanied by synergy disclosures. This observation is in line with other studies in the conventional corporate world finding that management most often stresses expected cost savings. Within the operating cost savings category, savings in general and administrative (G&A) expenses are the by far most frequently quoted source with almost 70% of the disclosures accompanied by cost savings explicitly stemming from this cost category. This is also in line with studies on economies of scale in REITs that reveal the importance of G&A expense savings in REIT size effects (see, for example, Bers and Springer, 1998a, and Capozza and Lee, 1995). G&A expenses also include all sorts of corporate-level asset management expenses, such as management salaries, and filing and reporting costs. We find that, for mergers and acquisitions of rather small firms, savings in redundant and duplicative public company costs, itself part of the G&A expense category, seem to play a critical role.

Revenue synergies are explicitly stated in merely one case out of the 32 deals with synergy forecasts. This is considerable less than found in previous studies in other industries, but supports anecdotal evidence stating that revenue enhancements may not be an important merger

motive for REITs. The finding is also in line with our expectation that revenue synergies do not play a vital role in REIT mergers, due to the restrictions of assets and operations limiting REITs' potential to create synergies from vertical integration. In contrast, revenue enhancement projections are available for 32% of the deals in Houston, James and Ryngaert (2001) study of large US bank mergers. However, Bernile and Bauguess (2010) find for their broad sample containing mergers across multiple industries that insiders rarely project revenue enhancements with only 5% of the retrieved forecasts including such synergies. Half of these forecasts are in financial institution mergers. Dutordoir, Roosenboom and Vasconcelos (2010) find that in only 7% of their observations the estimates of synergies include expected revenue enhancements. Both values are higher than ours for the REIT sample, despite still being relatively small compared to those for bank mergers.

Moreover, savings in interest expenses following the merger are explicitly quantified in three transactions in our sample.^{xii} Perhaps more importantly, in a considerable fraction of the deals in our sample, a lower cost of capital, either in form of the cost of equity and/or the cost of debt, are mentioned as an expected merger benefit. Lower cost of capital, the main cost input of REITs, is often claimed as the primary driver of REIT expansion in the literature. It is regularly argued that because REITs' business is very capital-intensive, larger REITs may take advantage of scale effects in capital costs when buying smaller firms (see, for example, Ambrose, Highfield and Linneman, 2005).

Finally, tax considerations are not quoted at all in our sample. This finding challenges the assertion that tax motivations, for example through the purchase of operating losses to offset the acquiring REIT's capital gains, are a dominant motive for REIT mergers.^{xiii}

Forecasting Peculiarities

In some cases, management forecasts of synergies are very specific, with information on the timing and details concerning the sources of the merger-related gains. Unfortunately, the majority of projections are not as detailed, especially with respect to the expected time horizon. For example, some announcements only state that the benefit of annualized synergies is estimated in excess of a certain dollar amount, without further elaborating on the source of these savings or the expected time horizon in detail. The sources of expected synergies, however, are discussed in the forecasts in greater detail in most cases.

The majority of projections state that a certain dollar value of savings is expected to be realized annually. In this context, savings in a specific G&A run rate are mainly quoted. The value that is assumed to be realized each year can be regarded as long-run or steady state synergistic cash flow gain. When making an assessment on the expected timing, most managers expect these savings to become fully effective in the first full year of combined operation. In few cases, a certain fraction of the annually expected savings is expected to already occur in the year of merger completion. Some others, by contrast, expect the full savings to drop right to the bottom line in the year of merger completion. In more than half of the forecasts managers do not specify in which year they expect the full synergies to be attained. In these cases, we assume that the savings are fully materialized in the first full year of combined operations and no savings occur in the year the merger is completed in.

One diametrical difference to the synergy forecasts in takeovers in other industries is that the time horizon management expects it will take to fully realize the expected synergies is considerable less in REIT mergers. Houston, James and Ryngaert (2001) for example find for their sample of large bank mergers that management expects the incremental cash flows to be

fully realized within two to four years after the completion of the merger. Bernile and Bauguess (2010) find similar time horizons for their sample across multiple industries. The significantly shorter realization time in REIT mergers is likely due to the homogeneity of operations and assets of REITs that allows for a rather smooth integration of the merging entities.

In a bit more than one third of the cases, managers forecast a certain range of synergy values. Following Dutordoir, Roosenboom and Vasconcelos (2010), we use the range's midpoint in subsequent calculations. In three cases, management instead discloses a percentage or ratio of a specific cost category that will be saved on an annual basis in the future. We retrieve the most up-to-date value of the corresponding cost category available at the time of the deal announcement from SNL, if available, and calculate the resultant dollar value.^{xiv} In the majority of cases, however, insiders report a specific value of synergies to be achieved and no adjustments are necessary.

Section 4. Methodology and Empirical Results

Valuation of Synergy Forecasts

To examine the order of magnitude of expected synergies in REIT mergers in detail and to allow for a valid comparison of the results with synergies relative to other firms calculated in other studies, we need to calculate the absolute value of the synergies predicted by the merging firms' insiders. In line with previous research, we use the discounted cash flow method to estimate the present value of synergies from managerial disclosures, largely following the approach suggested by Kaplan and Ruback (1995), Gilson, Hotchkiss and Ruback (2000), Houston, James and Ryngaert (2001), Bernile and Bauguess (2010), and Dutordoir, Roosenboom and Vasconcelos (2010).

Using the calculated incremental cash flows going out for two years (i.e. the year of the deal completion and the following year), we estimate the present value of these earnings increments as follows:

$$\frac{\text{SynCF}_1}{1+K} + \frac{\text{SynCF}_2}{(1+K)^2} + \frac{\text{SynCF}_2}{K(1+K)^2} \quad (1)$$

where SynCF_1 is the projected incremental synergistic cash flow estimate in the year of deal completion, SynCF_2 is the steady state incremental synergistic cash flow estimate in the first full year of combined operations (i.e. the year after the deal is completed) and in all subsequent years, K the discount rate (defined below).

We use three different scenarios of SynCF in the subsequent calculations. First, the forecasted incremental cash flow from all sorts of synergies, including operating cost savings, revenue enhancements, interest savings, as well as all other synergies whose source has not been further elaborated on in the forecast, is used to calculate the present value of total synergies. Second, the incremental cash-flow from operating cost savings, which basically includes all cost savings except interest savings, is used to estimate the present value of operating cost synergies. Third, the incremental cash-flow exclusively from G&A expense savings, itself part of the operating cost category, and the by far most stated source of merger-related gains, is used to estimate the present value of G&A cost synergies.

In accordance with Bernile and Bauguess (2010), we assume no growth of cash flows in computing the terminal value. While most other studies assume that the cash flows increase at the rate of long-run inflation beyond the terminal year (i.e., zero real growth), we do not follow

this approach for two reasons. First, we find no indication that this assumption seems to be prevalent in the market's assessment of synergy projections either by stock analysts or journalists in the reviewed deal related news stories and press releases. We therefore judge this assumption as too optimistic and not appropriate, at least for our sample of REIT mergers. Second, we attempt to make our results comparable to those of the most comprehensive and recent study analyzing synergy forecasts in other industries, and thus largely follow Bernile and Bauguess (2010).

The applied discount rate should reflect the risks associated with the realization of the forecasts. We assume that the risk profile of the synergies is similar to that of the acquiring REITs' equity, and therefore use the cost of equity of the bidders as the discount factor K .^{xv} We calculate K by multiplying the firm's market beta^{xvi} by an assumed risk premium of 7.5%^{xvii}, and adding the yield on the risk-free rate which we set equal to the ten-year US Treasury Bond yield^{xviii} at the time of the announcement.

Size of the Gains Implied by Synergy Forecasts

The average (median) beta for the 31 acquiring REITs disclosing synergy projections in our sample is 0.45 (0.34) and the corresponding average discount rate is 8.3% (7.5%).^{xix} The low beta for the bidders in our forecast sample suggests that REITs are less sensitive to market movements than firms in other sectors. Similarly low betas have already been documented in other real estate studies (see, for example, Eichholtz and Kok, 2008).

[Please insert Table 2 about here]

Table 2 reports summary descriptive statistics of the present value of the projected synergistic incremental cash flows. The average and median present values of total synergies in our sample

(\$116.8 million and \$65.9 million) are of significantly smaller order of magnitude than the ones evidenced in studies analyzing the value of synergy forecasts in other industries. Bernile and Bauguess (2010) find an average (median) present value of \$828.7 million (\$189.7 million) in their comprehensive sample spanning several industries. Houston, James and Ryngaert (2001) report an average (median) of \$765.1 million (\$369.1 million) for their sample of large bank takeovers. On the basis of these values, it is tempting to speculate that the potential for the generation of synergies is indeed much smaller in REIT mergers than it is in mergers in the conventional corporate world in other industries. However, there could alternatively be many other factors influencing the absolute magnitude of expected synergies from mergers, such as the deal size and/or the relative size.^{xx}

To allow for a more reasonable comparison of the results of our REIT sample, we scale the present value of the synergy forecasts with the combined pre-merger bidder and target market capitalization.^{xxi} The corresponding ratios are also depicted in table 2. In our sample, the average (median) present value of the projected synergies is 4.3% (2.9%) of the combined bidder and target market capitalization. These percentages are again much lower than those found in other studies. Dutordoir, Roosenboom and Vasconcelos (2010) document 11.7% (6.9%) of the combined bidder and target market capitalization, Bernile and Bauguess (2010) document 14% (7.1%), and Houston, James and Ryngaert (2001) 13.1% (9.5%).^{xxii} Devos, Kadapakkam and Krishnamurthy (2009), who in contrast to all other studies do not focus on managerial synergy forecasts but estimate synergy gains using Value Line cash flow forecasts, report an average (median) of 10.03% (5.11%). Again, there are several factors that could potentially distort the validity of the comparison. The fact that REITs and real estate corporations in general tend to operate with higher leverage and therefore less equity in relation to their assets than most other

industrial corporations could potentially bias our percentages upwards and would make the real difference to the results of other studies even bigger.^{xxiii, xxiv} The different leverage would thus make our percentages of present values normalized by the merging firms combined market caps bigger solely because REITs exhibit different financing structures. Moreover, it is likely that the discount factors used in all other studies were significantly higher than the ones used in our sample, as betas of REITs in general tend to be much lower than those of conventional firms.^{xxv} The lower discount factors used in our study would make our present value estimates and therefore also percentages of those present values larger solely because REITs are less sensitive to market movements than firms in other sectors.

As we are interested not only in a comparison of the absolute present value figures and percentages of those scaled by some normalizing factor (i.e., combined market cap), but also in the impact of the expected annual synergies on the actual operating efficiency of the merging entities, we next look at the forecasted yearly synergy values relative to the combined firms' and targets' pre-merger revenues and several expense categories. This allows us to circumvent the impact of the many peculiarities of the valuation model used in our sample (lower beta, different financing structure, etc.). Considering annual synergies may therefore provide important insights into the real magnitude of synergies in REIT mergers, since we are able to measure the impact on firm efficiency and thus also performance compared to mergers among regular firms in other industries without explicitly accounting for the prevalent valuation effects discussed above.

Table 3 summarizes the expected annual G&A cost, operating cost, and total synergy forecasts scaled by the combined firms' and targets' pre-merger revenues and several expense categories. The average (median) ratio of expected annual total synergies scaled by the combined firms' pre-merger total revenues in our REIT sample is 1.77% (1.17%). Bernile and Bauguess

(2010) in contrast find an average (median) of 2.8% (1.7%) for their sample across multiple industries. The corresponding value for our REIT sample is still lower than theirs for a broad sample across multiple industries. The difference, however, is only of a much lesser extent than found in the recent two comparisons (i.e., comparison of absolute present values and of present values scaled by combined market caps). While the average absolute present value of projected synergies in our REIT sample is rarely about 1/7 of the value evidenced by Bernile and Bauguess (2010), the ratio materially increases to 4/7 when comparing annual synergy figures scaled by the combined firms' pre-merger total revenues. This finding reveals that even though the face value of predicted synergies in REIT mergers may be relatively small compared to mergers among conventional firms in other industries, the difference gets much smaller when comparing the impact of expected annual synergy figures.

All prior comparisons were so far based on the expected cash flows from total synergies, including synergies from all sorts of sources (cost synergies, revenue synergies, etc.). Our expectation that the expected total synergies are smaller in REIT mergers than in M&A deals in other industries is so far confirmed. The results are consistent with the notion that the regulatory enforced homogeneity of REITs indeed limits the availability for synergistic gains from merging assets and operations. It seems that the numerous provisions in fact restrict REITs' potential for creating revenue synergies from vertical integration. In line with prior studies and our own expectations, REIT insiders projecting merger-related gains do not seem to expect revenue enhancements to play a vital role as expected source of value creation.

[Please insert Table 3 about here]

We next compare the expected annual operating cost synergies, which do not include interest expense savings, scaled by the combined firms' pre-merger total operating costs to receive an impression of the real magnitude potential synergies have on the cost efficiency and therefore also operating performance of merging REITs.^{xxvi} We expect REITs to be able to achieve significant cost synergies through horizontal integration with other REITs. Regulations concerning the type of assets and operations of REITs lead to a high degree of homogeneity between combining REITs and consequently a likely availability of substantial cost savings, primarily in form of economies of scale in overhead costs.

The average (median) value of annual operating cost synergies scaled by the combined firms' pre-merger total operating costs in our sample is 7.15% (3.47%) and therefore materially higher than the one found by Bernile and Bauguess (2010) (average: 3.0%; median: 1.9%). This observation is consistent with our expectation and makes economic sense, since REITs as well as real estate firms in general have a different cost structure than conventional industrial firms. The real estate business is very capital-intensive and real estate firms therefore generally operate with much more leverage than firms in other industries. The capital costs and thereby especially interest costs are consequently the main cost input of REITs. As a result of the diverging cost structures between REITs and conventional firms in other industries, it is altogether not really surprising that the expected annual operating cost synergies make up for a bigger fraction of the combined firms' pre-merger total operating costs in REIT mergers than in mergers among firms in other industries, even though the opposite is true when comparing the ratio of expected annual total synergies scaled by the combined firms' pre-merger total revenues.

These findings suggest that the anecdotal evidence, supported by various academics and practitioners, stating that synergies in real estate and especially REIT mergers are rather small

compared to their counterpart in the conventional corporate world, is only true at first glance. When ignoring the availability of revenue synergies and taking the peculiarities of REITs' cost structures into consideration, expected savings in operating costs relative to pre-merger operating costs from REIT mergers even exceed their counterpart in the rest of the corporate world.

In order to get an even better understanding of the real impact of expected savings in annual operating costs in REIT mergers, we also compute the ratio of expected annual G&A synergies scaled by the combined firms' pre-merger G&A costs. G&A expenses constitute basically all relevant overhead costs of REITs and can be ascribed to the operating cost category. Savings in G&A expenses are the by far most quoted source of expected synergies – in absolute terms as well as within the operating costs category. The corresponding average (median) in our REIT sample, scaled by combined G&A costs, is 21.25% (19.96%). The average (median) ratio even increases to 70.80% (71.33%) when scaled by targets' pre-merger G&A costs only. Both values are economically significant. To be able to potentially save around 20% of combined REITs' pre-merger G&A costs or put another way 70% of targets' pre-merger G&A costs from merging assets and operations enhances operating efficiency to an extent hard to achieve in absence of merger activity. The obtained scale economies should constitute a competitive advantage in efficiency that is expected to be also evident in profitability measures. In contrast to common opinion, expected cost savings from merging REITs in fact seem to be material and their prospective impact on the merging firms' efficiency thus substantial.

Differences between the “Forecast” and “No Forecast” Samples

So far, we have delivered evidence for the economic relevance of the gains implied by insiders' synergy projections in REIT mergers. We now attempt to identify whether the availability of projections varies with factors related to the existence of potential synergies. Since

we are interested in whether deals accompanied by synergy projections differ from those without projections. We report descriptive statistics for the forecast sample and the no forecast sample in table 4.

[Please insert Table 4 about here]

The described variables are primary characteristics of interest that were selected based on prior studies on synergies in REITs and our experience from reviewing the expected sources of synergistic gains in deal related news stories and press releases. The depicted variables are thereby typically used as proxies to test the synergy theory for REIT mergers and therefore the potential to create incremental value. We mainly focus on proxies for economies of scale and thus the potential for savings in operating costs, as those are the dominant source of synergies in the analyzed forecasts.^{xxvii} Table 4 groups the variables into three categories: Deal, bidder and target characteristics.

The first four deal characteristics are proxies for the size of the deal. As shown, acquisition bids, accompanied by managerial synergy forecasts, tend to be larger in absolute (deal size with and without debt assumed) as well as in relative terms (relative asset size and relative equity size). This finding is consistent with the results of other studies and makes economic sense, since bigger deals in general have a bigger impact on the performance of acquirers and thus facilitate a greater potential for synergistic gains.

The differences between the forecast and the no forecast sample are not significant for the three proxies for focus diversification. The variable termed the same investment focus shows whether bidder and target are both primarily active in the same investment area (Equity-, Mortgage-, or Hybrid-REIT). The fact that there is no significant difference between the two

sub-samples is no real surprise though as the overwhelming majority of bidders and targets are equity REITs.^{xxviii} The same applies to the variable that indicates whether bidder and target have the same property focus. In fact, almost all deals in our sample are among firms with the same property focus, independent from whether forecasts are given or not. This is evidenced by the extremely high means and medians in both sub-samples.

What is most surprising at first is that the proxy for geographic overlap does not reveal any significant difference. We would expect to see higher values for deals accompanied by forecasts as a bigger geographic overlap is expected lead to bigger saving potential from closing redundant offices and other administrative facilities and savings in management salaries. In order to grasp the potential for closing redundant facilities and saving other administrative and operating expenses in a suitable way, we follow Bernile and Bauguess (2010) and construct a discrete variable varying between zero and three for each deal. The variable is equal to one if the bidder' and target's headquarters are located in the same region, equal to two if it is located in the same state, equal to three if it is in the same city and zero in all other cases.^{xxix} A potential explanation for the insignificant difference between the forecast and the no forecast sample could be that measures of geographic proximity on the basis of locations of headquarters reflect above all the potential for savings in administrative costs. The limitation of our proxy is expected to be particularly pronounced for large firms with multiple operating unit locations in addition to their corporate headquarters. However, we would still expect our geographic overlap variable to be a suitable proxy for our sample of REIT mergers, since the vast majority of the analyzed synergy projections is explicitly expected to come from savings in general and administrative costs, which should be appropriately captured by our proxy.^{xxx}

Bidders providing synergy forecasts tend to be slightly bigger than their counterparts. This is evidenced by the fact that all three proxies of bidder size (market cap, total assets, and total revenue) exhibit slightly higher values for the forecast sample than for the no forecast sample. This finding is in line with our earlier assessment that REITs below a certain critical firm size tend to be mainly concerned with gaining size from merging with another firm. Potential cost savings seem to be more of an ancillary effect in those cases. The differences between the two groups, however, are relatively small and not statistically significant.

We next compare the operating efficiency of bidders in both groups on the basis of the two most relevant expense measures: G&A expenses and interest expenses, both normalized by pre-merger revenue. However, both cost categories generally associated with economies of scale in REITs are not significantly different from each other when set in relation to pre-merger revenue. We also compare the profitability of bidders in both groups. Bidders in the forecast sample tend to be less profitable than those in the no forecast sample. This difference is significant for both profitability proxies and is especially pronounced when comparing return on adjusted equity (ROAE), the key profitability measure for REITs. The difference in return on adjusted assets (ROAA) is smaller but also significant.

We next look at target characteristics. Targets in the forecast sample tend to be bigger than their counterpart in the no forecast sample and the difference between the two groups is statistically significant for all three size proxies. This result logically follows from our earlier finding that acquisition bids accompanied by managerial synergy forecasts tend to be larger in absolute and relative terms and is also consistent with the results of prior studies analyzing synergy forecasts in other industries. In line with our previous findings for bidders is that there seems to be no significant difference concerning operating efficiency between those targets

receiving acquisition bids accompanied by managerial synergy forecasts and those without forecasts. We also do not detect any significant difference concerning profitability between the two groups.

Finally, for none of the cost based efficiency measures and proxies for corporate focus, the p-value of the Wilcoxon rank-sum test supports the rejection of the hypothesis that the forecast and no forecast samples are drawn from the same distribution, while the hypothesis can be rejected based on the differences for the majority of other variables.^{xxxii} Our expectation that the availability of forecasts is systematically related to the existence of potential synergies is consequently not supported by the evidence based on efficiency measures and proxies for corporate focus.

Determinants of the Variation in the Forecasted Synergies

The direction of causality of the factors tested in the previous section is, however, not necessarily obvious. The finding that the efficiency and corporate focus variables expected to proxy for the potential to create incremental value did not reveal any significant differences between the two groups needs further testing. We therefore now analyze whether the insignificant univariate results documented above also hold in a multivariate setting or if we are able to gain some additional insights when conducting cross-sectional analyses by conducting OLS regressions.

We investigate the determinants of insiders' forecasts of synergies and thereby attempt to explain the variation in the estimated present value of total synergies and in the estimated present value of operating cost synergies using the variables that are predicted to influence those values. Following previous studies, the present value estimates are normalized by the combined pre-

merger market values of the bidder and target in all regressions. The explanatory variables used in the regressions are selected based on the measures depicted in table 4. They were chosen based on prior literature on synergies in REIT mergers and our findings gained from analyzing managerial synergy projections.

The following variables are finally included: Relative size of the target compared to the bidder (REL_SIZE), bidder and target G&A expenses normalized by the corresponding pre-merger revenue (BI_GA and TA_GA), bidder and target interest expenses normalized by corresponding pre-merger revenue (BI_INT and TA_INT), degree of geographical overlap (GEO), and a binary variable for whether bidder and target have the same property focus (PROP_FOC).^{xxxii, xxxiii} We expect the estimated present value of total synergies to be positively related to relative size, geographical overlap, property focus, target G&A ratio, and target interest ratio, and negatively related to the bidder interest ratio. The expected relationship for the bidder G&A ratio is less clear and cannot be determined a priori. The expected relationship of the estimated present value of operating cost synergies to the variables listed above is essentially the same, except that the bidder and target interest ratios are apparently not included as explanatory variables. The initially estimated OLS model (model 1) has the following functional form:

(2)

where: TOT_SYN is the estimated present value of total synergies normalized by the combined pre-merger market values of the bidder and target, i denotes the i^{th} forecast, α is the constant of the model, ε is a random error term, and each independent variable is referenced above and also described in more detail in Appendix A.

[Please insert Table 5 about here]

The results of the analysis are provided in Table 5. The estimated present values of total synergies, which include operating cost savings, revenue enhancements, interest savings, as well as all other savings whose source has not been further elaborated on in the forecasts, are best explained by bidder and target G&A and interest expense ratios. The positive coefficients on the target interest expense and G&A expense ratios are consistent with relatively inefficient REITs with respect to financing and overhead costs offering the greatest potential for savings in interest expenses and G&A expenses. The negative coefficient on the bidder interest ratio is also consistent with more efficient REITs with respect to financing expenses taking advantage of their superior capital costs by financing newly acquired assets from a merger more efficiently. The combination of the negative coefficient on the bidder interest ratio and the positive coefficient on the target interest ratio shows that acquisitions by REITs with relatively low financing costs of REITs with relatively high financing costs offer the greatest potential for savings in interest expenses.

The positive coefficient on the bidder G&A expense ratio reveals that the forecasted savings do not seem to stem from more efficient REITs merely taking advantage of their superior operating efficiencies, as we would expect to find a negative coefficient in this case. It rather seems that bidders are also not operating efficiently prior to the merger and aim to improve their operating efficiency by spreading their overhead costs over a bigger asset base obtained by merging with other firms. Bidders that have built a scalable infrastructure are generally expected to be able to grow their portfolio (e.g. by merging with another REIT) while simultaneously reducing G&A expenses as a percentage of revenue.

Finally, larger acquisitions also result in larger total synergy estimates, as evidenced by the positive coefficient on relative asset size. All but one of the coefficients are statistically significant at the one percent level with the bidder interest expense ratio being significant at the five percent level. Regressions including the five variables explain about 34% of the variation in the estimated present value of total synergies.

The explanatory power (measured as adjusted R-squared) of regressions explaining exclusively the estimated present value of operating cost synergies (substituted as dependent variable for the present value of total synergies in equation 2) is materially higher with about 46% of the variation being explained by three variables only. The coefficients on relative asset size, bidder G&A expense ratio, and target G&A expense ratio remain positive and are continuously statistically significant at the one percent level.^{xxxiv} The explanatory power increases even further to about 48% when the individual bidder and target G&A expense ratios are substituted by the combined pre-merger G&A expense ratio of bidder and target (results not shown but available upon request). This finding is consistent with our earlier notion that the estimated present value of operating cost synergies is bigger for the combination of two less efficient REITs with respect to G&A expenses.

We now introduce variables as proxies for diversification respectively focus. Our proxy for geographic overlap does not reveal any significant difference between the forecast and the no forecast sample when tested in a univariate setting, as shown in the table 4 in the previous section. We are now interested whether we are able to detect any impact when entering the variable into the OLS model. We would basically expect to see a higher present value of forecasted synergies for deals with greater geographic proximity, as a bigger geographic overlap is expected to lead to bigger saving potentials. The coefficient on the newly introduced variable

is slightly negative and insignificant.^{xxxv} A similar pattern can be observed when the variable is introduced into the model explaining the estimated present value of total synergies.

We next introduce the binary variable for whether bidder and target have the same property focus into the model. The value of estimated synergies is expected to be higher for mergers between REITs with the same property focus, as the greater homogeneity of assets and operations of bidder and target should allow for a greater scalability of the existent infrastructure and management capabilities, an easier integration of the newly acquired assets and thus a greater potential for savings. The coefficient on the same property focus variable is slightly positive, as expected, but not statistically significant. A similar pattern can again be observed when the variable is introduced into the model explaining the estimated present values of total synergies.

Our results show that factors suggested by the literature to proxy for the potential existence of synergies explain a considerable share of the variation in the estimated present value of synergies. Managerial synergy forecast in REIT mergers therefore seem to be economically significant and profound. Whether the expected synergies are consecutively in fact materialized cannot be evaluated based on our data and experimental design. The results are consistent with more general findings on economies of scale in REITs, demonstrating that general and administrative expenses and to a lesser extent also interest expenses are the most relevant sources for cost savings. We did not find any evidence for the contention that focused REIT mergers, with respect to geographic proximity as well as property focus, lead to higher expected synergies than diversifying mergers. This result may be surprising, since it is regularly argued that corporate-level expenses (general and administrative expenses and interest expenses) of REITs increase with diversification (Capozza and Seguin, 1999). However, Bers and Springer (1998b)

find that REITs well-diversified across different property types show larger average scale economies than specialized REITs, thereby challenging conventional wisdom that scale economies should be higher in focused REIT mergers.

Section 4. Conclusion and Discussion

In this study, we provide new insights into why mergers among REITs take place by analyzing synergy forecasts provided by merging firms' insiders, a largely unexplored source of information. For this purpose, we hand-collected and analyzed news stories and press-releases for 191 M&A deals of real estate companies (92 thereof with publicly-traded REITs as bidder) that were announced between 1994 and 2010 and retrieved management forecasts of synergies, whenever available.

We find that management forecasts of synergies are publicly available in merely 19% of our sample, which, at first glance did not support our expectation that synergies are quoted more regularly in real estate M&A deals than in takeovers outside the real estate industry (two other studies using a broad sample across multiple industries found synergy forecasting frequencies of 23% and 17%). As we were interested in an unbiased analysis of merger motives in the real estate industry, we restricted our sample to deals in which the bidder is a listed US REIT, thereby limiting our sample to 92 deals. The unique laboratory of REITs guarantees that the determinants of synergy disclosures are similar for all bidders. As expected, the percentage of deals accompanied by management synergy forecasts increased significantly to 35%. This value is much higher than those found in other studies using a broad sample across multiple industries. Our expectation that synergies are quoted and quantified more often in REIT mergers than in mergers in the rest of the corporate world was consequently supported. We paraphrase this

finding as an indicator for the validity of our hypotheses that expected synergies are in fact an important merger motive for REITs.

The most common source of expected synergies in our REIT sample is savings in operating costs. This observation is in line with other non-real estate studies. Within the operating cost savings category, savings in general and administrative (G&A) expenses were shown to be by far the most frequently quoted source with almost 70% of the disclosures accompanied by cost savings explicitly stemming from this cost category. This is also in line with studies on economies of scale in REITs that reveal the importance of G&A expense savings in REIT size effects (see, for example, Bers and Springer, 1998a, and Capozza and Lee, 1995).

The absolute present values of total synergies in our sample, estimated by applying the discounted cash flow method on the forecasted annual synergies from managerial disclosures, are of much smaller magnitude than those evidenced in studies analyzing the value of synergy forecasts in other industries. The present values of the synergy forecasts normalized by the combined pre-merger bidder and target market capitalization are also much lower than those found in other studies. We paraphrase this finding as evidence for our hypothesis that the regulatory enforced homogeneity of operations and assets of REITs does overall only allow for relatively small synergistic gains.

We also looked at the forecasted annual synergy values relative to the combined firms' pre-merger revenues and several expense categories. This allows us to circumvent the impact of the many peculiarities of the valuation model used in our sample (lower beta, different financing structure, etc.). The ratio of expected annual total synergies scaled by the combined firms' pre-merger total revenues in our REIT sample is still lower than found in other studies for a broad

sample but the difference is only of a much lesser extent than found in the recent two comparisons (i.e., comparison of absolute present values and of present values scaled by combined market caps). This finding reveals that even though the value of predicted synergies in REIT mergers may be relatively small compared to mergers among conventional firms, the difference gets much smaller when comparing the impact of expected annual synergy figures. Our expectation that the expected total synergies are smaller in REIT mergers than in M&A deals in other industries is so far confirmed. In line with prior studies and our own expectations, REIT insiders projecting merger-related gains do not seem to expect revenue enhancements to play a vital role as expected source of value creation.

We also compared the expected annual operating cost synergies scaled by the combined firms' pre-merger total operating costs to receive an impression of the real magnitude expected synergies have on the operating efficiency of merging REITs. The corresponding value in our sample is even higher than the one found by Bernile and Bauguess (2010) for other industries. The expected annual operating cost synergies make up for a bigger fraction of the combined firms' pre-merger total operating costs in REIT mergers than in mergers among firms outside the industry. The result is therefore consistent with our expectation that REITs should be able to achieve significant cost synergies through horizontal integration of other REITs, since regulations concerning the type of assets and operations of REITs lead to a high degree of homogeneity between combining REITs and consequently a likely availability of substantial cost savings. We also found that management expects to save around 20% of combined REITs' pre-merger G&A costs or put another way 70% of targets' pre-merger G&A costs from merging assets and operations. In contrast to common opinion, expected cost savings from merging

REITs in fact seem to be material and their expected impact on the merging firms' efficiency thus substantial.

We also investigated the determinants of insiders' forecasts of synergies and thereby attempted to explain the variation in the estimated present value of total synergies (cost synergies, revenue synergies, etc.) and in the estimated present value of operating cost synergies using a number of variables that are predicted to influence those values. The explanatory power (measured as adjusted R-squared) of OLS regressions explaining exclusively the estimated present values of operating cost synergies is about 46% of the variation being explained by three variables only, namely the relative size of the target compared to the bidder, the bidder pre-merger G&A expense ratio, and the target pre-merger G&A expense ratio.

The estimated present values of total synergies, which include operating cost savings, revenue enhancements, interest savings, as well as all other savings whose source has not been further elaborated on in the forecasts, are best explained by bidder and target G&A expense ratios and interest expense ratios. Regressions including the five variables (i.e., the four aforementioned variables and relative size) still explain about 34% of the variation in the estimated present value of total synergies.

We found no evidence for the often claimed contention that focused REIT mergers, with respect to geography as well as property focus, exhibit synergy forecasts with a bigger magnitude than diversifying REIT mergers. Certain pre-merger cost categories respectively their ratios that are generally associated with synergies in REITs in fact seem to have a dominant impact on the expected potential for the generation of synergistic gains from mergers. Total synergies are best explained by the merging firms' pre-merger interest expense and G&A

expense ratios. For operating cost synergies, G&A expense ratios are the dominant factors influencing the order of magnitude of the expected synergistic gains.

Our results from the OLS models are thus largely in line with findings in previous studies on economies of scales in REITs. Managerial synergy forecasts consequently seem to be economically profound, which is evidenced by the substantial share of the variation in the projected synergistic gains that can be explained by a limited number of synergy proxies suggested by other studies and tested in this study. The model estimates finally support the idea that management forecasts indeed reflect potential synergies.

Future research will among others have to further assess the economic relevance of synergy forecasts in REIT mergers by linking managerial synergy forecasts to standard measures of merger performance (e.g., combined abnormal stock returns or changes in analyst forecasts). Whether market participants' ex-ante assessment of REIT mergers is directly related both to the availability of forecasts and the therein implied gains, as evidenced in studies for the regular corporate world in other industries, should thereby be of special interest. Taking the peculiarities of synergy forecasts in REIT mergers into account, it seems likely that the impact of publicly disclosing synergy forecasts in REIT mergers is different to those evidenced in other studies. Our finding that a substantial share of the variation in the projected synergistic gains can be explained by a limited number of synergy proxies casts doubt on the hypothesis that disclosing synergies in REIT mergers is interpreted by the market the same way than forecasts in other more complex industries (e.g., financial institutions). The fact that market participants can easily estimate the expected magnitude of synergies from REIT on their own based on publically available accounting data could make the expected synergistic gains largely anticipated by the market. Moreover, future research will also have to evaluate whether the forecasted synergistic gains are

subsequently in fact realized by measuring changes in operating performance of the merging REITs.

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Appendix A – Definition of variables

Variable	Definition
Deal Value	Aggregate price paid for the equity of the entity sold in the transaction, as of the day the takeover bid is announced. Excludes debt assumed and employee retention pools.
Deal Value incl. Debt	Total consideration paid to the sellers, including the assumption of the target's outstanding debt obligations, as of the day the takeover bid is announced.
Relative Asset Size	Target Total Assets divided by Bidder Total Assets, both as reported in the fiscal year prior to when the takeover bid is announced.
Relative Equity Size	Target Market Cap divided by Bidder Market Cap, both measured 60 trading days prior to the bid announcement date.
Same Investment Focus	Binary variable where 1 indicates that bidder and target have the same primary investment focus (Equity-, Mortgage-, or Hybrid-REIT).
Same Property Focus	Binary variable where 1 indicates that bidder and target have the same primary property focus (Residential, Retail, Office, etc.).
Geographical Overlap	Discrete variable varying between zero and three, calculated as suggested by Bernile and Bauguess (2010). The variable is equal to one if the bidder' and target's headquarters are located in the same region (six regions: Mid-Atlantic, Midwest, New England, Southeast, Southwest, and West), equal to two if it is located in the same state, equal to three if it is in the same city and zero in all other cases.
Market Cap	Market capitalization, calculated as number of common shares outstanding multiplied by stock price, measured 60 trading days prior to the bid announcement date.
Total Assets	Book value of assets as reported in the fiscal year prior to when the takeover bid is announced.
Total Revenue	Revenue (net of interest expenses) generated in the fiscal year prior to when the takeover bid is announced.
ROAA	Annualized Return on Adjusted Assets, defined as Net Income as percentage of Average Assets in the fiscal year prior to when the takeover bid is announced.
Net Income	Total Revenue, net of Total Expenses, Income Taxes, Minority Interest and Extraordinary Items in the fiscal year prior to when the takeover bid is announced.
Average Assets	Weighted average assets in the fiscal year prior to when the takeover bid is announced.
ROAE	Annualized Return on Adjusted Equity, defined as Net Income as a percentage of Average Equity in the fiscal year prior to when the takeover bid is announced.
Average Equity	Weighted average of total equity in the fiscal year prior to when the takeover bid is announced.
G&A Expenses/Total Revenue	Annualized General and Administrative (G&A) Expenses as a percentage of Total Revenue in the fiscal year prior to when the takeover bid is announced.
Interest Expenses/Total Revenue	Annualized Interest Expenses as a percentage of Total Revenue in the fiscal year prior to when the takeover bid is announced.
Interest expenses	Interest on deposits, borrowings and subordinated debt in the fiscal year prior to when the takeover bid is announced.

The Table above provides the definition of deal and firm characteristics and their timing relative to the takeover event. All Stock prices, total returns, market returns, and shares outstanding figures used in the underlying calculations are from the CRSP database. Companies with missing market data in CRSP are supplemented with data obtained from SNL (where available). All other variables and underlying data are obtained from SNL Financial.

Table 1 - Number of total M&A bids, number of deals with synergies forecasts, and proportion of deals with synergy forecasts by year of deal announcement

Year	# of Deals	# of Deals with Synergy Forecasts	% of Deals with Synergy Forecasts
1994	4	0	0
1995	6	0	0
1996	6	2	33
1997	10	3	30
1998	14	5	36
1999	7	0	0
2000	6	3	50
2001	7	3	43
2002	4	3	75
2003	4	2	50
2004	5	3	60
2005	4	3	75
2006	8	2	25
2007	5	2	40
2008	1	1	100
2009	0	0	0
2010	1	0	0
All Years	92	32	35

Table 1 reports the number of merger and acquisition bids announced between Jan. 1, 1990 and Dec. 31, 2010. The initial sample is obtained from the SNL Financial imposing the restrictions described in section “Data and Descriptive Results“. Synergy forecasts are hand-collected-for each deal, inspecting news stories and press releases for a time period beginning one year prior to the deal announcement and ending three month after the transaction is completed or terminated. Deal-specific news stories and press releases are from sources on Factiva. *Year* is the calendar year in which a deal is announced. *Number of Deals* is the number of deals announced. *Number of Deals with Synergy Forecasts* is the number of bids accompanied by managerial forecasts of merger-related synergies. *Percentage of Deals with Synergy Forecasts* is the percentage of bids accompanied by managerial forecasts of merger-related synergies.

Table 2 – Present value of forecasted synergies

	Total Synergies (\$ M)	$\frac{\text{Total Synergies}}{\text{Combined Market Cap}}$ (%)
N	31	28
Mean	116.83	4.27%
Median	65.92	2.94%
StDev	123.05	3.07%
	Operating Cost Synergies (\$ M)	$\frac{\text{Operating Cost Synergies}}{\text{Combined Market Cap}}$ (%)
N	28	27
Mean	99.93	4.09%
Median	65.25	2.95%
StDev	92.89	2.62%
	G&A Cost Synergies (\$ M)	$\frac{\text{G&A Cost Synergies}}{\text{Combined Market Cap}}$ (%)
N	19	19
Mean	113.06	3.94%
Median	74.09	2.95%
StDev	105.54	2.50%

Table 2 reports summary statistics for the value of managerial forecasts of G&A cost, operating cost, and total synergies expressed in millions of dollar or as a percentage of combined pre-merger market value of equity. The combined market value of equity is the sum of the merging firms' stand-alone market capitalization (i.e., number of common shares outstanding multiplied by stock price) measured 60 trading days prior to the bid announcement date. The present value of forecasted synergies is computed following Kaplan and Ruback (1995), Gilson, Hotchkiss, and Ruback (2000), Houston, James, and Ryngaert (2001), Bernile and Bauguess (2010), and Dutordoir, Roosenboom, and Vasconcelos (2010). Details about the valuation model are provided in section "Research Methodology and Empirical Results". G&A cost (operating cost, total) synergies is the present value of forecasted G&A cost savings (operating cost savings, total synergistic gains) based on our valuation model.

Table 3 – Forecasted annual synergies relative to combined pre-merger operating performance

	$\frac{\text{Total Synergies}}{\text{Combined Total Revenue}}$ (%)	$\frac{\text{Total Synergies}}{\text{Target Total Revenue}}$ (%)
N	27	28
Mean	1.77%	5.12%
Median	1.17%	3.55%
StDev	1.77%	4.08%
	$\frac{\text{Operating Cost Synergies}}{\text{Combined Total Expenses}}$ (%)	$\frac{\text{Operating Cost Synergies}}{\text{Target Total Expenses}}$ (%)
N	26	27
Mean	2.14%	5.90%
Median	1.52%	4.32%
StDev	2.29%	4.57%
	$\frac{\text{Operating Cost Synergies}}{\text{Combined Operating Expenses}}$ (%)	$\frac{\text{Operating Cost Synergies}}{\text{Target Operating Expenses}}$ (%)
N	24	27
Mean	7.15%	22.63%
Median	3.47%	10.30%
StDev	8.85%	30.62%
	$\frac{\text{G\&A Cost Synergies}}{\text{Combined G\&A Expenses}}$ (%)	$\frac{\text{G\&A Cost Synergies}}{\text{Target G\&A Expenses}}$ (%)
N	17	18
Mean	21.25%	70.80%
Median	19.96%	71.33%
StDev	11.38%	42.61%

Table 3 reports summary statistics for managerial forecasts of G&A cost, operating cost, and total synergies (on an annual basis) as a percentage of combined and target pre-merger total expenses, operating expenses, or total revenue. The combined pre-merger total expenses (operating expenses, total revenue) is the sum of the merging firms' stand-alone total expenses (operating expenses, total revenue) as reported in the fiscal year prior to when the takeover bid is announced. G&A cost (operating cost, total) synergies is the amount of forecasted yearly G&A cost savings (operating cost savings, total synergistic gains). Total synergies is either the sum of operating cost synergies, interest cost synergies and revenue synergies when a breakdown is provided or the amount of projected total synergies when no breakdown is provided. All values refer to managerial raw forecasts of synergies for the first full year of combined operations. As described in section "Research Methodology and Empirical Results", when no details are provided about the timing of annual synergies, we assume a steady-state is expected to be reached in the first full year of combined operations.

Table 4 – Deal and merging firm characteristics by synergies forecasts availability

	No Forecast Sample				Forecast sample				P-value
	N	Mean	Median	StDev	N	Mean	Median	StDev	Wilcoxon
<u>Deal Characteristics</u>									
<i>Deal Size</i>									
Deal Value (\$M)	59	901.35	312.10	1,699.09	31	1,452.23	760.30	1,418.58	0.00
Deal Value incl. Debt (\$M)	59	1,792.27	585.10	4,358.11	31	2,355.81	1,392.90	1,915.56	0.00
Relative Asset Size (%)	51	56.96	39.17	55.18	28	74.08	51.33	50.01	0.06
Relative Equity Size (%)	48	40.77	30.22	40.26	29	51.68	41.08	37.88	0.05
<i>Corporate Focus</i>									
Same Investment Focus (Binary)	59	0.85	1.00	0.36	31	0.90	1.00	0.30	0.66
Same Property Focus (Binary)	59	0.86	1.00	0.35	31	0.90	1.00	0.30	0.76
Geographic Overlap (0-3)	59	0.76	0.00	1.09	31	0.55	0.00	0.81	0.55
<u>Bidder Characteristics</u>									
<i>Size</i>									
Market Cap (\$M)	59	2,276.08	1,001.92	3,281.12	31	2,388.63	1,324.21	2,667.52	0.19
Total Assets (\$M)	57	2,927.23	1,756.71	4,014.61	31	3,515.94	2,497.21	4,103.90	0.16
Total Revenue (\$M)	57	410.20	196.93	601.31	30	498.66	327.17	583.41	0.17
<i>Profitability</i>									
ROAA (%)	55	4.60	4.30	2.21	29	3.43	3.01	1.59	0.01
ROAE (%)	55	11.44	9.19	6.51	28	8.23	7.87	3.45	0.04
<i>Efficiency</i>									
G&A Expenses/Total Revenue (%)	57	4.62	4.95	2.88	29	5.83	4.60	5.13	0.59
Interest Expenses/Total Revenue (%)	56	19.83	19.41	7.19	30	20.76	19.91	6.21	0.69
<u>Target Characteristics</u>									
<i>Size</i>									
Market Cap (\$M)	48	553.69	248.92	979.47	28	994.93	480.89	994.19	0.00
Total Assets (\$M)	52	1,386.25	389.23	4,161.11	28	1,586.68	1,109.83	1,233.38	0.00
Total Revenue (\$M)	52	180.53	57.79	496.84	28	232.67	148.80	208.50	0.00
<i>Profitability</i>									
ROAA (%)	46	3.05	3.21	2.90	27	2.66	3.21	2.76	0.57
ROAE (%)	46	6.78	7.02	6.41	27	6.72	6.51	7.91	0.72
<i>Efficiency</i>									
G&A Expenses/Total Revenue (%)	51	9.98	5.64	18.52	27	6.96	5.77	4.67	0.95
Interest Expenses/Total Revenue (%)	51	21.78	21.43	10.76	28	22.82	20.43	8.82	0.67

Table 4 reports summary statistics for deal, bidder and target characteristics, conditional on whether management provides synergy forecasts (*No Forecast Sample* vs. *Forecast Sample*). The initial sample is obtained from SNL Financial imposing the restrictions described in section “Data and Descriptive Results“. All variables are defined in Appendix A. *P-value Wilcoxon* provides the two-sided p-value of the Wilcoxon rank-sum test under the null hypothesis that the two samples are drawn from the same distribution.

Table 5 – Relation between the forecasted synergies and deal, bidder, and target characteristics

Variable	PV of Total Synergies Combined Market Cap			PV of Operating Cost Synergies Combined Market Cap		
	(1)	(2)	(3)	(4)	(5)	(6)
	Coefficient (Std. Error)	Coefficient (Std. Error)	Coefficient (Std. Error)	Coefficient (Std. Error)	Coefficient (Std. Error)	Coefficient (Std. Error)
Constant	0.0037 (0.0200)	0.0056 (0.0208)	-0.0048 (0.0184)	-0.0033 (0.0088)	-0.0040 (0.0091)	-0.0071 (0.0063)
Target Assets/Bidder Assets (%)	0.0173** (0.0082)	0.0199** (0.0076)	0.0191** (0.0082)	0.0218*** (0.0077)	0.0230*** (0.0078)	0.0227** (0.0082)
Bidder G&A Costs/Revenue (%)	0.1827*** (0.0443)	0.2354*** (0.0603)	0.2317*** (0.0621)	0.2114*** (0.0461)	0.2321*** (0.0536)	0.2314*** (0.0550)
Target G&A Costs/Revenue (%)	0.2618*** (0.0909)	0.2889** (0.1104)	0.2754** (0.1195)	0.2409*** (0.0761)	0.2511*** (0.0820)	0.2473** (0.0895)
Bidder Interest Expenses/Revenue (%)	-0.1660** (0.0753)	-0.1966** (0.0911)	-0.2043** (0.0936)			
Target Interest Expenses/Revenue (%)	0.1472*** (0.0505)	0.1616*** (0.0538)	0.1679*** (0.0544)			
Geographic Overlap (0-3)		-0.0087 (0.0088)	-0.0083 (0.0091)		-0.0032 (0.0061)	-0.0031 (0.0064)
Same Property Focus (Binary) (1=Yes)			0.0125 (0.0092)			0.0036 (0.0077)
Adjusted R-squared	0.3444	0.3582	0.3296	0.4604	0.4423	0.4137
N	26	26	26	25	25	25

Table 5 reports estimates of the relation between the value of projected synergies and bidder, target, and deal characteristics. The dependent variable is the present value of synergies scaled by the combined pre-merger market capitalization as defined in Table 2. All other variables are defined in Appendix A. Models 1-3 report OLS regression coefficient estimates and robust standard errors (in parenthesis) of the model relating the total synergy forecasts and deal, bidder, and target characteristics. Model 4-6 report OLS estimates and robust standard errors (in parenthesis) of the model relating the operating cost synergy forecasts and deal, bidder, and target characteristics. Heteroscedasticity robust standard errors are in parenthesis. *, **, *** indicate significance of the coefficient estimate at the 10%, 5%, and 1% probability level, respectively.

Endnotes

ⁱ We use the terms “takeover”, “merger”, “acquisition” and “M&A” interchangeably throughout this study.

ⁱⁱ To our best knowledge, there is no study comparing the order of magnitude of synergies in real estate mergers with those in corporate mergers outside the industry.

ⁱⁱⁱ Corporate takeover studies in general show that hostile takeovers were common in the 1980s in the US and UK, but became less frequent in the 1990s and afterwards (Martynova and Renneboog, 2008). Most real estate M&A studies analyze M&A activity of US REITs in the 1990s and thereafter. The interference that hostility is less common in real estate and especially REIT takeovers than in the rest of the corporate world therefore seems to be not necessarily valid by itself.

^{iv} To our best knowledge, the only study examining synergy forecasts of mergers in a singular industry is that of Houston, James and Ryngaert (2001) analyzing large bank mergers.

^v See, for example, Allen and Sirmans (1987) for a summary of the key provisions a REIT must meet to be qualified.

^{vi} The REIT Modernization Act (RMA) of 1999, which was implemented in 2001, relaxed the restrictions to some extent, since it allows a REIT to own up to 100 percent of the stock of a taxable REIT subsidiary (TRS). RMA therefore allows REITs to engage in certain ancillary businesses that they were not able to participate in before and thereby enlarges the nature and extent of services that a REIT might offer. However, according to the RMA, TRS securities may not exceed 20 percent of a REIT's assets and several other restrictions remain in place respectively are newly introduced in the RMA. The bill's restrictions ensure “... that a REIT remains focused on core real estate ownership and operations” (Edwards, 1999, 1). Please refer to Edwards (1999) and Howe and Jain (2004) for a comprehensive review of the REIT Modernization Act.

^{vii} It is sometimes argued that the payout constraint is not as stringent as it appears, as REIT taxable net income is not totally representative of actual cash flows (FFO). Depreciation expenses, which are required to be deducted when calculating net income in accordance with generally accepted accounting principles (GAAP), allow available cash flow to exceed net income. Bradley, Capozza and Sequin (1998) argue in this regard that managers retain a great deal of discretion in setting dividend policy. They base their interference on the finding that dividend payouts in their sample of REITs are on average about twice net income. Feng, Price and Sirmans (2010) find that dividends are between 110% and 150% of net income in most cases. Hardin and Hill (2008), however, contend that REITs pursuing a growth strategy are in fact nevertheless constrained because of their relative inability to generate residual cash flow from operations. They base their argumentation on the fact that REITs employing a growth strategy are dependent on the capital markets for short-term bank debt, long-term debt and additional equity, since they are not able to use material amounts of self-generated capital for growth. Following their reasoning, this reliance on external capital requires REITs to be more transparent and to reduce agency costs associated with debt and equity capital by paying dividends well above the mandatory level as signal to the market. REITs are consequently “forced” by the market to pay excess dividends over and above what is required to meet regulatory requirements, thereby limiting their potential to acquire substantial amounts of additional properties to grow assets and subsequent funds from operations.

^{viii} The time frame restriction starting in 1994 was imposed because of three reasons: First, SNL's data availability (SNL's Real Estate M&A data base includes deals from 1994, but comprehensive coverage is from 1999 onwards). Second, there were hardly any REIT mergers in the years prior to 1994 (see, for example, Campbell, Gosh and Sirmans, 1998, 2001, and Campbell, Gambiona and Sirmans, 2009). Third, the time frame beginning 1994 is accepted as the “modern REIT era” after adoption of the “look-through” provision (see, for example, Womack, 2010). Deals announced until 1993 are consequently not comparable to those announced from 1994 onwards.

^{ix} In three cases, management does not forecast absolute dollar terms but only certain percentages or ratios that can be converted into dollar terms, assuming the necessary reference values are publicly available. This is the case for two of the three disclosures without absolute values. Unfortunately, it is not possible to calculate the corresponding

value in one forecast, as the target is a private REIT and the annual G&A expense value needed to calculate the corresponding absolute value is not available for the year prior to the merger announcement.

^x While the payment of a premium makes the disclosure of synergy forecast necessary respectively beneficial from bidding firms' perspective, if synergies are indeed available, this may not be true for stating the "real" magnitude of the forecasted amount of synergies. The decision of how much synergies to forecast seems to be not only dependent on the availability of incremental gains but also seems to have a strategic component. Synergy forecasts, like all other kind of voluntary disclosures, risk the loss of proprietary information to competitors (Verrecchia, 2001). This risk could lead management to disclose lower values than actually expected. In contrast, the thread of litigation costs and reputation loss in case the projections fail to materialize should deter management from making unrealistically high forecasts (Healy and Palepu, 2001). Dutordoir, Roosenboom and Vasconcelos (2010) name several cases in which firms have been sued for making supposedly unrealistic synergy estimates and/or had had to demonstrate in court how they had arrived at their synergy estimates. Bernile and Bauguess (2010) reveal that post-merger long-term returns reconcile discrepancies between forecasted synergies and the realized changes in operating performance. The ability of firms to deliver the projected synergies therefore seems to be a significant determinant of post-merger stock returns, which should defer management from making unrealistically high forecasts only to rationalize the paid premium. At the bottom line, we do not expect the mentioned factors to influence the reliability of our results concerning the importance of synergies as merger motive based on the relative forecasting frequencies, since all factors should have a similar impact on the disclosure decision in takeovers in the real estate industry and takeovers in other industries.

^{xi} The size of the sample and thereof constructed sub-samples may decrease in some of the subsequent analyses due to missing data entries of some variables. The finally available sample size used to calculate descriptive statistics and utilized in subsequent models is denoted as "N" in all tables depicting results.

^{xii} It is likely that savings in interest expenses are implicitly included also in other forecast that do not explicitly state from which source they expect to generate synergistic gains but merely state a certain amount of total expected synergies. Unfortunately, there is nothing we can do about this, since we are not able to detect these "hidden" interest expense savings.

^{xiii} There may as well be reasons for REITs not to disclose anticipated gains from the purchase of operating losses and other tax issues due to regulatory concerns. Our interference that tax motivations do not play a major role as merger motive for REITs based on the observed absence of tax gain forecasts should hence be regarded with caution.

^{xiv} We are not able retrieve the necessary value of the corresponding cost category needed to calculate the resultant dollar value for one forecast. We therefore eliminate the respective M&A deal in all of the following calculations.

^{xv} Following other studies computing the present value of synergy forecasts, we use the bidding firms' cost of equity as discount factor (see, for example, Dutordoir, Roosenboom and Vasconcelos, 2010, and Houston, James and Ryngaert, 2001). Bernile and Bauguess (2010), however, use the asset-weighted average of the merging firms' beta.

^{xvi} The firms' market beta is computed using daily stock returns over a period of approximately one year prior to the announcement of the deal. In accordance with Devos, Kadapakkam and Krishnamurthy (2009), we calculate the beta over the period AD-280 to AD-40. All Stock prices, total returns, market (S&P 500) returns etc. used throughout this study are from the Center of Research in Security Prices (CRSP) database. Companies with missing market data in CRSP are supplemented with data obtained from SNL (where available).

^{xvii} A risk premium of 7% is used in most other studies computing the present value of synergy forecasts. To keep our results comparable to those of the most comprehensive and recent study of Bernile and Bauguess (2010), we follow their way of calculation and use a 7.5% risk premium.

^{xviii} Ten-year US Treasury Bond yields at the time of the deal announcement are obtained from SNL Financial.

^{xix} As mentioned earlier, we were not able to calculate dollar value for one of the three forecasts stating ratios/percentages only. We therefore eliminated the respective M&A deal in all of the following calculations. The forecast sample is consequently reduced to 31 deals.

^{xx} The lower absolute values in our sample could merely be the result of the generally smaller deal sizes in REIT mergers. While Dutordoir, Roosenboom and Vasconcelos (2010) document an average (median) total deal value (transaction value including debt assumed) of \$4,353.9 million (\$1,176.1 million), our average (median) total deal size is well below this value with \$2,208.7 million (\$1,385 million). The average size of bidders and targets in other studies is also well above the corresponding values in our sample, while the average relative size of target assets (market cap) to bidder assets (market cap) is similar in our sample. The material difference of the average present value of total synergies in our sample (\$116.8 million) to those of other studies (all around \$800 million) compared to the difference in deal sizes and relative size of targets to bidders does however cast doubt on the assessment that the differences in absolute synergy values are caused solely by differences in sizing.

^{xxi} In accordance with Bernile and Bauguess (2010), we calculate the combined market cap of the bidder and target as the product of the firms' stock price and number of shares outstanding as of 60 trading days prior to the announcement date. Stock prices and number of shares outstanding are obtained from CRSP and SNL.

^{xxii} Houston, James and Ryngaert (2001) do in contrast to our calculations and those of Bernile and Bauguess (2010) assume an increase of the forecasted synergies in perpetuity at a rate equal to the long-term inflation forecast. Using a zero perpetual growth assumption (as we do), their average total valuation estimate as a percentage of combined firm value falls from 13% to 10.1% and is therefore in the same order of magnitude found in other studies.

^{xxiii} Higher leverage in this context refers to a higher debt-to-assets ratio. A REIT that expects the same present value of synergies as a regular industrial company, both having the same amount of assets on their balance sheet, would exhibit a higher PV synergy/combined market cap ratio simply because it operates with a higher leverage (and therefore less equity) than the industrial company.

^{xxiv} Another reason that could potentially bias our absolute present values and therefore also percentages is the treatment of taxes on the forecasted synergies. All other studies find that in most cases synergies are given as pre-tax figures, sometimes explicitly stated this way. The authors thus adjust all disclosed synergy values not explicitly stated as after-tax value to after-tax figures by applying a tax rate of around 35% (i.e., statutory federal tax rate over corporate income sometimes plus some extra percentage points for an assumed state tax rate). We do not find any indication in the reviewed press releases surrounding the deal announcement that would encourage any deductibility of a tax rate on the forecasted cash flows. The reason for the absence of pre- or after-tax notions is likely the fact that REITs in general tend to pay a very low corporate income tax. As they are required to distribute at least 90% of their net income as dividends (prior to 2001 the requirement was 95%), potential tax payments would be relatively small. We therefore do not make any adjustments to the raw forecasts concerning tax payments.

^{xxv} The average discount rate by Houston, James, and Ryngaert (2001) for their sample of large bank mergers is 15.05%. All other related studies do not explicitly state the average discount rate used to calculate the present value of synergy forecasts. The rates used for our REIT sample is nevertheless expected to be considerably lower than the ones used in other studies computing the present value of synergy forecasts, simply because betas of REITs on average tend to be well below those of conventional firms in most other industries.

^{xxvi} We exclude expected savings in interest expenses from our calculations of (operating) cost synergies, since savings in interest expenses do not seem to be included in the cost saving calculations in other studies. Including interest expense savings would therefore make our results not comparable to those of other studies. In order to highlight the exclusion of the associated savings, we explicitly label our cost savings as "operating" cost synergies.

^{xxvii} We also compute average and median values of standard control variables (e.g. percentage of deal value paid in cash/stock, binary variable for whether the deal is terminated, etc.) but do not detect any significant differences between the forecast and the no forecast sample (results not shown).

^{xxviii} We subsequently restricted our full sample during the course of the study to deals where the bidder is a publicly-traded REIT. 89 of the 92 bidders in the initial REIT sample are Equity-REITs, two are Mortgage-REITs, and one a Hybrid-REIT. 84 of the 92 targets are also Equity-REITs, three are Hybrid-REITs, while 5 are REOCS without a REIT status. Two M&A deals of the 92 deals in the initial REIT sample had to be deleted in the course of our study. One because we were not able to calculate synergy savings in absolute terms from the percentage based forecast due to data unavailability and another because the transaction was a complex reverse merger where the target had a paired-share REIT structure and the accuracy of financial data of the firm could not be guaranteed. Both of the deleted deals involve Equity-REITs as target.

^{xxix} Locations of the headquarters are obtained from SNL. SNL divides the US into six regions: The Mid-Atlantic, Midwest, New England, Southeast, Southwest, and West.

^{xxx} Bernile and Bauguess (2010) also do not find any significant difference for the geographic proximity proxy in their study analyzing a broad sample across multiple industries.

^{xxxi} We use the Wilcoxon rank-sum test since the limited size of the forecast sample does not allow for valid standard mean difference t-tests.

^{xxxii} The same investment focus variable is not included in the subsequent regressions, since the same property focus variable and the geographical overlap variable (both included) are expected to be more suitable proxies for corporate focus. The same property focus variable is actually automatically omitted due to exact collinearity when entered into our model in addition to the other two corporate focus variables.

^{xxxiii} Profitability measures (ROAA and ROAE) are not included in the subsequent regressions, since the cost based operating efficiency measures (i.e., G&A and interest expenses) are expected to be more suitable proxies for operating performance.

^{xxxiv} As robustness check, we also substitute the relative asset size variable by relative equity size (i.e., target market cap divided by bidder market cap) and re-run the regressions (results not shown). The overall results stay materially the same, except that the relative equity size variable is statistically significant at the five percent level only and the explanatory power of the model decreases to about 38%.

^{xxxv} As robustness check, we also substitute the geographic overlap variable by a binary variable for whether bidder and target have their headquarters in the same state and/or same region and re-run the regressions (results not shown). The overall results stay materially the same. The coefficients on the alternative variables are both slightly negative and insignificant and the explanatory power of the models (measured as adjusted R-squared) decreases to about 44% in both cases.