

Executive Optimism and Corporate Decision Making: Evidence from Private Asset Transactions

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Abstract

We investigate almost 4,000 private asset transactions by US REITs and use the exercise of corporate stock options by their CEOs, CFOs and other executive board members to investigate the effect of executive optimism on private-asset deal pricing. Using a two-staged hedonic model, we generate predicted values for all the private asset transactions in the sample, and subsequently compare these predictions with actual purchase prices.

If a REIT led by a strongly optimistic CEO is the buyer in a transaction, we find a price premium of around 5.2 to 6.7 percent, while low investor optimism is associated with purchase price discounts of around 12 percent. For CFO optimism, the effects are more pronounced, especially when the CEO and the CFO are both optimistic. We find that investors who diversify across asset types overpay even more, especially if they are highly optimistic. When the CEO and the CFO have diverse outlooks in terms of optimism, we no longer find significant over- or underpricing.

Keywords

Overoptimism, overconfidence, behavioral bias, behavioral finance, private assets.

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I. Introduction

Behavioral biases influence investment decision-making, and that is also likely to hold for overoptimism, which is a commonly investigated behavioral bias in investment markets. The main conclusions of the existing behavioral finance literature concerning the effects of investor optimism are that corporations led by overoptimistic managers are more active in the corporate takeover market, and that they tend to be more risk taking – reflected in higher stock volatility and higher leverage (Malmendier and Tate, 2008; Ben-David, Graham and Harvey, 2013) and in overinvestment (Campbell et al, 2011).

However, most of the empirical studies tend to look at rather exceptional corporate decisions, like mergers and acquisitions. Little is known about the effect of overoptimism on day-to-day investment decision making, since these decisions are hard to observe. Moreover, none of the existing studies analyze the effect of differences or agreement in managerial outlook within the executive board.

We propose to use Real Estate Investment Trusts (REITs) as a platform to study the effect of investor optimism on the pricing of private asset transactions. REITs are ideally suited for this purpose. On the one hand, this approach allows us to identify overoptimistic executives using the proxies proposed by Malmendier and Tate (2005) and Campbell et al. (2011), based on the exercise of stock options by CEOs, CFOs and other executive board members. On the other hand, we can relate these executive characteristics to the private asset transactions made by the REITs they manage. These real assets allow for far more precise measurement of over- or underpricing than takeovers, since we can control for the characteristics of the asset, its location and time in a very precise manner. As far as we can see, there is no other industry for which the link

between executive characteristics and corporate transaction pricing can be established so clearly.

Focusing on the real estate market to evaluate the impact of optimism is also beneficial in another way. Miller (1977) argues that overconfidence becomes more important in illiquid markets with limited or no short sale opportunities. If there are limitations for short sales in illiquid markets, optimistic investors will not be aware of opposing valuations of pessimistic investors who could otherwise engage in short-selling and would thereby reveal a more negative market outlook. As a result, optimist investors may bid up the prices in such markets. Real estate markets are illiquid and lack short sale opportunities, and thereby offer a good environment to test the impact of optimism on deal pricing.

We test the impact of executive overoptimism on transaction prices where REITs are involved, either as buyers or as sellers, controlling for property and firm characteristics. We develop a two-staged hedonic valuation model of commercial properties to generate predicted prices for approximately 16,000 real estate transactions made by REITs between 2001 and 2013¹, and then relate the actual purchase and sales prices to these predictions, distinguishing the transactions of REITs led by overoptimistic CEOs, CFOs and other executives from other transactions. We can link executive optimism to deal pricing for almost 4,000 real asset transactions.

¹ We also calculate the difference between the actual transaction price and the expected price calculated from a joint regression of REIT transactions and a large control sample of transactions by other types of buyers and sellers, including REITs for which we cannot determine executive overoptimism. We then compare the means of the residual transaction prices for REITs with overoptimistic managers and their non-overoptimistic counterparts and do a second stage regression analysis. The results are comparable with those presented in this paper.

We also make a contribution to the real estate literature. To date, there is no evidence of the effects of investor optimism on direct (commercial or residential) property transactions, which is probably related to the fact that investor optimism is very hard to measure in that setting. Databases of commercial and residential property transaction prices are becoming available, but they do not have much, if any, information about those making the investments, so one cannot establish whether these are overoptimistic or not.² By linking REIT data to direct property data, we can.

So our paper has four main contributions. First, we investigate executive overoptimism effects on firms' normal business operations by evaluating overoptimistic executives' corporate deal making in private assets. Second, this paper is the first to analyze the effects of board diversity in terms of executive optimism by studying whether the CEO, the CFO and the other executives have similar or different optimism levels and by evaluating the impact of this on the asset deals they do. Third, we study the impact of the investment environment, by separating good times from bad times and by looking at REIT investments in asset types they do less business in. The fourth contribution of this study is to analyze the effects of investor overoptimism on commercial real estate transactions, which has not been done before.

We find that REITs led by overoptimistic CEOs pay higher prices than their counterparts after controlling for property and firm characteristics. We find purchase price premiums between 5.6 and 6.6 percent, depending on the overoptimism measure. We also test the impact of low CEO optimism and document that low CEO optimism is

² To investigate the effects of the other main behavioral bias in investment markets, loss aversion, this identification issue is not a problem, since that bias can be measured by looking at the transactions itself. As a result, loss aversion has been investigated for real estate quite extensively, both for residential real estate (Genesove and Mayer 2001; Eichholtz and Lindenthal 2013), for commercial real estate (Bokhari and Geltner 2011), and for REITs (Crane and Hartzell 2011).

associated with a purchase price discount of 12 percent. As expected, during the crisis period, the differential in prices paid between overoptimistic CEOs and their counterparts reduces and becomes statistically insignificant. Our findings can help understand the role of overoptimistic investors in running up real asset prices during boom periods.

We also document that of the executives board, only CEO and CFO optimism matters in the pricing of the asset deals their firm makes. We define a new board diversity measure in terms of CEO and CFO optimism. Our findings indicate that when both executives are optimistic, REITs pay a 12-percent higher than predicted price for real assets during the non-crisis period. For diversifying property deals these findings are more pronounced. However, if the CEO and CFO disagree in outlook, we no longer find a significant impact on deal pricing.

REITs investing in assets that differ from their core business line buy these assets at a premium. The source of this diversification premium can be related to lower level of information in the alternative asset type or can alternatively be due to executive overoptimism. In order to test this, we interact our optimism measures with an asset type diversification dummy. We document that if a deal is diversified by property type, overoptimistic managers pay 17.5 percent more than their counterparts during the non-crisis period.

In the remainder of this paper, we will first discuss the literature in Section II, and will subsequently discuss our method and expected outcomes in Section III. Section IV provides data sources and descriptive statistics. Section V provides results, and we will end the paper with a short concluding section.

II. Literature

The key challenge to investigate the effects of overoptimism and/or overconfidence has been to develop credible proxies to measure this in the first place. The early behavioral finance papers studied stock market trading by professionals and non-professionals, and used experience and gender as overoptimism proxies (Barber and Odean 2001; Benos 1998; Hirshleifer and Luo 2001). To put it bluntly, these papers' key assumption was that (successfully) experienced men are overoptimistic, and inexperienced women are not.

Malmendier and Tate (2005) brought this literature to a higher level by proposing more credible proxies for overoptimism, which have now become the standards in the literature. Malmendier and Tate studied the effects of managerial overoptimism on corporate investment activity, and developed proxies that are based on the way executives treat their stock options and how they trade in their own companies' stocks. Their measures were based on the central idea that overoptimistic managers are willing to have more exposure to the specific risks of their corporations than they have to. Rational behavior would predict the avoidance of specific risk where possible.

Once these measures were firmly established, they could be used to investigate the effects of managerial overoptimism on corporate actions. Recent examples of such studies are Campbell et al. (2011) and Hirshleifer, Low and Teoh (2012).

Ben-David, Graham and Harvey (2013) used another approach to study managerial overoptimism. They use survey evidence for the CFOs of large US corporations and show that overoptimistic managers are miscalibrated, having narrower confidence intervals with higher lower bounds for their expected returns.

Using these measures, researchers have been able to investigate the effects of investor and managerial overoptimism on behavior and performance. Regarding behavior, firms led by overoptimistic CEOs are more likely to engage in M&A activity (Malmendier and Tate, 2008), while (Chuang and Lee 2006) and Eichholtz and Yonder (2014) show that optimistic investors trade more frequently and are more likely to make riskier investments. They also tend to have higher leverage (Ben-David, Graham and Harvey, 2013). Last, they perform worse on average, than their less optimistic peers (Eichholtz and Yönder 2014; Malmendier and Tate 2005; Malmendier and Tate 2008). But while this performance effects are well established, the source of this underperformance is not. This is the key contribution of our paper.

III. Method

We measure optimism by looking at the exercise of stock options, following Campbell et al. (2011). We define a CEO as overoptimistic if he is a holder of an exercisable stock option that is 67 percent in-the-money (we also study the effects of a 100 percent in-the-money cut-off), i.e. if he postpones exercising a profitable exercisable stock option, possibly with the expectation that he will do better keeping it, and accepting the avoidable specific risk in doing so.³

The logic behind this approach is that a CEO can directly increase his wealth at no risk by exercising the in-the-money stock option, but he postpones exercising the

³ We first calculate the realizable value per option, which is the ratio of the total realizable value of the exercisable options to the number of exercisable options (ExecuComp variables for the total realizable value of the exercisable options and the number of exercisable options are OPT_UNEX_EXER_EST_VAL and OPT_UNEX_EXER_NUM, respectively). We then create the estimated exercise price by subtracting the realizable value per option from the year-end stock price (the ExecuComp variable for stock price is PRCCF). The average moneyness is calculated by the ratio of the realizable value per option to the estimated exercise price.

option, probably because he believes that the option will do even better as a result of ongoing appreciation of his company's stock price, due to his superior management skills. This can be interpreted as a sign of overoptimism, since the CEO is already overexposed to company-specific risk. The rational action would be to exercise and diversify the proceeds.

We classify a CEO as overoptimistic if we observe such behavior in the year before making an investment. This lagged optimism measure also helps us observe the effects of time and different market circumstances on the relationship between optimism and investment decisions. Additionally, and to be more comparable to the existing literature, we look for persistence in this behavior and call CEOs overoptimistic if this behavior occurs at least twice. In the second case, we consider such CEOs as overoptimistic for their entire reign, assuming that overoptimism is consistent as Malmendier and Tate (2005) and Campbell et al. (2011) do.

Alternative interpretations of this failure to exercise could be the CEO's access to profitable private information, or loyalty to the company. The former interpretation is unlikely, however, since Eichholtz and Yönder (2014) show that REITs lead by CEOs who do not immediately exercise their stock options when they can perform worse than other REITs, so if private information would be a driver for the CEO's behavior, this information is not likely to be of the profitable kind. CEO company loyalty could be another motive for the late exercise of corporate stock options. However, as far as we know, this has not been investigated in the literature, and the dominant interpretation of

late option exercise is overoptimism. We therefore follow this interpretation in the remainder of the paper.⁴

As proposed by Campbell et al. (2011), we also develop a low optimism measure. We classify a CEO as low-optimistic if he exercises a stock option when the option is below 30 percent in-the-money. We expect that low CEO optimism can lead to lower valuation of investments and lower transaction prices, if any. Again, we use a lagged and a persistent low optimism measure.

According to Hirshleifer and Luo (2001), overoptimism leads to overestimation of the precision of private information signals. As a result, overoptimistic people rely more on private information than on public information. When an overoptimistic investor receives a positive private information signal on an investment, he is more likely to believe that the information is precise and accordingly, more willing to make that investment compared to his counterparts. Moreover, overoptimistic investors underestimate the risk associated with their investments (Chuang and Lee 2006).

If such an overoptimistic investors have similar expected return patterns to their counterparts, they may be willing to pay more for an investment, as they value the asset more highly than their counterparts due to misinterpretation of the available information. Indeed, Ben-David, Graham and Harvey (2013) document that CFOs have narrower confidence intervals for their expected returns and accordingly higher lower bounds. This indicates that they will be bidding more than their peers even when the expected return to their investments are the same as their peers’.

⁴ We do not go in deep discussion of possible alternative interpretations of this behavior, such as obtaining private information or tax purposes, since it has been discussed well in the literature and this measure of overoptimism is shown to be robust (Malmendier and Tate 2005; 2008).

Based on this literature, we expect that overoptimistic investors are more likely to value potential acquisitions higher and to pay premiums compared to their non-overoptimistic counterparts when buying assets. We expect the opposite for the low-optimistic buyers.

In the base hedonic model, our dependent variable is the logarithm of the transaction price per square foot.⁵ On the right hand side, the model includes property characteristics such as size, age, number of stories, number of units within the property, dummies for whether the property is renovated or is within a portfolio sale, type of the buyer, year dummies and location dummies.⁶ We either control for economic region or metro area in different specifications to control for location of the property similar to Bokhari and Geltner (2011). We interact each control variable with each property type dummy in order to capture the differences in the impact of each hedonic for each property type. The model is as follows:

$$(1) \ln p_i = \sum_k \alpha_k X_{ik} + \sum_{kl} \beta_{kl} X_{ik} T_{il} + \varepsilon_i$$

where i stands for a transaction of property i , j stands for REIT j and l stands for property type l . In this model X is a vector of property characteristics such as property size, age, buyer or seller type, location (either economic region or metro area) and quarterly dummies. T is the property type vector. The base is office buildings and we have dummy variables for retail, apartment and industrial buildings. Each property characteristic is interacted with each property type dummy.

⁵ The results are robust to the use of the logarithm of the transaction price as the dependent variable.

⁶ The results are robust to the exclusion of portfolio transactions.

We estimate Equation 1 on the full sample of 16,154 asset transactions. Once we calculate the expected price from Equation 1, we calculate the residual price, ε_i , which is the difference between the actual price and predicted price.

The aim of our study is to assess whether investor overoptimism as defined above can systematically predict this difference. To test that, we perform a second stage regression of the residual price on optimism dummies and firm characteristics.

$$(2) \hat{\varepsilon}_i = \theta_0 + \theta_1 \text{Optimism}_i^j + \sum_m \partial_m Y_i^j + \vartheta_i$$

Optimism as defined in Equation 2 is included as dummies, with medium optimism (option moneyness between 30 percent and 66 or 100 percent) as the base. Vector Y stands for firm characteristics and quarter fixed effects in quarter $t-1$. The firm characteristics cover firm size (the logarithm of total assets), debt ratio (the ratio of total debt to total assets), cash stock (the ratio of cash and equivalents to total assets) and property type Q (the average of the ratio of market value of assets to book value of assets by property type). We expect that larger firms are more diversified and less risky so the impact of firm size on the price of the property purchased is negative. The impact of cash stock on purchase price should be positive since firms with higher cash stock have more financial flexibility. REITs with higher debt ratio allow more risk-taking so we expect them to buy with a premium. We estimate all equations for REIT purchases, limiting our sample to the transactions of REITs for which we can identify whether the REIT CEO is overoptimistic or not.

We expect the coefficient of the overoptimism dummy in Equation 2 to be positive when a REIT is a buyer, since we expect that overoptimistic managers buy at a higher price than non-overoptimistic managers. We expect the opposite sign for low optimism.

All regressions are run for the non-crisis and crisis periods, separately. We expect that the impact of optimism should be more significant during the boom period than in the crisis period. As we show in the descriptive statistics, there is a higher differential between the minimum and maximum transaction prices when we compare the non-crisis period to the crisis period. This indicates that during good times, investors may bid higher prices as they expect that prices will continue to go up in the future. However, during bad times, investors are more reluctant to make higher bids. As a result, less deals occur with less information asymmetry. Thus, we expect that the premium for overoptimism is more severe during good times than bad times.

In a similar manner, in addition to the base model, we track deals that are diversifying the investor's asset portfolio. We know the asset type focus for each REIT, and we also observe the asset type of the purchased asset, so we can create a diversifying deal dummy if the asset type of the REIT is different from the asset type of the property purchased. For instance, if an office REIT purchases a shopping mall, we call it a diversifying deal.

We test whether diversifying deals are made at a premium, as there are two possible reasons for this. The first is higher asymmetry between the buyer and a seller in a diversifying deal so that the buyer may pay a premium due to information asymmetry. The second explanation is that the buyer is overoptimistic and believes that he can do

better in a diversified deal where he holds a lower level of information. To disentangle overoptimism from information asymmetry, we interact the diversified dummy with the optimism measures. We expect the coefficient of the interaction term to be positive.

IV. Data and Sample Statistics

A. Sources

We first obtain data for real property transactions from Real Capital Analytics (RCA). The RCA database covers commercial real estate transactions exceeding US\$5 million and provides information on the property that can be used in our hedonic models. The specific sample we obtain from this database involves all transactions in which a listed real estate company is either a buyer or a seller. Initially, our sample consists of 16,154 transactions, with the sample period running from 2001 through 2013. In our analysis, we divide our sample into two sub-periods. The first subsample covers the non-crisis years (2001-2006 and 2010-2013) and the second subsample involves the crisis period (2007-2009). This allows us to study changes in optimistic investors' relative asset valuation during the boom and the crisis.

The RCA database keeps track of the key characteristics of the properties. We are able to observe the location of the property by its street address and as well by economic region, state, metro area and city.⁷ The RCA database also contains hedonics of the properties, including the size of the property, the year it was built, the number of stories, the property type (office, retail, industrial, ...), information whether the property is

⁷ In our analyses, we control for metro area and economic region in unreported regressions. There are 98 metro areas in our sample and we create a dummy variable for each of them in order to use in our analyses similar to Bokhari, S, and D Geltner 2011. Loss Aversion and Anchoring in Commercial Real Estate Pricing: Empirical Evidence and Price Index Implications. *Real Estate Economics* 39:635-670..

renovated at any time and whether the property transaction is part of a portfolio investment.⁸ We limit our sample to the four main property types: office, apartment, retail and industrial and create a dummy variable for each.

Having identified the REITs that were investing and divesting in properties during this time period, we then gather data on stock options for each of these REIT CEOs from the ExecuComp database. We end up with 52 REITs whose CEOs can be classified either as overoptimistic or not. We explain how we measure optimism in detail in the next section.

Then, we match the overoptimism data for the REITs available in the ExecuComp database with the REITs' real estate transactions data from RCA based on the REIT-CEO name and the year of transaction. The number of transactions in the final buyer and seller database after matching the REITs with the ExecuComp and Thomson Reuters Filings databases is 3,865.

We also control for firm characteristics in the second stage of our analysis. We obtain data on firm characteristics from SNL Financial. We gather total assets, total debt, cash and equivalents, market capitalization, common equity and property type by REIT by year. In our regressions we control for the logarithm of total assets as the firm size, the ratio of total debt to total assets as the debt ratio, the ratio of cash and equivalents as the cash stock. We believe that cash stock is an important variable for REITs as they have to pay out 90 percent of their income to shareholders, and accordingly, REITs are limited to cash availability (Eichholtz and Yönder 2014). Following Hartzell, Sun and Titman (2006), we control for property type Q in order to capture investment opportunities. We

⁸ For portfolio transactions, RCA reports the price of each of the underlying properties within the portfolio.

first calculate firm Q as the ratio of market value of assets (total assets plus market capitalization minus common equity) to book value of assets (total assets). Then we calculate the mean of Q by property type, by year for all REITs in order to obtain property type Q. By using property type Q instead of firm Q, we avoid possible endogeneity issues. We match the lag of these firm characteristics by the transaction year of the property. For instance, if a REIT purchases a property in year t, in our models we use the firm characteristics at year t-1 in order not to deal with possible causality issues.

B. Sample Statistics and Hedonic Regression Results

Panel A of Table 1 presents descriptive statistics for the whole sample. We summarize the mean of the high and low optimism dummies. In our sample, there is an overoptimistic buyer in 38 to 49 percent of the deals if we measure optimism annually using the 66 percent and 100 percent moneyness cut-offs, respectively. If we use the persistent high optimism measure, the share rises to 69 percent. Only 7 percent of the deals are by low-optimistic buyers. If we seek for persistence, then the percentage of low-optimistic buyers goes up for 17 percent. The shares are consistent with the literature as overoptimistic managers make more frequent investments.

– Insert Table 1 here –

In our analysis, we also control for buyers' financial characteristics using the advantage of limiting the buyers to REITs. The average debt to asset ratio is around 51 percent for the whole sample, and this increases to 54 percent during the crisis. The cash-

to-asset ratio is 2 percent, and the market-to-book ratio is around 1.41 for the complete sample period.

Table 2 provides results for the initial hedonic valuation model for the real asset transactions. Each column of Table 2 shows the regression results of the hedonic model for the total number of transaction in office (3,491 transactions), retail (4,431 transactions), industrial (4,073 transactions), and apartment properties (4,159 transactions). The R-squared of the models ranges from 50 percent for offices to 71 percent for apartments.

We find that all of the coefficients are in line with expectations and the literature. As age of the property increases and the size of the property increases, the transaction price per square foot declines. If the property is renovated, there is a premium ranging from 10 to 17 percent and if the property is a part of a portfolio transaction, there is a significant discount up of to 10 percent.

– Insert Table 2 here –

The hedonic model is key for interpreting all subsequent results presented in the paper. A biased model could result in faulty conclusions. So we need to judge the validity of the model. One way to do this is by comparing the model's outcomes with estimation outcomes of hedonic models for commercial real estate in the literature. Doing that shows that the signs of our regression coefficients, as well as the explanatory power of the

model, are indeed largely in line with those previously found by Eichholtz, Kok and Quigley (2010) and Fisher et al. (2003).⁹

IV. Optimism and Private Asset Deals

A. Optimism during Good and Bad Times

Table 3 presents the results for the complete sample. We regress the residual prices for asset deals where a REIT manager is a buyer on the high and low optimism measures that we create. The first three columns show the annual lagged optimism measures and the last three columns show persistent optimism measures.

Overall, we find a positive significant impact of high optimism and a negative impact of low optimism. In 4 out of 6 regressions, we find a significant impact of optimism. The high optimism premium ranges from 5.6 percent to 6.6 percent depending on the specification, so if buyers are overoptimistic they pay around 6 percent more than their moderately optimistic peers. If an investor is low-optimistic, then he purchases assets at a 12-percent discount. Among the controls, we find that if more cash is available, the investors pay a significant premium: a 1-percent increase in the cash-to-asset ratio leads to an purchase price premium of 1.6 percent.

– Insert Table 3 here –

⁹ Eichholtz, Kok and Quigley (2010) regress the logarithm of price on the hedonics of the properties, where the choice of hedonics is closely in line with ours. The signs of the coefficients are very similar to ours when we also use the logarithm of the price instead of the logarithm of the price per square foot. The R-squared in our model is higher than the R-squared in Eichholtz, Kok and Quigley (2010) in unreported regression of the logarithm of price. Fisher et. al (2003) also estimate the logarithm of the price per square feet but use less hedonics. The impact of the property size is also significantly negative in their model. Similarly, they mix different property types in their model and similar to us control for property type dummies. While they control for year dummies and geographic location by macro region, we use deeper controls: quarterly time dummies and dummies for metro areas.

In Table 4, we separately evaluate the boom periods and the crisis period. Overall, our findings show that the impact of optimism is more evident for the boom period. In Panel A of Table 4, we find a significant impact of optimism in five of six regressions. The high-optimism premium goes up to 7 to 8 percent depending on the specification. The discount for low optimism turns out to be 14 percent if we use lagged measure. The findings are in line with our expectations.

In Panel B, we show the findings for the crisis period. It is important to note that the crisis is directly linked to the commercial real estate market as it is mainly a real estate crisis. In all regressions, we do not find any significant impact of optimism. This finding is in line with our expectations that during the crisis, the price differentials might go down in different deals as we also observe in the descriptive statistics.

– Insert Table 4 here –

B. Optimism and Diversified Deals

In this section, we first evaluate the impact of diversification for the whole sample. We document that if a buyer is involved in a diversifying deal by investing in an asset type outside of his firm's focus, we find that he pays 11 percent more than in a focused deal as presented in Table 5. We then interact the diversifying-deal dummy with the optimism measures. We do not find any significant impact of the interaction terms. But in four out of six specifications, the direct impact of optimism remains significant.

– Insert Table 5 here –

In Table 6, we separately analyze the relationship for the non-crisis periods and the crisis period. The diversified-deal premium increases to 14 percent during the boom period. When we interact diversified-deal dummy with optimism, we document that the optimism premium becomes more severe when the investors are involved in a diversified deal. The overoptimistic buyer pays 18 to 22 percent more than his peers in a diversified deal. The direct diversified-deal premium becomes insignificant when the buyer is not overoptimistic. We do not find any significant impact of low optimism in diversified deals. During the crisis period, we do not find any effect of making diversified deals in addition to no impact of optimism.

– Insert Table 6 here –

C. CEO Optimism and Agreement among Executives

In the literature regarding the effects of executive optimism, the CEO tends to be the focus of attention (Malmendier and Tate, 2008; Campbell et al, 2011; Ben-David, Graham and Harvey, 2013). We aim to enrich the analysis, by studying the interplay between a corporation's executives, who may agree or disagree in terms of market outlook.

The managerial optimism literature argues that if there are short sales, the bidding by optimistic investors can be limited by short selling behavior of other market

participants. In private asset markets, short selling is not possible, removing a possible check on investor optimism. In that situation, counterbalancing forces may come from the executive team. For example, if the CEO is overoptimistic while the other executives are not, they may reduce part or all of the effects on deal pricing reported above. Inversely, if both the CEO and the other members of the executive team are optimistic, counterbalancing opinions are not heard, possibly resulting in acquisitions at even higher price premiums than we reported previously.

We investigate whether board unity and diversity in terms of executive optimism matters for the pricing of asset purchases by the firm. Furthermore, we study the influence of specific members of the executive team, most notably the CEO and the CFO.

Overall, our hypothesis is that when a CEO's outlook is similar to that of the CFO, i.e. they both score high or low on optimism, the firm purchases assets at premium or discounted prices, respectively, and these premiums and discounts would likely be higher than those reported previously in this paper, since their agreement of opinion would likely confirm them in their beliefs. On the other hand, if there is diversity in outlook between the CEO and the CFO, we would expect the premiums and discount to be lower or even to vanish at all, due to the counterbalancing forces of these differences in opinion.

We first analyze whether the optimism level of REIT CFOs and other executive team members apart from the CEO and CFO affect the pricing of these REITs' asset purchases. We assess CFOs' and other executives' optimism as before, by calculating the mean of moneyness of their corporate stock options. Table 7 shows the results.

Our findings indicate that CFO optimism matters for asset deal pricing. We find that REITs having CFOs with high optimism pay 11 percent more than their peers during the non-crisis period. On the other hand, REITs with CFOs showing low optimism make investments with a 35-percent discount during the non-crisis period. Panel B of Table 7 shows that the impact of CFO optimism is more pronounced for diversifying deals during the non-crisis period in our sample. We find that high CFO optimism in these transactions is associated with a 20-21 percent premium, while low optimism is associated with a 38 percent discount. When we evaluate the impact of the remainder executives' optimism, we document that it does not have a significant impact on the prices paid in private asset deals. Overall, for the asset purchases made by REITs, individual CEO and CFO optimism matters, but other executives' optimism levels have no discernible influence.

– Insert Table 7 here –

We next evaluate the interplay between the outlook of the CEO and the CFO, distinguishing situations in which their opinions conform to those in which they contradict. Table 8 provides results, with panel A providing non-crisis results in general, and panel B providing results for diversifying deals only. When both executives are highly optimistic, we find that the companies they manage buy properties at a 12 percent premium during the non-crisis period. The impact is more prominent – with a premium of 28 percent – when the deal is a diversifying deal, so when the REIT executives are less well informed about the asset they buy. The relationship is consistent when both the CEO and CFO have low optimism. We find that when both managers have low optimism, a

REIT makes a private deal 22 percent lower than expected price during the non-crisis period. If the deal is a diversified deal during non-crisis period, the discount goes up to 40 percent.

Inversely, when a CFO disagrees with an optimist CEO, we do not find a significant difference in the asset purchasing price for the REIT they manage. Similarly, when the CEO has low optimism while the CFO is highly optimistic, the price of a REIT asset deal is not statistically different from its predicted price.

So the main finding of this part of our paper is that agreement of opinion among executives, and specifically between the CEO and CFO, leads to more pronounced effects of optimism and pessimism, while diversify reduces these effects considerably. These findings are in line with our hypothesis and to our knowledge, they are first to show how executive diversity may affect corporate outcomes.

– Insert Table 8 here –

V. Concluding Remarks

The finance literature on overoptimism shows that companies led by overoptimistic CEOs invest more, have higher leverage (Ben-David, Graham and Harvey, 2013) and tend to perform worse (Eichholtz and Yönder 2014; Malmendier and Tate 2005; Malmendier and Tate 2008). However, there is not much evidence on the effects of overoptimism on the going-concern transactions of their companies and no one at all in private asset markets.

This paper aims to fill this gap. We study private property transactions by US REITs, and first determine whether a REIT CEO is overoptimistic or not by looking at whether or not he exercised his stock options when they were 67% (100%) in the money, following Campbell et al. (2011). We subsequently distinguish REITs led by overoptimistic CEOs from their peers. Our aim here is to determine the level of optimism of an investor given the advantage of using a REIT sample. We also determine low optimism.

To study how investor optimism affects real deals, we then study the property purchases of the REITs managed by overoptimistic CEOs, and compare those with the outcomes of a two-staged hedonic model we employ to generate predicted values for all property transactions in our sample. We regress residual prices from the hedonic model on our optimism measures on REIT firm financials.

We find a significant high-optimism premium. Depending on the specification, this premium varies between 5.6 percent and 6.6 percent. A possible interpretation for this finding is that overoptimistic people misperceive information signals and tend to underestimate risks. Or, since these investors are miscalibrated, they have narrower confidence intervals and accordingly, a higher lower bound for their confidence intervals possibly resulting with in a higher reservation price. As a result, they are prone to pay more for their investments. Additionally, we find a low-optimism discount at 12 percent.

We then separately analyze the relationship for the good times and bad times. The impact of optimism only holds during the boom period. The high-optimism premium goes up to 8 percent and the low-optimism discount declines to 14 percent during the non-crisis period. We finally show that investors pay a premium in diversified deals if

they are overoptimistic. In a diversified deal, the high-optimism premium increases to 22 percent.

We further evaluate optimism for the other members of the executive team, with a special focus on the number two: the CFO. Our findings indicate that while CFO optimism has similar effects to CEO optimism, other executives' optimism has no impact on the pricing of private asset deals. When we analyze the effects of CEO and CFO agreement, we find that executive agreement of opinion leads to more pronounced premiums and discounts in asset purchases. However, when the CEO and the CFO have different opinions, we no longer find significant purchase price premiums or discounts.

Our findings are the first to show the impact of executive optimism on the pricing of private asset deals by the firms they manage. While the firms of highly optimistic CEOs tend to overpay when they purchase assets, this effect disappears if their CFO has a different outlook. Different opinions in executive boards may lead to more balanced firm behavior.

References

Barber, BM, and T Odean 2001. Boys Will Be Boys: Gender, Overconfidence, and Common Stock Investment. *Quarterly Journal of Economics* 116:261-292.

Ben-David, I, JR Graham, and CR Harvey 2013. Managerial Miscalibration. *Quarterly Journal of Economics* 128:1547-1584.

Benos, AV 1998. Aggressiveness and Survival of Overconfident Traders. *Journal of Financial Markets* 1:353-383.

Bokhari, S, and D Geltner 2011. Loss Aversion and Anchoring in Commercial Real Estate Pricing: Empirical Evidence and Price Index Implications. *Real Estate Economics* 39:635-670.

Campbell, TC, M Gallmeyer, SA Johnson, J Rutherford, and BW Stanley 2011. CEO Optimism and Forced Turnover. *Journal of Financial Economics* 101:695-712.

Chuang, W-I, and B-S Lee 2006. An Empirical Evaluation of the Overconfidence Hypothesis. *Journal of Banking and Finance* 30:2489-2515.

Crane, AD, and JC Hartzell 2011. Is there a Disposition Effect in Corporate Investment Decisions: Evidence from Real Estate Investment Trusts. *Working Paper*.

Eichholtz, P, N Kok, and JM Quigley 2010. Doing Well by Doing Good: Green Office Buildings. *American Economic Review* 100:2494-511.

Eichholtz, P, and T Lindenthal 2013. That's What We Paid for It; The Spell of the Home Purchase Price through the Centuries. *Working Paper*.

Eichholtz, P, and E Yönder 2014. CEO Overconfidence, REIT Investment Activity, and Performance. *Real Estate Economics* forthcoming.

Fisher, J, D Gatzlaff, D Geltner, and D Haurin 2003. Controlling for the Impact of Variable Liquidity in Commercial Real Estate Price Indices. *Real Estate Economics* 31:269-303.

Genesove, D, and C Mayer 2001. Loss Aversion and Seller Behavior: Evidence from the Housing Market. *Quarterly Journal of Economics* 116:1233-1260.

Hartzell, JC, L Sun, and S Titman 2006. The Effect of Corporate Governance on Investment: Evidence from Real Estate Investment Trusts. *Real Estate Economics* 34:343-76.

Hirshleifer, D, A Low, and SH Teoh 2012. Are Overconfident CEOs Better Innovators? *Journal of Finance* 67:1457-1498.

Hirshleifer, D, and GY Luo 2001. On the Survival of Overconfident Traders in a Competitive Securities Market. *Journal of Financial Markets* 4:73-84.

Malmendier, U, and G Tate 2005. CEO Overconfidence and Corporate Investment. *Journal of Finance* 60:2661-2700.

— 2008. Who Makes Acquisitions? CEO Overconfidence and the Market's Reaction. *Journal of Financial Economics* 89:20-43.

Miller, EM 1977. Risk, Uncertainty, and Divergence of Opinion. *Journal of Finance* 32:1151-1168.

Table 1
Descriptive Summary of CEO Optimism

Variable	Obs.	Mean	Std. Dev.	Min	Max
Panel A - All Sample (2001-2013)					
Price per sqft	3,864	237.61	435.69	8.66	12979.43
High CEO Optimism (67%, lagged)	3,864	0.49	0.50	0.00	1.00
High CEO Optimism (100%, lagged)	3,864	0.38	0.49	0.00	1.00
Low CEO Optimism (lagged)	3,864	0.07	0.25	0.00	1.00
High CEO Optimism (67%)	3,864	0.69	0.46	0.00	1.00
High CEO Optimism (100%)	3,864	0.58	0.49	0.00	1.00
Low Optimism	3,864	0.17	0.37	0.00	1.00
Diversified Deal	3,864	0.26	0.44	0.00	1.00
Debt Ratio	3,864	0.52	0.09	0.04	1.04
Cash-to-Asset Ratio	3,864	0.02	0.02	0.00	0.16
log(Firm Size)	3,864	15.41	0.83	12.28	17.30
Market-to-Book	3,864	1.41	0.15	1.01	2.06
Panel B - Non-Crisis (2001-2006, 2010-2013)					
Price per sqft	3,057	240.73	457.36	8.66	12979.43
High CEO Optimism (67%, lagged)	3,057	0.44	0.50	0.00	1.00
High CEO Optimism (100%, lagged)	3,057	0.32	0.47	0.00	1.00
Low CEO Optimism (lagged)	3,057	0.07	0.26	0.00	1.00
High CEO Optimism (67%)	3,057	0.66	0.47	0.00	1.00
High CEO Optimism (100%)	3,057	0.60	0.49	0.00	1.00
Low CEO Optimism	3,057	0.18	0.39	0.00	1.00
Diversified Deal	3,057	0.25	0.43	0.00	1.00
Debt Ratio	3,057	0.51	0.09	0.04	1.04
Cash-to-Asset Ratio	3,057	0.01	0.02	0.00	0.16
log(Firm Size)	3,057	15.40	0.84	12.28	17.30
Market-to-Book	3,057	1.38	0.14	1.07	2.06
Panel C - Crisis (2007-2009)					
Price per sqft	807	225.83	341.35	12.43	6433.65
High CEO Optimism (67%, lagged)	807	0.70	0.46	0.00	1.00
High CEO Optimism (100%, lagged)	807	0.63	0.48	0.00	1.00
Low CEO Optimism (lagged)	807	0.04	0.20	0.00	1.00
High CEO Optimism (67%)	807	0.78	0.41	0.00	1.00
High CEO Optimism (100%)	807	0.50	0.50	0.00	1.00
Low CEO Optimism	807	0.10	0.31	0.00	1.00
Diversified Deal	807	0.28	0.45	0.00	1.00
Debt Ratio	807	0.54	0.09	0.23	0.81
Cash-to-Asset Ratio	807	0.02	0.02	0.00	0.16
log(Firm Size)	807	15.45	0.83	13.06	16.91
Market-to-Book	807	1.51	0.15	1.01	1.67

Notes The table presents the summary statistics of CEO optimism by deals. Each panel shows descriptive statistics by the sample period. The high optimism dummy gets one if a REIT CEO does not exercise stock options that are exercisable and 67 percent in-the-money and 100 percent in-the-money. The low optimism dummy gets 1 if a REIT CEO exercises an option that is below 30 percent in-the-money. We use a lagged and a persistent optimism measure.

Table 2
Hedonic Regressions by Property Type
All sample (2001-2013)

VARIABLES	(1) Price per sqft in logs (Office)	(2) Price per sqft in logs (Retail)	(3) Price per sqft in logs (Industrial)	(4) Price per sqft in logs (Apartment)
Ln(Sqft)	-0.053*** [0.014]	-0.198*** [0.011]	-0.217*** [0.011]	-0.063*** [0.013]
Age Group=1	-0.224*** [0.021]	-0.257*** [0.022]	-0.154*** [0.022]	-0.228*** [0.017]
Age Group=2	-0.357*** [0.024]	-0.476*** [0.028]	-0.288*** [0.023]	-0.393*** [0.020]
Age Group=3	-0.478*** [0.040]	-0.418*** [0.033]	-0.367*** [0.028]	-0.470*** [0.022]
Age Group=4	-0.380*** [0.064]	-0.411*** [0.043]	-0.391*** [0.037]	-0.467*** [0.037]
Age Group=5	-0.296*** [0.052]	-0.075 [0.056]	-0.133* [0.069]	-0.523*** [0.054]
Story 11-20	0.171*** [0.033]	0.814** [0.376]	-0.015 [0.156]	0.337*** [0.056]
Story 20+	0.196*** [0.049]	1.401*** [0.165]		0.309*** [0.079]
CBD	0.317*** [0.032]	0.605*** [0.067]	0.243*** [0.062]	0.360*** [0.036]
Renovated	0.118*** [0.025]	0.167*** [0.024]	0.164*** [0.030]	0.100*** [0.020]
Portfolio	-0.046** [0.020]	-0.090*** [0.022]	0.003 [0.019]	-0.097*** [0.016]
# of Buildings	0.008 [0.005]	0.030*** [0.006]	0.028*** [0.006]	-0.000 [0.000]
Constant	5.188*** [0.187]	6.785*** [0.170]	6.851*** [0.187]	4.840*** [0.193]
Quarter Fixed Effects	Yes	Yes	Yes	Yes
Metro Fixed Effects	Yes	Yes	Yes	Yes
Buyer Type Fixed Effects	Yes	Yes	Yes	Yes
Seller Type Fixed Effects	Yes	Yes	Yes	Yes
Observations	3,491	4,430	4,074	4,158
Adjusted R-squared	0.501	0.537	0.511	0.710

Notes: Regression results of the hedonic model for the whole sample by each property type including the control group. The dependent variable is the logarithm of the transaction price per square foot. The model includes fixed effects for the buyer types, the seller types, the metro areas in order to control for location and the quarterly time dummies. The base for the property type in Model 1 is office. Heteroskedasticity robust standard errors are in brackets. * indicates significance at the 10 percent level. ** indicates significance at the 5 percent level. *** indicates significance at the 1 percent level.

Table 3
Impact of High and Low CEO Optimism on Residual Price
All sample (2001-2013)

VARIABLES	(1) Residual Price per sqft in logs	(2) Residual Price per sqft in logs	(3) Residual Price per sqft in logs	(4) Residual Price per sqft in logs
High CEO Optimism (67%, lagged)	0.035 [0.030]			
High CEO Optimism (100%, lagged)		0.052* [0.030]		
Low CEO Optimism (lagged)	-0.109*** [0.041]	-0.108** [0.043]		
High CEO Optimism (67%)			0.067** [0.027]	
High CEO Optimism (100%)				0.059** [0.029]
Low CEO Optimism			-0.049 [0.038]	-0.052 [0.038]
Debt Ratio	0.178 [0.205]	0.177 [0.203]	0.180 [0.209]	0.138 [0.210]
Cash Ratio	1.594** [0.620]	1.553** [0.608]	1.502** [0.625]	1.568** [0.623]
log(Firm Size)	0.023 [0.018]	0.024 [0.018]	0.025 [0.018]	0.028 [0.017]
Market-to-Book	0.011 [0.181]	0.026 [0.179]	0.031 [0.185]	0.034 [0.188]
Constant	-0.477 [0.427]	-0.526 [0.415]	-0.568 [0.423]	-0.587 [0.420]
Year Fixed Effects	Yes	Yes	Yes	Yes
Observations	3,864	3,864	3,864	3,864
Adj. R-squared	0.042	0.044	0.044	0.043

Notes: Regression results of the second-stage model. The dependent variable is the residual of the logarithm of the transaction price per square foot from the estimation of Equation 2. The high-optimism dummy gets one if a REIT CEO does not exercise stock options that are exercisable and 67 percent in-the-money and 100 percent in-the-money. The low-optimism dummy gets 1 if a REIT CEO exercises an option that is below 30 percent in-the-money. We use a lagged and a persistent optimism measure. Firm financials are also lagged for one year. Heteroskedasticity robust standard errors are in brackets. * indicates significance at the 10 percent level. ** indicates significance at the 5 percent level. *** indicates significance at the 1 percent level.

Table 4
Impact of CEO Optimism during Good and Bad Times

VARIABLES	(1) Residual Price per sqft in logs	(2) Residual Price per sqft in logs	(3) Residual Price per sqft in logs	(4) Residual Price per sqft in logs
<i>Panel A - Non-Crisis Period (2001-2006, 2010-2013)</i>				
High CEO Optimism (67%, lagged)	0.066** [0.030]			
High CEO Optimism (100%, lagged)		0.067** [0.031]		
Low CEO Optimism (lagged)	-0.119*** [0.042]	-0.125*** [0.045]		
High CEO Optimism (67%)			0.081*** [0.027]	
High CEO Optimism (100%)				0.075*** [0.028]
Low CEO Optimism			-0.057 [0.039]	-0.060 [0.039]
Debt Ratio	0.279 [0.213]	0.248 [0.215]	0.249 [0.229]	0.220 [0.231]
Cash Ratio	1.889*** [0.610]	1.872*** [0.622]	1.814*** [0.663]	1.836*** [0.679]
log(Firm Size)	0.033* [0.018]	0.033* [0.018]	0.035* [0.019]	0.036* [0.019]
Market-to-Book	-0.094 [0.186]	-0.071 [0.186]	-0.058 [0.190]	-0.061 [0.195]
Constant	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Observations	3,057	3,057	3,057	3,057
Adj. R-squared	0.054	0.054	0.053	0.053
<i>Panel B - Crisis Period (2007-2009)</i>				
High CEO Optimism (67%, lagged)	-0.068 [0.087]			
High CEO Optimism (100%, lagged)		0.026 [0.075]		
Low CEO Optimism (lagged)	-0.070 [0.101]	-0.045 [0.100]		
High CEO Optimism (67%)			0.040 [0.068]	
High CEO Optimism (100%)				0.025 [0.058]
Low CEO Optimism			-0.019 [0.063]	-0.020 [0.062]
Debt Ratio	-0.218 [0.345]	-0.129 [0.362]	-0.130 [0.344]	-0.180 [0.344]
Cash Ratio	0.887 [1.140]	0.568 [1.125]	0.537 [1.180]	0.627 [1.108]
log(Firm Size)	0.009 [0.033]	0.003 [0.033]	0.001 [0.035]	0.008 [0.038]
Market-to-Book	0.352 [0.272]	0.440* [0.259]	0.424 [0.292]	0.437 [0.268]
Constant	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Observations	807	807	807	807
Adj. R-squared	0.011	0.009	0.010	0.009

Notes: Regression results of the second-stage model. The dependent variable is the residual of the logarithm of the transaction price per square foot from the estimation of Equation 2. The high-optimism dummy gets one if a REIT CEO does not exercise stock options that are exercisable and 67 percent in-the-money and 100 percent in-the-money. The low-optimism dummy gets 1 if a REIT CEO exercises an option that is below 30 percent in-the-money. We use a lagged and a persistent optimism measure. Firm financials are also lagged for one year. Heteroskedasticity robust standard errors are in brackets. * indicates significance at the 10 percent level. ** indicates significance at the 5 percent level. *** indicates significance at the 1 percent level.

Table 5
CEO Optimism in Diversified Deals
All sample (2001-2013)

VARIABLES	(1)	(2)	(3)	(4)	(5)
	Residual Price per sqft in logs				
		<u>Lagged Optimism</u>		<u>Persistent Optimism</u>	
Diversified by Type	0.113*** [0.042]	0.065 [0.055]	0.099* [0.053]	0.103** [0.052]	0.148** [0.056]
High CEO Optimism (67%)		0.015 [0.029]		0.048** [0.022]	
*Diversified by Type		0.114 [0.075]		0.074 [0.086]	
High CEO Optimism (100%)			0.046* [0.027]		0.055** [0.023]
*Diversified by Type			0.056 [0.085]		0.005 [0.090]
Low CEO Optimism (lagged)		-0.099** [0.041]	-0.094** [0.040]	-0.004 [0.039]	-0.008 [0.037]
*Diversified by Type		-0.018 [0.093]	-0.036 [0.093]	-0.144 [0.109]	-0.159 [0.107]
Debt Ratio	0.257 [0.205]	0.288 [0.194]	0.282 [0.193]	0.283 [0.198]	0.246 [0.201]
Cash Ratio	1.612** [0.681]	1.418** [0.648]	1.422** [0.625]	1.319** [0.635]	1.408** [0.628]
log(Firm Size)	0.025 [0.017]	0.030* [0.016]	0.032** [0.016]	0.034** [0.016]	0.036** [0.016]
Market-to-Book	0.177 [0.187]	0.111 [0.177]	0.132 [0.179]	0.099 [0.212]	0.109 [0.205]
Constant	-0.810* [0.436]	-0.804* [0.420]	-0.877** [0.402]	-0.882* [0.451]	-0.899** [0.425]
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes
Observations	3,864	3,864	3,864	3,864	3,864
Adj. R-squared	0.048	0.053	0.053	0.056	0.055

Notes: Regression results of the second-stage model. The dependent variable is the residual of the logarithm of the transaction price per square foot from the estimation of Equation 2. The high-optimism dummy gets one if a REIT CEO does not exercise stock options that are exercisable and 67 percent in-the-money and 100 percent in-the-money. The low-optimism dummy gets 1 if a REIT CEO exercises an option that is below 30 percent in-the-money. We use a lagged and a persistent optimism measure. A diversified-deal dummy gets one if the asset type of the REIT is different from the asset type of the property purchased. Firm financials are also lagged for one year. Heteroskedasticity robust standard errors are in brackets. * indicates significance at the 10 percent level. ** indicates significance at the 5 percent level. *** indicates significance at the 1 percent level.

Table 6
CEO Optimism in Diversified Deals during Good and Bad Times

VARIABLES	(1)	(2)	(3)	(4)	(5)
	Residual Price per sqft in logs				
	Lagged Optimism			Persistent Optimism	
<i>Panel A - Non-Crisis Period (2001-2006, 2010-2013)</i>					
Diversified by Type	0.133**	0.042	0.075	0.081	0.132*
	[0.050]	[0.048]	[0.051]	[0.051]	[0.067]
High CEO Optimism (67%)		0.015		0.045*	
		[0.030]		[0.026]	
*Diversified by Type		0.216***		0.149*	
		[0.072]		[0.088]	
High CEO Optimism (100%)			0.021		0.057**
			[0.025]		[0.024]
*Diversified by Type			0.171**		0.075
			[0.085]		[0.099]
Low CEO Optimism (lagged)		-0.097**	-0.099**	-0.011	-0.014
		[0.042]	[0.040]	[0.043]	[0.040]
*Diversified by Type		-0.069	-0.084	-0.131	-0.151
		[0.090]	[0.089]	[0.105]	[0.107]
Firm Financials	Yes	Yes	Yes	Yes	Yes
Constant	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes
Observations	3,057	3,057	3,057	3,057	3,057
Adj. R-squared	0.058	0.073	0.069	0.072	0.068
<i>Panel B - Crisis Period (2007-2009)</i>					
Diversified by Type	0.046	0.063	0.132	0.219*	0.167
	[0.078]	[0.134]	[0.122]	[0.124]	[0.106]
High CEO Optimism (67%)		-0.028		0.098	
		[0.094]		[0.075]	
*Diversified by Type		-0.081		-0.183	
		[0.155]		[0.148]	
High CEO Optimism (100%)			0.098		0.078
			[0.075]		[0.057]
*Diversified by Type			-0.166		-0.177
			[0.158]		[0.119]
Low CEO Optimism (lagged)		-0.153	-0.097	0.056	0.048
		[0.097]	[0.106]	[0.063]	[0.067]
*Diversified by Type		0.419**	0.343**	-0.235	-0.206
		[0.174]	[0.163]	[0.156]	[0.151]
Firm Financials	Yes	Yes	Yes	Yes	Yes
Constant	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes
Observations	807	807	807	807	807
Adj. R-squared	0.011	0.013	0.017	0.018	0.018

Notes: Regression results of the second-stage model. The dependent variable is the residual of the logarithm of the transaction price per square foot from the estimation of Equation 2. The high-optimism dummy gets one if a REIT CEO does not exercise stock options that are exercisable and 67 percent in-the-money and 100 percent in-the-money. The low-optimism dummy gets 1 if a REIT CEO exercises an option that is below 30 percent in-the-money. We use a lagged and a persistent optimism measure. A diversified-deal dummy gets one if the asset type of the REIT is different from the asset type of the property purchased. Firm financials are also lagged for one year. Heteroskedasticity robust standard errors are in brackets. * indicates significance at the 10 percent level. ** indicates significance at the 5 percent level. *** indicates significance at the 1 percent level.

Table 7
CFO and Executive Optimism

Panel A - Non-Crisis Period						
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
High CFO Optimism	0.109**					
	[0.046]					
High CFO Optimism (100%)		0.108**				
		[0.046]				
Low CFO Optimism			-0.342***			
			[0.083]			
High Executive Optimism (mean)				0.048		
				[0.038]		
High Executive Optimism (100%, mean)					0.069	
					[0.042]	
Low Executive Optimism (mean)						-0.011
						[0.061]
Firm Financials	Yes	Yes	Yes	Yes	Yes	Yes
Constant	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,057	3,057	3,057	3,057	3,057	3,057
Adjusted R-squared	0.053	0.053	0.063	0.049	0.047	0.049
Panel B – Diversified Deals during Non-Crisis Period						
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
High CFO Optimism	0.198*					
	[0.100]					
High CFO Optimism (100%)		0.213**				
		[0.099]				
Low CFO Optimism			-0.384**			
			[0.149]			
High Executive Optimism (mean)				0.172*		
				[0.094]		
High Executive Optimism (100%, mean)					0.158	
					[0.100]	
Low Executive Optimism (mean)						0.161
						[0.179]
Firm Financials	Yes	Yes	Yes	Yes	Yes	Yes
Constant	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	773	773	773	773	773	773
Adjusted R-squared	0.103	0.107	0.103	0.098	0.095	0.083

Notes: Regression results of the second-stage model. The dependent variable is the residual of the logarithm of the transaction price per square foot from the estimation of Equation 2. The high-optimism dummy gets one if a REIT manager does not exercise stock options that are exercisable and 67 percent in-the-money. The low-optimism dummy gets 1 if a REIT manager exercises an option that is below 30 percent in-the-money. We use a lagged and a persistent optimism measure. Firm financials are also lagged for one year. Heteroskedasticity robust standard errors are in brackets. * indicates significance at the 10 percent level. ** indicates significance at the 5 percent level. *** indicates significance at the 1 percent level.

Table 8
CFO Agreement with CEOs

Panel A - Non-Crisis Period				
VARIABLES	(1)	(2)	(3)	(4)
	Agreement with CEO		Disagreement with CEO	
High CEO Optimism & High CFO Optimism	0.124***			
	[0.046]			
Low CEO Optimism & Low CFO Optimism		-0.225*		
		[0.113]		
High CEO Optimism & Low CFO Optimism			-0.060	
			[0.087]	
Low CEO Optimism & High CFO Optimism				-0.077
				[0.083]
Firm Financials	Yes	Yes	Yes	Yes
Constant	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Observations	3,057	3,057	3,057	3,057
Adjusted R-squared	0.054	0.051	0.047	0.047
Panel B – Diversified Deals during Non-Crisis Period				
VARIABLES	(1)	(2)	(3)	(4)
	Agreement with CEO		Disagreement with CEO	
High CEO Optimism & High CFO Optimism	0.276***			
	[0.096]			
Low CEO Optimism & Low CFO Optimism		-0.398**		
		[0.159]		
High CEO Optimism & Low CFO Optimism			0.953	
			[0.640]	
Low CEO Optimism & High CFO Optimism				-0.008
				[0.130]
Firm Financials	Yes	Yes	Yes	Yes
Constant	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Observations	773	773	773	773
Adjusted R-squared	0.117	0.102	0.091	0.082

Notes: Regression results of the second-stage model. The dependent variable is the residual of the logarithm of the transaction price per square foot from the estimation of Equation 2. The high-optimism dummy gets one if a REIT manager does not exercise stock options that are exercisable and 67 percent in-the-money. The low-optimism dummy gets 1 if a REIT manager exercises an option that is below 30 percent in-the-money. We use a lagged and a persistent optimism measure. Firm financials are also lagged for one year. Heteroskedasticity robust standard errors are in brackets. * indicates significance at the 10 percent level. ** indicates significance at the 5 percent level. *** indicates significance at the 1 percent level.