Large Sample Valuations of Tenancies-in-Common

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In this paper, we value a large sample of tenant-in-common (TIC) investments based on cash flow projections found in 194 private placement memoranda. Our sample of TIC offering documents covers approximately 20% of the TIC industry from 2004 to 2009. Based on the sponsor's projections, we find that the TICs on average were worth 83.6 cents per $1 paid by TIC equity investors. However, we have found that sponsors' cash flow projections overstate likely returns to investors by assuming unrealistically high rental growth rates and unrealistically low vacancy and caps rates.

Adjusting only the sponsors' cap rates alone to rates reflecting market conditions lowers the average valuations by 9.5 cents to 74.1 cents per $1. Adjusting the sponsors' unrealistic rental growth rate and vacancy assumptions lowers the average value further. These low valuations are consistent with average upfront fees and reserves equal to 28% and 12% of equity. Our results suggest that private placement sponsors have considerable latitude in their projections, and that investors should view projected returns with skepticism.

I. Introduction

Syndicated (or pooled private) TICs are private placement real estate investments that are specifically packaged and sold by sponsors as undivided real estate interests.[2] These TICs are almost invariably purchased for the purpose of a 1031 exchange.[3] 1031 exchanges allow investors to defer taxes on a realized gain from the sale of a property if it is exchanged for a like-kind property within a short time period. Historically, TIC

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[2] For more on TICs see (Borden 2009, Borden and Wyatt 2004, Cuff 2002, Lopez 2007, Pederson 2005, Rich 2010, Updike 2007, and Whitman 2007). We have written two earlier papers discussing commercial real estate valuation: (Husson et al 2012) discusses the methodology used in valuing TICs and the sensitivity of the valuation to assumed values for key parameters and (Husson et al 2013) computes appropriate discount rates for commercial real estate investments more generally.

[3] For a discussion of the economics of tax deferred real estate exchanges see (Ling and Petrova 2008).

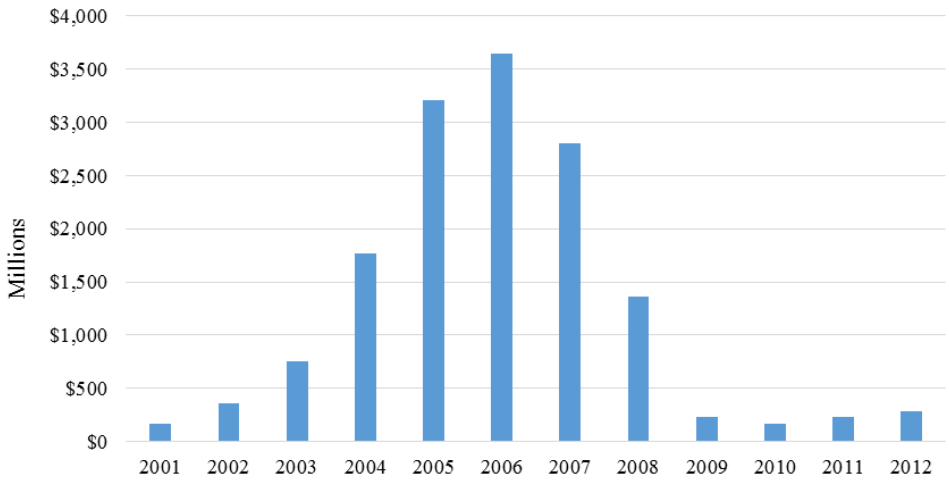
interests were generated primarily through family gifting or estate planning where the real estate in question was inherited by multiple family members or family trusts.

By selling undivided interests in a larger property, TIC sponsors allow investors to match the value of a sold property with a replacement property. TIC issuance increased dramatically after 2002, when the IRS adopted Rev. Proc. 2002-22.

Sponsors include projected future cash flows to equity investors in the private placement memorandums (PPMs) circulated to potential investors. Although not typically available to the public, PPMs are the primary means used to determine whether a particular TIC investment is fairly valued. The lack of widespread dissemination of PPMs has allowed TICs to be sold with inadequate scrutiny. The projected future cash flows did not support the price investors paid for TIC equity, on average, even after including the potential tax benefit from a 1031 exchange.

The total amount of new TIC equity issuance increased from $167 million in 2001 to $3.7 billion in 2006. After 2007, many TICs stopped paying distributions to equity investors. It was not uncommon for non-performing TICs to be restructured, effectively wiping out the value of the equity investors. The industry shrank precipitously from 2007 to 2009 and, with only $278 million on new TIC equity issued in 2012, it is currently a small fraction of what it used to be. Figure 1 shows the new TIC equity issued by year from 2001 to 2012.[4]

Figure 1: New TIC Equity Issued



[4] Data on the TIC industry from 2001 to 2006 is from Omni Research & Consulting, LLC as cited by (Borden 2009). Data from 2007 to 2012 is from Orchard Securities.

The next section of the paper describes the 194 TICs in our database. Section III uses the cash flow projections in the TIC offering documents to produce present values for the TICs. Section IV provides evidence that sponsors use unrealistically aggressive assumptions to boost their cash flow projections. We compare the cap rate used in developing the sponsor projections with averages of market cap rates by property type, location, and year, and find that TIC sponsors typically assume cap rates that result in much higher valuations. Section V concludes.

II. Description of Database

We have reviewed offering documents for 487 real estate private placements, most of which are TICs. The vast majority of TICs purchase an income-generating property with the proceeds from an equity issuance and a mortgage loan. TICs' offering documents include projected distributions to TIC investors as well as any interest and principal due on the loan for a period of 3 to 10 years. The offering documents project a sale of the property and distribution of the sales proceeds after paying the outstanding mortgage balance and sales fees to TIC investors. Offering documents often include projections for annual and terminal distributions to TIC investors. From our set of 487 real estate private placements, we have identified the 194 TICs for which we have projections for both annual and terminal distributions to TIC investors.

The total amount of equity issued by our 194 TICs from 2004 to 2009 is $2.2 billion. Figure 2 shows the total equity issued by our 194 TICs and the fraction of the total TIC industry that our database represents. Most of the TICs in our database were issued from 2006 to 2008, with $915 million issued in 2007 alone. Our database covers 33% and 31% of all equity issued in TICs in 2007 and 2008, respectively.

Figure 2: Database TIC Equity Issued and Fraction of the Total TIC Industry, by Year.

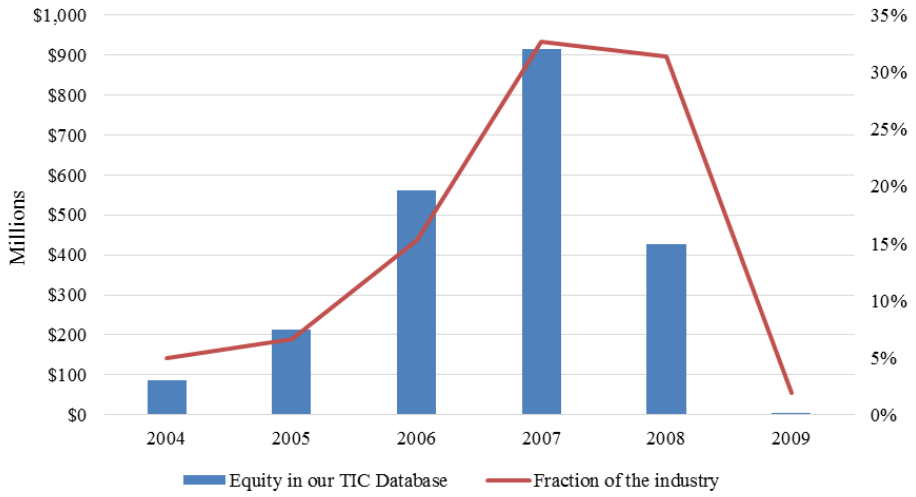


Figure 3 shows the equity issued by type of property. About $758 million in equity was issued by TICs purchasing suburban office buildings. Suburban multi-family residences and suburban lodging properties ranked second and third, with equity issuances of $402 million and $211 million, respectively.[5]

Figure 3: Equity Issued by Property Type

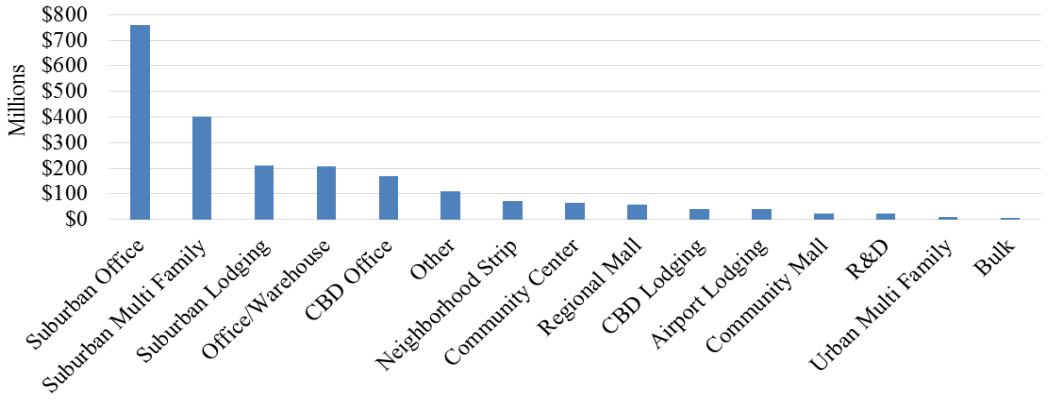


Figure 4 shows the total TIC equity issued by sponsor. The main TIC sponsors in our database are: CORE Realty Holdings with $259 million in equity issuances; DBSI with $249 million; and Triple Net Properties with $246 million. DBSI, one of the main TIC sponsors according to our database, filed for bankruptcy protection in November 2008.[6] The top three sponsors issued about 34% of the TIC equity in our database.

[5] We followed the commercial real estate property categories used by Integra Realty Resources, Inc. We used (National Association of Realtors 2005) for guidance in classifying real estate property. We used (Yap and Circ 2003) for further guidance in classifying industrial property.

[6] Several of DBSI's executive officers were indicted for conspiracy to commit securities fraud, involving their TIC interest offerings. See (Federal Bureau of Investigation, 2013).

Figure 4: Equity Issued by Sponsor

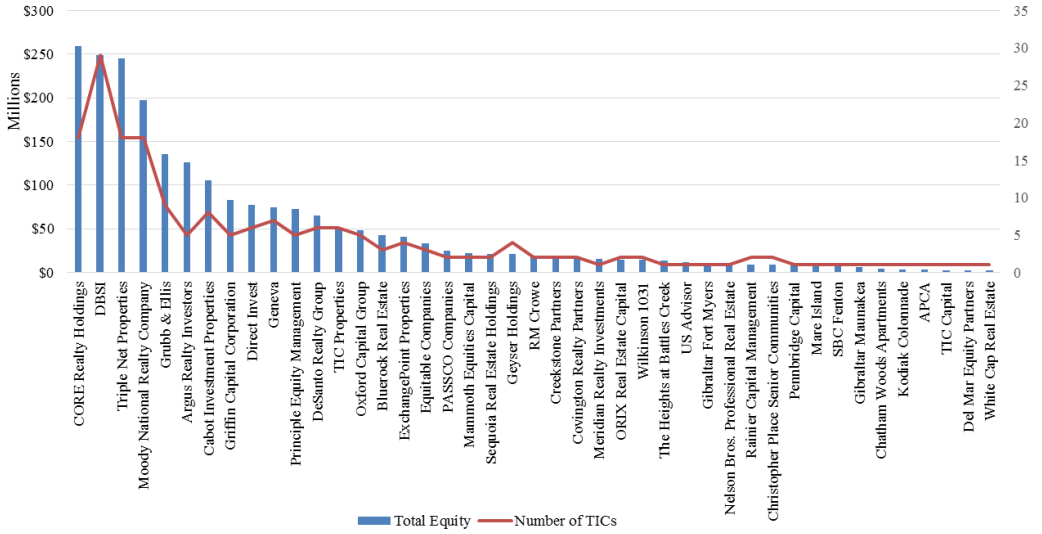
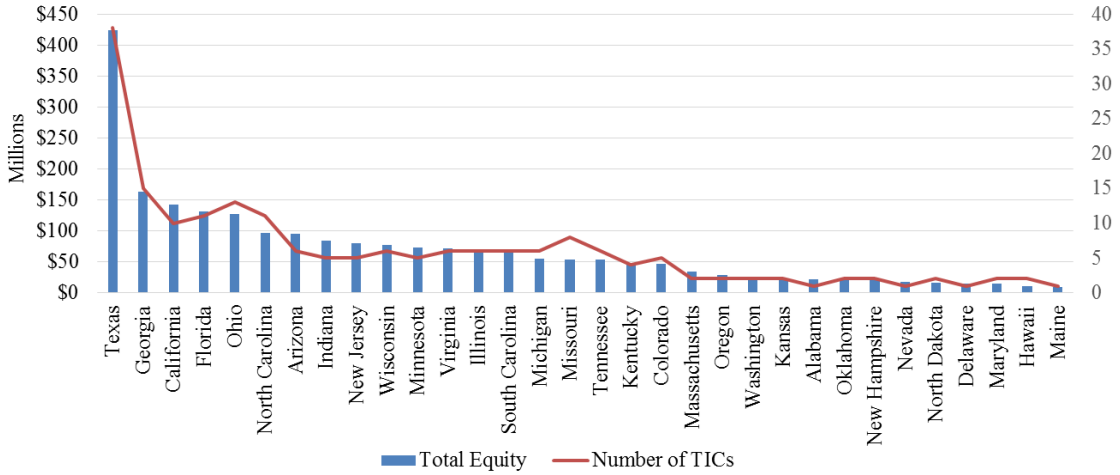


Figure 5 shows TIC equity by state. Our database includes properties in 32 states. Approximately $423 million of the TIC equity in our database represents investments in Texas. Georgia is a distant second with $162 million, followed by California, Florida, and Ohio, each with over $125 million in equity.

Figure 5: Equity Issued in TICs by State



The average TIC in our database purchases property for about $25 million, charges about $3 million in upfront fees and sets aside about $1 million in upfront reserves to pay for future expenses. The average TIC funds the $29 million "fully loaded" purchase price by obtaining an $18 million mortgage and issuing $11 million in TIC equity. Table 1 shows some descriptive statistics on the dollar value of the property purchase price, equity, and debt, as well as the debt-to-equity ratio and fees and reserves

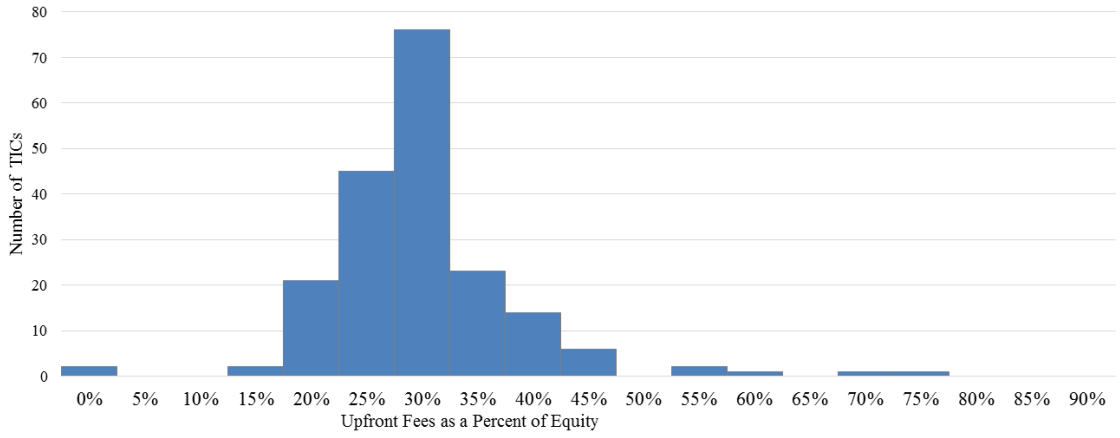
as a fraction of TIC equity. All but one of the TICs in our 194 database obtained a mortgage on the property.

Table 1: Database Descriptive Statistics[7]

	Property Purchase Price	Equity	Debt	Debt-to-Equity Ratio	Fees as a Fraction of Equity	Reserves as a Fraction of Equity
Mean	$24,617,190	$11,378,139	$17,951,139	1.56	28%	12%
Median	$21,664,500	$10,140,000	$15,037,500	1.56	27%	11%
High	$138,210,000	$55,000,000	$103,130,000	4.07	72%	55%
Low	$3,950,000	$1,935,000	$0	0.00	13%	0%
Standard Deviation	$16,859,069	$6,687,922	$12,989,266	0.46	8%	10%
Number of Observations	194	194	194	194	192	192

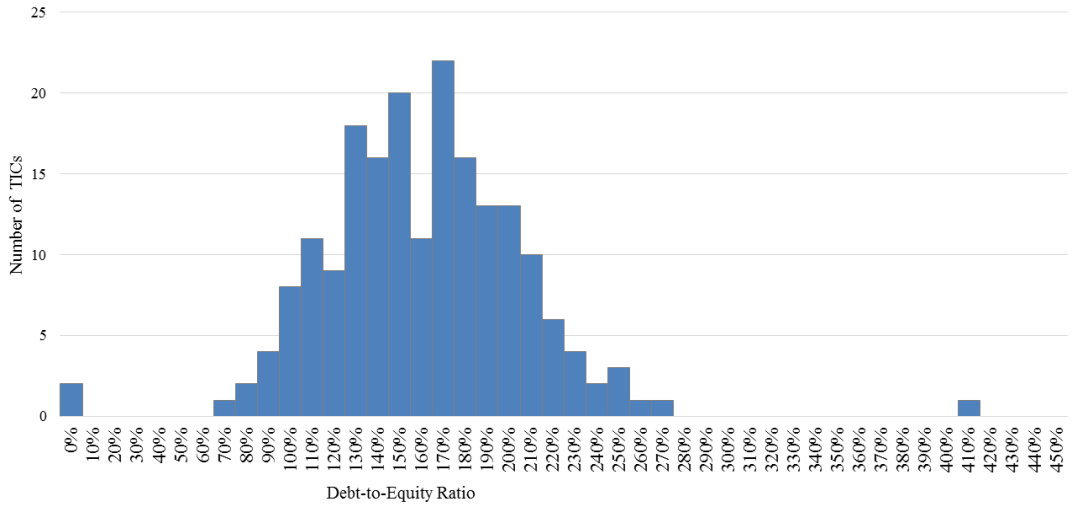
Upfront fees are commonly 20% to 30% of the amount of equity issued. Upfront reserves set aside to cover future expenses are commonly 10% to 15% of the amount of equity issued, although a handful of TICs did not have any upfront reserves. The average debt-to-equity ratio in our database is 1.56, although the debt-to-equity ratio was as high as 4.07 for the most leveraged TIC. A histogram of fees is plotted in Figure 6 and a histogram of debt-to-equity ratios is plotted in Figure 7.

Figure 6: Histogram of Upfront Fees as a Percent of Total Equity



[7] Two of the TICs in our database are missing the "Use of Proceeds" section of the private placement memorandum that lists the fees and reserves.

Figure 7: Histogram of Debt-to-Equity Ratios



III. Valuations

We calculate the present value of the cash flows to TIC investors, finding that TIC investors suffered sizeable purchase-date losses, even when taking the sponsor's cash flow projections as given. Our methods follow those we have described in (Husson et al. 2012) and (Husson et al. 2013).

To calculate the present value, we first determine the discount rate that should be applied to the TIC cash flows. The discount rate is the risk-free interest rate plus the levered beta multiplied by the equity risk premium.

$$Discount\ Rate = Risk\ free\ Rate + Levered\ Beta * Equity\ Risk\ Premium^{8} \quad \text{Eq. 1}$$

We set the equity risk premium at 6%, which is approximately equal to the average equity risk premiums from 1978 to 2007.[9] Our risk-free rate is the total return on 30-Day US Treasury Bills in the 12 months preceding the month of the TIC's issuance. To obtain the levered beta, we use the debt-to-equity ratio of our TIC and an unlevered beta of 0.62 which is consistent with academic literature on the subject, including our prior research.[10]

[8] This formula is generally applicable to discounting any investment's future cash flows and can be found in most introductory corporate finance or investments textbook. See (Pratt and Grabowski 2010). The formula is also applicable to discounting cash flows from real estate investments (Corgel and Djoganopoulos 2000; Damodaran 2002; Gyourko and Nelling 1996).
[9] See (Ibbotson 2011).
[10] See (Husson et al 2013) and (Damodaran 2002).

$$Levered\ beta = Unlevered\ beta * \left(1 + \frac{debt}{equity}\right) \qquad \text{Eq. 2}$$

Using Equations 1 and 2, we arrive at a discount rate for each TIC which will vary depending on the individual TIC's debt-to-equity ratio and the risk-free rate at the time of the TIC's issuance. For the TICs in our database, we arrive at discount rates ranging from 7% to 22.5%, with an average discount rate of 13.6%. These discount rates are likely to be a lower bound for the appropriate discount rates for these TIC investments, given that we have not adjusted the rate to account for the TIC investments' illiquidity and lack of control.

The vast majority of TICs offering documents contain projections for annual cash flows to investors for a period of time and a terminal cash flow to investors at the time of the sale of the property. We use mid-year discounting for the annual cash flows to investors to the time of purchase and end-of-year discounting for the proceeds from the sale of the property.

TIC cash flow projections vary with a set of crucial parameters regarding the profitability of the TIC, including rent growth rate, vacancy rate, operating expense growth rate, and capital expenses. The TIC offering documents project a sales price of the property based on the property's projected net operating income on the year after the sale and assumed cap rate, with the formula:

$$Sale\ price = \frac{1}{cap\ rate} \times NOI \qquad \text{Eq. 3}$$

If the assumed vacancy rate, the cap rate, or expense growth rate are too low or the rent growth rate is too high, the projections will overstate the present value of the real estate interest. In fact, small changes to the parameters may sometimes result in large changes in the valuation. In this section, we focus on valuations that take the sponsor's projections as given.

The offering documents typically present several cash flows scenarios, without including any indication of the likelihood of each of the scenarios. Approximately 90% of the TICs in our sample present at least two assumptions for the cap rate. Occasionally, the offering documents include several assumptions for the net operating income in the final year or several assumptions for the annual cash flow projections. When TIC offering documents present several scenarios, we average the present values of the different scenarios, assigning each the same weight.

Table 2 shows the present value as a percent of total equity, using all TICs in our database as well as the three main sponsors by value of TIC equity issued. We find that a $1 investment in the average TIC is worth only about 83.6 cents on the date of purchase and that this overvaluation holds across the main TIC sponsors." The worst TIC in our

database was worth approximately 51.3 cents on the dollar at the time of purchase, while the best TIC was worth 119.2 cents on the dollar based on the sponsors projections.

Table 2: Present Value as a Percent of Total Equity

	All Database	CORE Realty Holdings	DBSI	Triple Net Properties
Mean	83.6%	84.6%	83.6%	81.3%
Median	81.7%	81.5%	81.4%	77.1%
High	119.2%	107.3%	109.9%	114.2%
Low	51.3%	70.8%	73.7%	56.2%
Standard Deviation	11.4%	8.9%	8.4%	15.9%
Number of Observations	194	18	29	18

Figure 8 is a histogram of the present value as a percent of total equity for all TICs in our database.

Figure 8: Histogram of the Present Value as a Percent of Total Equity

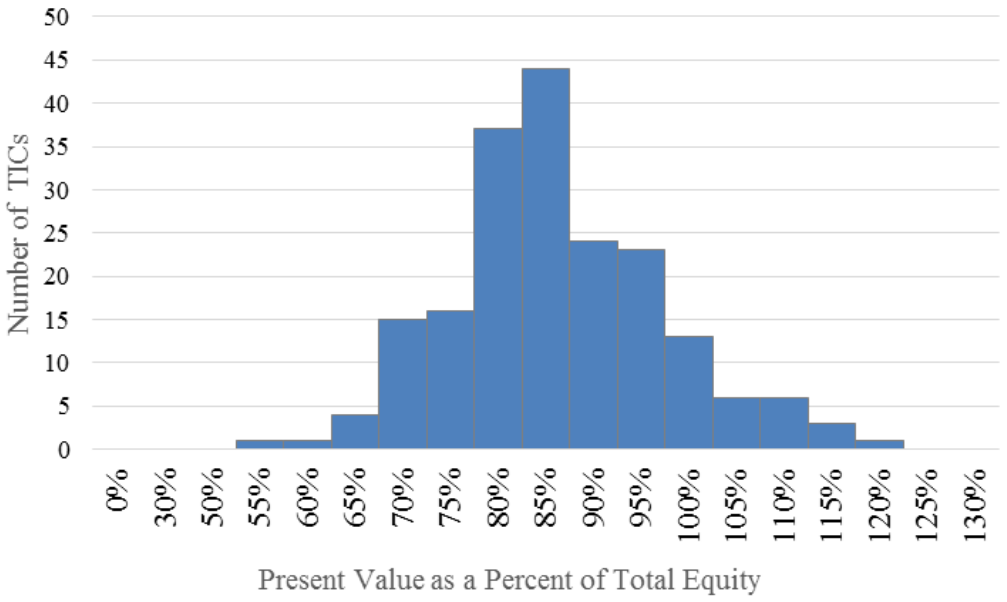
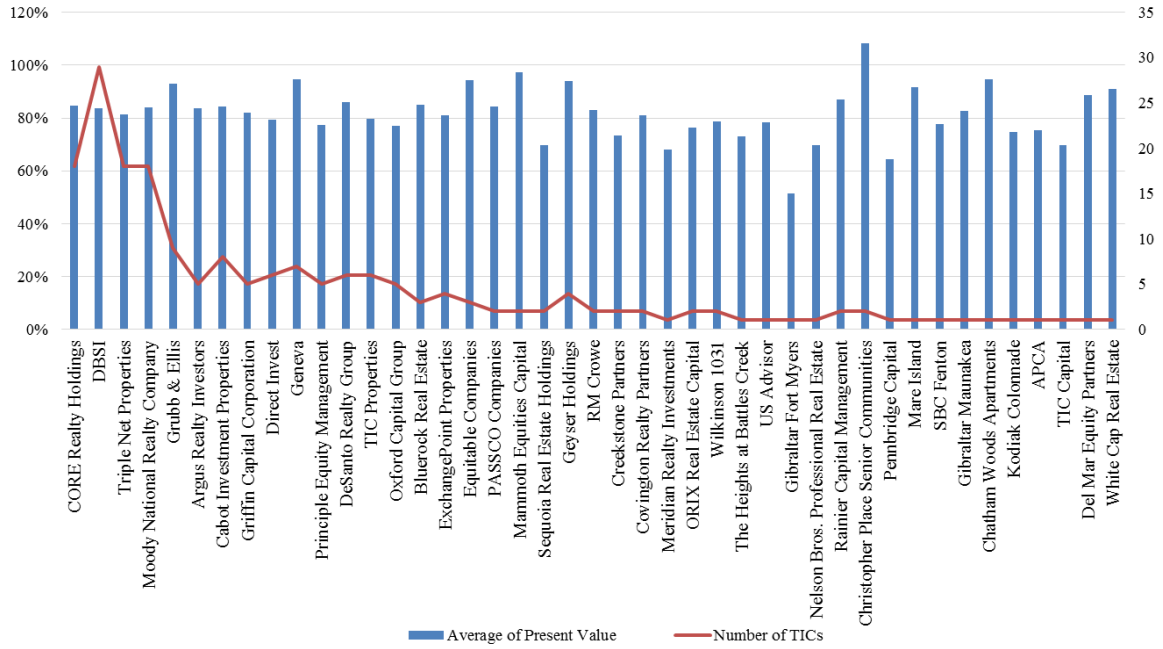


Figure 9 shows the average present value as a percent of total equity for each of the 43 sponsors in our database. The valuations summarized on Table 2, Figure 8, and Figure 9 are based on the sponsors' assumptions of the TICs profitability as reflected in the sponsors' cash flow projections. Sponsors may, however, make aggressive assumptions to garner more interest for their TIC offerings. We explore this possibility in the next section.

Figure 9: Average Present Value as a Percent of Total Equity by Sponsor



IV. Modifying the Cap Rate Assumption

In this section, we compare the cap rate assumed by the TIC sponsors to market projected cap rates. We find that sponsors typically use cap rates that are lower than market projected cap rates for similar properties in the same region, which produces a higher estimate of the property's sales price, inflating the valuations.

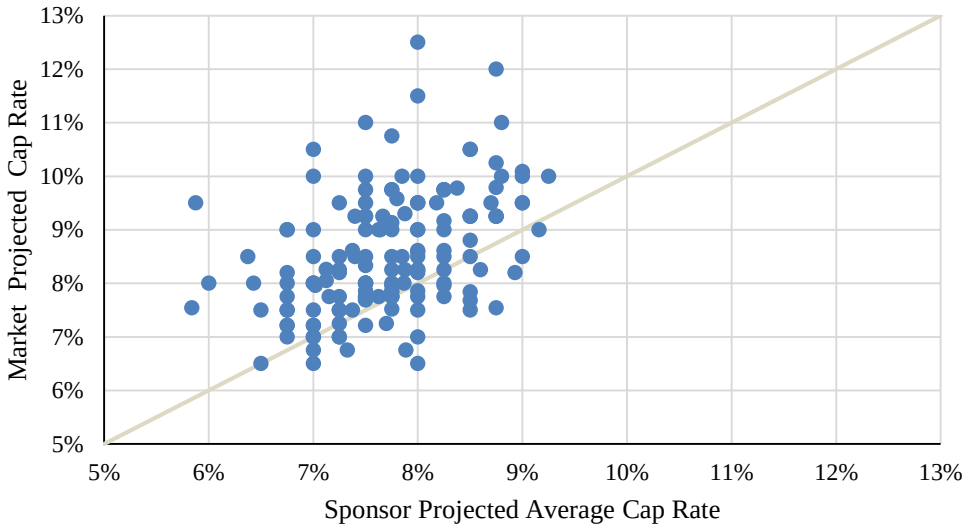
We obtain market projected cap rates by region, type of property, and year from Integra Realty's *Viewpoint* annual reports.[11] The reports include data on 66 metropolitan areas and their surroundings, as well as 14 commercial real estate property types. The reports include market projections for other key parameters such as the vacancy rate, rent growth rate, and expense growth rate, but we limit the scope of our analysis to the cap rate used to project the property's sale price at the end of the TIC's holding period. The *Viewpoint* reports contain market cap rates for 159 of the 194 TICs in our database. The location or property type of the remaining 35 TICs is not covered by the reports. Therefore, the results in this section apply to the 159 TICs for which we can make cap rate comparisons.

Figure 10 plots the market projected cap rate against the sponsor projected average cap rate. If there were no differences between the sponsor projections and the market estimates of the cap rate, the blue dots representing each TIC would all fall on the

[11] The annual IRR Viewpoint reports are available http://www.irr.com/Publication/PublicationList.asp

identity line shown in gray. We find that the vast majority of the cap rates assumed by TICs sponsors fall above that line – that is, they are lower than the market projected cap rates. Since there is an inverse relationship between the cap rate and the projected sales price of the property, a lower assumed cap rate (by the sponsor) leads to valuation inflation.

Figure 10: Market Projected Cap Rate and the Sponsor Projected Average Cap Rate



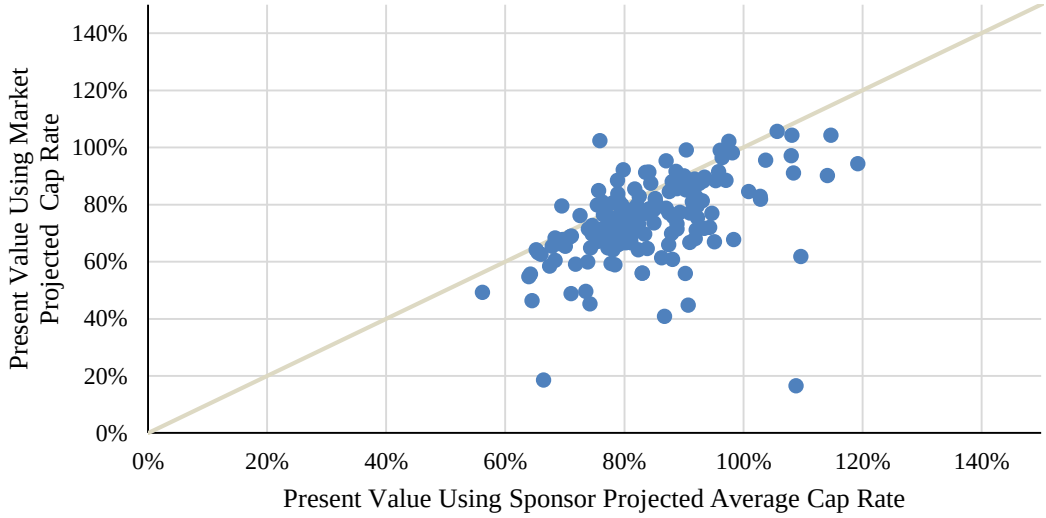
Most TIC sponsors include more than one projection for the cap rate in their terminal sales analysis. The comparison in Figure 10 averages across all of the cap rates projected by the sponsor. We find that even the maximum sponsor projected cap rate is too low, leading to overestimated valuations. The difference between the sponsor cap rate and the market estimates is smaller when using the maximum cap rate projected by the sponsor, but a difference in means test reveals that the difference in both of the series is statistically significant.[12]

We use the market projected cap rates to recalculate the present value of the TICs in our database. Figure 11 shows the present values for the TICs in our database using both the sponsor projected cap rates and the market cap rates. Any dots along the identity line would indicate that the market projected cap rates and the sponsor projected cap rates are equal. All dots below the identity line are examples of TICs with sponsor projections

[12] We use the t-statistic for the difference in means test. We perform two separate tests: 1) comparing the market projected cap rates to the average cap rate projected by the sponsor and 2) comparing the market projected cap rates to the maximum cap rate projected by the sponsor. Both tests result in p-values lower than 0.0001.

that inflate present values. The distance from the identity line is the size of the valuation inflation. We find that most TICs are overvalued.

Figure 11: Present Value using the Sponsor Average Cap Rate and the Market Cap Rate



Using sponsors' assumptions the average TIC in our database has a present discounted value equal to 83.6% of contributed capital (see Table 2). We find that using market projected cap rates, the present value of the average TIC equals 74.1% (see Table 3).

Table 3: Present Values Using Market Projected Cap Rates

	All Database	CORE Realty Holdings	DBSI	Triple Net Properties
Mean	74.5%	70.6%	76.4%	62.7%
Median	74.7%	69.0%	75.0%	66.2%
High	105.7%	91.0%	95.6%	90.2%
Low	16.6%	49.6%	61.4%	18.5%
Standard Deviation	14.3%	11.5%	8.1%	20.0%
Number of Observations	159	10	27	13

The average present value inflation per TIC is 9.5%. Table 4 summarizes our results on the sponsors' present value inflation due to their optimistic cap rate assumptions. We show results for all of the TICs in the database, as well as the main three issuers.

Table 4: Sponsor's Present Value Inflation Caused by Sponsor's Cap Rate Assumption

	All Database	CORE Realty Holdings	DBSI	Triple Net Properties
Mean	9.5%	14.8%	6.5%	20.5%
Median	7.2%	15.5%	5.0%	16.3%
High	92.3%	23.9%	28.2%	47.9%
Low	-26.5%	2.9%	-8.3%	-4.9%
Standard Deviation	13.1%	6.2%	8.1%	20.0%
Number of Observations	159	10	27	13

Figure 12 plots the histograms of the present value of the TICs using both the sponsors' projections and the market projections for the cap rates. We find that the distribution of present values shifts to the left when replacing the sponsors' projections for the cap rates with the market projections for the cap rates. This observation is consistent with the results on Table 4 – sponsors tend to inflate the purchase date valuations of the TICs by projecting optimistic cap rates for the property's time of sale.

Figure 12: Histograms of Present Value as a Percent of Total Equity Using the Sponsors' Average Projections and the Market Projections for the Cap Rates

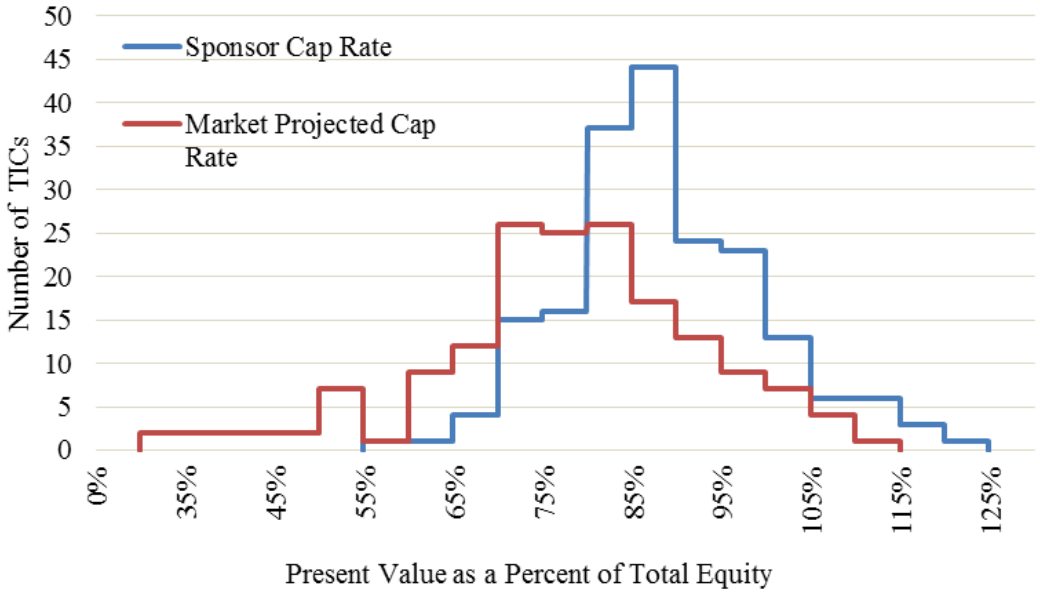
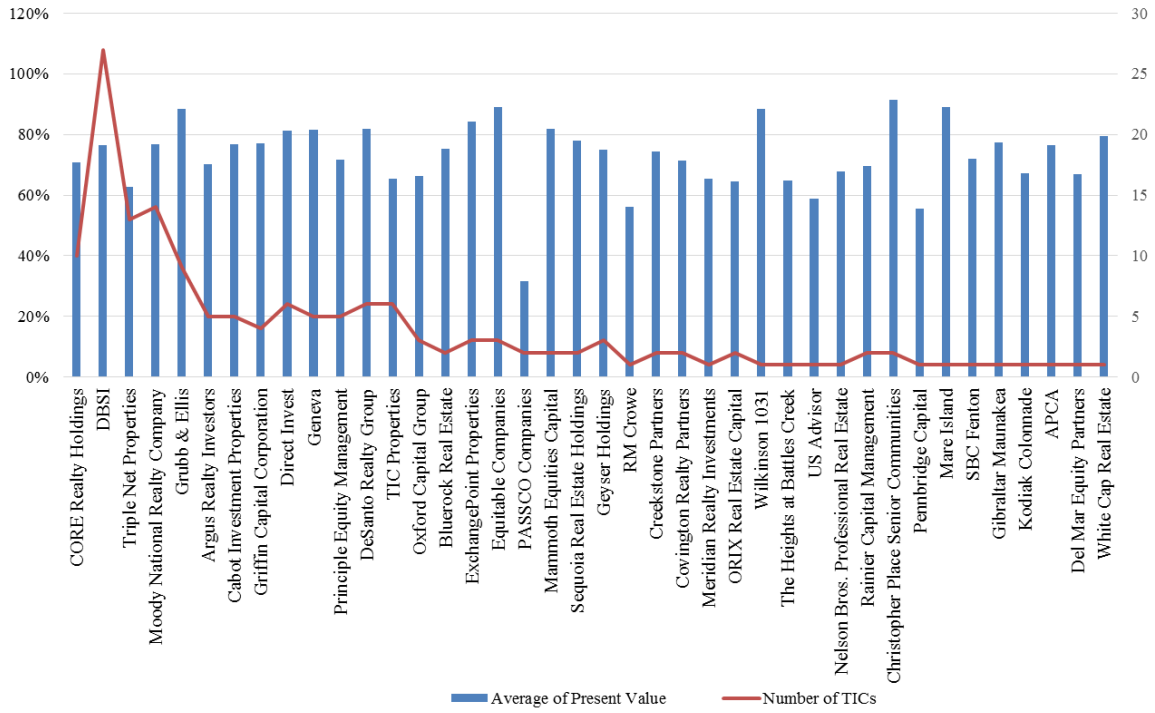


Figure 13 shows the average present value using the market projected cap rates by sponsor.

Figure 13: Average Present Value by Sponsor Using Market Projected Cap Rates



V. Conclusion

Our analysis of $2.2 billion in TIC equity issued from 2004 to 2009 in 194 separate issues reveals that the vast majority of TICs are extraordinarily poor investments even accepting the sponsors' unrealistic cash flow projections. Based on the sponsor's projections, we find that the TICs on average were worth 83.6 cents per $1 paid by TIC equity investors. However, we have found that sponsors' cash flow projections overstate likely returns to investors by assuming unrealistically high rental growth rates and unrealistically low vacancy rates and caps rates.

Adjusting only the sponsors' cap rates alone to rates reflecting market conditions lowers the average valuations to 74.1 cents per $1 on average. Adjusting the sponsors' unrealistic rental growth rate and vacancy assumptions would lower the average value further. These low valuations are consistent with average upfront fees and reserves equal to 28% and 12% of equity. Our results suggest that private placement sponsors have considerable latitude in their projections, and that investors should view projected returns with skepticism.

VI. References

Borden, B. T. 2009. "Open Tenancies-in-Common." *Seton Hall Law Review,* 39: 387-445.

Borden, B. T. and R. W. Wyatt. 2004. "Syndicated Tenancy-in-Common Arrangements: How Tax-Motivated Real Estate Transactions Raise Serious Nontax Issues." *Probate & Property* (September/October): 18-23.

Corgel, J. B. and C. Djoganopoulos. 2000. "Equity REIT Beta Estimation." *Financial Analyst Journal* 56, No. 1 (January/February): 70-79.

Cuff, T. F. 2002. "Hot Like-Kind Exchange Issues: Revenue Procedure 2002-22 and Section 1031 Exchanges Involving Tenancies-in-Common." ALI-ABA Course of Study Materials. Creative Tax Planning for Real Estate Transactions.

Damodaran, A. 2002. *Investment Valuation* (2nd ed.). Hoboken, NJ: John Wiley and Sons.

Federal Bureau of Investigation. 2013. "DBSI Principals Indicted for Securities Fraud, Wire Fraud, Mail Fraud, Bank Fraud, and Conspiracy." Retrieved from: http://www.fbi.gov/saltlakecity/press-releases/2013/dbsi-principals-indicted-for-securities-fraud-wire-fraud-mail-fraud-bank-fraud-and-conspiracy.

FINRA. 2005. "Notice to Members 05-18: Private Placements of Tenants-in-Common Interests." Retrieved from http://www.finra.org/Industry/Regulation/Notices/2005/p013456,

Gyourko, J. and E. Nelling. 1996. "Systematic Risk and Diversification in the Equity REIT Market." *Real Estate Economics* 24, No. 4 (December): 493-515.

Husson, T., C. McCann, E. O'Neal, and C. Taveras. 2012. "What is a TIC Worth?" *PIABA Bar Journal* 19, No. 3: 373-392.

Husson, T., C. McCann, E. O'Neal, and C. Taveras. 2013. "Private Placement Real Estate Valuation" *Journal of Business Valuation and Economic Loss Analysis* (Revise and Resubmit).

Ibbotson. 2011. *Stocks, Bonds, Bills, and Inflation Valuation Yearbook*. Chicago, Il: Morningstar.

National Association of Realtors. 2005. Glossary of Commercial Real Estate Terms. Retrieved from: http://www.realtor.org/NCommSrc.nsf/files/Commercial%20Real%20Estate%20Glossary.pdf/$FILE/Commercial%20Real%20Estate%20Glossary.pdf

Ling, D. C. and M. Petrova. 2008. "Avoiding Taxes at Any Cost: The Economics of Tax-Deferred Real Estate Exchanges." *Journal of Real Estate Finance and Economics* 36: 367-404.

Lopez, L. E. 2007. "A Matter of Semantics: Should Tenancies-in-Common be Treated as Securities or Real Estate Interests?" *Journal of Business & Securities Law* 8 (Fall): 1-22.

Pederson, A. R. 2005. "The Rejuvination of the Tenancy-in-Common Form for Like-Kind Exchanges and its Impact on Lenders." *Annual Review of Banking & -Financial Law* 24: 467-486.

Pratt, S. P. 2009. *Business Valuation Discounts and Premiums* (2nd ed.). Hoboken, NJ: John Wiley & Sons.

Pratt, S. P. and R. J. Grabowski. 2010. *Cost of Capital: Applications and Examples* (4th ed.). Hoboken, NJ: John Wiley & Sons.

Rich, D. 2010. "Betting the Farm: The TIC Turf War and Why TICs Constitute Investment Contracts Under Federal Securities Laws." *William & Mary Business Law Review* 1, No. 2: 451-487.

Updike, B. 2007. "Exploring the Frontier of Non-Traditional Real Estate Investments: A Closer Look at 1031 Tenancy-in-Common Arrangements." *Creighton Law Review* (February) 40: 271-342.

Whitman, E. A. 2007. "A 'TIC'ing Time Bomb: Rule 506 Meets Section 1031." *Fordham Journal of Corporate & Financial Law* 12: 121-165.

Yap, J. L. and R. M. Circ. 2003. *Guide to Classifying Industrial Property* (2nd ed.) Washington, DC: ULI-the Urban Land Institute.