Management Thesis- II

On

An Analysis of Investor Types in Real Estate Capital Markets:

Performance 2000 to 2006

Submitted By

(Name)

Submitted To

(Faculty Guide)

CERTIFECATE

I here by declare that this management Thesis-II titled "An Analysis of Performance of Domestic Mutual Funds Having Equity Option by Using Different Fund Characteristics." is the original work of & has not been submitted either in part or in full to any institute / university.

Signature of the Faculty Supervisor

Name:

Designation: Faculty Member

Centre:

ABSTRACT

This thesis explores the timing and returns of eight types of real estate investors between 2000 and 2006. The investor types considered are

1) Private local,
2) Private national,
3) Institutional,
4) Public REIT (Real Estate Investment Trust),
5) Foreign,
6) User/other,
7) Syndicator and
8) Condo converter.

Observing over 41,000 transactions and using the repeat sale method to calculate investor capital appreciation returns, this thesis finds that private local investors are the largest investor type—both in absolute number and transaction volume—suggesting that real estate is still a very local business. In addition, this thesis observes that REIT, foreign and private investors each exhibited leading behavior over other investors, especially institutions, in capital flows: they each tended to start trends in buying and selling at various times from 2000 to 2006. Moreover, it finds that REIT, foreign and private investors took turns in earning the highest cumulative capital appreciation returns from 2000 to 2006, and that private local investors tended to lead all other investors, especially institutional, in return trends. These findings are significant as they increase the understanding of investor behavior and performance in capital markets and may ultimately help increase market information and efficiency.

Acknowledgements

I wish to thank blue White of Real Capital Analytics for providing the extremely rich property transaction data upon which this thesis is based. Without this data and the interesting insights he provided, this thesis could not have been written.
I want to thank my thesis advisor, kamla Lalawani, who provided steady and keen guidance during research and writing, and also who inspired me with his passion for this and other real estate finance subjects.

In addition, I want to extend thanks to _____.

Finally, I want to thank my Friends & Family, for providing tireless support through this thesis writing and for giving me inspiration to achieve my goals.

(Name)

TABLE CONTENT

Introduction

The purpose of this thesis is to explore the behavior and performance of eight types of real estate investors in order to broaden the general understanding of real estate capital markets and ultimately make information within these markets more efficient. The eight investor types considered are 1) private local,
2) Private national,
3) Institutional,
4) Public REIT (Real Estate Investment Trust),
5) Foreign
6) User/other,
7) Syndicator and
8) Condo converter.

Examining data provided by Real Capital Analytics, a real estate investment analysis firm based in India, this thesis explores dynamic empirical evidence regarding capital flows and capital appreciation returns by investor type.
By compiling transaction information and creating a repeat sale index to calculate capital appreciation returns, this thesis finds that private local investors are the largest category of investors—in both absolute number and transaction dollar volume. REITs and foreign investors earned the highest cumulative returns from 2001 until mid-2004. Beginning in early 2004 private local investor returns climbed significantly, becoming the highest cumulative returns of all investors from mid 2004 until early 2006. In addition, this thesis observes that REITs tended to start trends in buying and selling properties from 2000 to 2003, while private local investors tended to start trends in 2004 and 2005. Moreover, private local investors exhibited a lead-lag relationship to other investor types, especially institutions, in capital appreciation returns. Such real estate investor type findings are quite novel and offer a foundation upon which to conduct further study.
Many journal articles and textbooks recognize the idiosyncrasies of real estate compared to other asset classes. First real estate is a relatively expensive asset with high transaction costs and, therefore, relatively long holding periods.1 Real estate markets are decentralized, with many types of buyers and sellers operating in thousands of different locales. There is not a singular place, or exchange, where buyers and sellers come together to trade properties.

Second, unlike securitized assets, real estate is a heterogeneous asset class, whose properties are unique. Since no two buildings can actually be located on the exact same land parcel, location is the most fundamental difference among properties. Size, type, construction-quality, tenant occupancy and many other factors are additional determinants of value. Some investors inevitably know more about specific properties than other investors, implying that real estate market information in general can be inefficient.

The fundamental problem with real estate market irregularities and inefficiencies does not lie in the properties themselves. They are assets, albeit unique, that possess value. The

root of the problem lies in the fact that investors see value differently, if they have an opportunity to see value at all. (Many investors never even know that a property is available for sale, preventing them altogether from bidding on that property.) Therefore, in order to understand real estate capital markets more completely, it is very important to understand the different investors, since they are the ones ascribing value to properties. Because each and every investor is unique with regard to property and location preferences, risk tolerances, tax motivations and so on, it is essentially impossible to study each individual investor separately. Therefore, it is appropriate to group similar investors into several major categories or types and to study these types relative to one another.

By exploring the behavior and performance of different real estate investors, this paper seeks to offer more information on real estate markets. Who buys from whom, who competes with whom, and who is the largest investor type are all important matters in increasing market information. Knowing who earns the highest returns relative to others, and who leads others in investment trends also provides greater information about the overall nature of capital markets. At a broad level, more information leads to greater market efficiency, which leads to greater market transparency and participation. Greater efficiency also leads to a more accurate understanding of the opportunity cost of capital within real estate markets, and ultimately a more efficient allocation of capital across all assets classes.

The remainder of this thesis is organized into five sections: First, it gives a brief historical background on capital markets and reviews pertinent literature. Second, there is a review and description of the two data sets compiled by Real Capital Analytics since mid-2000. Third, the paper discusses capital flows into and out of real estate, describing how much each investor type bought and sold since mid-2000. Fourth, it describes the repeat sale methodology for calculating returns, then evaluates and interprets these investor returns from 2001 to May 2006. Finally, it concludes with a summary of observations and recommendations for further study. The Appendix contains supporting information and additional charts.

1. Historical Background and Literature Review

Since 2000 real estate capital markets have blossomed with activity. At the beginning of the decade, vast amounts of capital flowed out of a lagging stock market and into real estate, driving property values up dramatically. In addition historically low interest rates fueled the market's expansion, as buyers were able to borrow money at very low interest rates. Real estate offers several advantages when compared to other types of assets, such as stocks and bonds. On a very basic level, real estate is "bricks and mortar," a tangible asset that investors can visit, see and touch. Compared to stocks, which are intangible securities whose values plunged in 2000, real estate is a concrete investment, which is easy for many to see and understand. In addition, real estate offers returns generally uncorrelated with stocks and bonds, delivering extra diversity to investor portfolios. Modern Portfolio Theory (MPT) (Markowitz, 1952) supports investment across uncorrelated asset classes in order to mitigate risk and increase returns; real estate offers many opportunities for such diversity. The phenomenal rise of real estate since 2000 offers an interesting backdrop against which this thesis is written.
While the existing literature regarding investor behavior and performance is abundant, there are very few articles that comprehensively address the behavior and performance of all investor types relative to one another. The primary reason for this paucity in literature is the availability of supporting data. This study could not be done without the extensive transaction observations made by Real Capital Analytics (RCA).

Regarding institutional investor behavior, Armonat and Pfnuer (2004) argue that existing market information (which is anecdotally inefficient) restricts the application of capital market models, such as MPT, in determining the appropriate amount of real estate to hold in large portfolios. Recognizing the inefficiencies and irregularities of the real estate asset class, and real estate's "special decision-making environment", they warn against treating real estate like securities, as this may cause inefficient use of capital across asset classes.2 Institutional investors, in short, need more accurate information for investing in real estate.3

In addition, because many institutional investors such as pension funds and endowments are not subject to taxes, they are often considered the "marginal investor." According to Colwell and Webb (1980), the marginal investor (who is in the lowest tax bracket) sets the market value because they can pay the most for properties.4 Perhaps the ability to pay the highest price partly explains why institutional investors in the RCA data set typically earn the lowest return.

Collett, Lizieri and Ward (2003) find that real estate investors have longer holding periods than they usually claim (less than eight years in the 1990s) because of high transaction costs and illiquidity. The authors find that larger properties usually have longer holding periods than smaller properties, because the market is "thinner" and the higher transaction costs must be amortized over longer periods.5 This thesis shows

evidence that institutional and foreign investors typically purchase the largest properties, while private local investors typically purchase the smallest properties. It follows then from authors' conclusion that institutions would often hold properties longer than private local investors because they invest in different property sizes. Furthermore, a study on property size and risk by Ziering and McIntosh (1999) concludes that the largest properties have the highest volatilities, causing them to under-perform relative to smaller properties during recovery periods and outperform during times of economic expansion.

Their conclusion is that owners of the largest properties have a unique set of illiquidity issues and must sell or "harvest profits" at the right time.6 Both of these studies suggest that property size determines—to some extent—investor behavior.

Private investors differ from other investor types in more ways than investment size. In two separate papers, Brown (2004 & 2005) suggests that private investors often combine ownership and control in property to affect their property returns positively. "A similar influence, absent a controlling interest, is not available in securities markets," he says.7 Certain investors, he argues, "self select into a market in which they combine entrepreneurial labor with their capital resulting in a unique mix of determinism and probability"8 This implies that the investor can influence the probability distribution of expected returns, skewing it positively to the right; hence, what Brown calls a "fat right tail phenomenon." Furthermore, recognizing some of the inefficiencies and irregularities in real estate, Brown (2004) goes on to pose the following:

Knowing that they cannot easily diversity away site-specific risk, one wonders if private real estate investors seek out such risk in order to employ their abilities to maximize the possibilities inherent therein. For these investors, the burdens and inefficiencies of this market become opportunities.

Often times the private investor is not compensated for the addition of labor or "sweat equity" that causes higher returns. In such instances Brown argues the following:

That addition confounds the accurate computation of both return (the compensation of labor is mixed with the compensation for risk bearing) and risk. Entrepreneurial property owners appear to invest a substantial amount of their time. The cost of this time, if contributed by outside vendors, comes out in the operating statement. If included, this cost would reduce NOl and the returns.

Private investors, therefore, must be careful to account for all their labor input when comparing real estate returns to other investment returns. Brown (2005) explores this subject further by using an investor behavior model that "discloses that real estate investment decisions are a labor trade-off rather than a portfolio trade-off." While a simple labor model claims that people choose to spend their time on either work or recreation, Brown introduces a third element, real estate investing, as choice; then he studies the new complexity that real estate investing adds. He says, "One conclusion is a natural point in time where real estate investing is supplanted by investing in financial assets."2 Brown's articles are extremely insightful in explaining behavioral and performance differences among private, "entrepreneurial" investors.

REITs are another major investor type whose behavior and performance are unique because of their public ownership structure. Conner and Falzon (2004) argue that the

most important difference between the public and private real estate markets is the significantly higher volatility of the public markets. These volatility differences explain some of the REITs' behavior and performance, especially in the short run.'3 For example, arbitrage opportunities sometimes exist for REITs when their share prices trade at significant premiums over their underlying property values (or Net Asset Value—NAy). This permits them to raise large quantities of equity in the stock market and buy relatively undervalued real estate assets. Conner and Falzon point out that this arbitrage phenomenon began to occur in the second half of 2001, when most REIT stocks were trading at premiums to NAy. The premium disappeared a short time later, but then reappeared in most of 2003. This was the same time REITs were buying large quantities of property and earning exceedingly high returns in the RCA data sets.

This thesis draws upon the previous studies to explain some of the differences in timing and returns among investor types within the RCA data set. The following section describes this data in more detail.

2. Review and Description of the RCA Data Sets

This thesis analyzes two separate but related data sets. The first, The Overall Data Set, is larger and used to evaluate overall trends in capital flows since 2000. Because of its size, this data set is deemed more comprehensive than the other data set for the purpose of observing trends in real estate capital markets. The second, The Repeat Sale Data Set, contains prior sale information that is used to create a repeat sales index. This index is helpful in analyzing the returns of each investor type. The two data sets and their respective limitations are briefly described below.

The Overall Data Set

RCA has collected information for 41,124 commercial real estate transactions in the India since mid-2000. Each transaction is $5 million and greater, and the total aggregate value of these transactions through May 2006 is just over $1 trillion. See Appendix A for more information on the variables contained in the data set. RCA has classified approximately 85% of buyers and 77% of sellers in these transactions, enabling a detailed examination of investor behavior and performance. Buyers and sellers are grouped into one of six major categories, including private-local, private-national, foreign, institutional, REIT/public, and user/other. When a transaction involves a partnership of investors from different major categories, the institutional category trumps all—in terms of investor identification—then foreign, then REIT. For example, if an institutional and a private local investor partner up to buy a property, the buyer is labeled "institutional." See Appendix A for more information on investor classification.

In addition to the six major categories mentioned above, RCA has also added two specialized investor categories: syndicators and condo converters. If a deal is bought for condo conversion, the investor is classified as a "condo converter" regardless if the investor is private, REIT, foreign, or institutional. Syndicators are also comprised of all investor types, and receive special identification because of their unique ownership structure. Both of these categories have experienced tremendous growth and popularity in the latest real estate cycle, and creating separate classifications for them allows more accurate evaluation of investor trends. Therefore, the eight buyer categories are further defined as follows.

1) Private local investors are the largest category of investors and the one upon which this thesis focuses. They include private individuals, private investors, private developers and private trusts that operate within a small region of the country.

2) Private national investors are comprised of private firms, funds and individual investors, which have a super-regional or national investment, reach. They also include private Real Estate Investment Trusts (private REIT5).

3) REIT/public represents publicly traded (securitized) REITs and Real Estate Operating Companies (REOC) which are typically more regional or national in scope. They offer all

types of investors the opportunity to invest in real estate through entities, which receive unique tax treatment.

4) Foreign investors are comprised of off-shore entities which invest in the India; they are broken down into nine capital classifications: General, Australia, Canada, Europe, Germany, Middle East, Pacific Rim, South America and the United Kingdom. This thesis treats them all as one category.

5) Institutional investors are comprised of various real estate funds that manage money on behalf of others, including endowments, pension funds, banks, finance companies, and insurance companies. Many of these institutional investors are not subject to taxes.

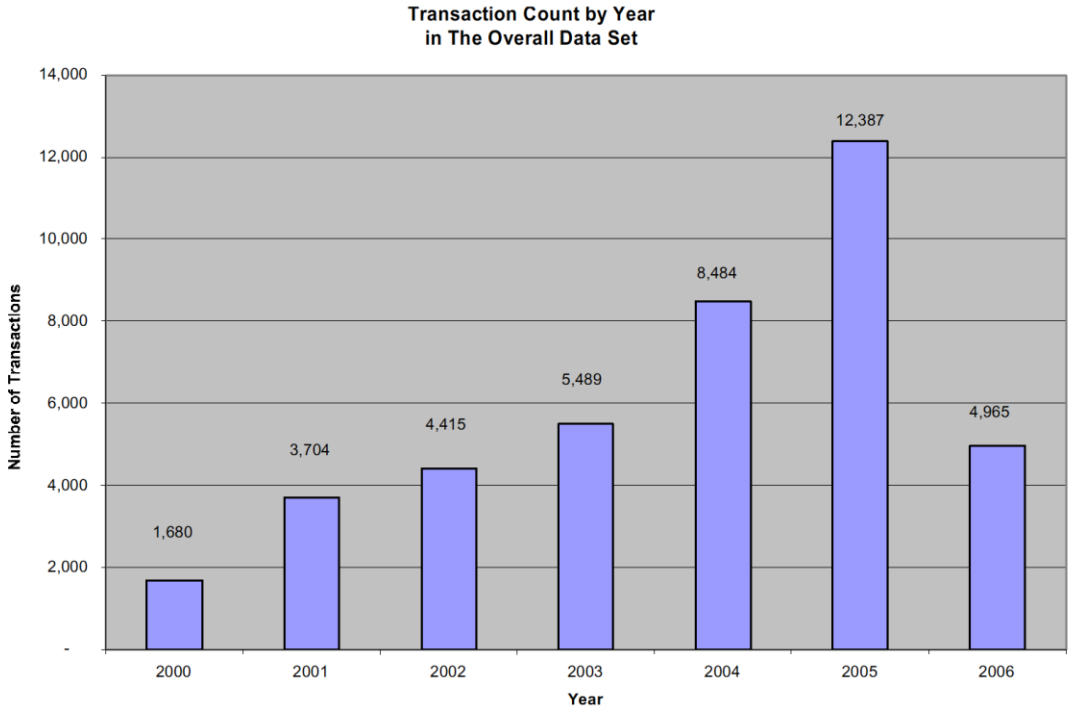
6) User/other is corporations, retailers, governments and other entities, which use the real estate for business or entity operations. It also consists of other buyers and sellers not captured in another investor category.

7) Syndicators include Tenancy-in-Common (or TIC) investment groups which are formed by many separate buyers to purchase real estate. Each buyer receives a title for his undivided interest in the real estate, thereby making this kind of transaction quite convenient for Section 1031 tax-deferred exchanges.' Because of this unique ownership structure, syndicators are seldom, if ever, sellers.

8) Condo converters are an outgrowth of the "condo craze" that has manifested itself in the last five years. While apartments are the most common property type to be bought and converted by these investors, office, industrial, hotels and even retail are also targets for conversion. Because condos are resold to individual owners, the condo converters never sell the whole property at one time.

The number of observations in the data set grew each year, from 2000 to 2006, as

Figure 1



The Overall Data Set Limitations:

The data pose some limitations, despite the wealth of information. The first limitation is data history. Because these transactions only reach back to mid 2000, it is difficult to draw conclusions across time. Real estate cycles are approximately ten years, meaning that this data likely covers only part of one cycle. Moreover, the rise of real estate values in this latest cycle could be an aberration compared to all the previous cycles. While it would be "nice" to have data reaching across multiple cycles, it is realistically difficult to obtain such information. Quite simply, the technology used by RCA today to collect this information was not available in previous cycles.

The data also lack some variables useful for hedonic regression analysis. These are property characteristics, which are extremely important in determining the price of property. Some that are included in the data set are square footage, age, property type, location and even occupancy rate (albeit in a limited capacity). Some that are not included are Class A, B, or C quality status; parking ratios and amenity information; and property type specific information, such as clear-height, sprinkler information, and number of dock-doors.

Another limitation is the lack of income returns. Approximately 13,424 (or 33%) of all transactions have cap rate information. The cap rate is a fraction equal to the property's Net Operating Income (net rent) divided by its purchase price; however, cap rates provide implied income in only the first year. They never provide income growth or duration. Because transaction information is often private and buildings are numerous, it is impossible to collect income returns for every property during every year.

TheRepeat Sale Data Set

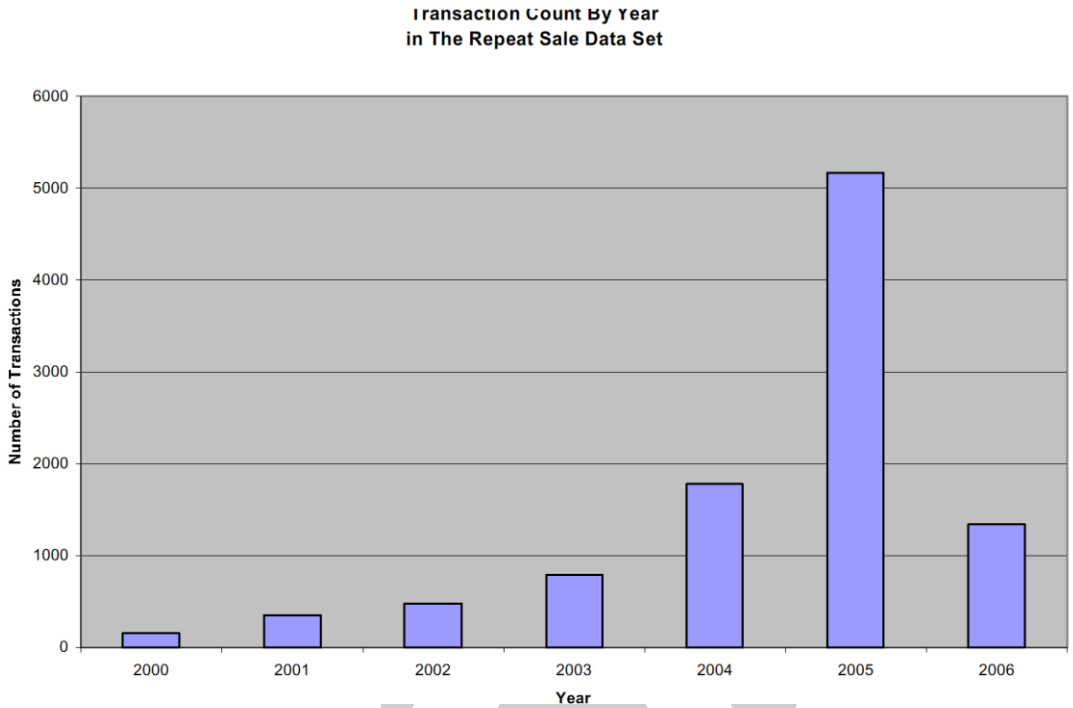
The second data set—The Repeat Sale Data Set—contains 10,073 total transaction data points, many of which are also included in The Overall Data Set. Each data point contains the prior transaction price and date, the second transaction price and date, plus buyer and seller identification in the second transaction.

(See Appendix A for a more detailed variable description.) The second transaction prices start at $1.2 million and go higher. With the exception of one property, which was acquired in 1916, the earliest acquisition date is 1961.

Having each property's purchase price, sale price and holding period enables calculation of each property's periodic appreciation returns. Compiling all the properties' returns across a given time period creates a "repeat sale index" which can be used to evaluate investment returns (capital appreciation returns) for any given sample. There are many unknown characteristics that determine value for each property; a repeat sale index allows the observer to eliminate those characteristics altogether from consideration, because the same property is observed at two points in time. Despite some shortcomings (which are described later), the ex post nature of repeat sales information—as opposed to ex ante—makes it quite a reliable return metric.

Figure 2 illustrates the transaction count by year in the Repeat Sale Data Set

Figure 2



The Repeat Sale Data Set Limitations

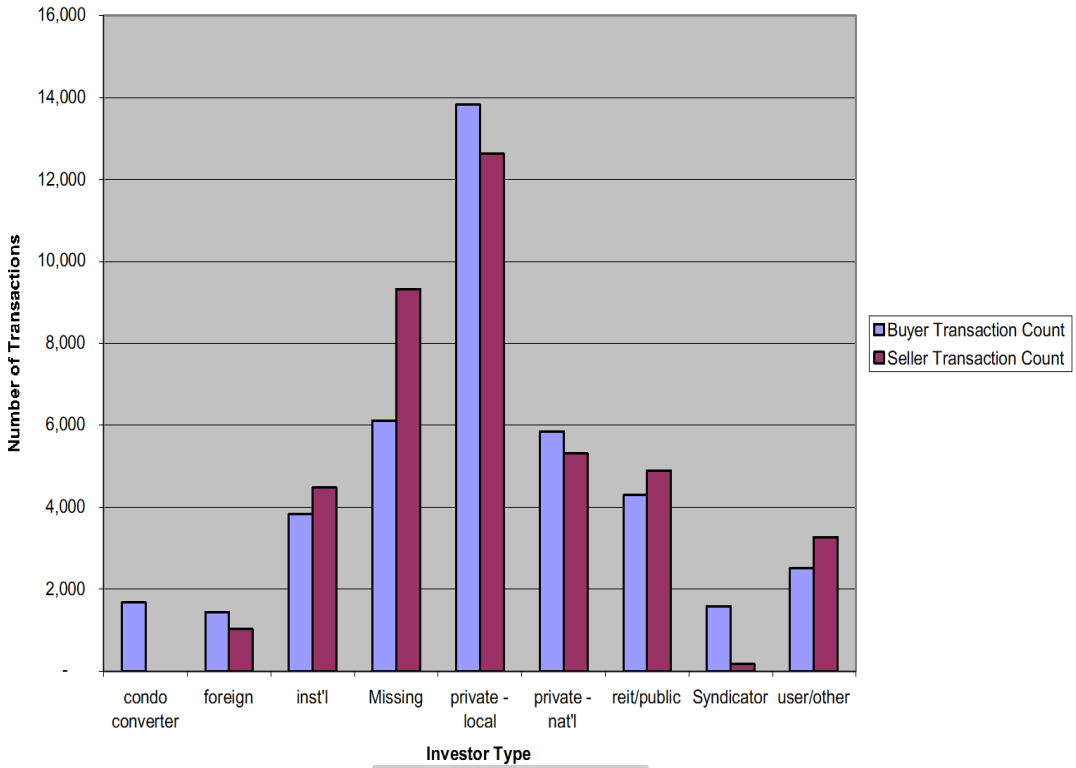
While there are relatively few limitations to this data set, the primary limitation is sample size: because the number of observations is relatively small, the repeat sale index may show biases. Figure 2 illustrates that there is much more data since late 2004 than earlier, potentially causing biases, as well. In addition, like the Overall Data Set, another limitation is the lack income return information. This means that investor total returns are not observable. Despite these limitations, there are still many opportunities to make meaningful observations about investor returns in real estate capital markets.

3. Real Estate Capital Flows

As observed in the larger Overall Data Set, private local investors represent the largest category of investors in buying and selling properties. Figure 3 illustrates the number of transactions as counted by buyer type and seller type, respectively

Figure 3

Transaction Count Across All Years by Buyer & Seller Type

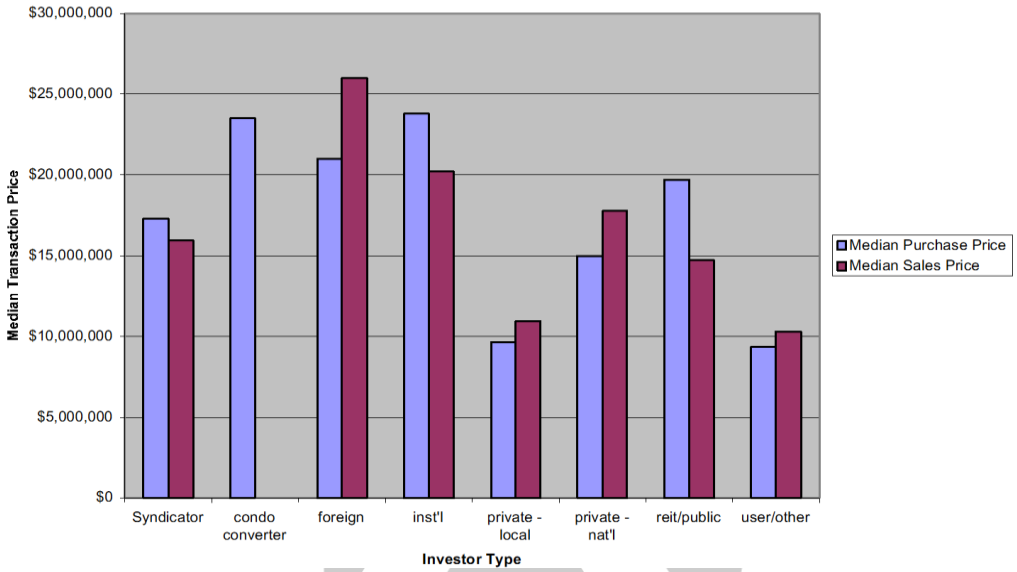


Given this information, it is reasonable to conclude that real estate is still a very "local" business, comprised of many private local investors who are relatively close to the transaction. As described above, these transactions often include joint ventures, whereby one-investor type partners with another. Since institutional, foreign and REIT investors trump other investor partners in terms of investor identification, the number of transactions in which private local investors are involved is actually higher than these figures indicate.

The data also show that median transaction prices differ across investor types between mid-2000 and May 2006. Foreign, institutional and condo converters have the largest median transaction prices. Users and private local investors have the smallest median transaction prices.

Figure 4 illustrates median transaction prices by buyer and seller type, respectively.

Figure 4
Median Transaction Price by Buyer & Seller Type



The mean (or average) transaction price is the smallest for private local investors and Largest for foreign and institutional investors, as illustrated by Figure 5 below.

Figure 5
Mean Transaction Price by Buyer & Seller Type

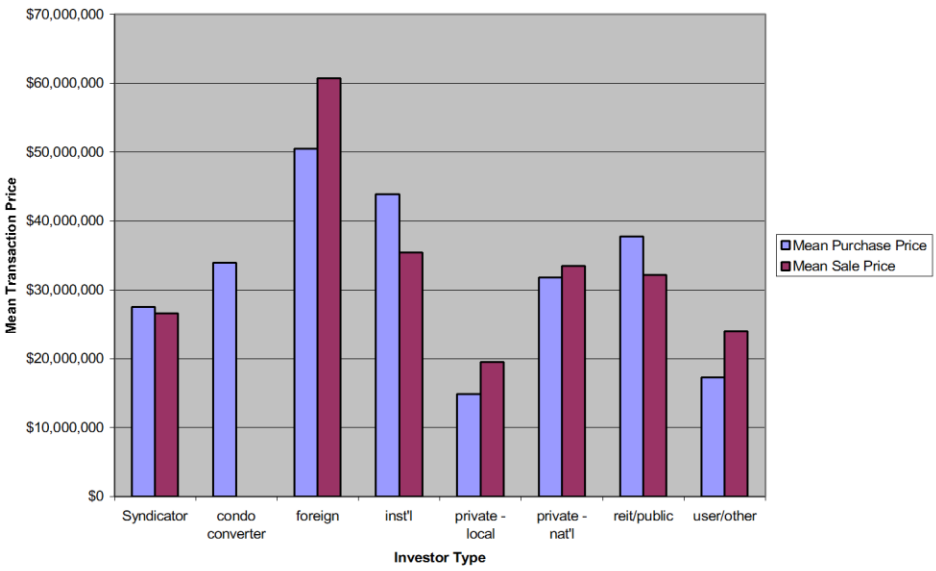


Figure 5 also shows that relatively large transactions cause the mean values to be higher than the median for each investor type.

Transaction Dollar Volume

Even though the median and mean transaction prices for private local investors are the smallest of all investor types (with the minor exception of user/other), private local total transaction dollar volume is the highest of all investors. The sheer number of private local transactions explains this phenomenon. Figure 6 illustrates the total buyer expenditures and total seller proceeds for each investor type from mid 2000 through May 2006. It also shows the net expenditures, equal to total buyer expenditures minus total seller proceeds. When negative, the net expenditures indicate that the total value of property sold exceeded the total value of the property bought.

Figure 6

Total Transaction Dollar Volume by Investor Type from mid-2000 thru May 2006

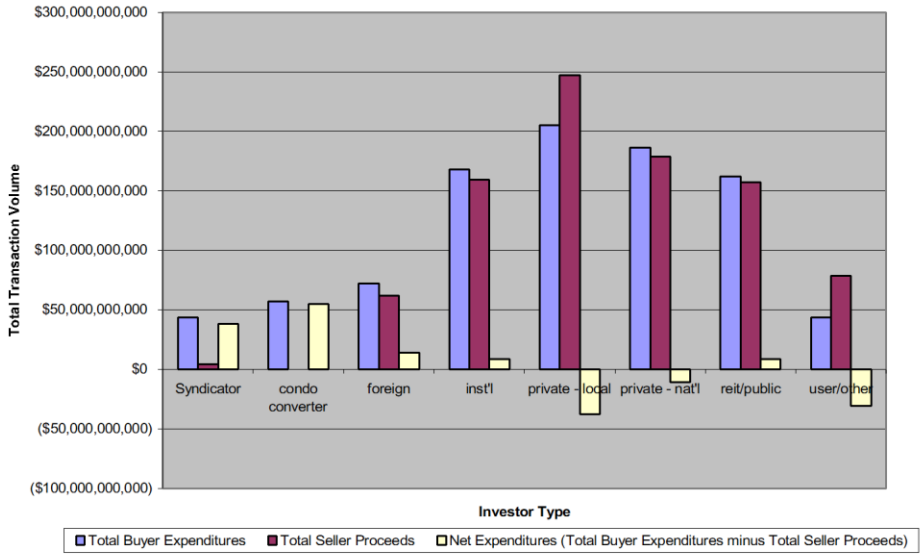


Figure 6 provides several interesting insights. First, it shows that private local investors were the greatest net sellers of real property—in absolute transaction dollar volume between mid 2000 and May 2006. Second, users were also very large net sellers in the sample period, especially given their relative size in dollar volume. One possible explanation is that users were selling their properties as they endured the economic recession of the early 2000s and their revenues possibly lagged. Third, as mentioned earlier in the description of buyers, syndicators and condo converters are rarely, if ever, sellers.

The investing behavior of users, condo converters and syndicators exhibited in Figure 6 deserves greater discussion. The chart illustrates that users often behave differently than the other "major" types of real estate investors. This stands to reason. Users are not typically buying properties for their income stream, as is the case for most other investors. They are buying properties for a specific use, for operations. This means that

users measure property value differently than other investors: if a property suits their operations extremely well, then they are willing to pay a higher price. Generally speaking, a user is willing to pay more for an empty building than other investors, because users can make immediate use of the building. Any other investor must hold an empty property until a tenant is identified. Given the uncertainty of finding a tenant, the investor usually buys at a discount; however, this generalization could change if the investor has a tenant in hand. Whatever the case, users generally behave differently than other types of investors.

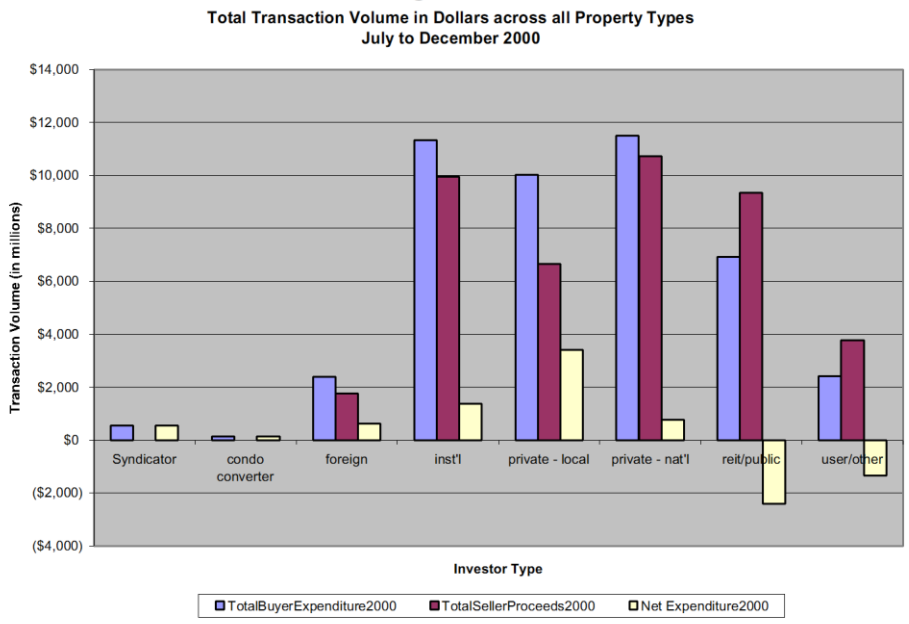
Syndicators (TIC investors) also behave differently from the "major" real estate investors, in that they rarely sell the whole property. Instead, each individual investor sells his undivided interest to another individual investor, who then becomes part of the syndicate. The significant level of buying activity by syndicators can be partly explained by the rise in popularity of the "1031 exchange", a section in the tax code allowing an investor to sell one property and defer any ensuing capital gains taxes by investing the sales proceeds in "like-kind" property within six months. The "1031 exchange" also partly explains the rise in overall real estate investment activity among other investor types.

The property demand from condo converters was fueled in large part by historically low interest rates that enabled the end-user, the homeowner, to buy condo units relatively inexpensively. Condo converters are viewed differently from the "major" real estate investors, because they sub-divide and sell the acquired property, rather than hold it for rental income.

Transaction Dollar Volume across Time

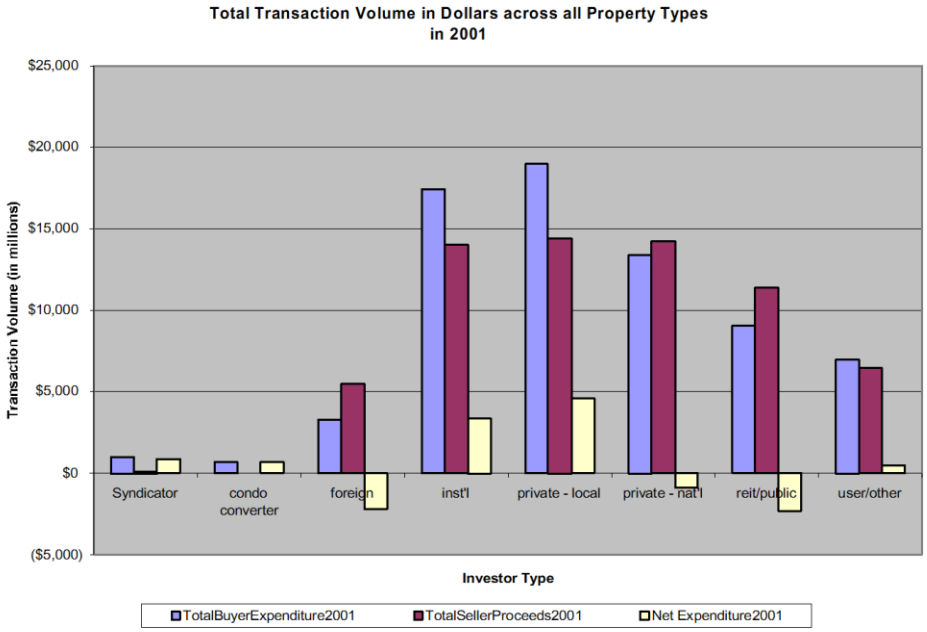
Figures 7 through 12 summarize total dollar volume by investor type in each year. there are two types of investors worthy of noting: public REIT and private local. In the early years (mid-2000 through 2002), REIT investors were behaving in ways quite contrary to other investor types, excluding user/other, syndicators and condo converters. For example, in 2000 REITs were net sellers, while the others (private local, private national, foreign, and institutional) were net buyers

Figure 7



In 2001 REITs were still the largest net sellers, while foreign and private nationals became net sellers, too. Private local and institutional investors were relatively large net buyers of properties.

Figure 8

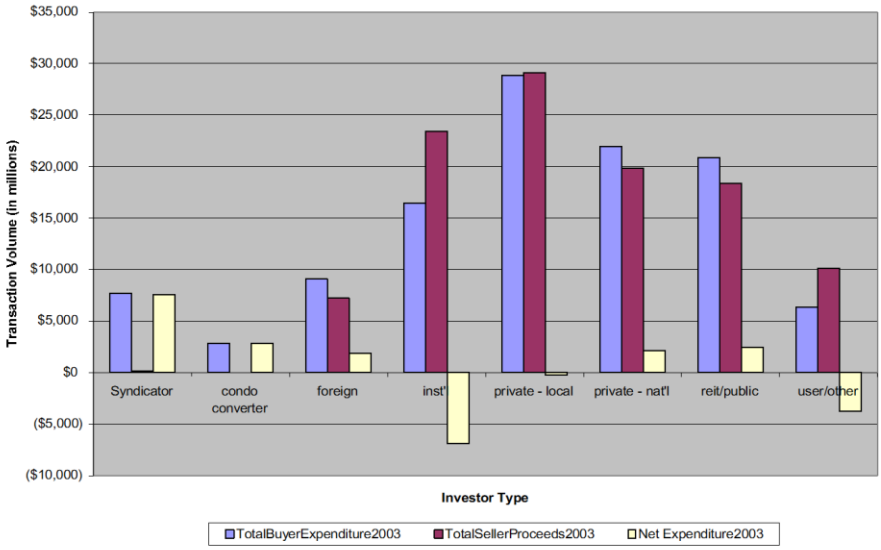


In 2002 REITs reversed their trends and became tremendous net buyers, as illustrated in Figure 9. With the small exception of private locals, the other investors net sellers in 2002.One possible explanation for REITs' voracious property demand during 2002 is the premium that many REIT shares were experiencing relative to property values. As described earlier, these arbitrage opportunities may have encouraged REITs to buy properties with equity raised in a relatively highly valued stock market. This marks the beginning of a four-year period when REITs were net buyers.

It was not until 2002 and 2003 that institution finally "caught up" with the investment activity already exhibited by the other investors (see **Figure 10).** In that year, institutions were net sellers while most other investors were net buyers.

Figure 10

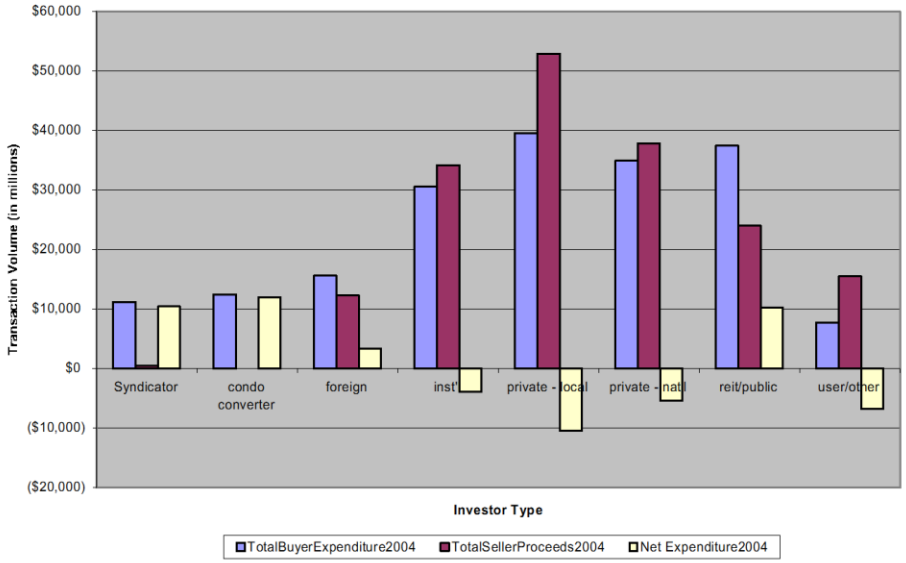
Total Transaction Volume in Dollars across all Property Types in 2003



In 2004 private local, private national and institutional investors were net sellers, while REITs and foreign investors were still net buyers. In terms of absolute dollars, private local investors were the largest net sellers. For the next three years private local investors were net sellers.

Figure 11

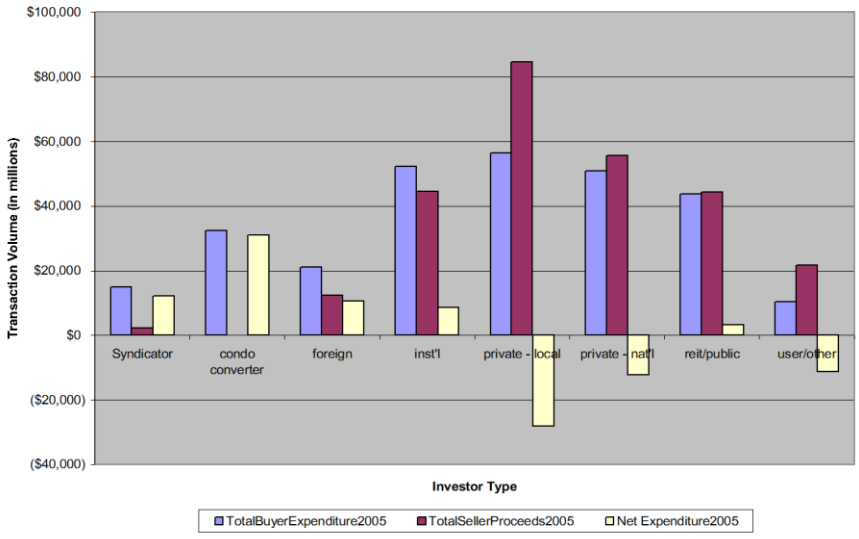
Total Transaction Volume in Dollars across all Property Types in 2004



In 2005 that same trend continued, and private locals became the biggest net sellers by an even larger margin. In that year institutions became net buyers again.

Figure 12

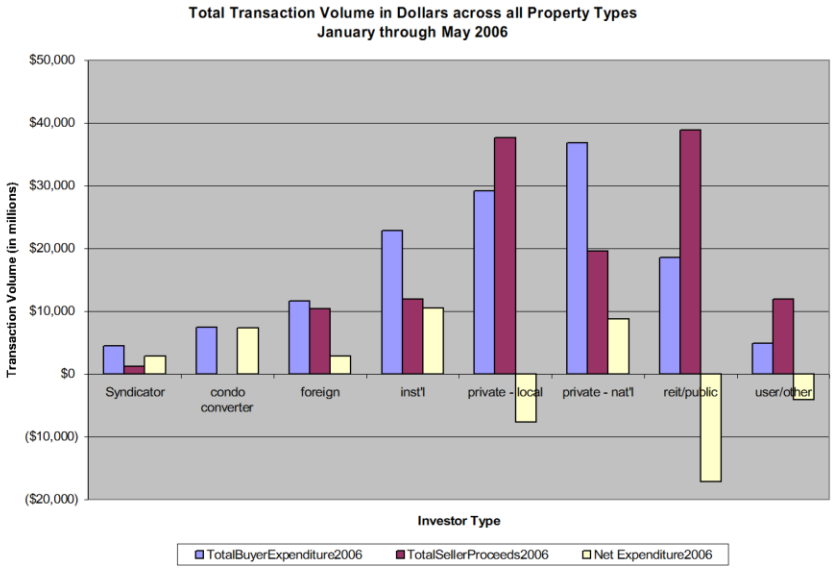
Total Transaction Volume in Dollars across all Property Types in 2005



In 2006, REITs became the largest net sellers by a large margin. Private local investors were the only other net sellers during that time. It is also interesting to note that foreign

Investors were net buyers of real estate from 2003 until May 2006. Relatively strong foreign currencies could explain some of this foreign investor behavior. Attractive US real estate markets could also explain their strong demand.

Figure 13



At a very high level, these differences in capital movement among investor types illustrate some *lead-lag* phenomena; however, it is difficult prove this conclusively given the short time period and various exogenous forces affecting each investor type. "Lead lag" refers to the relationship that two or more investor types have across time. Specifically, it refers to a situation in which one investor type acts in a certain way, and then, some time later, another investor type acts in a similar way. In other words, 'investor one' leads 'investor two', and 'investor two' lags 'investor one.' For example, REITs were the only net sellers of properties in 2000.then foreign and private national investors joined REITs as being net sellers in 2001. In 2002 REITs led others again as being massive net buyers of property when hardly any other investors were net buyers. In 2004 and 2005, the "leaders" changed, and private locals and private nationals were the first investors to become and remain net sellers those two years. Conversely, institutions often lagged and were the last to follow suit in buying or selling properties. If these capital flows do not illustrate *lead-lag* phenomena, they show, at a very minimum, that investors behave in different ways. Their timing into and out of

Investments are often driven by exogenous forces, such as the arbitrage opportunities in the stock market enjoyed by REITs, or favorable foreign currency markets for some foreign investors. These exogenous forces may affect investor types differently, and they often explain 'contrarian' investor behavior.
Coincidentally, according to the Repeat Sale Index results described later, REITs earned among the highest returns of all investors between 2000 and 2003. Moreover, private locals and then private nationals earned the highest returns between 2004 and May 2006. The repeat sale index provides a richer and more accurate examination of investor performance, and *Section 4—Evaluation of Investor Returns* devotes more explanation to the methodology and results. However, further study is required to understand the complete relationship between capital flows and property returns.

Transaction Dollar Volume by Property Type

REITs bought a relatively large volume of retail property. **Figures 14 and** 15 illustrate the transaction volume in dollars broken down by property type. **Figure 14** shows the total amount each investor purchased between mid- 2000 and May 2006, while **Figure 15** illustrates the total amount each investor sold during that years. These figures illustrate that office was the most commonly traded property type in terms of total dollar volume. In fact, with the notable exception of condo converters (who, logically, buy mostly apartments), every investor type bought more office than any other property type.

Figure 14 also illustrates that private locals bought a large volume of apartment property Observing what investors sold (in **Figure** 15) during this time indicates that all investors, with the exception of private locals, sold more office property than any other type in terms of transaction dollar volume. Institutional investors sold relatively high quantities of office compared to the rest of their portfolios and compared to other investors. Private locals sold more apartment properties in dollar volume—than any other property type and also sold a relatively large amount of retail property.

Figure 14
Buyer Expenditures in Total Dollars by Property Type

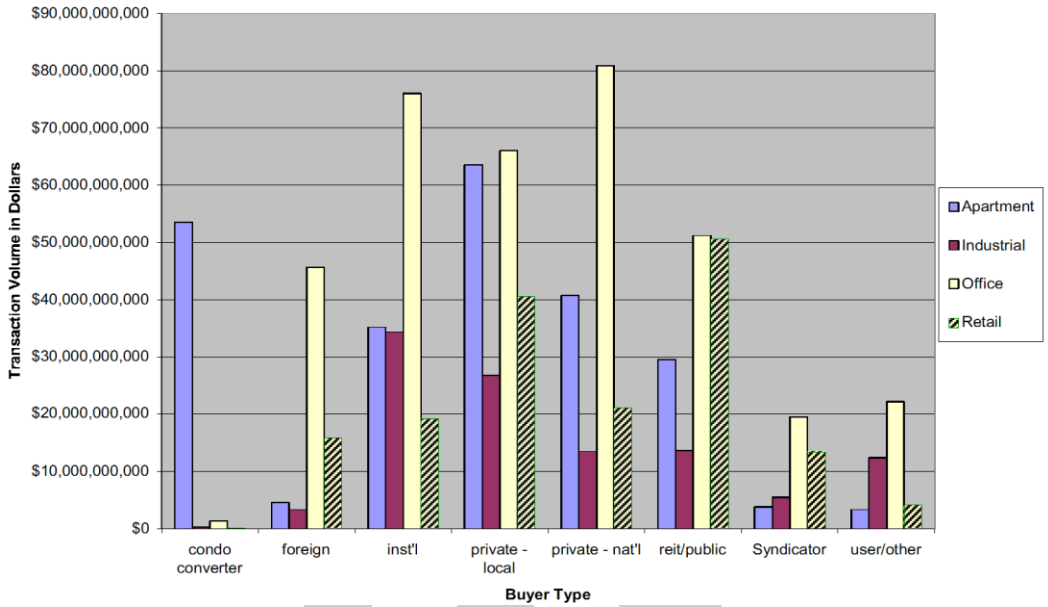
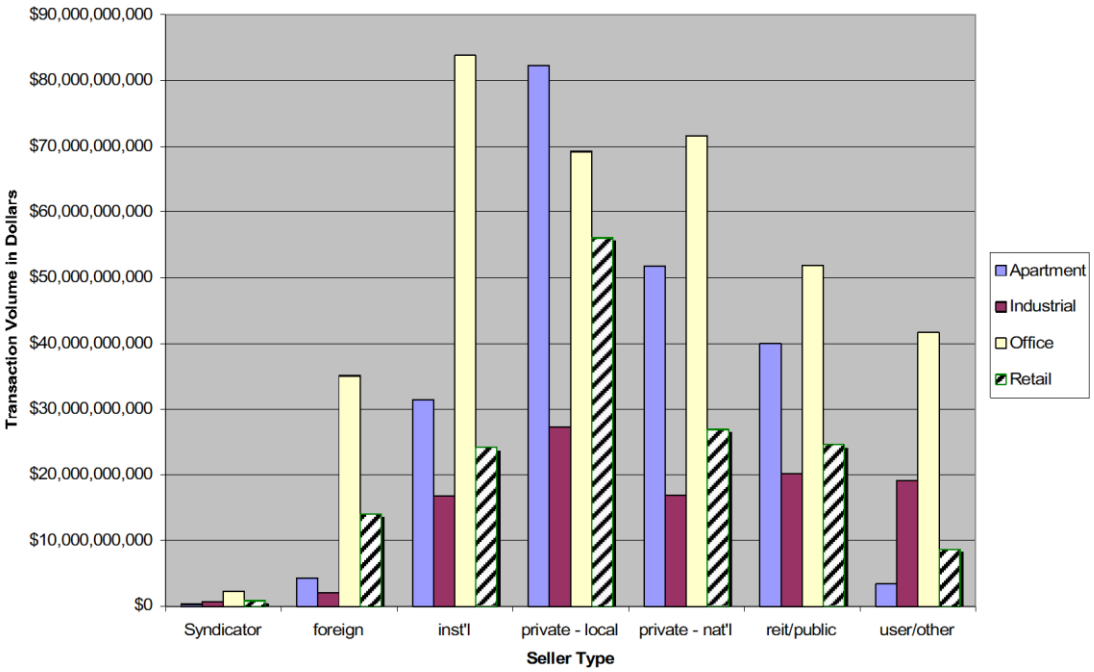


Figure 15
Seller Proceeds in Total Dollars by Property Type



Figures E through L in *Appendix C* illustrate buyer expenditures and seller proceeds by year and by property type. There are several notable periods of activity in

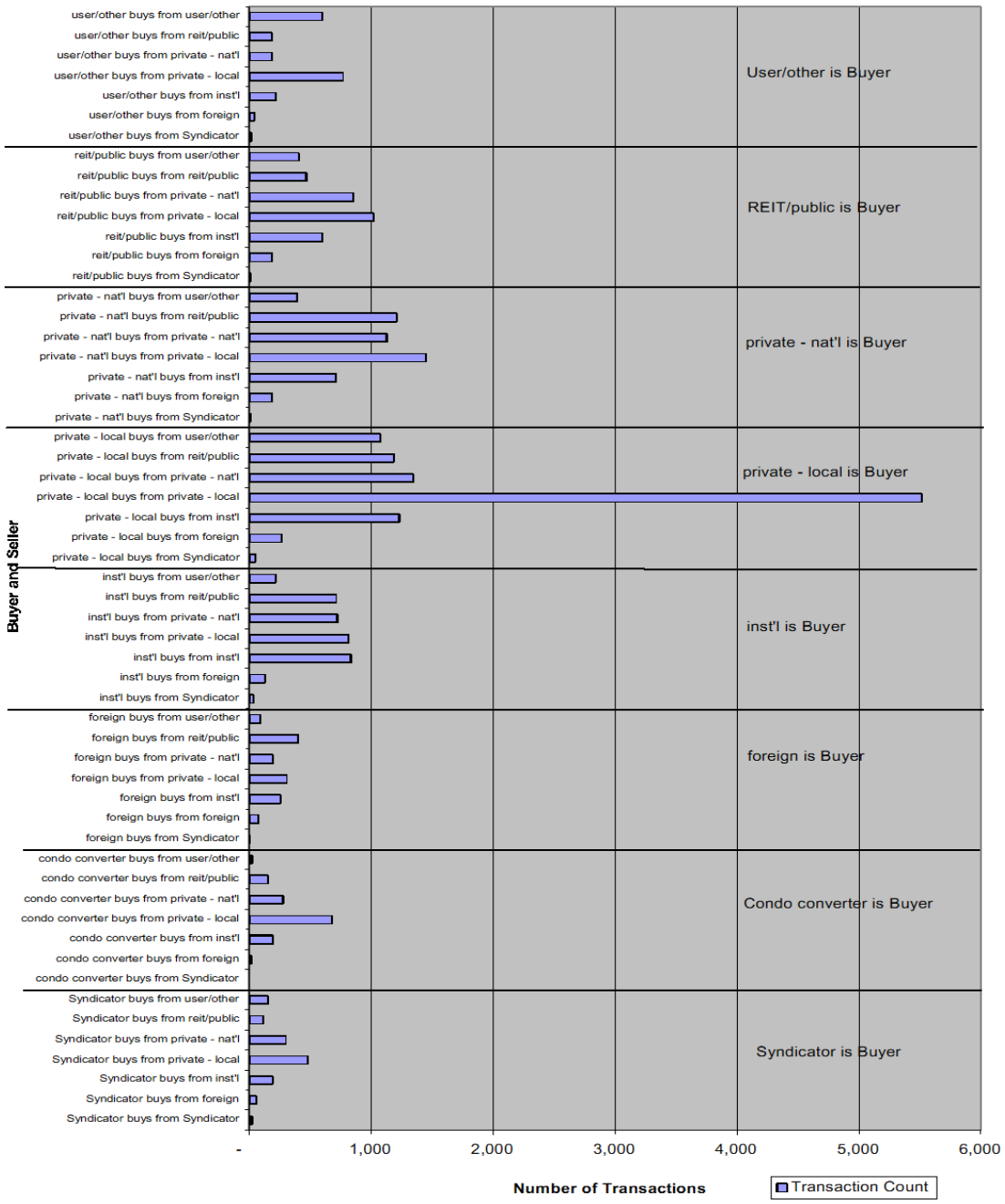
These figures. First, condo converter demand for apartments spiked in 2005, illustrating just how explosive that market became (see **Figure E).** Second, institutional investors bought a relatively large quantity of industrial property in 2001 and 2005 (see **Figure F).** Incidentally, industrial values dipped in 2001-2, but were rising in 2005. Third, REITs bought a tremendous amount of retail property in 2002, 2003 and 2004 (see **Figure H),** as retail values were experiencing a steady rise. Fourth, REITs were heavy sellers of industrial property in late 2000 (just before the dip in value) and early 2006 (after values had climbed), while private locals were large sellers of industrial in 2005 (see **Figure J).** Fifth, foreign investors were heavy sellers of retail property in 2002 and heavy buyers of retail in 2005 (see **Figure** L and **Figure** H), while private local investors were heavy sellers of retail in 2003 and 2004 (see **Figure** L). These are interesting observations when made alongside the repeat sale index results. This is done below in the Section entitled *Direct Comparison of Capital Appreciation Returns to Capital Flows.* Broadly speaking, REITs, foreign and private locals each earned the highest returns at various points during the sample period, while institutions earned the lowest cumulative returns.

Buyer/Seller Combinations — who buys from whom?

Evaluating who buys from whom provides additional insight to investor behavior and the competition among buyers within real estate capital markets. **Figure 16** illustrates these buyer/seller combinations between 2000 and 2006. The figure is divided horizontally into eight sections, each section representing a buyer type. The top section, labeled "user/other is buyer," illustrates the transaction counts when "user/other" investors bought properties. Within this section, each of the seven horizontal bars represents the transaction counts between users and the respective seller types. The top bar, for example, labeled "user/other buys from user/other", illustrates there were about 600 transactions in this data set in which a user/other bought from a user/other.

Figure 16

Buyer/Seller Combination Count between mid 2000 and May 2006



Several interesting observations can be made from **Figure 16.** First, the longest bar illustrates there were approximately *5,500* transactions in which private local investors bought from private local investors. This was the most frequent buyer/seller combination by a very large margin. Moreover, private local investors were very active buyers from institutional, REIT, user/other and private national sellers. The conclusion is that the real estate business is still a very local business, as over 19% of the 28,785 transactions represented in **Figure 16** were between private local buyers and sellers. This is a significant proportion of transactions, given that there are seven other investor types evaluated. All in all, private local investors were buyers in 10,672 transactions, or 37% of all transactions in this sample. Private local investors were also very active sellers in this data set. With the exception of institutional and foreign investors, every investor type bought the most properties from private local sellers. The overall second most frequent buyer/seller combination was private nationals buying from private locals, a combination that occurred approximately 1,450 times. In fact, private local investors were sellers in 11,035 transactions, representing 38% of all transactions in this sample. These observations demonstrate that private local investors are not only active buyers, but also active sellers; also real estate transactions are often "private" in nature.

Figure 16 also shows that four investor types—REITs, private local, private national, and institutional—bought and sold properties more often from each other than any other investor types. This is apparent by the relatively large "clusters" of horizontal bars in these respective sections. Take, for example, the section labeled "private Nat'l is buyer." The four-investor types from whom private national investors most frequently bought properties were REITs, private local, private national and institutional investors. This same "cluster" of trading activity occurred for REITs, private local and institutional investors, as well. This information suggests that these four investor types were most often competing against one another for properties.

It is also interesting to note that institutional investors bought from other institutions a few more times than they bought from private local investors, providing some insight to the market for "institutional-quality" properties. Typically, institutional quality properties are relatively large, well-maintained and well-located properties with credit-worthy tenants. While buyers and sellers in the "institutional" market are often both institutional investors, **Figure 16** illustrates that foreign, private local, private national and REIT investors all substantially trade in the institutional property market.

Foreign investors bought relatively large quantities of property from REIT, private local and institutional investors. In particular, foreign investors bought considerably more properties from institutions than they sold to institutions. As illustrated in Figures *4* **and** 5 earlier, the median and mean transaction prices for foreign investors are approximately the same as, or higher than, those of institutions. Because of this high median transaction price and their trading volume with institutions, it is reasonable to conclude that foreign investors are also very active players in the "institutional" real estate market.

Figures 0 through U in *Appendix D* illustrate this break-down by year. Every year private local investors were active buyers and sellers. In addition, private nationals showed relatively high buyer and seller activity through the years.

3. **Evaluation of Investor Returns**
   When evaluating investor returns, the period-by-period total return components are income and growth. Assuming that one period equals one year and that income is received periodically, total return equals income plus growth,

   or:

   $r = y + g.$

Income (y) equals the amount of rent (NOl) the property generates as a percentage of the acquisition price. This is commonly called the cap rate. Growth (g) is equal to the percentage growth in the property value over the period. It is also sometimes called capital return, capital gain, price-change component or capital appreciation.

Consider a simple example: an investor buys a property using all cash for $1,000,000, and this property generates an NOl of $70,000 in year one. Assume, for simplicity, that this rent is collected in one lump sum payment at the end the year. The cap rate is, therefore, 7%. Imagine that the property value grows *5%* during that year. At the end of the first year, the investor collects the rent and sells the property for $1,050,000. Assuming he has not made any additional improvements to the property, the total periodic return equals income plus growth

:

$r = y + g$

$r = 7\% + 5\%$

$r = 12\%$

While actual returns may be different than this (because rent is usually collected monthly), the basic principle for calculating total periodic return holds true. When evaluating investor return within the *Repeat Sale Data Set*, it is not possible to calculate the total return for investors, because the data set does not have income return for every property. Some of the data points have cap rate information, but the cap rate only describes income in year one. It does not provide information on growth in the income component, nor how long the income will last. If, for example, the lease terminates after year one, but the investor continues to hold the property, his return quickly alls. Despite the lack of income information, the *Repeat Sale Data Set* does contain important information relative to growth in property value: all 10,073 data points contain a prior sale price and date, allowing the observer to calculate growth, or property price appreciation. This metric provides a reasonably reliable picture of growth (g), a valuable component of total return.

Income (y) is typically more stable than growth (g). It stands to reason that properties typically keep a relatively constant rental stream because lease terms generally span many years. Even if a tenant moves out, landlords can backfill the vacant space with new tenants relatively quickly. Property values are typically more volatile than income because values are subject to market forces. With changes in capital markets, property supply and property demand, values can fluctuate considerably.

If income is relatively stable, and property values are relatively volatile, then eliminating income returns from evaluation is tantamount to isolating the more differentiating return component: growth. In short, growth demonstrates an investor's skill at knowing when to sell a property—as well as when to buy—in order to maximize returns. Therefore, evaluating growth provides very important insight into investor behavior and performance.

Repeat Sale Index Description and Methodology

In order to study growth in property value, a repeat sale index is used. Theoretically, a repeat sale index works because it measures price appreciation for a property of constant quality. With property characteristics relatively constant during the holding period, this permits observation of price appreciation (or growth). Modest property improvements during the holding period are acceptable because the index is not necessarily estimating the "true" price change, but a change in value from the investor's point of view. Major changes during the holding period, however, will seriously bias the results. For example, if significant capital improvements, such as a new roof, building expansion, or even a major lease, were made to a property, but the costs were not reflected in the acquisition price, this would skew the property appreciation returns too high. The data are not complete enough to account for such capital improvements; therefore, in order to eliminate potentially skewed results, this thesis employs several methodologies to minimize the number of such "improved" properties.

The first method to minimize skewed returns is to eliminate any properties which are held for a short period of time. These properties are often known as "flips" because investors buy them, make improvements, and then flip them for unusually high "returns" when compared to the initial price. For purposes of this thesis, all properties held less than 24 months have been eliminated. Research conducted by the Massachusetts Institute of Technology (MIT) Center for Real Estate has concluded that 24 months is a suitable holding period to eliminate such flips.

The second method to minimize skewed returns is to eliminate properties with extremely high annual returns, as they are more likely to have received capital improvements during the holding period. For purposes of this thesis, all properties that realized *50%* or greater annual appreciation rates have been eliminated from the sample. Again, the same research by the Center for Real Estate has deemed this elimination reasonable for constructing repeat sale indices.

A third method to minimize skewed returns is to eliminate properties whose first transaction (or prior sale) occurred before 1988. This minimizes the chance of including a property which has received capital improvements because of its age.

Finally, while the index is structured to reflect overall property values within a sample, one underlying problem with estimating an index of commercial property values is that the index is composed of numerous unique properties, whose holding periods vary individually. When each observation's error term has a different variance, "the error term is said to exhibit heteroskedasticity (or non constant variance). The repeat sale index used in this thesis addresses these problems by weighting sales pairs. Using the Weighted

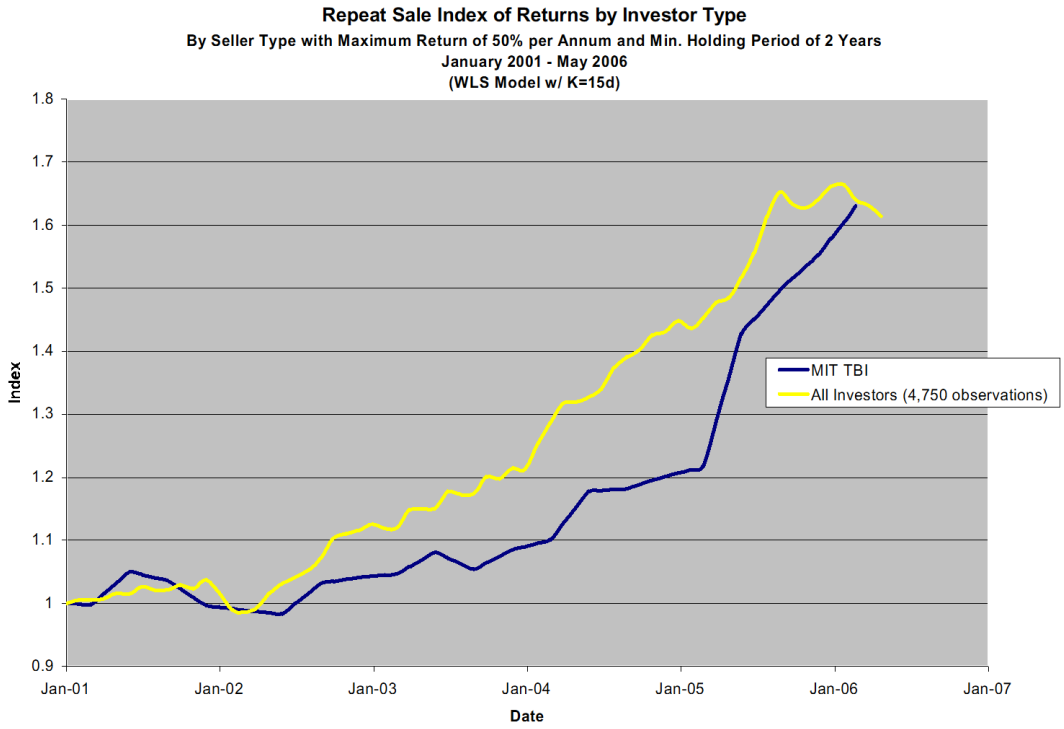
Least Squares (WLS) statistical method, weights are applied using a number that minimizes that property's deviation from a predicted value. The period frequency in a repeat sale index can be any amount of time, but is usually measured in years, quarters or months. In order to achieve significant results using monthly periods, there should be approximately 200 or more observations in the sample. Otherwise the returns could exhibit noise, or purely random error. When the Sample size is too small, the period frequency must be quarterly (or higher) to have reasonably accurate results. There are typically sufficient observations in the *Repeat Sale Data Set* to permit a monthly index.

Given the sample size, the return series captures significant noise. Ridge Regression is an accepted econometric technique for removing noise while still preserving the index's underlying volatility. Research conducted by the Center for Real Estate concludes that a ridge factor of $k = 15$ is an appropriate ridge level in a repeat sale index with a sample size such as used here.

Please see *Appendix E* for a more detailed description of this technique and the effect of different *k* values. This repeat sale index evaluates returns based upon the seller type in the second transaction—not the buyer type. The reason is that the seller in the second transaction is the same investor as the buyer in the first transaction. Therefore, the index calculates the "round trip" investor returns, and these are the returns used to evaluate the performance for each investor type. It is also important to recognize that these returns are calculated at the "property level," without regard to financial leverage. Given that investors take on varying levels of leverage (and therefore varying levels of risk and return), evaluating capital appreciation at the property level eliminates from consideration this additional layer of risk and return.

Repeat Sale Index Results and Interpretations:
Figure 17 illustrates the returns of all investors in the RCA data set, compared against the **MIT** Transaction Based Index (TBI). The TBI is a quarterly index based upon real estate transactions made by institutional investors who are members of the National Council of Real Estate Investment Fiduciaries (NCREIF).

Figure 17



With the indices beginning in January 2001, the two tracked closely together until January 2003, when the RCA 'All Investors' index began to show greater cumulative returns through 2005. From early 2005 until early 2006, the MIT TBI showed rapid appreciation, nearly catching the RCA index as of March 2006. The figure illustrates that institutional investors (as represented by the MIT TBI) during most of the sample period earned lower cumulative returns (they took on less risk) than the overall market (as represented by All Investors). However, by early 2006, both indices showed similar cumulative returns. It is important to note that the timing of RCA's data collection makes the last three months of these indices subject to error. Data is not always promptly received.

Figure 18 parses the RCA index returns by investor type and shows their respective returns. It does not include syndicators or users.

Figure 18
Repeat Sale Index of Returns by Investor Type
By Seller Type with Maximum Return of 50% per Annum and Min. Holding Period of 2 Years
January 2001 - May 2006
WLS Model w/ K=15

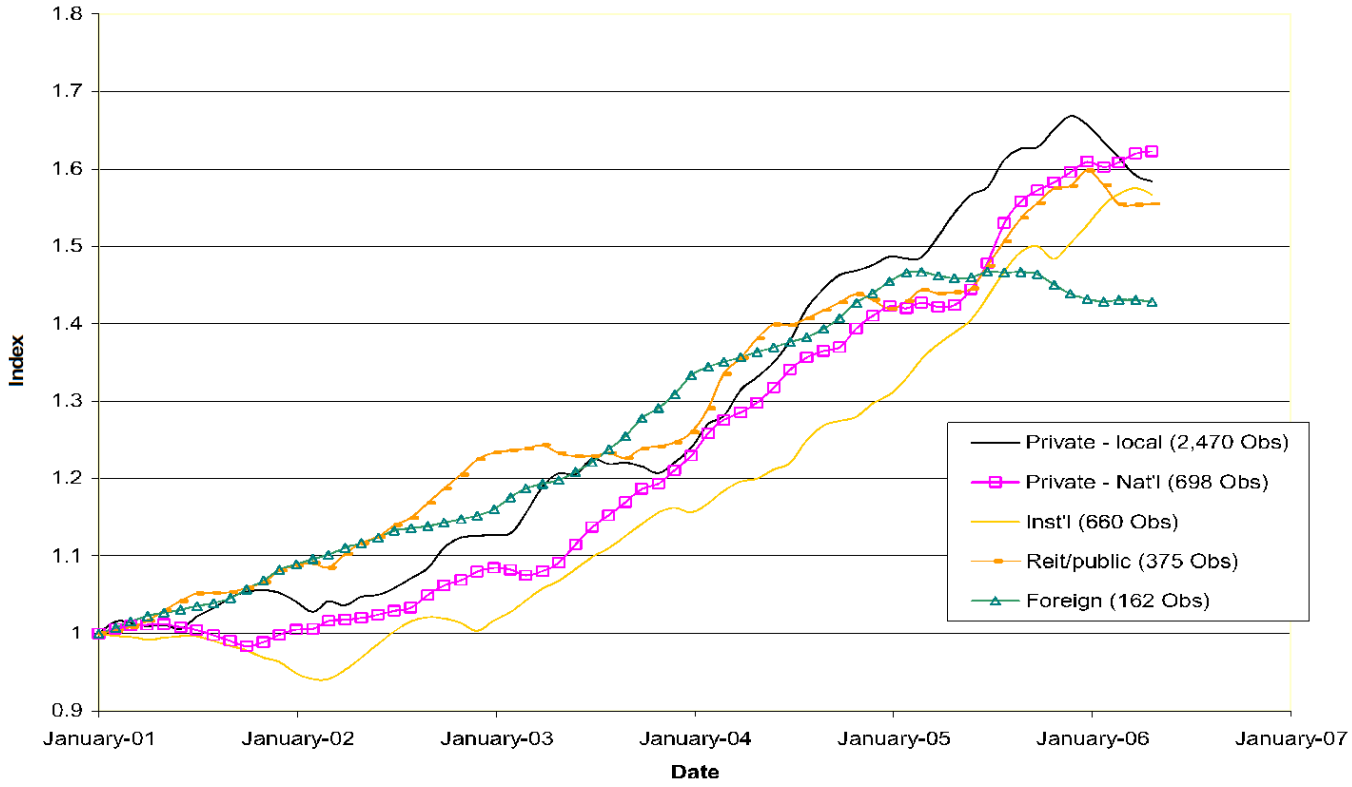


Figure 18 highlights several interesting facts. First, REITs and foreign investors earned the highest cumulative returns through early 2004. On several occasions, REITs exhibited a period of high returns followed by a period of flat returns. For example REITs dominated through much of 2001 and late 2002, before their returns flattened in most of 2003. Then their returns were high in early 2004 before tapering off again in late 2004 and early 2005. They exhibited one last strong climb in 2005. Foreign investors dominated in late 2003 and early 2004, before their returns flattened. These trends are partly explained by the unique capital flows described earlier in the

Transaction Dollar Volume by Property Type section:

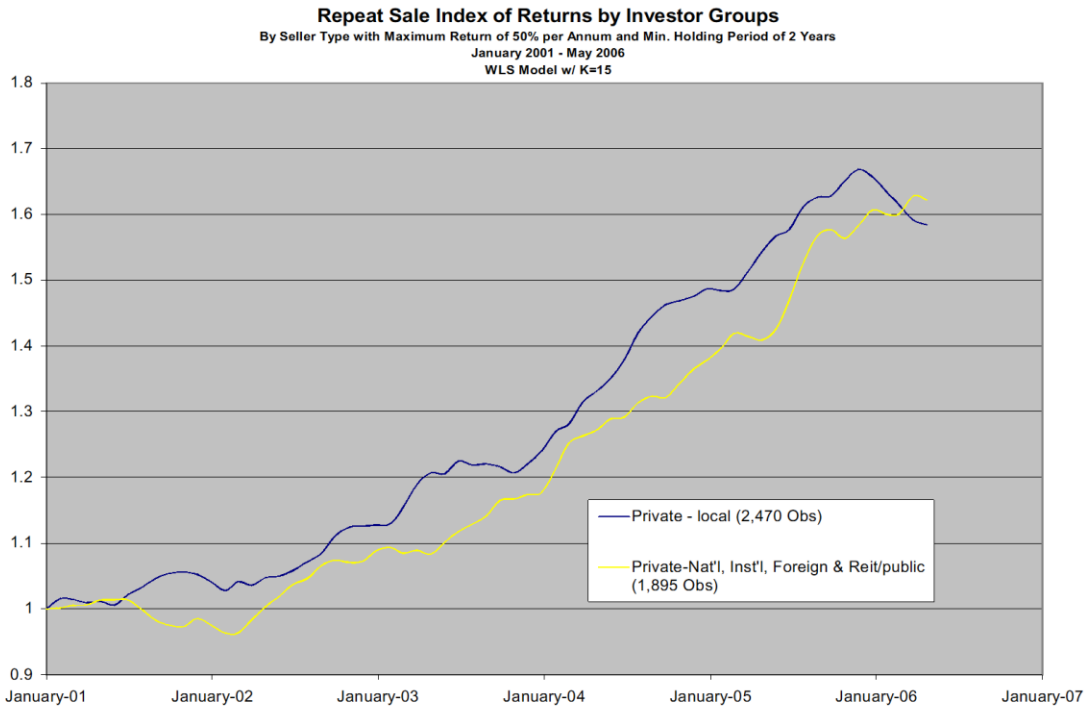
REITs and foreign investors were buying and selling the right property types at the right times, especially in these earlier years. (See Figures E through L in *Appendix C.)* In addition some REITs may have benefited from arbitrage opportunities in the securities market, as described earlier.

Second, private local returns appear to be the most volatile of all investor type returns examined, and their cumulative returns were strong throughout the entire sample period. Private local investors began earning higher returns in early 2004, and from mid 2004 to early 2006 had the highest cumulative returns of all investors in the sample period. This represents the longest continuous period of time that a single investor type earned the highest cumulative returns. One possible explanation is that private local investors sold a large amount of retail property in 2003 and 2004, a time when that property type performed exceedingly well. Another overarching explanation is related to Brown's (2004 & 2005) conclusions that private investors can combine entrepreneurial labor and capital to influence property returns. Private local investors also take advantage of local market inefficiencies, using their unique market knowledge to earn relatively high returns. Third, institutions earned the lowest cumulative returns of any investor from January 2001 until mid 2005. This represents the longest continuous period that one investor type earned the lowest cumulative returns, and can be partly explained by the flat and falling returns throughout 2001 and early 2002. Institutional investors bought a relatively large amount of industrial property in 2001, about the time that industrial return across 60 major markets that provide tremendous economic and geographic diversity.

Returns: Private Local vs. Other Investors

Of the five investor types in **Figure 18,** private locals are a class unto themselves by virtue of their restricted geographical nature. The others (private national, public REITs, institutional and foreign) can be grouped together because of their more extensive geographical reaches. **Figure 19** compares the returns of these two groups.

Figure 19

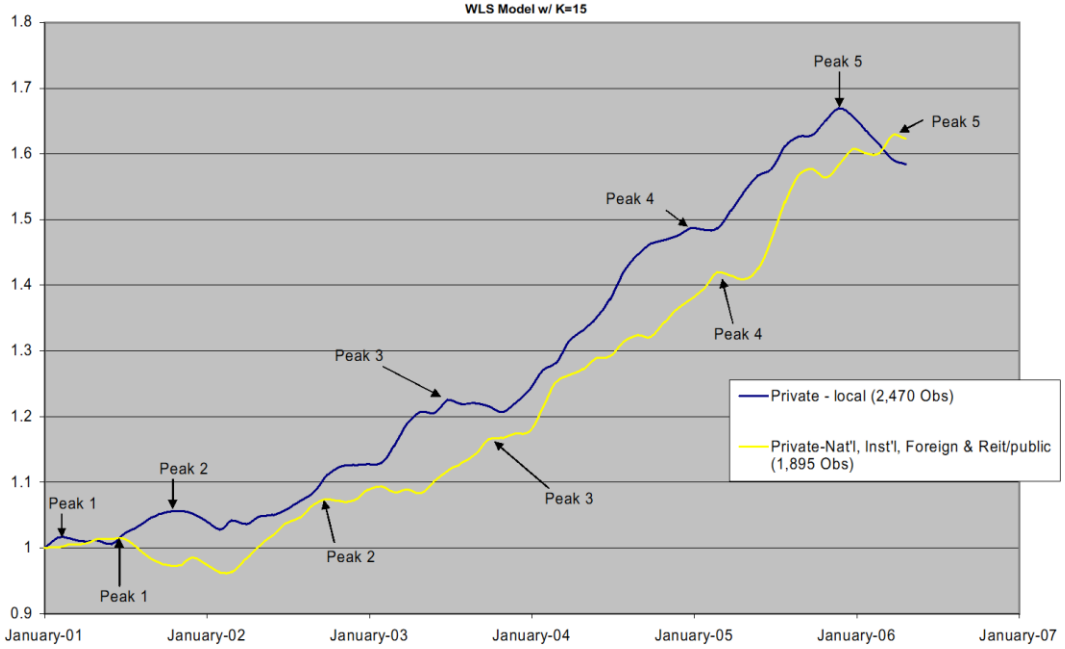


Several points can be made. First, the number of observations for each group is similar and significant; private locals have 2,470 observations and the others, 1,895. Second, private local investors earned higher cumulative returns than the other group, with two exceptions: once, briefly, in 2001, and again in early 2006. It is easy to see how the poor performance by institutions in 2001 affected the entire group's performance during that same time. The lower cumulative returns speak, in part, to the nature of the risk being born by each investor group. Private national, public REIT, institutional and foreign investors have a greater tendency to invest in a fiduciary capacity than private locals. Investing on behalf of others typically means more investment restrictions and a lower risk-tolerance. Conversely, private locals usually have fewer restrictions because they invest their "own" money; hence, typically a higher risk tolerance. Third, there appears to be a *lead-lag* relationship in return trends between these two groups. The private local returns lead and the others lag. **Figure** 20 illustrates this final point with more clarity.

Figure 20

Repeat Sale Index of Returns by Investor Groups

By Seller Type with Maximum Return of 50% per Annum and Min. Holding Period of 2 Years
January 2001 - May 2006
WLS Model w/ K=15



The corresponding peaks are labeled for clarification. 'Peak 1' along the private local line leads 'Peak 1' along the other line by approximately six months. 'Peak 2' along the private local line leads 'Peak 2' for the others by nearly one year. The lead time drops to approximately three months at Peak 3', and for the remainder of the peaks and valleys, private locals lead the others by no more than three or four months.

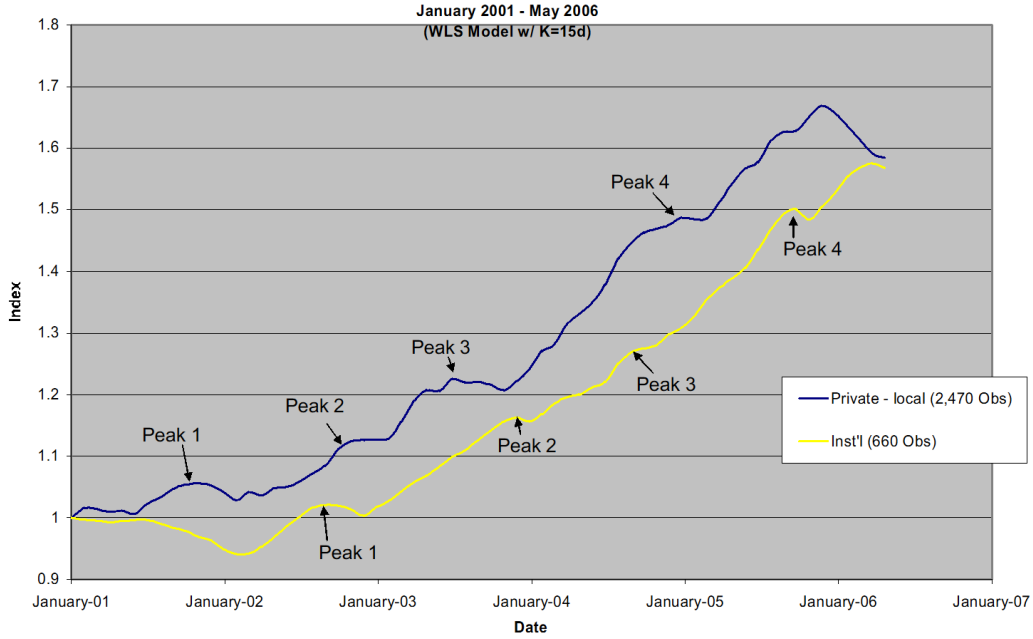
Figure 20 also illustrates that the nature of returns in earlier years (2001 and 2002) was different than the nature of returns in later years (2003 to May 2006). There were several differences: First, the lead-lag relationship was longer in the earlier years and shorter in later years, as just described. Second, the peaks and valleys of returns for Private local investors were more "compact" in the early years than those of the other investors. The other investors' returns appear to be "smoothed" over longer stretches of time, while the private local returns appear to move more over shorter periods of time. In short, private local returns appear more volatile than others' returns in the early years. Third, in the later years, the returns for the other investors track much more closely to those of private locals. In fact, others' returns appear to be just as volatile as—and sometimes more volatile than—those of private locals.

There are likely many explanations for this apparent *lead-lag* relationship. First, perhaps private local investors are swifter to recognize information asymmetries because of geographical advantages: they are usually most familiar with local market forces and individual property characteristics. Second, the difference in investor risk profiles may

explain these results. If private local investors are more "risk tolerant" than other investor types, then perhaps they are willing to risk being the first to invest in—or sell—a certain type of property. Conversely, more "risk averse" investors often wait until a property type has established itself before investing. Third, private investors typically are more nimble in their decision-making process, whereas institutions and REITs must obtain authorization to buy or sell from multiple layers of management. Fourth, different tax motivations may cause investors to move at different speeds; perhaps a 1031 exchange makes a private local investor move more quickly than an institution or REIT who receives different tax treatment. It is likely that all of these reasons—and others-explain the *lead—lag* relationship. However, more research must be done to establish whether this lead-lag relationship actually occurs over longer time periods and whether private locals are typically the leaders in return trends.

Figure 21 explores the *lead-lag* relationship between two specific investor groups: private locals and institutions. It illustrates **a** more apparent *lead-lag* relationship between these two investor types than **Figure 20** illustrates.

Figure 21
Repeat Sale Index of Returns by Investor Type
By Seller Type with Maximum Return of 50% per Annum and Min. Holding Period of 2 Years
January 2001 - May 2006
(WLS Model w/ K=15d)



The private local returns appear to lead the institutional returns by up to 12 months, depending on the year. Given the number of observations in this data set, it is difficult to determine which peaks along the private local index exactly correspond to those along

the institutional index. The peaks labeled above are merely best guesses, but even the small vacillations in the private local index seem to appear later in the institutional index. Additionally, cumulative private local returns are not only greater, but also more volatile than the institutional returns. This speaks to the nature of the risk that each investor group takes on. The more apparent *lead-lag* relationship between these two groups can be partly explained by the fact that institutional investors are more strictly "fiduciary," whereas REITs, foreign (and certainly private) investors typically have more entrepreneurial tendencies.

This final point regarding entrepreneurial tendencies deserves greater attention. This thesis has already addressed the entrepreneurial tendencies exhibited by some private investors. REITs and foreign investors often exhibit this same behavior. Many REITs are well established in specific markets, giving them keen market knowledge and an informational edge over others. In addition, as developers, REITs often seek "growth"

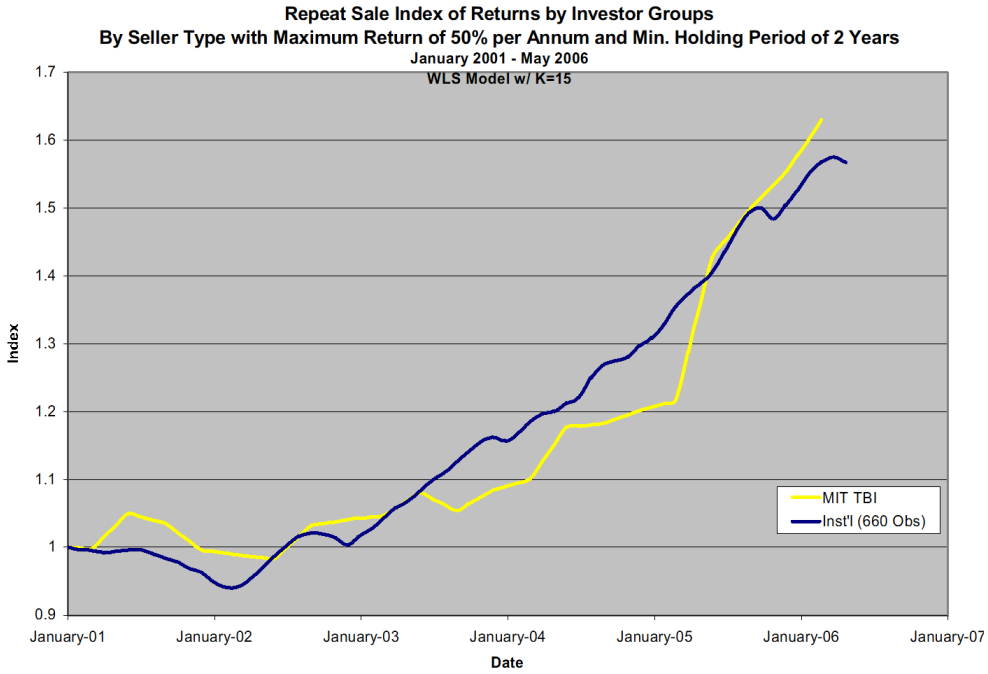
Opportunities or chances to add great value to real estate. With respect to foreign investors, not all are "fiduciary" in nature; many are entrepreneurial individuals, corporations and opportunity funds seeking higher risks. Sometimes they partner with private locals who know the markets intimately.

It appears that investors, who have entrepreneurial tendencies, or greater inclination to create new value, typically earn higher returns than those seen as more "fiduciary", ie. Institutional investors. An incentive to add value might include retenanting a building, making capital improvements, or taking advantage of special market knowledge. While every effort has been made to eliminate properties that have been "improved", it is not possible to eliminate the underlying traces of entrepreneurial behavior. Because entrepreneurial investors tend to take on additional risk, it follows that their returns would be higher than others who take on less risk.

Returns: Institutional Comparisons

Given that the MIT TBI is composed of only institutions, it is interesting to compare this index to the Repeat Sale index of institutional investors.**Figure 22** illustrates that these returns were fairly close to one another throughout time, with one exception: during 2004 the TBI cumulative returns fell below the other index; however, very high returns in early 2005 enabled the TBI cumulative returns to surpass those of Institutions by mid 2005.

Figure 22



Though the TBI measures returns only through March 2006, while the others measure returns through May 2006, both cumulative returns terminate at about the same point. *Returns: REITs* given the excellent performance of REITs through 2004, it is interesting to compare the returns of this investor to all other types. **Figure** 23 illustrates that REITs earned higher returns early, but were surpassed in 2005 by all the other investors. There is no apparent lead-lag relationship for REITs and other investors in **Figure 23.**

Figure 23

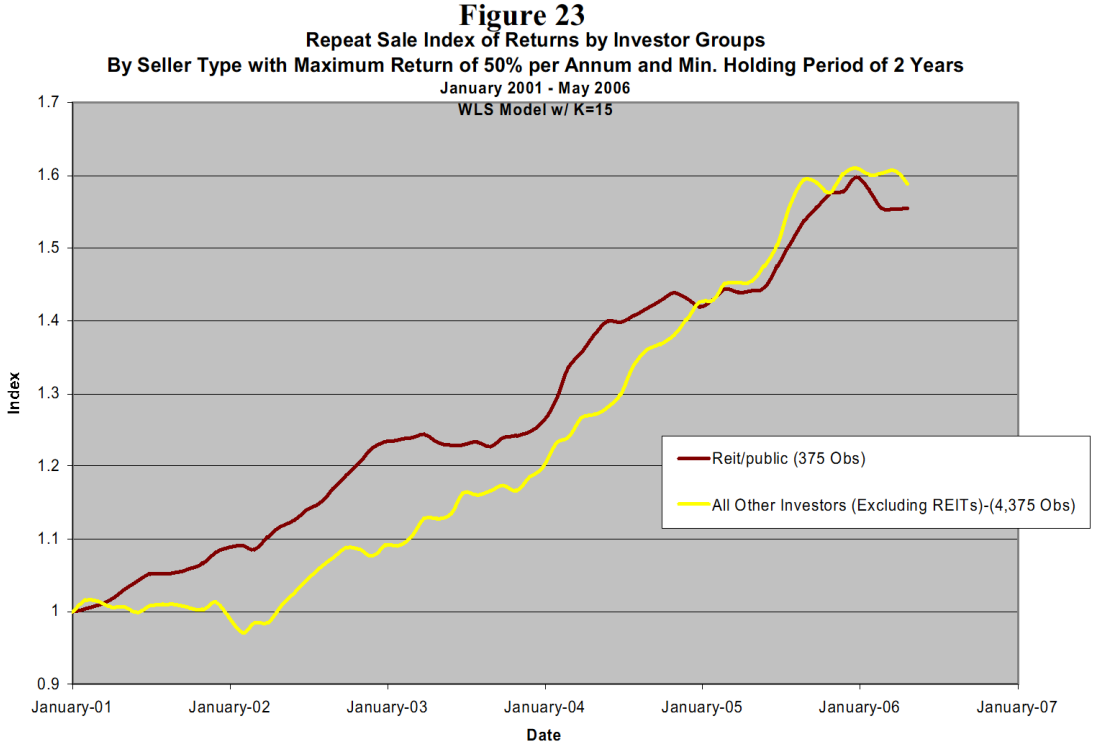
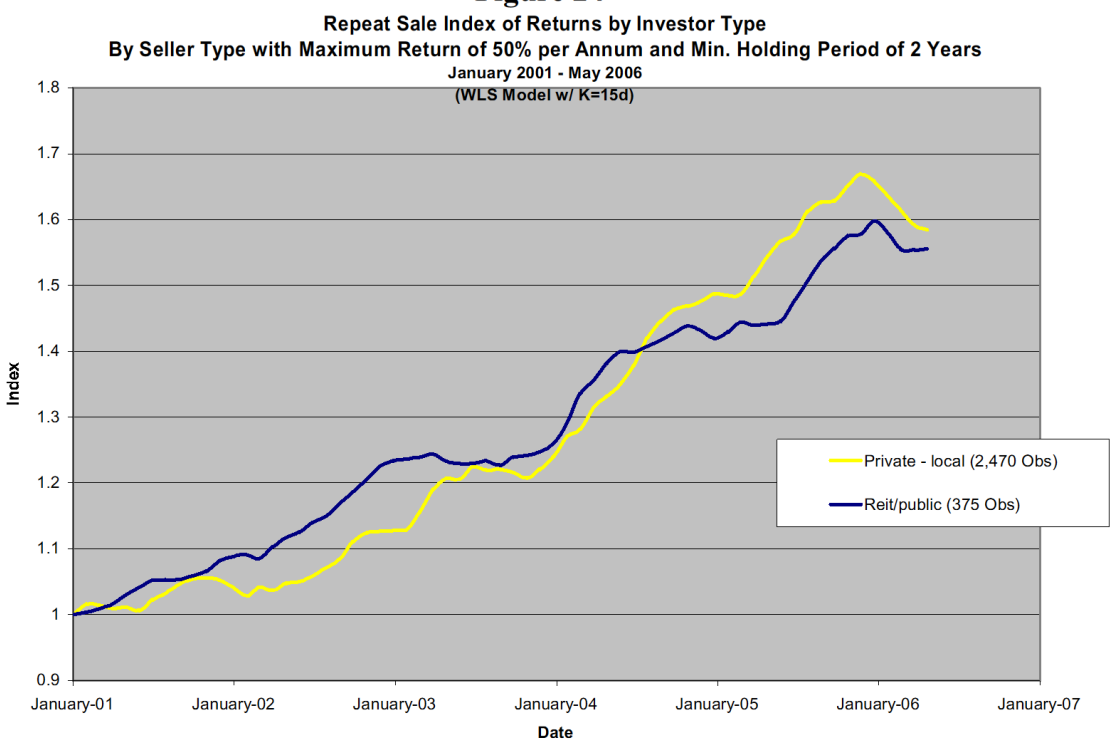


Figure 24 illustrates that REITs earned greater cumulative returns than private local investors until mid-2004, at which time private local returns began to a steady rise. One

Figure 24



Might argue that REITs led private local investors in return trends until mid-2004, at which time private local investors began to lead REITs; however, given the short time period and the "switch" in leads, it is difficult to declare that one absolutely leads the other. It is safe to conclude, however, that REIT and private local cumulative returns tracked rather closely to one another the entire time, terminating at a very similar point

.

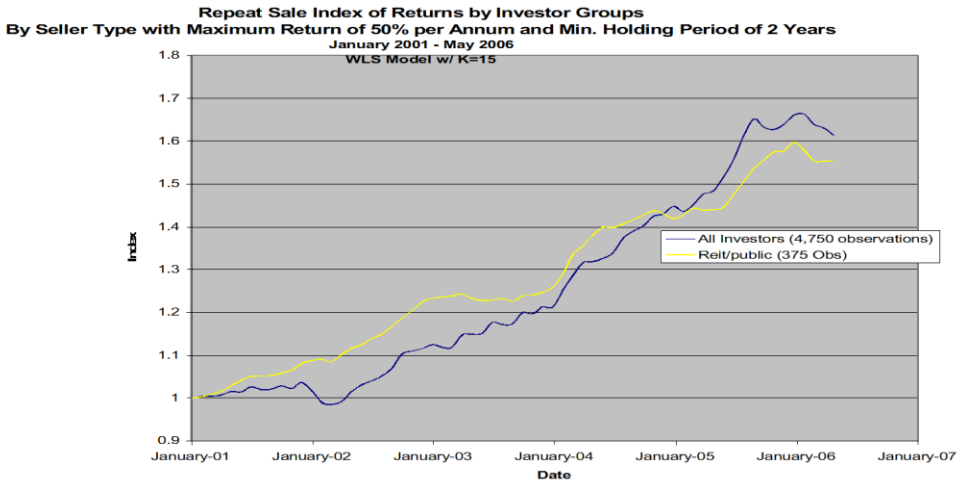
Direct Comparison of Capital Appreciation Returns to Capital Flows

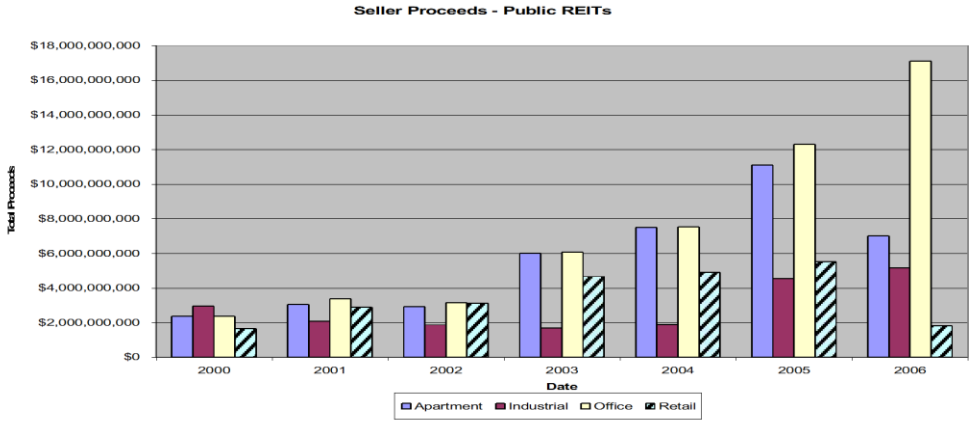
Earlier observations in this thesis touch on the relationship between capital flows and capital appreciation returns by investor type. For example, when REIT and foreign investors were leaders in buying or selling real estate, they also tended to earn the highest returns. Likewise, when private locals led in buying and selling, they tended to earn the highest returns. Because return indices are based on seller type, it follows that sale proceeds have great impact on returns. In general, higher sales activity led to positive return performance during the rising real estate market from 2000 to 2006. However, buyer expenditures also had impact on returns if investors bought properties at the right time or at a good price.

The following figures **(Figures 25 through 31)** illustrate these relationships between capital flows and capital appreciation returns for each investor, year by year. **Figure** 25, for example, shows the REIT return index against a benchmark, the index of returns for all investors. Below that chart on the same page is another chart showing REIT yearly seller proceeds in dollar volume by core property type. Below that is a similar chart showing buyer expenditures for REITs. The years are aligned accordingly so that one can easily observe the temporal relationship between REIT capital flows and REIT returns. For instance, relatively constant sales for REITs in 2000 to 2003 corresponded with strong returns. Strong REIT buying activity in 2002 likely tempered returns in 2003, but lifted returns in later years. This same chart formation has been done for each investor type.

Figure 25

Public REIT Investor Returns and Capital Flows




Seller Proceeds - Public REITs
$18,000,000,000
$16,000,000,000
$14,000,000,000
$12,000,000,000
$10,000,000,000
$8,000,000,000
$6,000,000,000
$4,000,000,000
$2,000,000,000
$0
Total Proceeds
2000
2001
2002
2003
2004
2005
2006
Date
Apartment
Industrial
Office
Retail

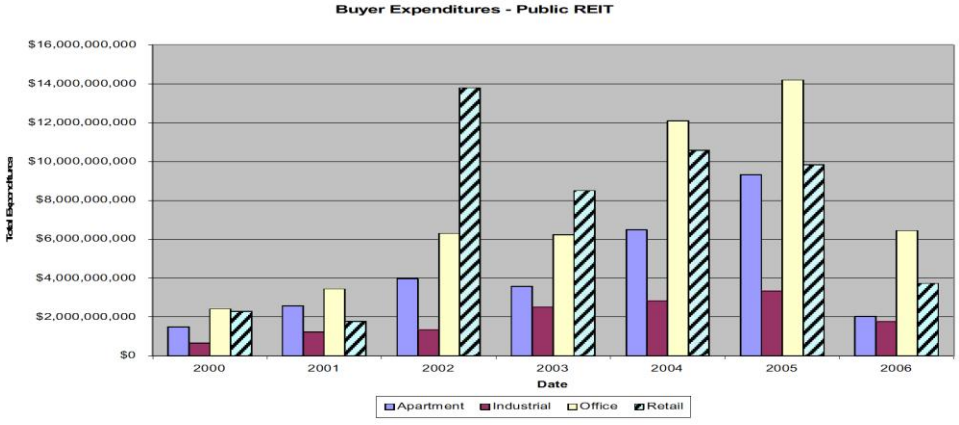
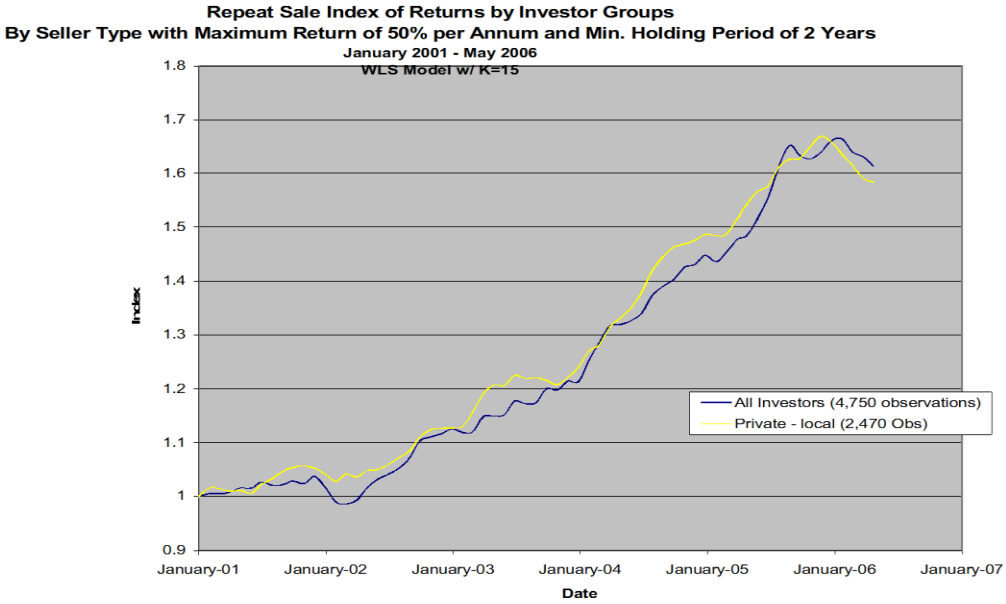
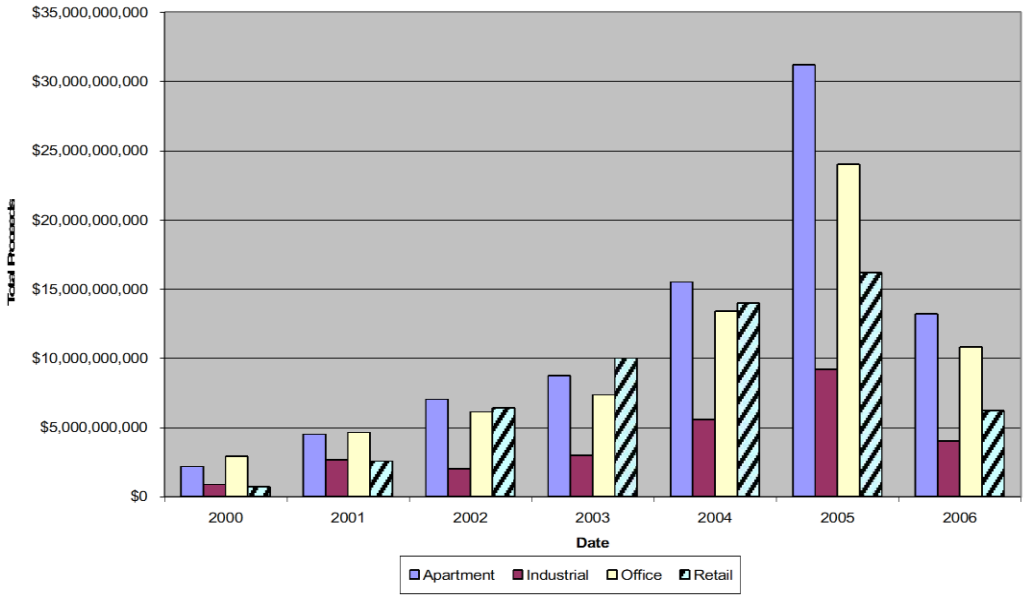

Buyer Expenditures - Public REIT
$16,000,000,000
$14,000,000,000
$12,000,000,000
$10,000,000,000
$8,000,000,000
$6,000,000,000
$4,000,000,000
$2,000,000,000
$0
Total Expenditures
2000
2001
2002
2003
2004
2005
2006
Date
Apartment
Industrial
Office
Retail

Figure 26

Private Local Investor Returns and Capital Flows





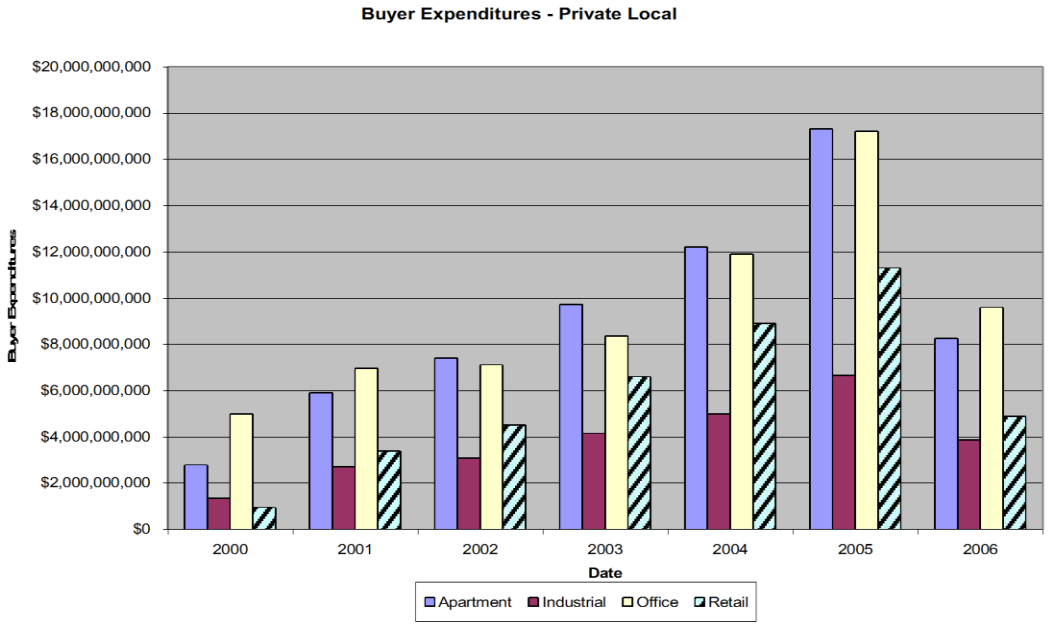
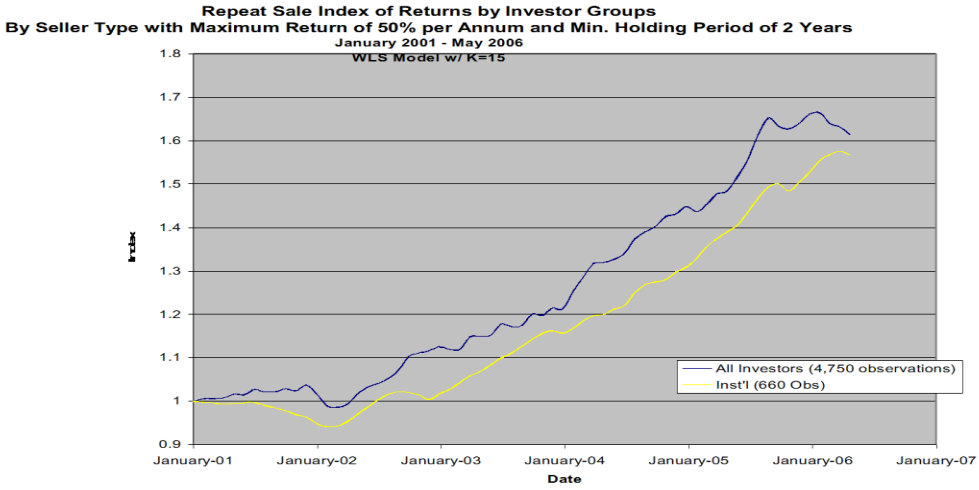
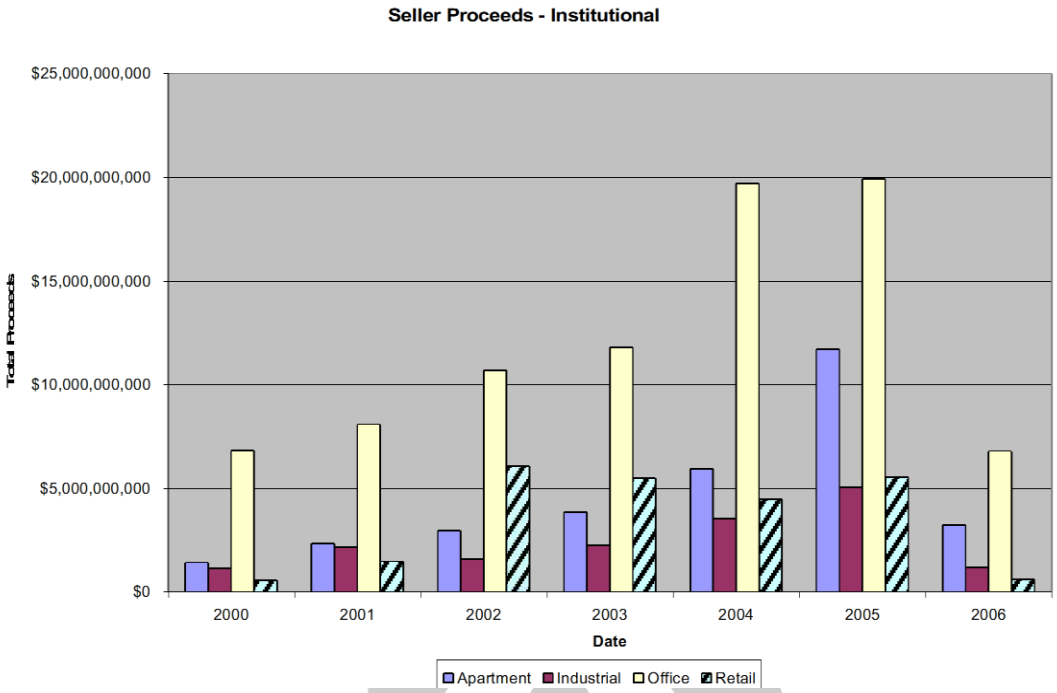


Figure 27

Institutional Investor Returns and Capital Flows




Seller Proceeds - Institutional
$25,000,000,000
$20,000,000,000
$15,000,000,000
$10,000,000,000
$5,000,000,000
$0
Total Proceeds
2000
2001
2002
2003
2004
2005
2006
Date
Apartment
Industrial
Office
Retail

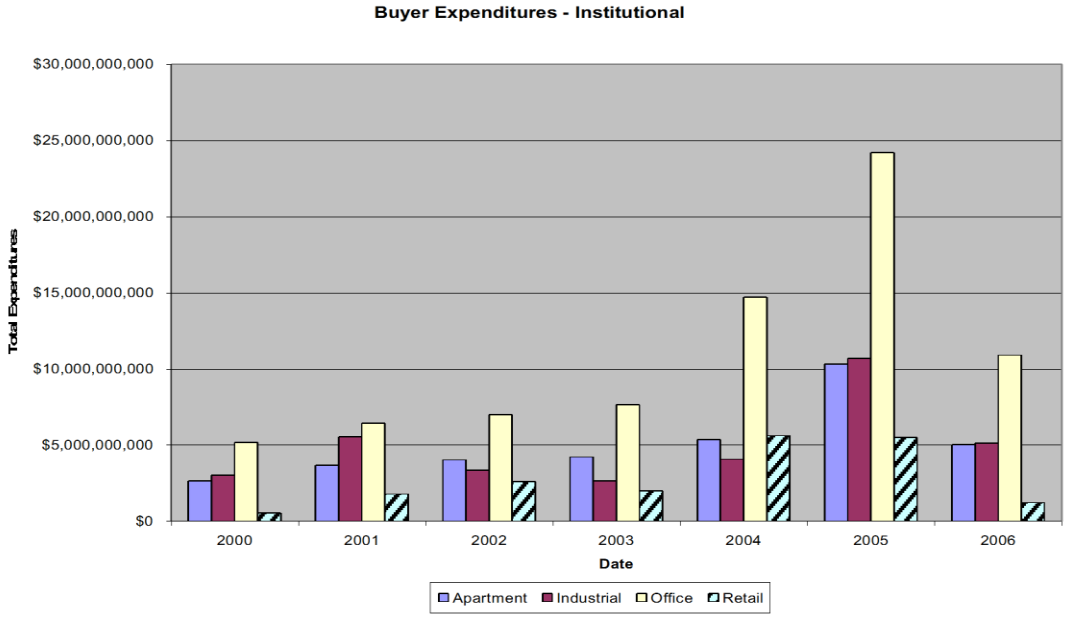
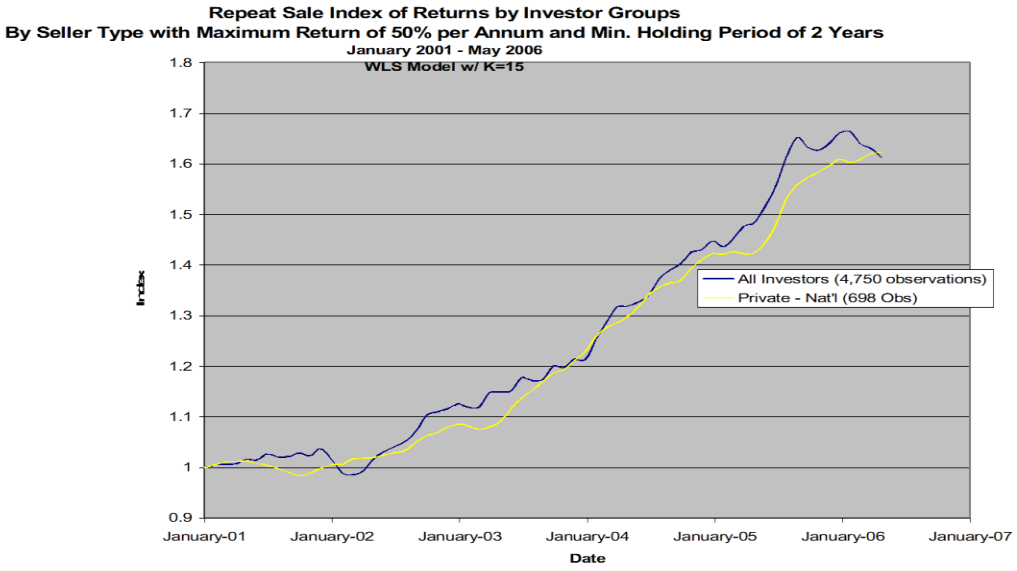
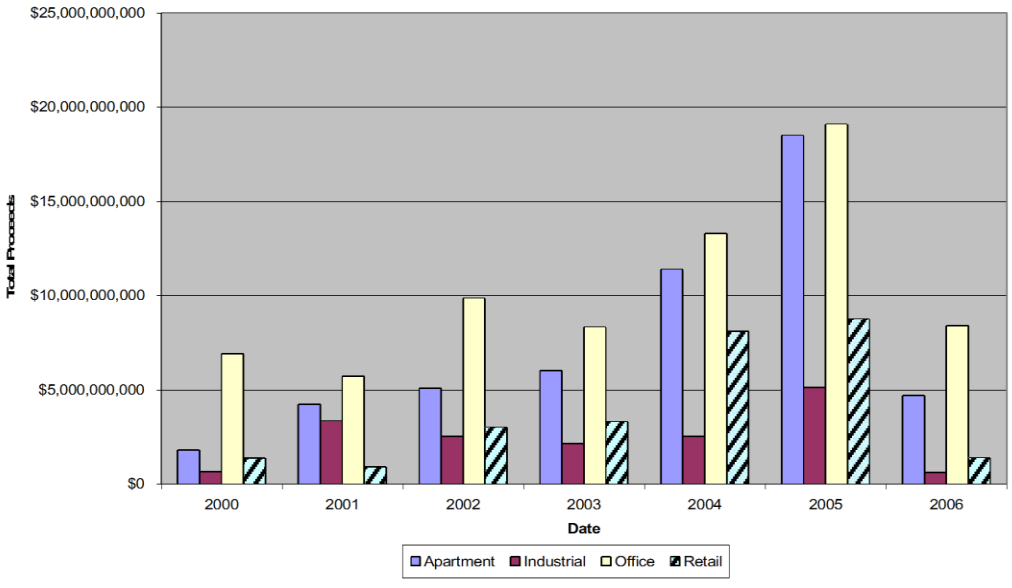

Buyer Expenditures - Institutional
$30,000,000,000
$25,000,000,000
$20,000,000,000
$15,000,000,000
$10,000,000,000
$5,000,000,000
$0
Total Expenditures
2000
2001
2002
2003
2004
2005
2006
Date
Apartment
Industrial
Office
Retail

Figure 28

Private National Investor Returns and Capital Flows





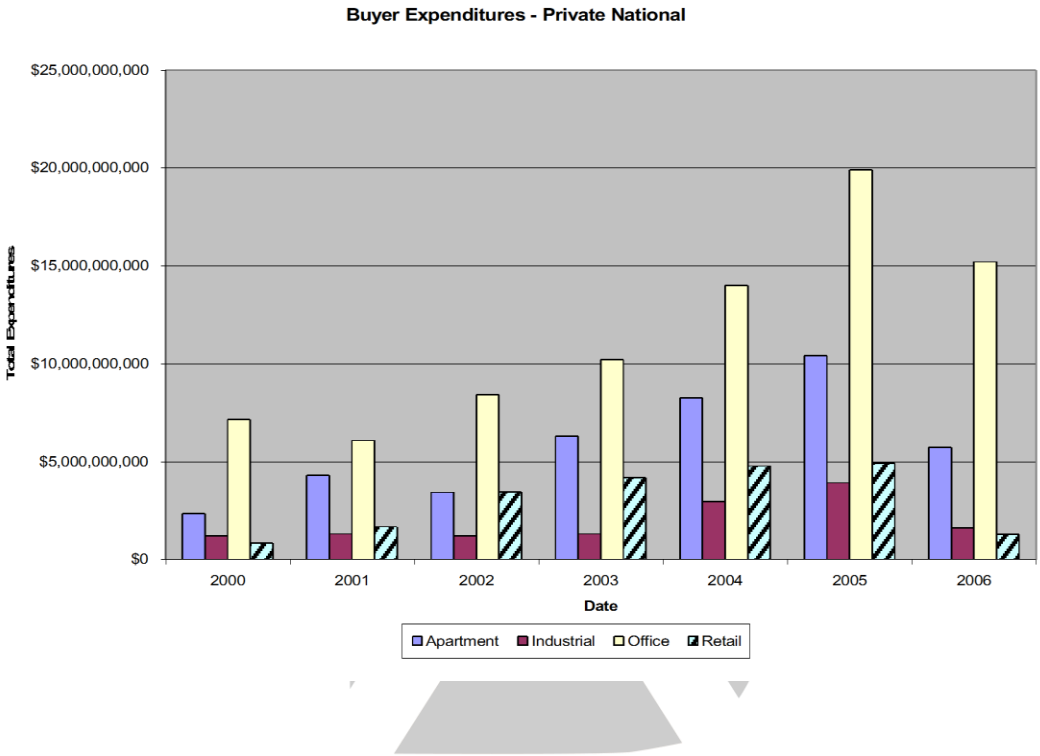
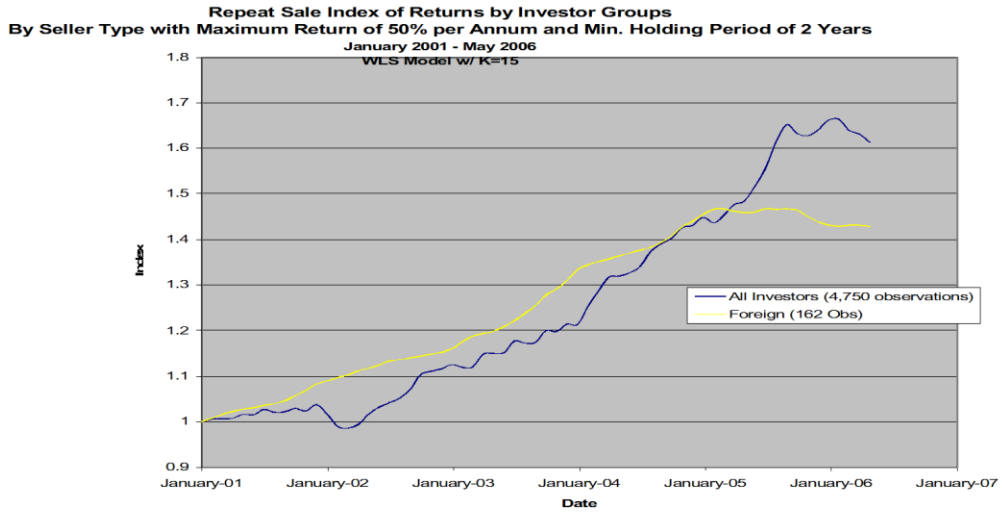
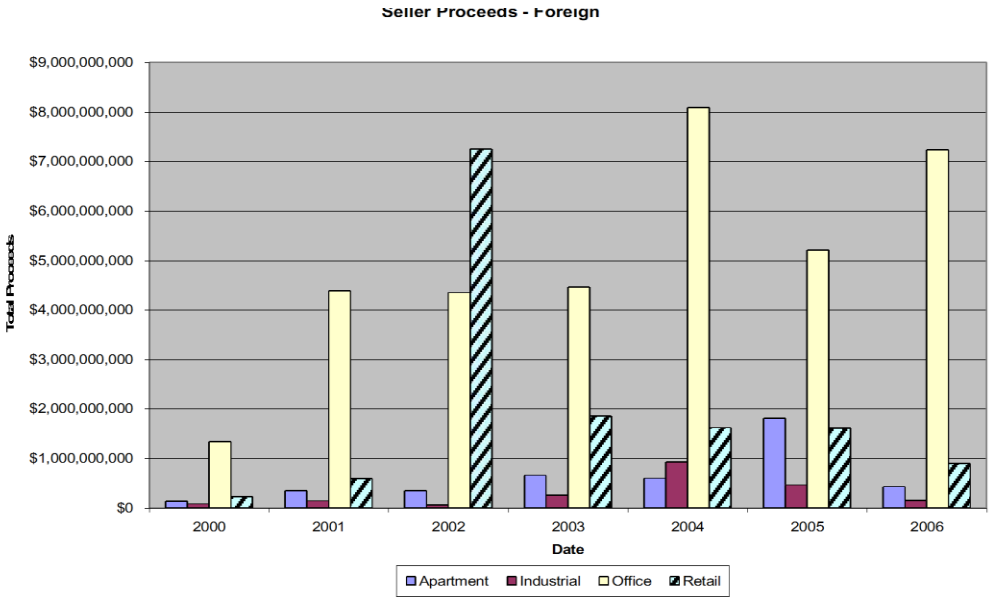
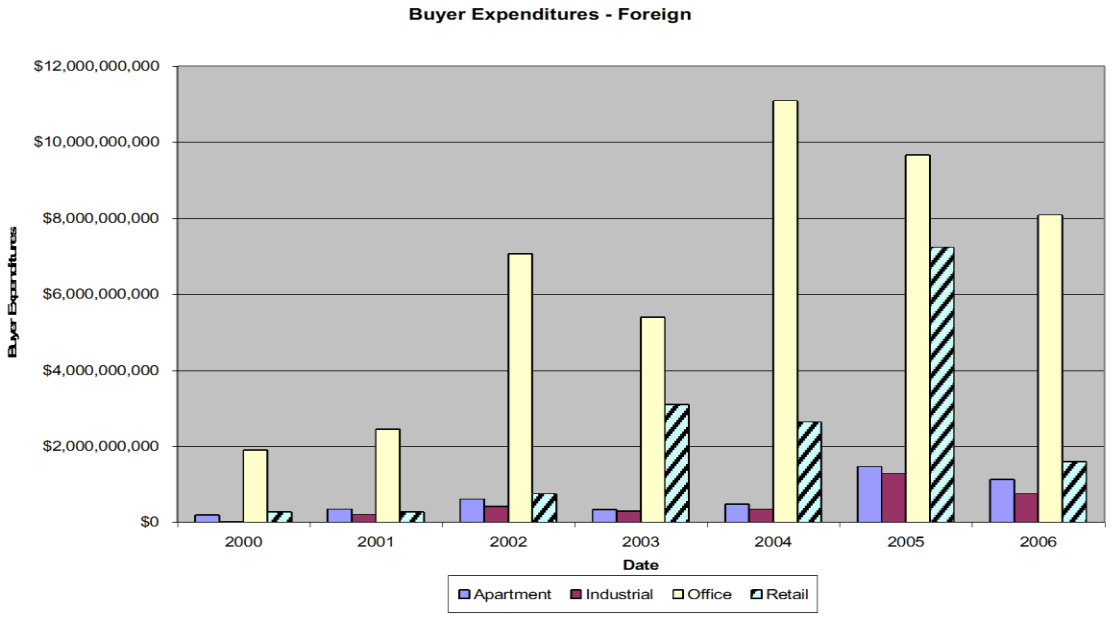


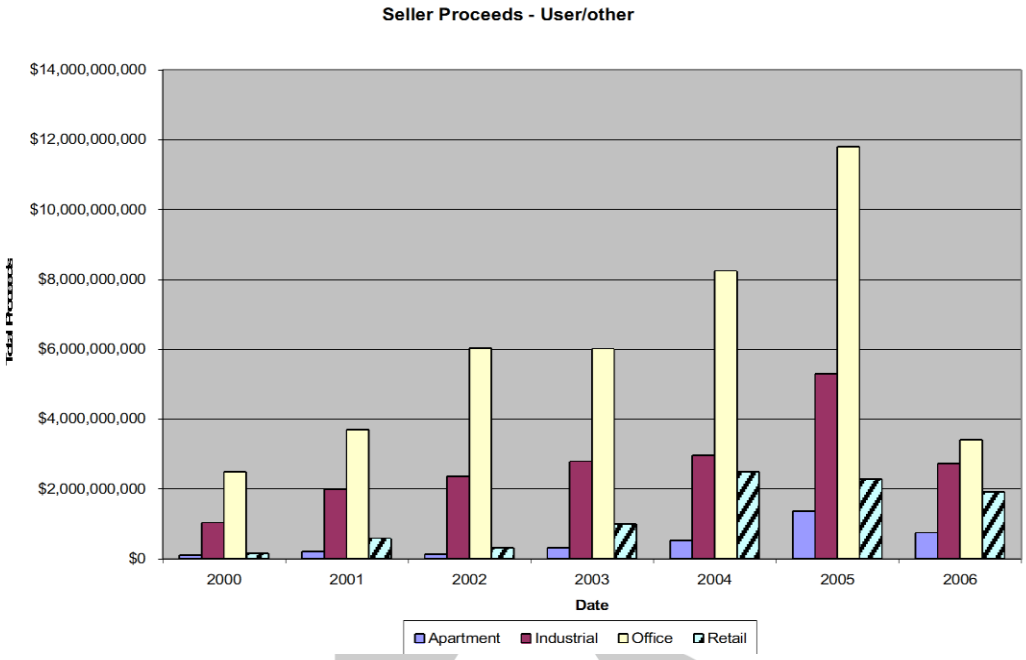
Figure 29

Foreign Investor Returns and Capital Flows




Seller Proceeds - Foreign
$9,000,000,000
$8,000,000,000
$7,000,000,000
$6,000,000,000
$5,000,000,000
$4,000,000,000
$3,000,000,000
$2,000,000,000
$1,000,000,000
$0
Total Proceeds
2000
2001
2002
2003
2004
2005
2006
Date
Apartment
Industrial
Office
Retail


Buyer Expenditures - Foreign
$12,000,000,000
$10,000,000,000
$8,000,000,000
$6,000,000,000
$4,000,000,000
$2,000,000,000
$0
Buyer Expenditures
2000
2001
2002
2003
2004
2005
2006
Date
Apartment
Industrial
Office
Retail


Seller Proceeds - User/other
$14,000,000,000
$12,000,000,000
$10,000,000,000
$8,000,000,000
$6,000,000,000
$4,000,000,000
$2,000,000,000
$0
Total Proceeds
2000
2001
2002
2003
2004
2005
2006
Date
Apartment
Industrial
Office
Retail

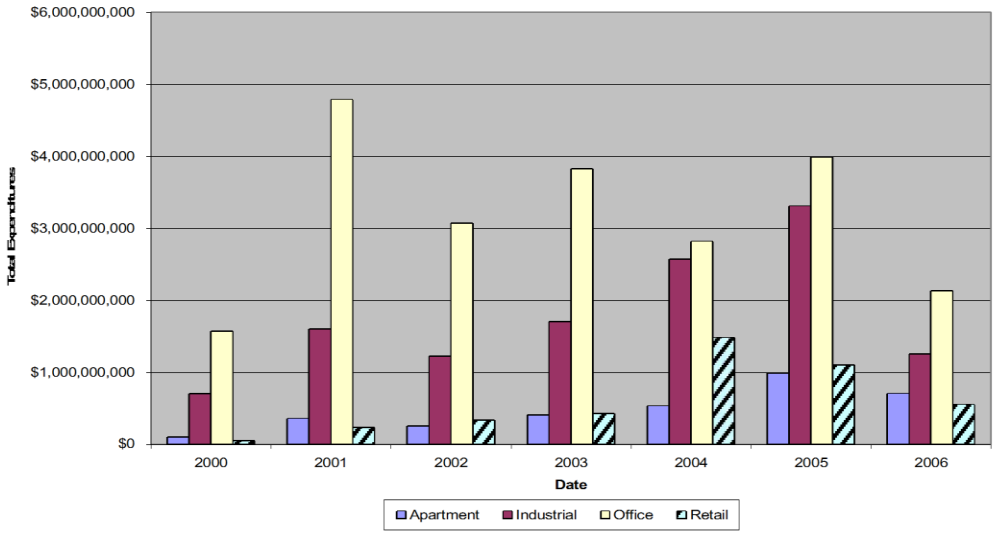
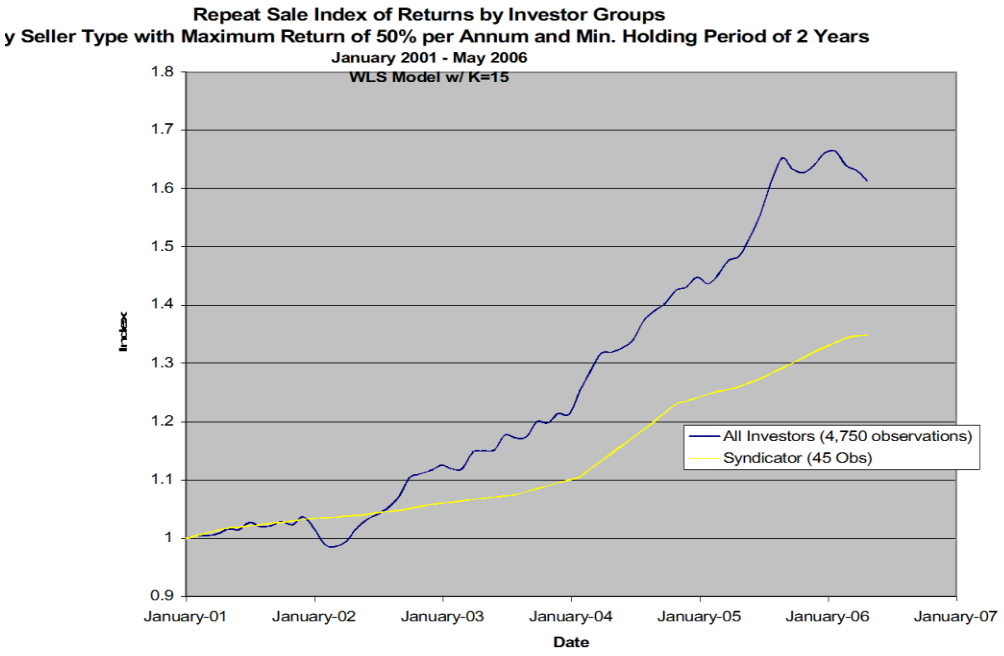
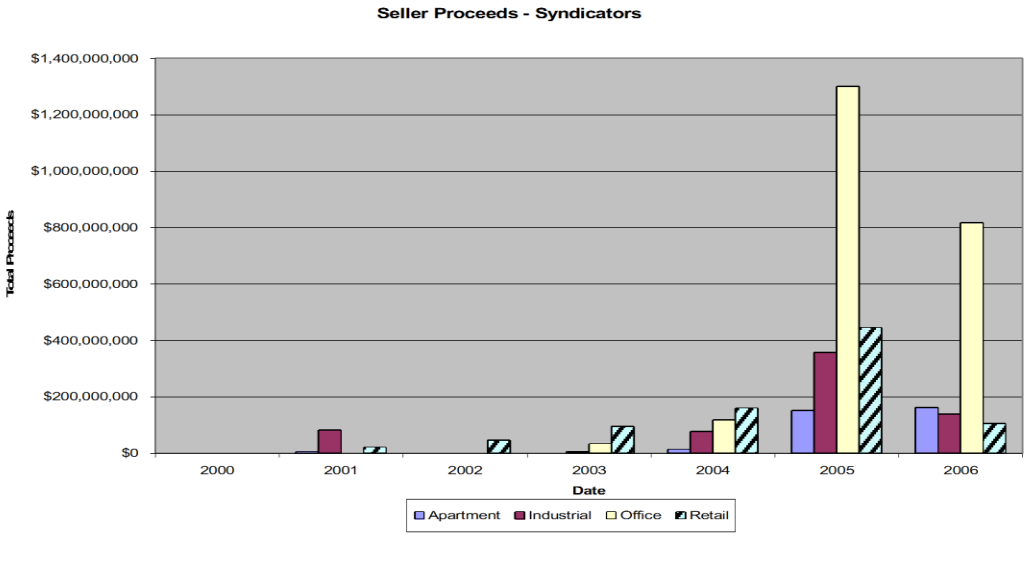
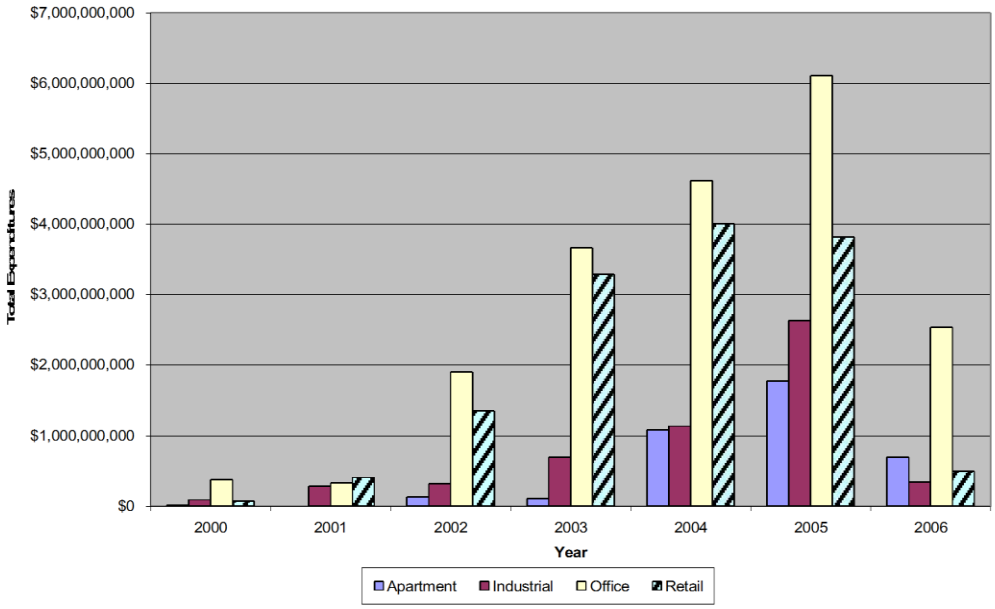

Buyer Expenditures - User/other
$6,000,000,000
$5,000,000,000
$4,000,000,000
$3,000,000,000
$2,000,000,000
$1,000,000,000
$0
Total Expenditures
2000
2001
2002
2003
2004
2005
2006
Date
Apartment
Industrial
Office
Retail

Figure 31

Syndicator Investor Returns and Capital Flows







4. **Conclusion**

The purpose of this thesis is to explore the behavior and performance of various investor types, thereby enlarging the existing body of knowledge in capital markets. It is important because it deepens the understanding of the opportunity cost of capital in real estate, and ultimately may help increase market information and efficiency. More efficient markets lead to greater transparency and participation, which generally benefits investors. The paper evaluates capital flows and capital appreciation returns for each investor type, from private local to institutional, and presents a number of conclusions which add to the understanding of investor behavior and performance. First, within the *Overall Data Set* of property transactions between 2000 and 2006, private local investors are the largest investor type, both in absolute number and in transaction dollar volume. Even though private local investors have the smallest median and mean transaction prices, their sheer number explains such large transaction volume. Between 2000 and 2006 private local investors were buyers in 37% of the total sample transactions and sellers in 38%. Despite the growing presence of institutional, REIT and foreign investors—which are typically regional or national in geographic scope and have much larger median and mean transaction prices—the real estate market is still very local in nature. Inefficiencies in market information and uniqueness in property characteristics permit private local investors—in aggregate to be significant market participants.

Second, private local, private national, REITs and institutions are the four largest categories of investors. They trade properties more among themselves than with any other investor types. This implies that they are competing with one another quite frequently when buying properties. Even though many private local investors tend to buy and sell smaller properties, a significant contingent of private locals invest in larger, "institutional quality" real estate. Private national, foreign and institutional investors also buy and sell frequently in the "institutional" market.

Third, REIT, foreign and private investors each exhibited leadership at different times with respect to buying and selling real estate. Between 2000 and 2001, REIT and foreign investors were net sellers before most other investor types became net sellers. In 2002 REITs were extremely large net buyers when all other investor types were net sellers. Private local and private national investors exhibited similar leadership, becoming the first and largest net sellers of properties in both 2004 and 2005. In almost all years, institutional investors lagged behind other investors in buying and selling properties. Given the short sample period, it is difficult to prove conclusively these *lead-lag* relationships in capital flow. Exogenous economic forces could very well explain the "leading" or "contrarian" behavior of some investors. For example, some REIT stocks trading at *premia* to NAV may have affected REIT behavior, while strengthening foreign currency markets may have driven foreign investor behavior.

Fourth, condo converters, syndicators and users are unique types of real estate investors. Condo converters and syndicators are mainly buyers of real estate rather than sellers. While condo converters are composed of all types of investors, they are a separate category because they sell—rather than hold for rental income—the acquired properties. Their property acquisitions surged since 2000 in large part due to historically low interest rates. Demand from syndicators rose because their ownership structure is a favorable vehicle for 1031 tax deferred exchanges, and it allows many investors to band together to purchase attractive, large properties. Lastly, users are unique investors whose determination of building value lies not in rental income generation, but in suitability for entity operations.

Fifth, in order to evaluate investor returns, a repeat sale index was employed to calculate capital appreciation (growth) in properties. While this method lacks the rental income component of total return, it isolates the differentiating component: *growth.* REITs, foreign and private investors all took turns earning the highest cumulative growth returns during the sample period. REITs and foreign investors earned the greatest cumulative returns from mid 2000 to early 2004, benefiting in part from favorable security and currency markets, respectively. Private local investors earned very high returns in 2004, surpassing REITs and foreign investors in cumulative returns from mid 2004 to May 2006. Private locals benefited from unique market knowledge, entrepreneurial labor and nimble decision-making. Institutional investors consistently earned the lowest cumulative investor returns, excluding syndicators and users, but these returns were also the least volatile. The institutional performance illustrates their tendencies to assume the lowest risk of all investor types. These investor returns appear to be loosely correlated with capital flows: when REIT, foreign and private local investors each led, respectively, in capital flows, the leader also tended to have the highest investor returns. However, further study must be done over longer time periods to determine the precise relationship between capital flows and investor returns. Finally, private local investors exhibited the greatest tendency to lead other investors in terms of return performance. When private local returns climbed during the sample period, it was not uncommon to see other investors' returns climb in the same fashion three to 12 months later. While REITs and foreign investors were occasionally exceptions to this *lead-lag* phenomenon, institutional investors were usually lagging other investors. In particular, private local and institutional investors exhibited a relatively strong *lead-lag* relationship with respect to return trends.

Recommendations for Further Study

Further study is recommended in several areas. First, investor returns relative to transaction size are important. Recent observations by RCA (within a similar data set) showed that property cap rates become lower as transaction prices rise, up to a point— between $40 and *$50* million—above which cap rates edge back up. While cap rates are a different return metric than growth, these observations demonstrate that property size might influence property return. Ziering and McIntosh (1999) find supporting evidence of this relationship. If different investor types are prone to buy and sell at different price points, property size—and not just investor type—might have a significant impact on returns. Initial tests were conducted in this thesis to compare returns within certain price bands; this would allow observation of the different investor type behavior and performance for transactions in the same price range. However, the resulting indices showed too many irregularities, likely because there were not enough observations contained within the *Repeat Sale Data Set.* Another recommended area of study is volatility of growth returns across investor types. Because certain investors typically earn higher returns than others, it would be interesting to determine if these investors are fairly compensated for the additional risk they take on, based on empirical evidence. Understanding such risks would broaden the knowledge base in real estate capital markets.

Finally, this thesis is limited to the years 2000 to 2006. In order to make broader, more meaningful observations about capital flows, returns and *lead-lag* relationships, it is important to study transactions that span greater lengths of time—preferably across real estate cycles. It is recommended that this study be conducted again in five to ten years to observe any changes in results.

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