Dueling Markets: Capitalizing on the Non-Institutional and Institutional Asset Arbitrage

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Abstract

The rising supply of both domestic and international capital pursuing yield in major U.S. real estate markets is staggering and has resulted in substantial unmet demand for quality, institutional assets. This thesis examines the pricing and yield arbitrage between institutional and sub-institutional grade assets, as defined by valuation parameters, alongside the feasibility of an investment model to capitalize on the aggregation of sub-institutional assets into portfolios attractive to institutional investment.

The U.S. market was analyzed both quantitatively and qualitatively to determine the viability of the perceived arbitrage, the components comprising both institutional and non-institutional markets, and where these have been successfully capitalized on with an aggregation investment model. In order to assess the viability and best practices of an aggregation strategy, interviews were conducted with firms invested in or executing this model. A repeat sales index was also created using data provided by Real Capital Analytics which comprised over 68,000 transactions of assets valued above $2.5 million which transacted between 2000 and 2014 across the United States.

The interviews, regressions, and corresponding data analysis revealed distinguishable trends underlying institutional and sub-institutional assets within specific markets. These trends suggest that there is inefficiency in the real estate market regarding the pricing of certain sub-institutional assets in older, land-constrained cities making them target locations for an urban aggregation model. The largest disparities between sub-institutional and institutional investments were found in the yield and growth rates of specific assets based on underlying market criteria. By aggregating these two metrics for total return averages for non-institutional and institutional assets, and by analyzing the risk performance of each, we conclude the existence of a different pricing of risk, which generates the potential for arbitrage. Specifically, non-institutional properties exhibited better risk-adjusted returns relative to their larger counterparts for land constrained, older regions and cities, confirming our hypothesis.

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We are indebted to Real Capital Analytics and their support of research at the MIT Center for Real Estate. In addition, Dr. Sheharyar Bokhari provided critical guidance in constructing the repeat sales index and adding valuable insight to the results.

I am especially grateful for the valuable input, collaboration and opportunity to work alongside my good friend and co-author, Bernardo Sacchini in crafting this thesis. I am excited to see the impact he has on the people and places he works throughout his career.

Most importantly, I am grateful for the support and love of my incredible wife, Sara. Her consistent and steadfast encouragement throughout the rigor of the past year has enabled us to experience an incredible education, build lasting friendships, and realize unforeseen opportunities.

Zach

There are few words that can explain the 18 months that I spent at MIT. The things I learned, the people I met, the friends I made, it exceeded each and every one of my expectations. This thesis is written as humble contribution to the incredible community that MIT represents.

Also I would like to give special credit to our thesis advisors, Dr. David Geltner and Mr. John Kennedy, whose incredibly wise insights, guidance and enthusiasm made it a great, fun and didactical journey. I will like to extend credits too to Dr. Sheharyar Bokhari, whose help in the deep quantitative, analytical part was much needed. I would also like to thank Real Capital Analytics for their support and generosity, without their data this paper would have not been possible.

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Finally, special gratitude goes out to my family whose support and encouragement to keep studying brought me to this place. I am forever grateful.

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Table of Contents

Table of Figures

CHAPTER 1. Introduction

This thesis explores the pricing and yield arbitrage between institutional and sub-institutional grade assets alongside the feasibility of an investment model to capitalize on the aggregation of non-institutional assets into portfolios attractive to institutional investment. The foundation of this research is both quantitative, using data provided by Real Capital Analytics ("RCA"), and qualitative through interviews with industry professionals.

A repeat sales index was created using Real Capital Analytics data for United States assets valued at $2.5 million and above which transacted since the year 2000. The regressions and corresponding data points revealed distinguishable trends underlying institutional and non-institutional assets. For the purpose of this thesis, we defined institutional and non-institutional asset categories strictly by valuation. Institutional assets were determined to have a valuation greater than $10 million while non or "sub"-institutional assets are between $2.5 and $10 million in total value. These findings were additionally vetted against research, and professional interviews to arrive at the synopsis.

Ten individual and confidential interviews were conducted over the course of this thesis with active industry professionals representing the top institutional and general partner firms in their field. The questions were consistent and focused on either institutional or general partner positions accordingly. Interviewees and their firms are held in the strictest of confidentiality to ensure quality and unbiased responses. Therefore, citations will be denoted as either "Institutional Firm #1,2,3..." or "General Partner # 1,2,3..." correspondingly.

This paper further examines the longstanding aggregation investment model as a means to manufacture real estate portfolios of an institutional level in markets meeting certain criteria. Raw land for development, farmland, hotels, and industrial sites have long been the main targets of investors for the purpose of aggregating into portfolios of a critical mass. More recently, student housing and mini-storage have been the components of successful aggregation plays. These portfolios are commonly aggregated using an initial value-add approach given the additional risk resulting from meaningful physical renovation, lease-up, or are ahead of projected growth. Once the business plan is completed, and dependent on several factors including market, asset quality, and capital markets, these portfolios are commonly viewed as core-plus investments[1].

Driven mainly by the desire for superior risk-adjusted yield and capital market tail winds, this model is being expanded to include assets in single-family residential rental, self-storage, single-tenant industrial buildings, and mobile home parks[2]. Advancements in technology and operating efficiencies have helped make this expansion possible. While there are systematic commonalities that can be applied to all asset classes, which will be covered by this thesis and representative data, the multi-family sector will be the focus of our research.

As a real estate cycle matures and yields are compressed in major markets, investors are faced with difficult investment decisions in order to maintain desired returns. These often include development of core assets if possible, the pursuit of lower quality assets within the major market, venturing into secondary and tertiary markets, and increasing leverage to attain the required returns. Another, but rarely executed option due to operational burden and scaling risks, is to aggregate smaller assets into portfolios of a size that attract institutional capital. While there are specific risks inherent to an aggregation investment strategy, we provide evidence suggesting that this rarely used option of aggregating smaller assets should be strongly considered by institutions.

In order to accurately exhibit the research and data involved in deciphering the arbitrage opportunities around aggregating assets, this thesis is organized as follows[3]. CHAPTER 2

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[1] In the real estate investment industry, "value add" refers to investment strategies that contain more risk and require more hands-on active involvement, and therefore provide higher returns (lower going-in price/income multiples), compared with "core" investment strategies which are typically stabilized prime properties. "Core-plus" is a category between "value add" and "core" as defined later in this paper.

[2] The Superior risk-adjusted yield implies a greater return going-in (ex-ante) than is warranted by the amount of risk in the investment. Conversely, merely obtaining higher yield by going out on the risk/return Security Market Line (i.e.: taking on more risk to get more return ex-ante), would not be viewed as "superior risk-adjusted yield" in this thesis.

[3] In this thesis, we define arbitrage as obtaining higher risk-adjusted returns. This entails investing in assets that provide for higher returns with similar or lower risks, or conversely, assets that

and CHAPTER 3 explore the existing supply and demand within real estate markets for institutional assets through literature analysis. CHAPTER 4 is devoted to the arbitrage opportunity within aggregating sub-institutional properties and the potential to "manufacture" core assets through aggregation as opposed to new, ground-up development.[4]. Additionally, CHAPTER 5 examines the attributes and operational components of an aggregation investment model. Detailed data analysis comprises CHAPTER 6, CHAPTER 7, CHAPTER 8 and CHAPTER 9 while CHAPTER 10 draws the conclusions and results of our research.

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provide similar returns with lower risks. Arbitrage opportunities of this kind are different from value-add strategies that provide for higher (not risk adjusted) returns, because in reality unlike value add, arbitrage opportunities do not create any value, they are mere inefficiencies of the market, thus are not sustainable over time. First movers will be the ones that capitalize on the inefficiencies and will generate the super normal profits offered initially, but once competition arises, additional profits provided will be eroded, reducing the return to a level commensurate with the risk that it entails.

[4] While an arbitrage scenario can be realized in an aggregation model, there are also "value-add" components to the investments such as: building renovations and improving operations. These methods incur real value added to the assets in addition to the arbitrage opportunity. Incorporating these components alongside an aggregation model could result in creating or "manufacturing" and institutional grade investment portfolio.

CHAPTER 2. The Investment Market

The U.S. real estate investment market is massive in scale. This chapter seeks to explore generally accepted parameters for investments styles, define institutional and non-institutional assets, and consider the types of investment structures commonly implemented.

Real Estate Investment Styles

Real estate investment allocations are often divided into "styles" or strategies based on a risk and return measurement, characterized by a combination of type of assets and investment business model. The least risky and thus lower returning assets purchases with a relatively passive business model and low leverage are generally considered "core" or "core plus" and are commonly characterized as institutional grade assets[5]. The following categories include generally accepted descriptions of the investment categories.

- **Core – Low risk:** diversified across five major property types: office, retail, industrial, multifamily, and hotel. Low to moderate leverage and located in major markets.
- **Core Plus – Moderate risk:** essentially core properties in terms of location and type but contain riskier elements such as capital requirements, lease turnover, or slightly higher leverage.
- **Value-Add – Elevated risk:** higher leverage used to increase returns. Capital is required to re-position the asset, perform extensive renovations, or conduct considerable leasing. Can be located in any market.
- **Opportunistic – Higher risk:** substantial leverage can be incurred to generate increased returns. Includes development, substantial redevelopment projects and non-traditional property sectors, which often entail investment in real estate related operating companies.

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[5] Joseph L. Pagliari Jr., "The Pricing of Non-Core Real Estate Ventures," *Journal of Portfolio Management* 33 (September 2, 2007): 119–33.

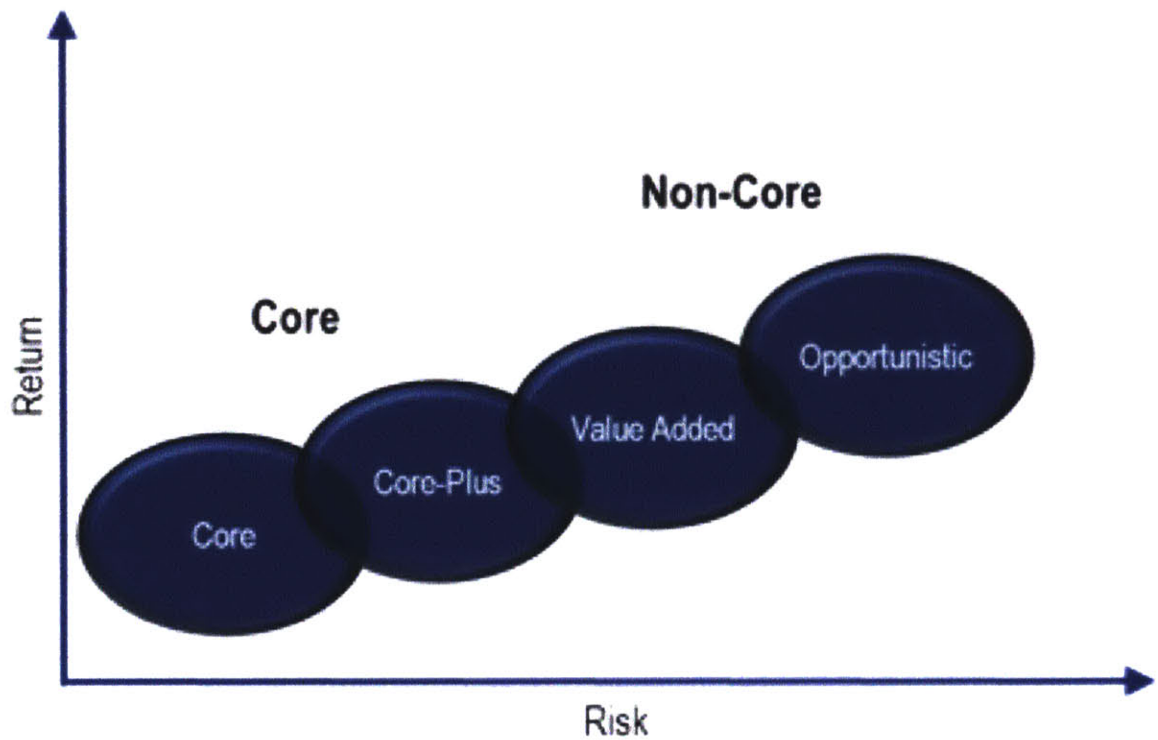

Figure 2-1. Real estate segments risk and return
Source: Advisorperspectives.com

Though perceived risk of an asset is a component to the opaque definition of an institutional asset, this thesis determines the definition strictly by a valuation range.

Institutional Assets Defined

By investment standards the real estate market is largely bifurcated into two categories: Institutional and Non-Institutional. The line separating institutional from non-institutional assets is opaque with no clear, defined definition in existence. Key distinguishing factors include asset size, quality, location, financing source, and age[6]. Assets fitting the institutional mold are often owned and traded by institutional investors such as, pension funds, investment banks, Real Estate Investment Trust, sovereign wealth funds, endowments, private equity funds, and insurance companies, where as non-institutional assets are often owned by individuals or smaller companies[7]. As evidenced in the

[6] Arthur Segel, I., "How Institutional Investors Think About Real Estate," August 12, 2010.

[7] Confidential, General Partner #2, November 10, 2014.

PriceWaterhouseCoopers Real Estate Investor Survey (formerly Korpacz) the institutional-grade label is not static, and institutional status can change with a property's physical condition or economics, market conditions and trends, or investor's preferences[8].

Additionally, financial characteristics are good indicators of institutional grade assets as further assessed in the PwC Survey, "The financial characteristics of institutional grade property vary and depend on the investor's specific objective for the specific investment - immediate cash flow, asset enhancement, or upside potential. In general, the property has low leasing risk, proven stable occupancy, a preponderance of financially strong tenants, and good long-term growth[9]". Institutions are willing to accept a lower yield on such "core" assets due to perceived security and liquidity, which in turn results in higher valuations than non-institutional properties.

The National Council of Real Estate Investment Fiduciaries ("NACREIF"), Real Capital Analytics ("RCA"), CoStar, and the National Association of Real Estate Investment Trusts ("NAREIT") represent the major sources of real estate data and were critical in defining the institutional asset threshold. Additional interviews with Institutional investment firms, endowments, and life insurance companies confirmed these findings.

Real Capital Analytics is a global research and consulting firm founded in 2000. RCA collects transactional information for current property sales and financings globally, then analyzes and interprets the data. The RCA website (www.rcanalytics.com), defines the "institutional investor" as an "investor, such as a bank, insurance company, retirement fund, hedge fund or mutual fund which is financially sophisticated and makes large investments, often held in very large portfolios of investments."

Typically, institutional investors or "limited" partners provide capital to operating or "general" partners as defined in a legal document termed the Joint Venture Agreement.

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[8] Jacques Gordon, Rich Kleinman, and William Maher, "Tracking Institutional Real Estate Capital Markets--A 'Stock' versus a 'Flow' Approach," *Real Estate Finance (Aspen Publishers Inc.)* 29, no. 3 (October 2012): 6–11.

[9] "PwC Real Estate Investor Survey Second Quarter 2014," *PwC*, Real Estate Investor Survey, 27, no. 2 (June 16, 2014).

Generally, the limited partner invests a majority of the equity in the investment alongside the operating partner who essentially acquires, manages, and oversees the disposition of the real estate assets. A sample of actual entities in the institutional investment and operating partner tiers provided by Real Capital Analytics are listed below:

Examples of Institutional Investors (Real Capital Analytics)

AEW Capital Management	Prudential Real Estate Investors
Apollo	Blackstone
TA Associates Realty	CalPERS
Invesco	Citi Group
Norges Bank	Harvard Management Co.
AIG	Met Life

Examples of Operating Partners (Real Capital Analytics)

Laramar Co.	CNL Financial Group
Lincoln Property Group	Fairfield Residential
Paradigm Property Group	Extell Development
Inland Real Estate Group	Rhino Capital
Vantage Properties	Triple Net Properties
Pinnacle Group	Greystar

Examples of Non-Institutional/Private Investors (Real Capital Analytics)

Family Offices	Non-traded REIT
High Net Worth Individuals	Syndicated Investments

This thesis focuses on the potential to aggregate specific sub-institutional assets with valuations greater than $2.5 million but less than $10 million, in the value-added space. These assets are considered to be value-add as they typically require significant capital investment, and are generally smaller in size[10]. The aggregation criteria for these properties resemble that of institutional assets in location, quality, vintage but lack in size or value.

10 Arleen Jacobius, "U.S. Is Location, Location, Location for Foreign Buyers," *Pensions & Investments* 42, no. 24 (November 24, 2014): 1–37.

Considering all the aforementioned definitions regarding asset grade, this thesis and data components defined the institutional parameters strictly by asset valuation. While this assumption is a material generalization and will knowingly contain outlying data points, we deemed it the most efficient way to tranche and analyze the accompanying data while delivering the key metrics to our hypothesis. These metrics included a pricing, yield, and growth arbitrage between institutional and non-institutional assets across multiple geographic regions in the U.S.

CHAPTER 3. Market Analysis

With the investment market defined, the following chapter will focus on the supply and demand metrics around U.S. real estate markets.

Supply

According to research by accounting firm Price Waterhouse Coopers, the global stock of institutional-grade real estate is $29 trillion in 2012. This stock is expected to expand by more than 55%, to $45.3 trillion in 2020[11]. Also, according to a 2010 paper by Costar researchers, the estimated cumulative value of the United States commercial real estate market at the end of the year 2009 was $11.5 trillion[12]. That is nearly $4 trillion lower than the peak estimated value in 2006, which in certain markets has been recovered and surpassed at the time of this thesis. This economic growth and corresponding increase in prices has caused a birth of new construction in recent years to "manufacture core" assets through ground-up development. Major metros such as New York, Boston, Los Angeles, Washington D.C., Chicago, and San Francisco are some of the most sought after for domestic and foreign investment in institutional real estate. Given the prior mentioned constraints around the characteristics that make a property "institutional" grade, there is a limited supply of investment grade assets.

A recent paper by *Real Estate Finance* examines the size of the institutional real estate market from a "capital flow" perspective rather than a measurement of existing or developable stock[13]. Based on the capital amount of both debt and equity, the total value of U.S. institutional real estate stock is estimated at $3.9 trillion as of year-end 2011[14]. The paper categorizes the institutional investment in real estate into four sections: privately held debt, publicly traded debt, public equity, and private equity. For the purpose of this thesis, we are focusing on both the public (i.e., REIT's, investment banks) and private (i.e.,

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11 PwC. "Real Estate 2020: Building the Future," 2014. www.pwc.com/realestate.

12 "Real Estate Investing," *Pensions & Investments* 42, no. 10 (May 12, 2014): 24–29.

13 Jacobius, "U.S. Is Location, Location, Location for Foreign Buyers."

14 Ibid.

equity funds, sovereign wealth funds) equity components. As the market continued to improve since 2012, increasing amounts of institutional capital has flooded the market resulting in lower core market yield and a scarcity of institutional quality assets to meet the increasing demand further outlined in the next section.

Professor J. Shilling PhD, points out in his paper regarding Risk Premiums in real estate that, "evidently, institutional investors prefer to invest in real estate only if the case is so obvious as to justify its undertaking. This must mean that institutional investors miss many worthwhile investment projects"[15]. This leads us to believe that there are many investment opportunities that are just outside of the institutional realm. If these "sub-institutional" assets could be acquired and "institutionalized", a resulting increase in value could be realized. Additionally, this could allow for an expansion of "institutional" asset stock by expanding the actual supply boundary of the market, possibly ultimately generating downward pressure on current prices and increasing yields in the present institutional market.

This research seeks to expound on the viability of such opportunities through analyzing a repeat sales index and engaging the industry around ways to capitalize on such an arbitrage. The existing arbitrage, or ability to capitalize on the aggregation of assets into institutional grade portfolios, can be further expanded by implementing a strategy to add value to the individual assets through operations, capital components, and other property variables.

Demand

The U.S. is known to serve as a sort of "safe harbor" for international capital due to a stable government, transparency and dependable legal system, low inflation, and enticing growth as compared to most other countries. A recent survey of foreign investors by the Association of Foreign Investors in Real Estate noted the U.S "is perceived to provide a

[15] Confidential, Institutional Firm #5, November 6, 2014.

stable environment in which to invest and is the best market for capital[16]." Demand for core or perceivably safe, institutional assets is on the rise domestically but most noticeably from an international influence with 42% of all buyers of U.S. real estate in the first half of 2014 being foreign[17]. This rush of overseas capital has pushed prices so high in the major U.S. markets that many investors are seeking more attractive returns in non-major markets. According to a survey by Jones Lang Lasalle, "71% of foreign investor respondents indicated interest in buying properties in the so-called secondary U.S. cities due to an increase in economic fundamentals"[18]. Based on our research and data, these institutions are making the wrong investment decision by pursuing yield in secondary markets. These non-major markets expose portfolios to greater risk through volatility, and while core markets may exhibit a lower yield, their volatility and corresponding risk is minimized. Comparatively, the aggregation model would theoretically increase desire for investments in markets in prime locations while providing, at least initially, the potential for higher returns with less volatility.

The **Figure 3-1** below illustrates the major catchments of foreign real estate investment since 2012.

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[16] Ibid.

[17] David Geltner and Henry Pollakowski, "A Set of Indexes for Trading Commercial Real Estate Based on the Real Capital Analytics Transaction Prices Database," MIT Center for Real Estate, 2007.

[18] Ibid.

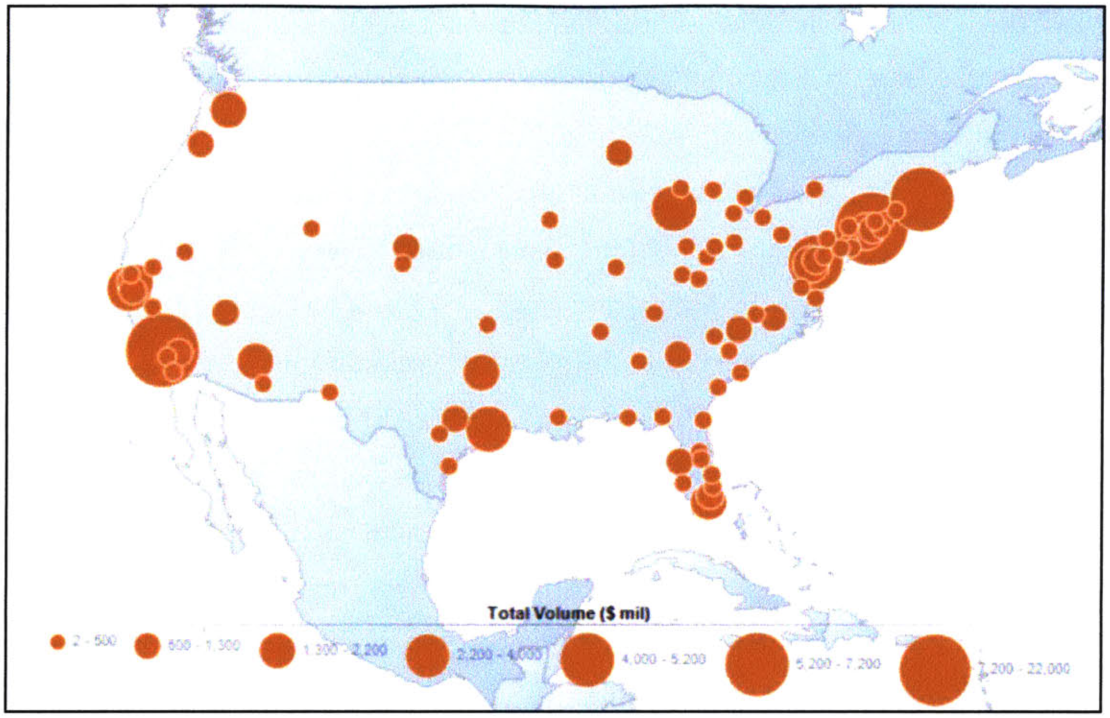

Figure 3-1. Map of top U.S. markets for foreign real estate investment (2012-2014)
Source: Real Capital Analytics.

Top Market Destinations

Volume in Millions ($USD)

Top Market Destinations		
Market	**Total Properties**	**Total Volume**
Manhattan	110	$21,973.3
Los Angeles	69	$8,188.5
Boston	53	$6,302.0
DC	33	$4,125.6
Chicago	87	$3,989.4
Hawaii	13	$2,982.1
San Franciscc	42	$2,949.9
Houston	76	$2,352.9
Seattle	63	$2,106.2
Other	1,478	$33,547.1
Total	2,024	$88,516.9

Table 3-1. Top U.S. markets for foreign real estate investment (2012-2014)
Source: Real Capital Analytics.

Origin of Capital

Volume in Millions ($USD)

Origin of Capital		
Market	**Total Properties**	**Total Volume**
Canada	891	$25,263.2
China	83	$8,513.6
Norway	81	6339.7
Germany	87	$4,752.4
Switzerland	101	$4,669.6
Japan	56	$4,028.2
Singapore	18	$3,910.8
Israel	102	$3,693.8
Hong Kong	56	$3,244.2
Other	549	$24,101.3
Total	2,024	$88,516.9

Table 3-2. Origin of U.S. invested capital (2012-2014)
Source: Real Capital Analytics.

In addition to international capital flowing into the United States, real estate has returned to favor for domestic capital and become a staple allocation for many investment portfolios. Typical real estate target allocations are approximately 8% - 10% of a portfolio driven by attributes such as inflation protection, diversification, and cash flow[19] However, according to the efficient market theory and research, portfolios are generally underweighted in real estate. Some research suggest that optimal allocation should amount to be more than 10% of total wealth[20]. This would demand much more investable assets to cope with inflows of money responding to adjustments in allocations, which supports the idea of expanding the institutional market. While this allocation can manifest itself in many forms, a majority of institutions will chose the bulk of their real estate exposure to be in the form of core or "institutional" assets. A recent article by *Pensions & Investments* pointed out that most major institutional investors with a real estate allocation maintain 50% to 65% of that commitment in core assets. Additionally, given the strong performance of commercial real estate since the recession, many sponsors are increasing real estate allocations or entering the realm for the first time[21]. This additional capital is continuing to pour into real estate markets driving prices up in traditionally major markets and forcing investors to seek yield elsewhere. The substantial influx in demand has outstripped the supply of institutional investments to the extent that Jones Lang Lasalle again estimates that "there are $12 for every $1 dollar of property in the market"[22].

These scenarios and data identify the existing demand for investors to own assets in the major U.S. markets but also highlight the lack of available product that meets institutional criteria. Considering these facts, investment opportunities that provide expansions of existing market boundaries in highly desired markets will prove to be good to be of interest to institutional capital by allowing for similar "certain" returns previously sequestered in only prime locations.

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19 David M. Geltner et al., *Commercial Real Estate Analysis and Investments*, 3rd ed.

20 Jacobius, "U.S. Is Location, Location, Location for Foreign Buyers."

21 Confidential, Institutional Firm #1, November 3, 2014.

22 Confidential, General Partner #1, November 17, 2014.

CHAPTER 4. Manufacturing Institutional Assets

The supply and demand components of CHAPTER 3 delineate the potential for an investment model to capitalize on opportunities using an aggregation strategy. In this chapter we will further consider the components of the aggregation investment model, potential challenges, and the benefits to implementing this investment thesis.

The supply and demand components reveal a compelling story for means to create assets of institutional quality through development, re-development, or aggregation. This thesis examines the potential to aggregate, and thus transform, sub-institutional multi-family assets that meet certain criteria within specific types of markets into portfolios that would be attractive to institutional investors.

Ultimately, as with most investments, the capital markets play a critical role in the overall success or failure of an aggregation model. In a period of rising prices, the aggregation model, as well as most prudent investments at that point in the cycle will likely perform well due to the resulting premium on the exit. Conversely, a portfolio that is aggregated amidst a downward progression in pricing, will likely not realize any such premium, indeed, may be exposed to some loss in value with the down cycle. While the investments will be made and business plan determined by the capital source and corresponding holding period, the market ultimately controls the outcome.

Some of the most notable real estate investment trends in the past decade focus on the Single Family Residential market and the exponential influx of institutional capital to acquire portfolios of rental houses[23]. Major investment firms such as Colony, Blackstone, and Oaktree Capital have committed billions in capital to acquiring, leasing, and operating portfolios of thousands of single-family homes. Several firms have actually taken their portfolios to the public market through recent IPO's while others have successfully securitized cash flows from the portfolios which sold as residential mortgage backed securities (RMBS) since the recession. Despite the amount of work required to close on one

[23] Confidential, Institutional Firm #5. November 6, 2014.

house, technological advances in software and data have played significant roles in the process of identifying markets, inspecting houses, acquiring individual homes, and managing portfolios. The progress seen in the aggregation of the single-family sector can be transferred to other asset classes, and the benefits of such market expansions reaped, of course, not without challenges.

Aggregation Model

Historically, real estate has been a prime medium for aggregation when considering, REIT's, the CMBS market, comingled real estate funds (CREF's), and various syndications, but the aggregation of real estate assets has been fairly limited in scope when specifically employed to transform sub-institutional properties into institutional grade investments. Asset classes that have experienced a focused aggregation into institutional portfolios generally include land for development, farmland, hotels, and industrial properties due to the scalability of management or lack thereof[24]. Hotels maintained operations that were accretive in value if an efficient scale was achieved. Similarly, farmland and land likely required minimal operational efforts depending on the purpose and structure. Industrial assets by nature typically required the least amount of management of the major asset types and were often more easily assembled due to location and ownership.

Advancements in the operations, technology, and data across the real estate industry and the aggregation model components, which are being refined in the single-family residential realm, provide methods to capitalize on the increasing demand for scarce, institutional assets. The aggregation model can be molded around a myriad of situations, markets, and opportunities. This investigation will highlight common factors affecting aggregation models but focus on multi-family assets in major markets.

Upon deciding to enter a market with the intention of aggregating sub-institutional, multi-family assets a firm will likely chose to "anchor" themselves by acquiring an existing

[24] Confidential, Institutional Firm #1. November 3, 2014.

portfolio or securing enough units to constitute a critical mass[25]. The critical mass generally considered to substantiate management, maintenance, and leasing personnel is a minimum of one hundred units depending on the market[26]. Often times, investors will not enter a market with this model unless there is a "reliable, proven path to building critical mass"[27]. The geographic location is an advantage as the aggregation component may provide access to areas previously untouched by institutional investors due to regulatory or land constraints, operational bandwidth, or other barriers to entry, as the assets are considered sub-institutional[28]. The proximity is important for operational efficiency and while this is enhanced the closer the assets are to each other, the maximum distance between outlying assets should be four miles or an hour drive[29]. Another metric proposed by a prominent institutional investor is to contain the portfolio within the same Metropolitan Statistical Area (MSA), which denotes an urban concentration of 1 million or more inhabitants[30]. This initial anchor portfolio will provide a substantial presence within a market to establish operations and a brand.

A critical component to the success of the portfolio is a cohesive brand, and a cohesive experience for the tenant[31]. The *Journal of Corporate Real Estate* highlights the importance of branding conforming to the following criteria for success[32]:

- a brand has a name, symbol or design which identifies the product or service as having sustainable competitive advantage;
- results in superior profit and market performance;

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[25] Confidential, General Partner #2. November 10, 2014.

[26] Confidential, General Partner #1, November 17, 2014.

[27] Confidential, General Partner #3, November 17, 2014.

[28] Operational bandwidth represents the capacity of the investor to effectively operate or manage the assets in its control either directly or through a partner. In this case, institutional investors may be deterred from smaller assets with a high or complex operational burden.

[29] Confidential, General Partner #1, November 17, 2014.

[30] Confidential, Institutional Firm #1, November 3, 2014.

[31] Abdul Jalil Omar and Christopher A. Heywood, "Defining a Corporate Real Estate Management's (CREM) Brand," *Journal of Corporate Real Estate* 16, no. 1 (April 2014).

[32] Ibid.

- is only an asset if it leads to sustainable competitive advantage; and
- like other assets, will depreciate without further investment.

Strategic branding will create a commonality across the properties although they will be separate and allow for autonomy in the operational components. A quality, recognized brand will also incur enterprise value to the assets while positioning the portfolio within the market.

Physical Constraints

Geographic constraints play a major role in the practicalities of an aggregation investment model. High barriers to entry, limited supply, and sustainable demand are the foundational frameworks for a successful small asset portfolio. Physical land constraints represent barriers that prevent the development of additional stock or the growth of a specific area often resulting in stable demand. These constraints are often the result of mountains, bodies of water, roadways, or physical components that make expansion either impossible or detrimentally difficult.

Regulatory Constraints

Regulatory barriers to entry are equally efficient at preventing new stock from entering a market. Regulatory scenarios often provide a framework that limits additional competition and creates a barrier to entry into a certain location or market. These can manifest themselves in a myriad of ways such as historical landmarks, natural preserves, zoning uses, environmental protection, and other areas where legalities or governmental authorities affect property usage. This can be beneficial, under the right circumstances, in identifying an area with limited supply, stable demand, and the potential to aggregate assets into a portfolio of critical mass.

Aggregation Challenges and Risks

The defined, non-institutional asset market exists in part because of the minimum equity investment imposed by institutional investors given the quantity of capital they are required to deploy as well as the operational burden required to acquire and operate assets not of the size or scale included in the institutional asset class. Evidenced in the single-family residential investment market illustrates, possibly, the largest hurdle an aggregation investment model faces, the geographic dispersion of assets. According to an article by National Real Estate Investor, this has been hedged by attempting to build scale quickly[33]. This often required a base of 1,000 single-family homes within a 30-mile radius in order to effectively scale operations. The challenges underscoring the single-family residential model are not unique, and some of them are universal to aggregation investment strategies. Outlined below are some of these challenges and risks as revealed through research and interviews.

1. Entry
    - Deal Sourcing
    - Replication of Investments
    - Financing and Capital Markets
    - Warehousing and Timing
    - Acquisitions Costs
2. Operations
    - Operator Qualifications
    - Construction
    - Scalability and De-Scalability of Operations
3. Exit
    - Financing
    - Exit Options
4. Other
    - Informational Inefficiency
    - Volatility
    - Market Correlation
    - Idiosyncrasies of Non-Institutional Assets

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[33] Elaine Misonzhnik, "House Money," *National Real Estate Investor* 56, no. 4 (August 7, 2014): 20–26.

Entry

The process of sourcing successful sub-institutional asset acquisitions is often complex, as these assets are typically owned by unsophisticated parties, which can result in unique and inconsistent challenges. The sub-institutional deal size is often under the radar of most top tier brokerage and advisory firms. The resulting inefficiency of information in the sub institutional market can be challenging to navigate. This frequently results in the need for focused proprietary research on behalf of the operating company, which often involves taking action with limited data[34]. These complexities often produce a challenge to consecutively replicating methods to source investment opportunities while building a portfolio to scale.

Timing of the investment aggregation is a critical component to the success of the strategy. A "warehousing" risk exists where integral components to favorable investment outcomes such as the capital markets, economic conditions, and asset pricing, change between the period of the first investment and the final investment to complete the aggregation portfolio. In order to mitigate this risk and attain economies of scale, investors at times assemble and acquire an initial portfolio in a specific market to offset costs and gain an entrance. This can be accomplished in a myriad of ways such as placing properties under contract with extended due diligence clauses, purchase options, and amassing several small portfolios. This "anchor" portfolio size is considered to be between 100 and 300 units, depending on the market, to cover the necessary costs for key personnel and gain immediate scale[35]. Acquiring what are often multiple, smaller assets can incur substantial due diligence and closing costs as compared to a single, institutional asset. These costs can pose a substantial risk if not fully understood and accounted for in underwriting. With scale, these expenses can also be mitigated with service contracts and replicable systems around the due diligence process.

[34] Confidential, General Partner #3, November 17, 2014.

[35] Confidential, General Partner #1, November 17, 2014.

Capital market fluctuations can have a more profound impact on sub-institutional real estate due to the asset size, availability and cost of capital, as well as a myriad of other circumstances affecting the private owner that do not necessarily impact institutional companies. The availability of capital also has a direct impact on the ability of sub-institutional owners to compete in the market and refinance owned assets.

Operations

The operational expertise and capacity of all parties involved in the aggregation process is critical to the overall success of the investment strategy. The operating partner must be able to effectively execute the business plan alongside the contractors performing the renovation and the property manager throughout the lifecycle of the investments. A failure to include contractors throughout the due diligence process could result in unconsidered expenses and non-functional renovation plans[36]. The construction process also contains challenging components such as understanding potential exit plans and how those will affect the type of required renovations. Additional challenges that must be considered include remodeling an asset with tenants in occupancy, a constrained timeline due to the importance of speed in the aggregation process, and effectively managing construction crews working at various locations. The overall aggregation, projected returns, and disposition have critical ties to the successful execution of the renovation stage.

The operator must be well qualified and exude a complex understanding of the target market, a detailed strategy, and ultimately the ability to execute the aggregation plan. Often times, these operators are intensely hands on with a finite understanding of the operational components necessary to lead a successful assemblage, business plan, and exit.

Another important component to the operating partner is their ability to scale and ultimately de-scale operations in accordance with the business plan[37]. Both scenarios have the potential to create conflict between the operator and its capital partner if no strategy is

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[36] Confidential, Institutional Firm #5, November 6, 2014.

[37] Ibid.

mutually agreed upon from the onset and consistently communicated throughout the investment period. High fixed costs, an operator overweight on personnel, or a disconnect with the market could incur challenges to de-scaling operations as the business plan reaches an exit stage.

Exit

The capital markets play as critical a role in the ability to enter a market as they do in the exit strategies. An aggregated portfolio presents several options for an exit strategy such as a portfolio sale, one-off dispositions, condo conversions, or the potential formation of a REIT[38]. While these options are largely considered benefits of the model, challenges exist in understanding the local market as well as conducting an aggregation and renovation strategy in-line with realistic exit options and considering projected capital markets.

Other Challenges and Risks

An inefficiency in or lack of viable market information around non-institutional assets frequently results in taking action with limited data, which can expose the investor to unforeseen risks. Exposure to both known and unknown risks increases with time in an aggregation model. The shorter the duration of time between necessary acquisitions, the lower the probability that volatility related risk could be exuded on the portfolio. Ultimately, idiosyncratic risks pertinent to local market and individual properties can be unique in nature and can be mitigated by a strong local operating partner.

Another risk that exists in the sub-institutional market is the existence of increased correlation between assets with the general capital market. Real estate assets are appealing to investors because they provided a source of diversification from other investments, or in portfolio theory terms, real estate offered lower betas than similar risk investments in other industries[39]. Generally, non-institutional assets attract non-institutional tenants

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[38] Confidential, General Partner #2, November 10, 2014.

[39] The Beta in portfolio theory is defined as the normalization of the investment risk as a fraction of the overall market risk (or market variance). In other words, the required risk premium of an asset

which are more affected by market swings, making them more correlated with broad economic conditions relative to their larger, institutional counterparts, this is particularly true for office, industrial and retail products.

Aggregation Benefits

While challenges and risks exist that are specific to aggregation models, there are numerous intrinsic benefits. The value-driving component to the data substantiated aggregation model is the ability to penetrate desirable markets, to capitalize on the yield arbitrage - partially in place and partially created through economies of scale, and then to take advantage of multiple exit opportunities.

Given the demand for quality real estate in core markets, aggregating a sub-institutional portfolio can provide an entry point that is otherwise unattainable for the institutional investor. Considering the data analysis performed in this thesis, the best performing locations are often supply-constrained markets in which there are barriers that prevent or strongly hinder new entrants into the market, contain a dense population, and have strong demographics. These factors tend to assure that supply does not outpace demand, which leads to increasing rents within asset classes that are typically privately owned and fractured across a myriad of investors. The aggregation model capitalizes upon the operational and yield opportunities through the consolidation of these sub-institutional properties, which do not fit the typical institutional asset mold.

The aggregation strategy may require a strong renovation plan to achieve consistency in rents, branding and property components across the portfolio. This allows for the revitalization of assets, which could result in a transformational impact on the surrounding community as the area is improved. Re-developing communities in areas ripe for

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is not only proportional to its own volatility, but also to its correlation with the market's portfolio. A lower beta means that the investments are not as correlated with the general market, providing good source of diversification.

aggregation can have an accretive effect on the local market as a whole, not just the specific assets[40].

The economies of scale achieved will also benefit the investors through operational efficiencies that can also be realized upon initial acquisition from un-sophisticated ownership and on an increasing basis as the portfolio grows. Cost reducing benefits primarily come in the form of bulk service contracts and lower expenses due to operational expenses spread across multiple properties.

Ultimately the capital markets will determine the best strategy, but there are multiple exit options available to the owners of an aggregated portfolio. These include the sale of the portfolio as a whole to an institutional grade investor, one-off sales of individual assets, or potential condo conversions for the sale of individual units in the multi-family context. Dependent upon the size of the portfolio, there is also the potential to offer the assets publicly through the formation of a Real Estate Investment Trust (REIT)[41].

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[40] Confidential, Institutional Firm #4, November 5, 2014.

[41] Confidential, General Partner #2, November 10, 2014.

CHAPTER 5. Operational Components

The previous CHAPTER 4explained the framework, challenges, and benefits to an aggregation investment model while touching on the operational structure. Moving forward, the following chapter will further elaborate on the components affecting the operation of sub-institutional portfolios from property management to outlining potential exit strategies.

To Institutional asset owners, buying assets right is important, but efficient operation of owned real estate is more critical. Challenges often voiced by professionals during interviews revolved around the scaling of operations to absorb assets as the portfolio grew[42]. Equally important is the de-scaling of operations as the business plan reached an exit stage, which resulted in one-off sales or a portion of the portfolio. Both scenarios can create conflict between the operator and its capital partner if no strategy is laid out at the onset. These issues encompass fixed costs and employees associated with implementing and managing the investments, as well as the space occupied by the general partner for the undertaking. We will touch on some of the main operational components during this chapter.

Property Management

Operating costs relating to managing the properties are also a point of debate. Aggregation models have been successfully executed using both in-house and third party property management[43]. The argument against third party managers in these scenarios hinges upon an alignment of interests and whether managers can be effectively incentivized to outperform given the level of operational intensity required. Additional challenges to third party management include communication components of independent firms instead of being under common ownership, as well as a common and current understanding of the overall business strategy for the investments. Proponents of in-house management

[42] Confidential, Institutional Firm #5, November 6, 2014.

[43] Confidential, General Partner #3, November 7, 2014.

leverage these perspectives while opposing views point out that focusing on deal sourcing and aggregation strategy enables a more effective approach given the critical timing involved while allowing a third party management to execute the business plan.

According to a paper published by the *Building Services Operation and Maintenance Executives Society* of Hong Kong, four key factors of success in building or hiring a property management organization in a dense, residential context are outlined below[44]:

- Discipline
- Key performance measures
- Necessity and cost-effectiveness of maintenance
- Expenditure against budget

We found that ultimately both in-house and third party management operations could be successful with the outcome contingent upon several factors including management expertise and ability to scale accordingly, relationship between the property management group and operating partner, as well as an acute understanding of the investment strategy for both parties[45].

In addition to the actual property level management components, important items vital to the aggregation model and a potential institutional investor exit include the accounting and reporting mechanisms employed by the manager.

Construction and Renovations

Given the value-add nature the majority of aggregation investment models exhibit, there is typically a renovation plan in place to renovate units due to their vintage, to attain a level of consistency across the portfolio, and boost rents. While this resurfaces similar issues to the in-house or third party property management debate, the same conclusions hold.

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[44] "Key Success Factors of Building Management in Large and Dense Residential Estates," *Facilities* 23, no. 1/2 (January 2005): 47–62.

[45] Confidential, General Partner #1, November 17, 2014.

Regardless of the construction segment's position whether in-house or third party, all firms engaged the contracting expertise early in the acquisition process to fortify projected costs.

Role of Technology

Technology has played a critical role in advancing the investors' ability to scale operations and management across numerous assets in varying locations as evidenced by the public offerings of single family home portfolio Real Estate Investment Trust's (REIT's)[46]. In the multi-family arena, property management software such as Yardi, Buildium.com, and MRI Management Software have enabled the operator to scale operations without necessarily compounding fixed costs with additional employment of management, accounting, leasing, and maintenance staff. These and similar programs automate much of the daily management process by allowing tenants to pay rent electronically, generate maintenance requests and, while enabling operating companies to automatically generate available postings to rental websites, notify vendors of work orders and compile financials at the click of a button[47]. In addition to systematic advancements, this data has been collected and with proper analysis can aid operators in determining a myriad of beneficial factors such as common issues with buildings inspected and how efficient their firm is throughout the due diligence process to when energy loads demand peaks on their properties to pre-determining maintenance issues before they arise. These technological efficiencies allow for operators to locate, conduct efficient due diligence, acquire buildings, and provide a quality tenant experience in ways that previously would have been considered unattainable because of the lack of operational scalability.

General Expenses

According to industry professionals and operators, the economies of scale achieved through aggregation models can result in a 14% to 20% savings in expenses relative to

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[46] Karen Weise, "Wall Street Wants You to Become a Landlord," *BusinessWeek.com*, May 6, 2013, 5–5.

[47] Confidential, General Partner #1, November 17, 2014.

general expenses incurred by similar assets owned by non-institutional investors[48]. These cost savings are primarily realized from bulk service agreements such as trash, hardware purchasing, and other contracts achieved at scale. The cost of repairs and general maintenance also decrease with scale as dedicated staff are employed rather than individual service calls. Online maintenance requests, work order processing, and scheduling also contribute to cost savings and improve the efficiency of management across a portfolio of individual buildings.

Additional expenses are subjective and locational dependent such as property taxes and insurance. According to a national risk management advisory firm, insurance may decrease with a portfolio of assets given the geographical spread of risk[49]. The example provided depicted a single building with 200 units versus 10 buildings with 20 units each. In the event of a damaged roof, fire, or flood the displaced tenancy and cost burden is greater with the single building while the damage exposure to the individual building is considered to be more limited. Regardless of locational premiums that will be in affect such as the risk of hurricanes in Miami or earthquakes in Los Angeles, the chance of damage is spread over multiple assets in the portfolio, which could result in lower premiums.

Exit Strategies

An aggregated portfolio has the added benefit of several exit mechanisms as opposed to single, institutional sized assets. Ultimately, the capital markets drive the exit strategy employed at the time of sale. The capital source and corresponding holding period are also taken into effect regarding the desired multiple or internal rate of return (IRR) to the investors. Regarding multi-family assets, four options have been proven successful at varying times in market cycles[50]:

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[48] Confidential, General Partner #2, November 10, 2014.

[49] Confidential, Risk Management Advisor, October 27, 2014.

[50] Confidential, General Partner #2, November 10, 2014.

- **Portfolio Exit:** Sell the aggregated portfolio to an institutional or other quality investor. Most efficient method regarding the cost of sale, timing to complete the transaction, and potentially realize a premium based on the portfolio.
- **Individual Asset Exit:** Sell assets individually to high net worth investors, private owners, or similar purchasers. Often achieve a higher price per individual property. However, the Internal Rate of Return (IRR) could be depressed based on the length of the sale process between first and last asset sold. Additional costs associated with marketing and closing the assets could dilute and benefit from a higher individual sales price.
- **Condo Conversion Exit:** Converting the units to condominiums for individual sales is ultimately dependent upon the capital markets. This strategy may yield the highest return but would also incur corresponding risk with additional costs and time.
- **Public Offering:** An initial public offering serves as a potential exit dependent upon the size and scope of the portfolio assembled.

The benefits of multiple exit strategies must be aligned with the business plan from the beginning of the aggregation investment. For example, certain renovation thresholds must be considered should the disposition strategy entail condominium conversions as opposed to a rental portfolio sale. Ultimately, the optionality component to the exit strategies is a significant value to the aggregation investment model.

CHAPTER 6. Data Analysis

Data Parameters

The $5 to $10 million threshold regarding non-institutional asset values for this thesis was arrived at through both qualitative and quantitative measures. The stated collective equity investment floor of a majority of institutional funds is $5 million[51]. As previously evidenced, there is no clear and defined delineation between institutional and non-institutional assets. Considering the varying ambiguity of defining institutional assets as well as the data and information available to us, we concluded on using total asset valuation as the defining measurement. Additionally, we sought to examine potential discrepancies in the data using two different valuation thresholds. The first considered an institution acquiring an asset with a minimal direct investment of $5 million and securing financing of 50% loan-to-value, common leverage for "core-plus" assets, which results in an asset value eclipsing $10 million. Secondly, we ran analyses using a straight $5 million valuation with all asset values greater being considered Institutional.

For the purpose of this thesis and the availability of data, we determined the defining line of institutional assets to be those over $10 million in value. Although most assets below $10 million in value would be considered non-institutional, we defined a group between $2.5 and $10 million in total value for all asset types, including multi-family buildings, as "sub-institutional assets". Given the broad nature of the division between institutional and non-institutional assets and based on available data, we decided to delineate categories based on a total asset value. This is a generalization with several outlying factors, however research and industry professionals agreed on the parameters in place for this analysis.

Considering this, in the present study, assets valued below $2.5 million were not included in the quantitative research. This was due to a lack of available data for assets values under $2.5 million. Our data focuses on assets in the valuation gap just above the majority of individual investors and slightly below institutional funds.

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[51] Confidential, Institutional Firm #5, November 6, 2014.

Data Set 1: $ 2.5M < Type 1 < $10M, Type 2 > $10M

Data Set 2: $2.5M < Type 1 < $5M, Type 2 > $5M

Data Sources and Other Basic Information

Through the support of Real Capital Analytics, this research benefitted from full access to the raw data in their repeat sales database. This data set consisted of over 68,000 repeat sales transactions for U. S. commercial real estate since 2000. RCA is a company that started tracking commercial (income producing) property transactions in the year 2000 and they have totaled over $9 trillion of reported trades. Real Capital Analytics is one of the most respected and comprehensive real estate research firms in the world and as such, their information is of the highest quality available.

RCA coverage has significantly expanded since 2000; especially in 2007 when operations were scaled internationally, covering markets in all continents except Antarctica. As **Table 6-1** shows, they are in most if not all developed countries and in some of the biggest developing economies in the world.

The composition of the RCA's data varies, it reports on transactions consisting of apartments, industrial, office, retail, hotel, and senior housing & care, to developable land sites. Their focus is on commercial properties that trade above $2.5 million for U.S. transactions and over $10 million for international transactions.

BY ZONE		2007 - 2014 YTD		Entire History	
	Country	Volume ($ Billion)	Number Properties	Volume ($ Billion)	Number Properties
Americas	United States	1,447.9	104,437.0	3,622.6	249,813.0
	Canada	124.2	6,958.0	207.6	10,833.0
	Brazil	42.5	1,229.0	52.5	1,581.0
	Mexico	8.2	707.0	22.2	1,733.0
	Other	16.6	770.0	24.0	973.0
EMEA	United Kingdoı	384.5	11,780.0	941.8	32,732.0
	Germany	272.3	13,392.0	457.0	28,095.0
	France	157.5	6,884.0	272.6	1,090.0
	Spain	63.9	5,437.0	101.7	7,923.0
	Sweden	75.7	5,469.0	127.7	9,024.0
	Netherlands	57.5	4,586.0	92.1	6,326.0
	Russia	64.5	1,531.0	92.0	1,888.0
	Mideast	35.3	1,430.0	45.4	1,571.0
	Africa	14.0	793.0	20.4	1,156.0
	Other	278.2	11,952.0	451.4	18,797.0
Asia Pacific	China	1,218.8	25,584.0	2,036.4	43,181.0
	Japan	272.2	7,423.0	513.0	12,920.0
	Australia/NZ	136.0	6,176.0	250.8	10,557.0
	Singapore	110.9	1,051.0	169.1	1,765.0
	Hong Kong	119.2	4,703.0	176.6	6,616.0
	India	50.3	779.0	63.1	1,093.0
	Other	152.2	4,101.0	234.0	6,393.0

Table 6-1. RCA coverage by continents
Source: Real Capital Analytics.

BY PROPERTY TYPE	U.S.		Non-U.S.	
Property Type	Volume ($ Billion)	Number Properties	Volume ($ Billion)	Number Properties
Apartment	869.1	61,452	332.7	26,580
Senior Housing and Care	72.2	5,606	18.5	1,469
Hotel	259.5	13,879	307.4	10,927
Office	1,149.1	42,714	1,837.4	47,134
Development Site	167.5	14,532	2,364.1	52,713
Industrial	456.4	53,476	407.7	26,670
Retail	631.4	54,863	1,079.3	50,091
Other	17.2	3,291	4.4	476

Table 6-2. RCA coverage by property type
Source: Real Capital Analytics.

Furthermore, it can be seen that the coverage in the U.S. contains the most depth in transactions with more than 249,000 properties represented in the repeat sales index. We feel very confident that we are handling one of the most reliable datasets available.

The time frame for our analysis is from December 2000 to September 2014. Also, the research is limited by the lower bound of $2.5 million imposed by the data. The accuracy and availability of data for assets with sub-$2.5 million in total valuation is questionable and sparse at this time. This is neither a decision we made nor a definition of the market; it is strictly a particular circumstance of the actual data available. Further analyses that would cover a spectrum of assets below $2.5 million should prove helpful and we would expect to have similar or even more polarizing results than the ones obtained in this thesis. As delineated prior, based on extensive interviews to industry professionals, we established two monetary thresholds that would define the institutional and non-institutional markets in which properties can trade. These cut-off points are found at $5 million and $10 million. As explained in previous chapters, there is no clear classification as to what should be the definition of institutional grade real estate investments in part because of the varying array of firm sizes and strategies of institutions. For example, large firms such as Blackrock or AIG would not go through the brain damage or would not allocate the capacity to deploy capital into assets below $10 million in value. Contrarily, there are smaller institutions where their size and capital commitments enable them to navigate smaller assets. Both organizations are representative of institutional firms but they operate in two completely different arenas, and their definition of "institutional asset and market" varies. Also relevant is the fact that the valuation cut-off point of a particular asset type (e.g: apartments) could not be the same for other asset types (e.g: retail, office, etc). Again, the exact definition of one market or the other is not an exact science[52].

While this research was focused mainly on multifamily products; we also conducted analysis on other property types like office, retail and industrial but not to the extent of multifamily. Our conclusions and findings will relate to multifamily asset type and cannot and should not necessarily be extrapolated to the other property types.

Data Sorting and Filtering

The datasets obtained from Real Capital Analytics are raw in the sense that they are not completely sorted or filtered. In this paper we took on the challenge of sorting out this data

[52] Confidential, Institutional Firm #2, November 4, 2014.

set according to assumptions supporting the non-institutional and institutional arbitrage idea [53] [54].

The main assumptions for the sorting criteria are:

High barrier to entry markets will provide for more arbitrage potential

Cities with highly regulated markets and/or land-constrained markets should provide for higher arbitrage potential. The main reasoning behind this is that due to regulations or physical scarcity of developable land, the pipeline for brand new supply in these markets is limited. As cities grow to a considerable size, demand for institutional properties will exceed the existing supply and considering the constraints for developing new assets (due to the high barriers to entry), the prices (particularly the price of land) will be bid up, compressing returns. When non-institutional assets are found in these conditions they benefit from the increased land value but the lack of competition for this assets will generally not drive their prices as high as institutional assets, hypothetically allowing for an arbitrage spread.

In line with this, less land constrained cities and regions do not experience this fierce competition for land which allows the prices to be relatively lower than their constrained counterparts, making land more accessible for new development. This can remove some incentive of an innovation, like small property aggregation, to expand the existing boundaries of market.

Old cities with extensive familiar history will provide for more arbitrage potential

Cities with high concentrations of multi-generational families should present a higher proportion of non-institutional properties, mainly for residential products, due to the

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[53] We would like to extend full acknowledgement to Dr. Sheharyar Bokhari, whose help and advice in the technical analysis of this thesis was invaluable.

[54] It is important to note again that in this context, arbitrage is referred to not as possibility of profit without risk, but the possibility to capitalize on inefficiencies in the market that provide for more profit (super-normal profits).

underlying ownership history. In the early days of the U.S., construction technology was not as developed which resulted in the smaller size of older vintage buildings. Over time, these older cities might have redeveloped part of this outdated construction, but many of these vintage structures remain today. Such cities would hypothetically have a higher fraction of smaller, older construction that would qualify in the present time as non-institutional. Yet often these old structures have desirable, sometimes even irreplaceable, aesthetic value or market appeal among certain segments of the rental market.

Cities that might exhibit these characteristics are the older cities of the U.S. where early populations established and invested originally. The possible results of this historical fact are the existence of long-dated familial estate inheritance. We believe this progression can result in scenarios where heirs lose track of or lose interest in the investments that were inherited, they care little for the asset and rely on the cash flow stream that they receive, giving way to owners who lose interest in the Real Estate market.

To add to this, the plausible long list of heirs relative to the original investor and their shared interest make it even more difficult to come to a collective agreement for any efficient management or capital investment plan, hindering incentives to take any steps to update property or even liquidate the property. The consequence is that such familial estates are greatly located in older, evolved cities and might be sitting on land that might have much higher value than that valued by the market.

Additionally, due to earlier ways of transportation, the older cities are usually next to a water source such as an ocean, lake or river. The resultant effect of early transportation's dependency on water, has made these older cities inherently land constrained as they were developed close to shipping hubs. But coastlines also now provide a valuable amenity for many renters.

In order to analyze the raw data and quantify how the land constraint and history of private ownership conditions affect the arbitrage hypothesis, we aggregate and sort out the data by the following criteria.

No Filter

Arbitrage potential is examined between sub-institutional ($2.5 million to $10 million in asset value) and institutional properties (over $10 million in asset value), without any filtering criteria for location, constraint or history. In other words, we use all valid observations available in RCA's dataset only filtering for product type.

- ***All***: Includes all data gathered by RCA in the U.S. filtered only by product type.

By Size (as defined by Real Capital Analytics)

Size of the metropolitan area is examined to explore arbitrage differences between major and non-major metros. We believe that major metros have more scarcity of land, so they should provide higher arbitrage potential.

- ***Major Metros (MM)***: New York, Washington DC, Boston, Chicago, Los Angeles and San Francisco.
- ***Non Major Metro (NMM)***: All other.

By (land) Constraints

Cities with obvious, physical land constraints were analyzed for potential arbitrage differences versus non-land constrained cities. We believe that land constrained cities will be more prone to arbitrage between certain segments of the market.

- ***Land Constrained Cities (LCC)***: Boston, Broward County, Chicago, Washington DC, Denver, East Bay (LA), Hawaii, Houston, Inland Empire (LA), Long Island, Los Angeles, Manhattan, Miami, NYC Boroughs, Orange County, Palm Beach, SF Metro Other, San Diego, San Francisco, Seattle, and Tampa.
- ***Non Land Constrained Cities (NLC)***: All other.

By Regions (as defined by Real Capital Analytics)

Analyses were made by region to determine the geographical impact on potential arbitrage scenarios between institutional and non-institutional assets. We believe that the regions where the older coastal cities are located will provide higher arbitrage potential between segments of the market. These cities are largely inclusive of the northeast and western United States, particularly where we find cities such as New York, Boston, San Francisco and Los Angeles.

- ***Mid-Atlantic (MA)***: Baltimore, Washington DC, DC-MD Burbs, DC-VA Burbs, Eastern PA, Harrisburg/Central PA, Norfolk, Philadelphia, Pittsburgh, Richmond, South New Jersey and Wilmington.
- ***Northeast (NE)***: Albany, Boston, Buffalo, Hartford, Long Island, Manhattan, No NJ, NYC Boroughs, Providence, Rochester, Stamford, and Westchester.
- ***Southeast (SE)***: Atlanta, Baton Rouge, Birmingham, Broward, Central FL, Charleston, Charlotte, Columbia, Daytona Beach, Florida Panhandle, Gainesville, Greenville, Jacksonville, Knoxville, Lexington, Little Rock, Louisville, Martin/Saint Lucie, Memphis, Miami, Myrtle Beach, Nashville, New Orleans, Orlando, Palm Beach, Raleigh/Durham, Savannah, SW Florida, Tallahassee, and Tampa.
- ***Midwest (MW)***: Chicago, Cincinnati, Cleveland, Columbus, Dayton, Detroit, Grand Rapids, Indianapolis, Kansas City, Milwaukee, Minneapolis, Omaha, St. Louis, and Toledo.
- ***Southwest (SW)***: Albuquerque, Austin, Colorado Springs, Corpus Christi, Dallas, Denver, El Paso, Houston, Oklahoma City, Phoenix, San Antonio, Tucson and Tulsa.
- ***West (W)***: Central CA, East Bay, Hawaii, Inland Empire, Las Vegas, Los Angeles, Monterey, North Bay, Orange County, Portland, Reno, Sacramento, Salt Lake City, San Diego, San Francisco, San Jose and Seattle.

By Major Metros (as defined by Real Capital Analytics)

To consider the potential arbitrage differences between major cities, the data was delineated between major U.S. metropolitan areas as defined by Real Capital Analytics.

- Los Angeles.
- San Francisco.

- Boston[55].
- Chicago[56].
- New York.
- Washington DC[57].

The following figure depicts Real Capital Analytics' regions and metros.

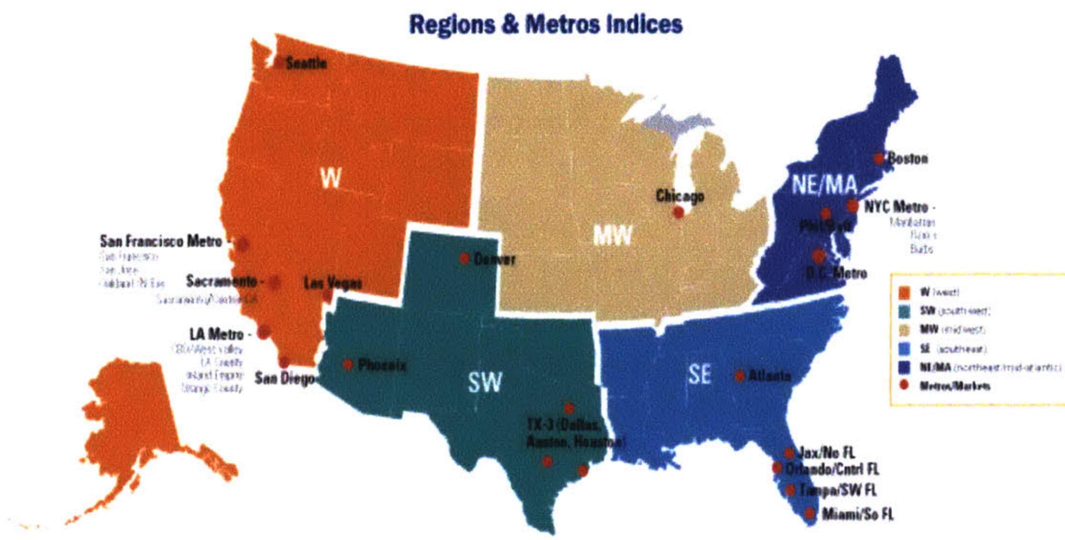

Figure 6-1. RCA regions and metros map
Source: Real Capital Analytics.

55 Not enough data to run full analysis.

56 Not enough data to run full analysis.

57 Not enough data to run full analysis.

CHAPTER 7. The Framework for Analysis

The quantitative part of this thesis is an attempt to shed light on the existence, magnitude and nature of a risk-adjusted total return spread that might exist in what we have defined as "sub-institutional" properties against that of larger, "institutional" properties.

Before proceeding, it is important to clarify our interpretation of the risk-adjusted total return spread. As it is commonly known in the world of finance, returns on investments are a combination of yield on investment and capital return on investment (also referred to as growth), in particular the total return on an investment can be expressed by the following formula:

$$r = y + g$$

Where "r" stands for total return, "y" stands for yield and "g" stands for growth or capital return.

We arrive at historical, or ex-post, total returns on investments of multifamily properties above and below the determined valuation thresholds by independently analyzing each component of the total return metric. These components are then aggregated to obtain the average total return of the investment in the analysis period. Simply put, we analyze the yield return on asset performance and the growth returns on asset performance independently, then sum both components to arrive at the total return performance.

Alternatively, the total returns of an investment can be expressed in terms of the total risk it entails. The classical financial formula is:

$$r = rf + RP$$

Where "rf" equals the risk free rate, reflected in the average yield of the 30 day T-bills of the U.S. Treasury and the "RP" stands for risk premium, which is the price that capital markets give for all the risks that the market cares for and that are present in the investment[58].

We define risk by standard metrics. The risk quantified in this research is expressed mainly in the standard deviation of the returns across time (aka "volatility"). Similarly, we quantify range (or cycle amplitude) as a measure of risk, defined as the level of the index at the top of the peak minus the level of the index at the bottom of the trough over the real estate cycle from 2000 to 2014. Also, possibly even more important is the fact that all of these risk metrics are derived from the underlying volatility of the growth analysis, this is possible to do because literature tells us that real estate risk is concentrated for the most part in the growth component of return while yields are very non-risky[59].

These are classical metrics of risk that nonetheless might not reflect all of possible risks that are present in the investment. As explained in CHAPTER 4, there are other perceived risks relevant to an aggregation investment model that are more idiosyncratic to a particular market (in specific to the non-institutional market) that might not be fully reflected in these metrics of standard deviation, range of returns, and downside potential.

The Law of One Price and the Sharpe Ratio

In order to achieve a balanced and measurable comparison, we employ a framework that succeeds at rendering metrics that are comparable between the different criteria filters that we applied to the data (constraints, regions, size, cities, etc.). For this we resort to the law of one price, which states that a good must sell for the same price in all locations, it is derived from an assumption of no arbitrage[60]. Accordingly, if this good is defined as units of

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[58] U.S Department of the Treasury, "Resource Center. Interest Rate Statistics," n.d., http://www.treasury.gov/resource-center/data-chart-center/interest-rates/Pages/Historic-LongTerm-Rate-Data-Visualization.aspx.

[59] David M. Geltner et al., *Commercial Real Estate Analysis and Investments.*

[60] This is true for goods or resources that have free unlimited mobility, if there's restrictions in mobility the markets will segment themselves and create price differences. A perfect example of this can be seen in Real Estate, buildings and land are by definition unmovable, so rents that each

risk, then each unit of risk must sell for the same price. This law can be typically observed in the capital markets and how it prices the claims of future cash flows (i.e.: investments). Investment pricing is done relative to the risk each investment entails. Lower risk (i.e.: less units of risk) investments should command lower premiums and higher risk (i.e.: more units of risk) investments should command higher premiums so that each unit of risk is rewarded with matching units of return premium, or as the law states, each unit of risk is priced the same. If markets are completely efficient then this is true and the law of one price holds.

For our quantification of the law of one price, units of risk are equivalent to units of standard deviation; so an investment that presents a 20% standard deviation has 20 units of risk. Units of "premiums" are equivalent to units of risk-premium; so an investment that has a risk premium of 8% has 8 units of "premium"[61]. A ratio of these two metrics is called the Sharpe Ratio. It is a natural measure of risk-adjusted returns and is widely used, understood and accepted in the realm of finance[62]. It indicates the price of risk, or in other words, the return premium that an investor will experience for each unit of risk acquired.

$$Sharpe\ Ratio = \frac{Risk\ Premium}{Risk} = \frac{RP}{St.Deviation} = \frac{r - rf}{St.Deviation}$$

As previously noted, we are interested in quantifying the total return spread between small and large properties and analyzing if such an additional "premium" for investing in smaller properties is proportional to the risks (defined as volatility) that are inherent when owning smaller properties. The Sharpe Ratio formula gives us the framework to do such an analysis in a simple, intuitive, risk-adjusted basis that it is backed by solid financial economic literature[63]. Ultimately, as previously determined, a higher risk-adjusted return for smaller properties must be possible in order to realize any arbitrage.

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building can charge will not be the same in every market because every market has their idiosyncrasies that makes them unique.

[61] $\text{Risk} - \text{premium} = \text{RP} = r - r_f$

[62] David M. Geltner and others, *Commercial Real Estate Analysis and Investments*. 3rd edn.

[63] Total Return spread is exactly the same as the difference in Risk Premium.

It is then our hypothesis that smaller properties in some particular markets exhibit a greater return on investment and without necessarily higher risk. Said differently, non-institutional properties in some particular markets have a higher risk-adjusted return than institutional properties in the same market, providing for an arbitrage opportunity.

In a mathematical sense the following exemplifies what we are trying to quantify:

$$r_{non-institutional} - r_{institutional} > 0$$

or equivalently

$$RP_{non-institutional} - RP_{institutional} > 0$$

while at the same time

$$risk_{institutional} \cong> risk_{non-institutional}$$

and all can be expressed as

$$sharpe\ ratio_{non-institutional} > sharpe\ ratio_{institutional}$$

This final inequality can happen if all of the above is true. However there are other ways in which the Sharpe Ratio inequality could arise. For example, the inequality could be the consequence of a lower RP relative to institutional properties, but at the same time lower volatility (risk) relative to institutional properties. If the ratio of the difference of risk premium between non-institutional and institutional properties relative to the risk premium of the institutional properties is bigger than the ratio of the difference of risk between non-institutional and institutional properties relative to the risk of the institutional properties, then the inequality holds[64].

$$\text{Total Return Spread} = \mathrm{r_{small}} - \mathrm{r_{large}} = (\mathrm{rf} + \mathrm{RP_{small}}) - (\mathrm{rf} + \mathrm{RP_{large}})$$

$$\text{Total Return Spread} = \Delta\mathrm{RP_{small-large}}$$

[64] A visual representation is as follows:

If we are able to find markets in which this is true, in theory these are assets that yield more return for each unit of risk acquired, so the Law of One Price does not hold and we believe that represents an inefficiency of the markets' perception and pricing.

$$\frac{RP_{non-institutional} - RP_{institutional}}{RP_{institutional}} > \frac{Risk_{non-institutional} - Risk_{institutional}}{Risk_{institutional}}$$

CHAPTER 8. Methodology

To quantify this expected arbitrage spread, we analyzed growth component and the yield component of the total return equation for non-institutional and institutional properties.

Growth Methodology. The Repeat Sales Regression Index

For the capital return component of the total return of properties we used data, provided by Real Capital Analytics, on properties that transacted during the analysis period. This data was then ran using a modification of the classical Repeat Sales Regression methodology jointly developed by Dr. David Geltner and Dr. Sheharyar Bokhari from the MIT Center for Real Estate, Moody's and Real Capital Analytics, which yielded period-to-period capital returns[65]. It is called a Repeat Sales Regression Index because it uses only "round trip transactions", or in other words, observations of properties that had repeated sales during the period of analysis, between 2000 and 2014. In order to obtain round trip observations, the properties in the index must have transacted ("bought" and "sold") at least twice during the period of analysis. A minimum of two documented points of sale allowed us to compare the price changes that specific properties, defined by address, experienced. The methodology then used many of these repeat observations and created an index that tracks price change for every period-to-period term, depending on the frequency. The index measures the actual price change, appreciation or depreciation, experienced by investors.

By employing this methodology we could control for data quality. This is critical to the accuracy of the research due to the fact that real estate assets are by definition unique, thus assuring that changes in prices are reflective of the market trends at that time and not idiosyncratic changes in prices (random noise) that can arise from simple averages of different properties. Additionally, the methodology employs sophisticated econometric

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[65] Geltner, Phillip and White, "The Moody's/RCA Commercial Property Price Indices - CPPI (Version 1.0)," June, 2012.

techniques including filters, frequency conversions, double stage regressions, and ridge regression noise filters that further smooth the index making it extremely reliable.

Considering the data set and the previously mentioned inferences, the Repeat Sales Regression was run the following assumptions:

1. Frequency conversion set Annual to Quarter (ATQ)
2. No second stage residual regression (WLS)
3. No ridge bias

Cap Rate Methodology

For the analysis of the total return yield component of assets, we again used Real Capital Analytics data on transactions of properties where the capitalization rate, or "cap rate", was reported. The capitalization rate is not an exact measurement of the return yield that the property will experience because it is calculated as Net Operating Income (NOI) divided by the Value of the asset, while the actual yield of the property is the Property Before Tax Cash Flow (PBTCF) divided by the Value of the asset. The difference between the NOI and the PBTCF are the Capital Expenditures (CapEx), so in reality the actual yield on the property will be less than the cap rate, given any CapEx reserves or expenditures. It is assumed in our analysis that capital expenditures are proportionally the same relative to the NOI, independent of the property being institutional or non-institutional, so the cap rate comparison for yield purposes is deemed sufficient. However, in practice this assumption would need to be relaxed.

The procedure for analyzing different cap rates in the data set is straightforward, consisting of simple, annual reported cap rate averages. However, within the simple average there is no way of controlling for quality, unlike the Repeat Sales Methodology. It is difficult to ascertain whether period-to-period changes in cap rates between periods are due to changes in the market trends versus changes in the risk profiles of any of the two sets of properties. Given these challenges to controlling for quality and period-to-period fluctuations, we chose to generate annual averages of the cap rate data. Through doing so, we are able to amass many more observations for each period that will reduce the random noise (property idiosyncrasies) of the output and increase the accuracy of the results.

By achieving results on both the yield and growth components of the total return, we can proceed with the framework explained above to determine the possibility for arbitrage situations. However, we think it is also important to revisit that these risk measurements are not necessarily the only indicators of risk as perceived by the participants in the market, and that there are likely to be other factors, as explained in CHAPTER 4 influencing the expectations around such investment.

CHAPTER 9. Research Findings

It is important to state that our analyses are done on an ex-post perspective, meaning that they are backward looking analyses of historical data and might not be representative of the future, for the future is uncertain. As long as we consider that the future is going to behave similarly, although not exactly to the past, we can draw conclusions that helps us forecast the future. Decision-making should always be done with ex-ante perspective taken into account for analyses[66].

Cap Rate Findings

The results obtained from the cap rate data were not as compelling as we initially thought they might be. There is no clear evidence systematically indicating that a spread in yield between non-institutional and institutional assets exists. Some markets in the data set exhibited a clear spread while other markets resulted in the yearly average behaving similarly for both non-institutional and institutional properties, displaying little or no spread. For example, we can see in the two charts below that the market for major metropolitan areas with a $10 million cutoff do not exhibit a clear trend, while non-land constrained markets with a $10 million cutoff show a clear delineation.

[66] In exhibit C we show all the results, cap rate, growth risk for 5 million and 10 million cutoffs for multifamily properties.

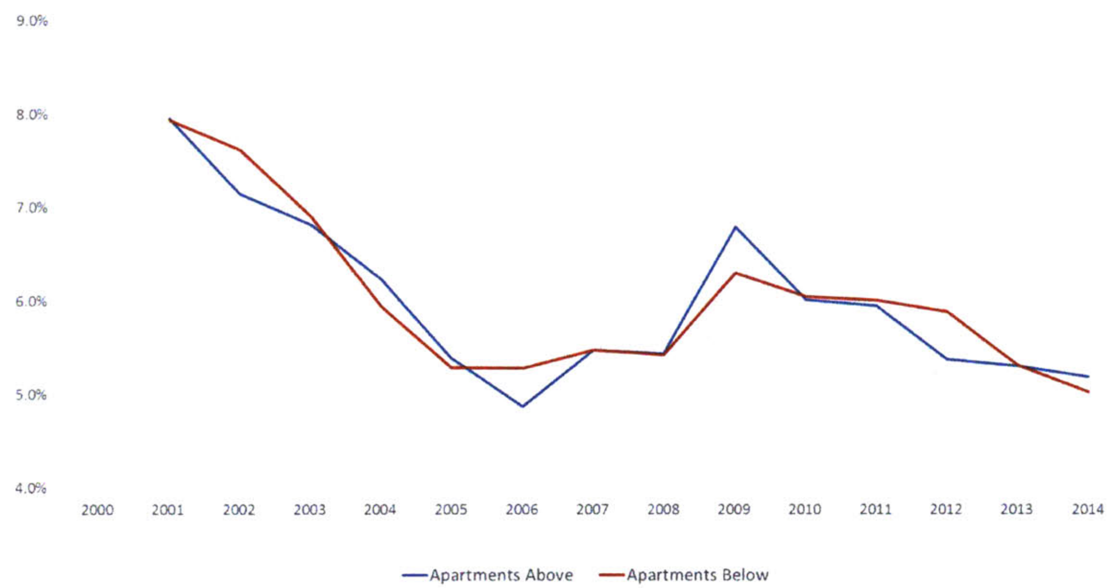

Figure 9-1. Apartment cap rate series. Major metros. Cutoff at $10 million
Source: Sacchini & Shipps.

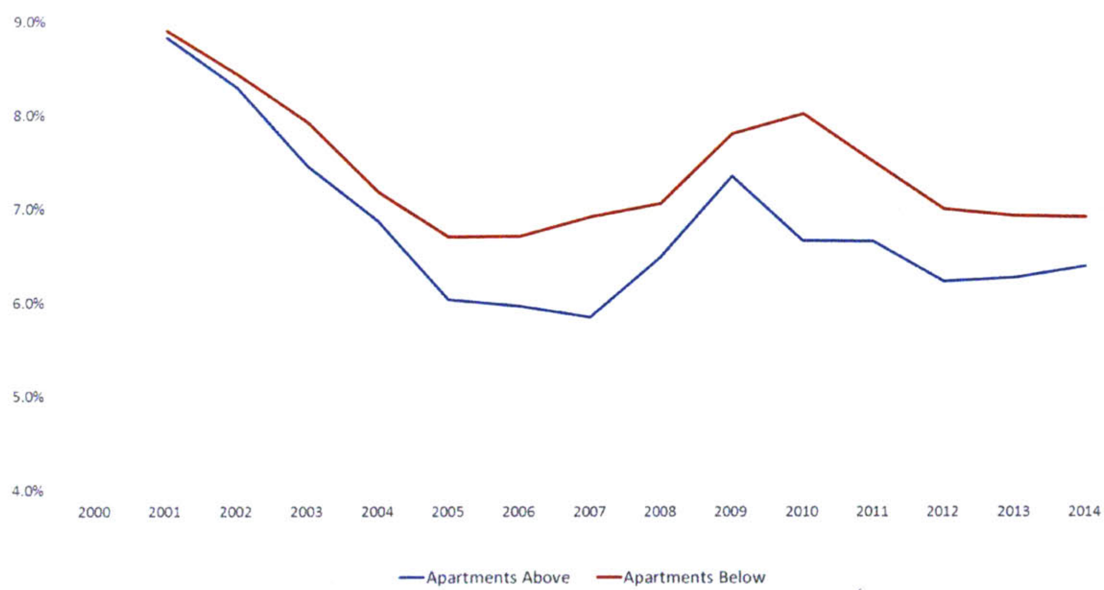

Figure 9-2. Apartment cap rate series. Non-land constrained cities. Cutoff at $10 million.
Source: Sacchini & Shipps.

Furthermore, we find that the markets in which we assume that arbitrage opportunities should be greater (i.e.: high barrier to entry markets and older cities) do not exhibit considerable spreads in yield, some of them in fact present lower yields for smaller properties. Conversely, markets that are not expected to provide for great arbitrage opportunities are showing considerable differences in yield between different property sizes.

The following charts give a good representation of the above paragraph.

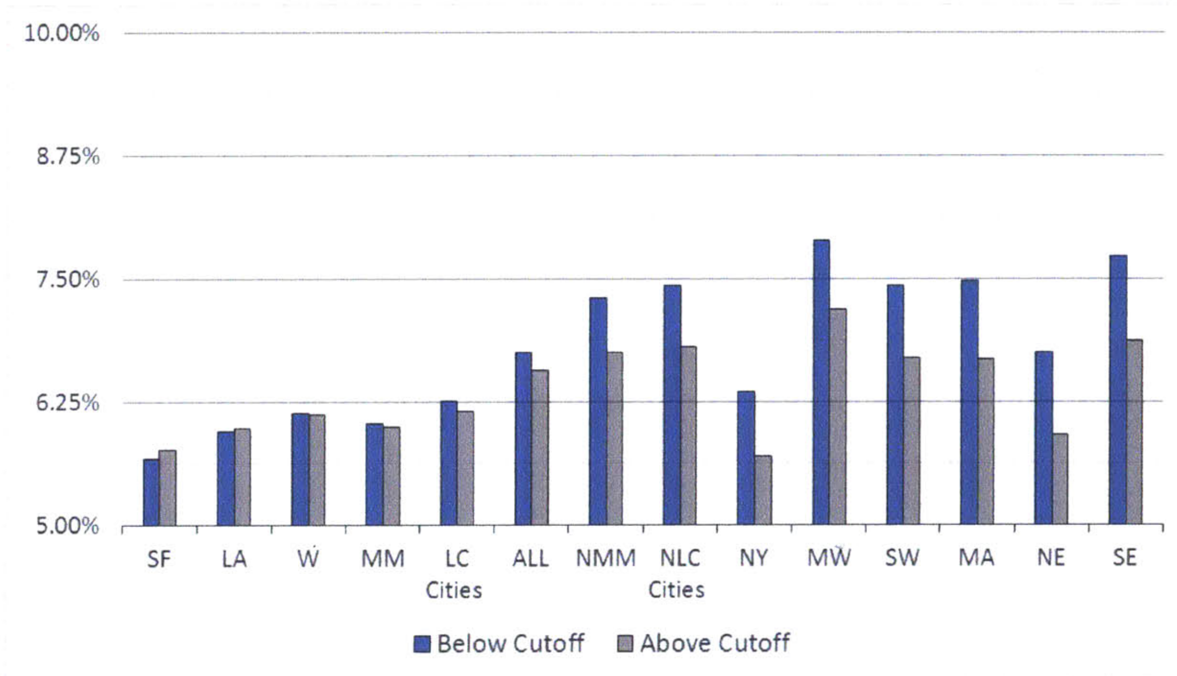

Figure 9-3. Apartment cap rate bar chart for properties above and below a $10 million cutoff
Source: Sacchini & Shipps.

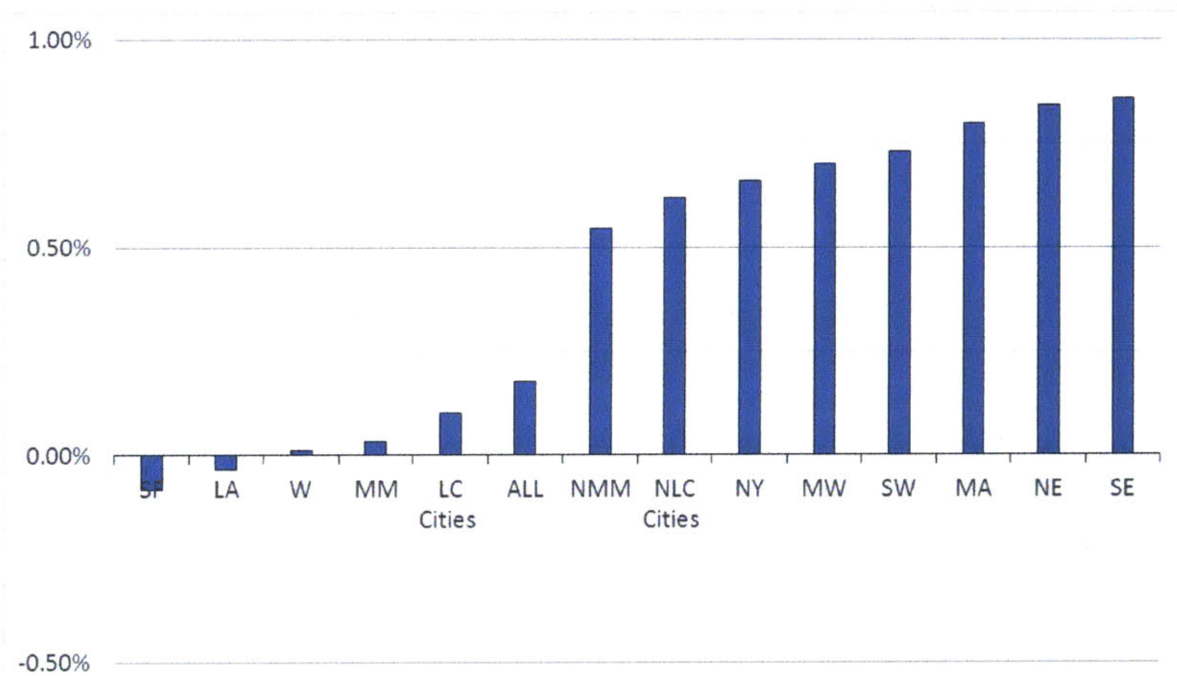

Figure 9-4. Apartment cap rate spread bar chart between properties above and below $10 million cutoff

Source: Sacchini & Shipps.

San Francisco, the West Region, All, Los Angeles, Land Constrained Cities, and Major Metros exhibit virtually no spread, or even negative spread in some cases. All these locations would qualify according to our assumptions for more arbitrage potential, yet the markets do not suggest this in those regions (with exception of New York and Northeast Region) on a yield return basis. The results for the $5 million threshold are almost exactly the same, with New York and the Northeast as exceptions to the trend.

We need to remind our readers that these partial results do not invalidate the arbitrage idea. The arbitrage model is based on obtaining higher risk-adjusted total returns for the smaller properties and thus obtaining more return for each unit of risk acquired. If we are able to show that growth potential is higher for smaller properties while having similar risk (remembering that risk is mostly concentrated in the growth component), the arbitrage is still possible even without a spread in yields (as long as the yield spread does not go negative).

Growth (Capital Gains) Findings

The results obtained from the repeat sales regression that constitute growth are very interesting. The observed cap rate analysis trend, which resulted in no significant or definitive spreads between non-institutional and institutional properties in regions or cities with expected arbitrage potential, seems to be reverted. A majority of the markets that we hypothesized of having higher arbitrage potential exhibit considerable spreads in growth rates between non-institutional and institutional properties. Markets that were not prone to arbitrage, exhibit varying results, with some showing significant growth potential relative to larger properties, while others are reveal little or even negative growth potential.

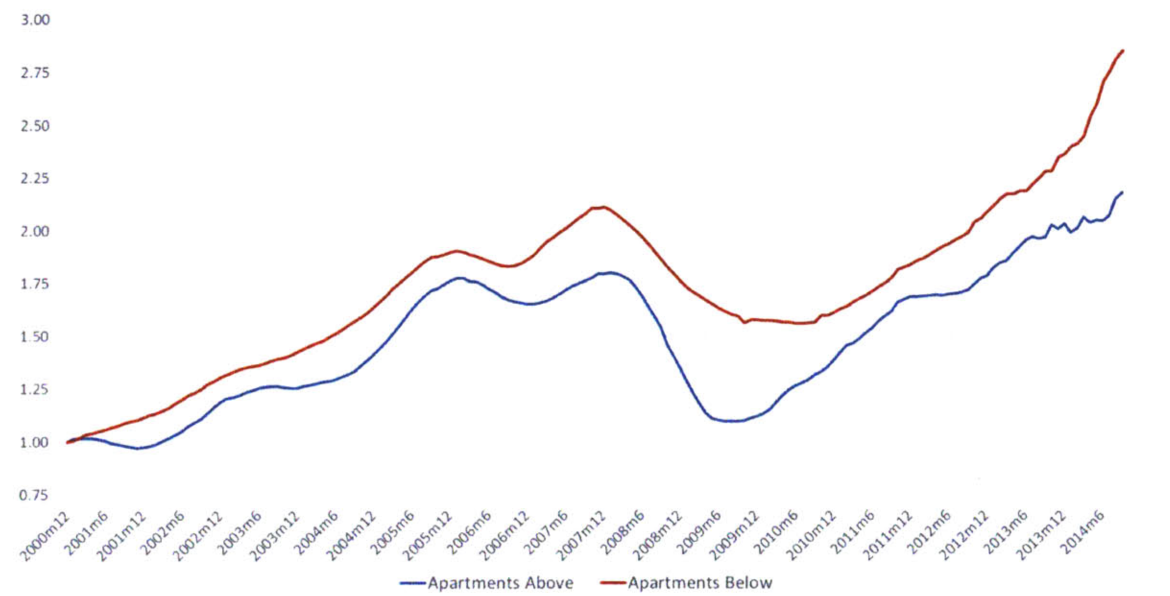

Figure 9-5. Apartment repeat sales index. Land constrained cities. Cutoff at $10 million
Source: Sacchini & Shipps

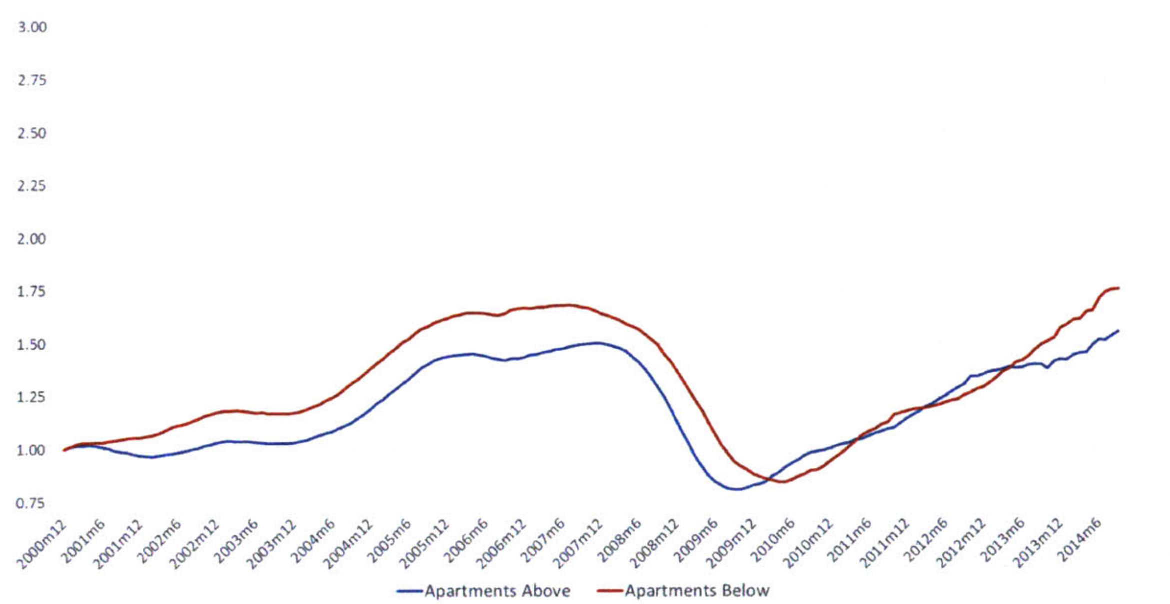

Figure 9-6. Apartment repeat sales index. Non-major metros. Cutoff at $10 million
Source: Sacchini & Shipps

The Repeat Sales regressions run for the $5 and $10 million thresholds showed a variation in growth potential between the two cutoffs. The higher growth potential for smaller properties was realized for the $5 million cutoff, with only the exception of San Francisco, and the Southwest Region for the $10 million cutoff.

The following bar charts show the results that are discussed above.

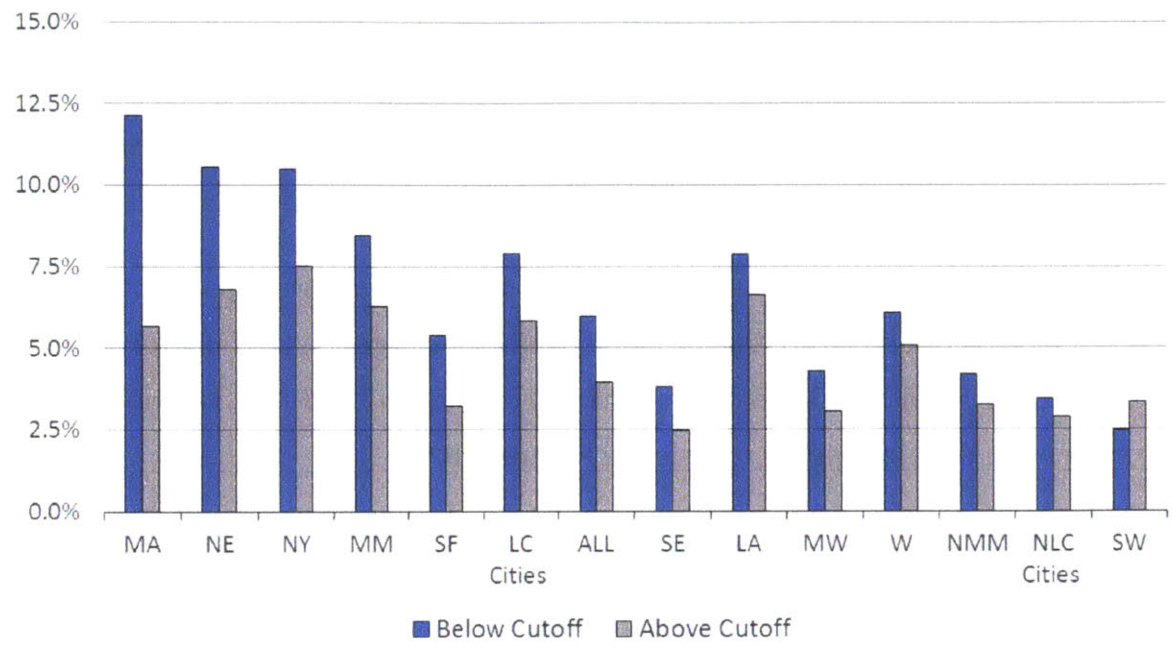

Figure 9-7. Apartment growth rate spread bar chart for properties above and below $10 million cutoff
Source: Sacchini & Shipps

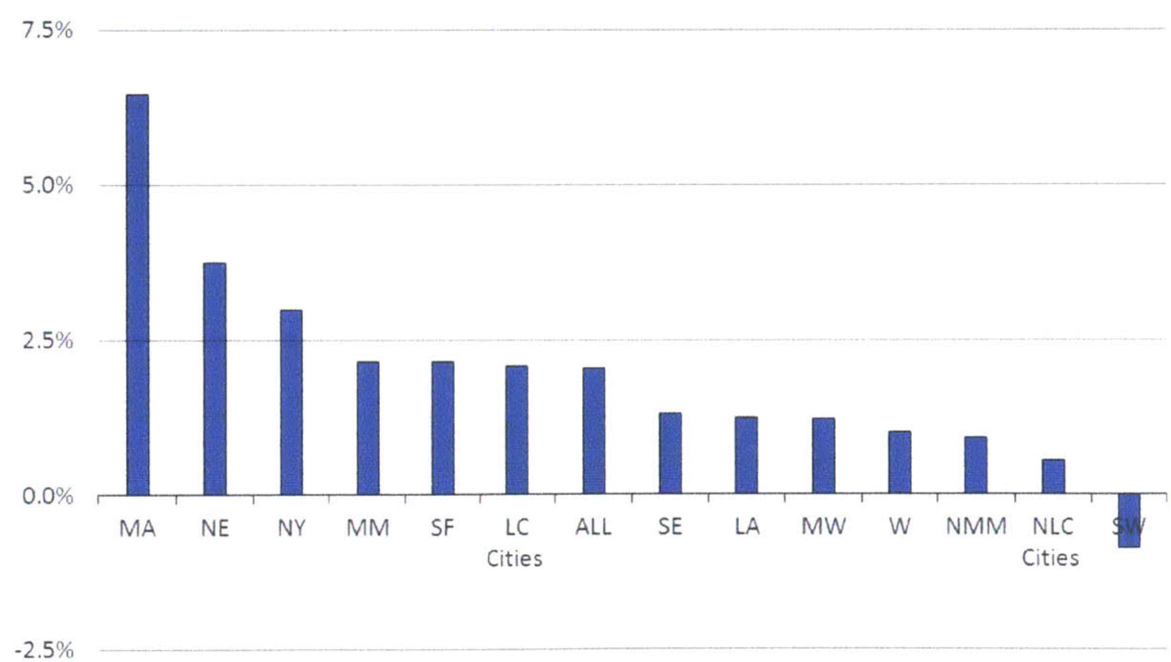

Figure 9-8. Apartment growth rate spread difference bar chart between properties above and below $10 million cutoff
Source: Sacchini & Shipps

Though the cap rate results were not as promising for the viability of an arbitrage scenario, the growth rates for non-institutional properties are considerably higher than for institutional properties in all regions and cities analyzed in the data set with two exceptions. These exceptions were found in the Southwest region in the $10 million cutoff as referenced above and San Francisco for the $5 million cutoff. In general, these findings reinforce the hypothesis of higher returns resulting from smaller properties.

Also relevant is the fact that the cities most prone to contain arbitrage opportunities, according to our assumptions, are the ones that exhibit the largest spread in growth, with the West Region (prone) as an exception on the low end and the Mid-Atlantic (not-prone) as an exception on the high end, as revealed in **Figure 9-8**.

Total Return Findings

Considering the findings in their entirety, we can conclude that total returns (not adjusted by risk) are greater for non-institutional properties in all regions and cities. These results fortify the hypothesis of arbitrage potential between institutional and non-institutional assets. For arbitrage-prone regions and cities this total return spread is mainly driven by additional growth potential, while for non-arbitrage prone properties there's no definitive finding, but the results seem to be equally influenced by both cap rate and growth spread. The following chart displays total returns for different regions and cities.

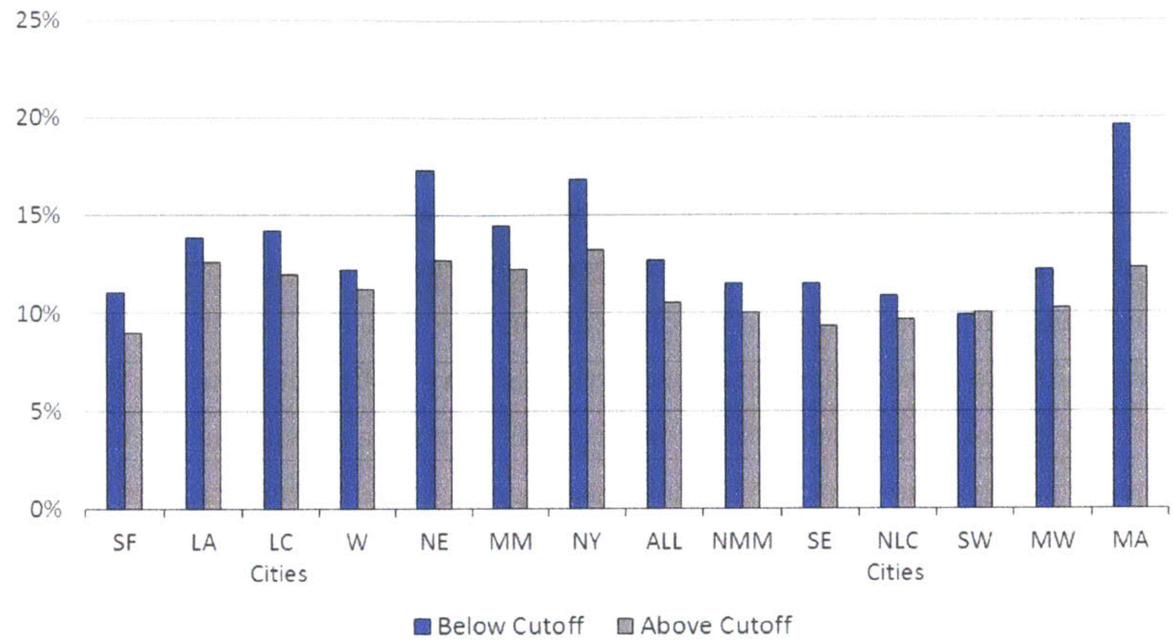

Figure 9-9. Apartment total return (not adjusted by risk) spread bar chart for properties above and below $10 million cutoff
Source: Sacchini & Shipps

The following chart amplifies the spread difference for better visualization.

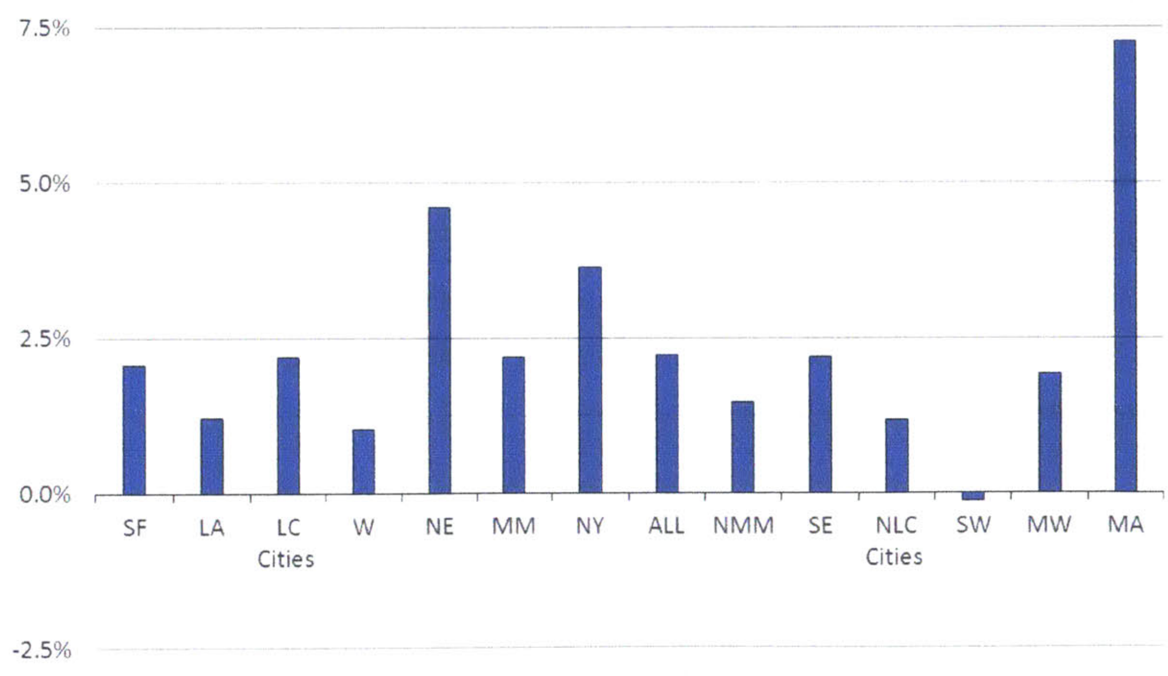

Figure 9-10. Apartment total return (not adjusted by risk) spread difference bar chart for properties above and below $10 million cutoff
Source: Sacchini & Shipps

Findings for a cutoff at $5 million are similar to the above.

Risk (Volatility) Findings

Results from the repeat sales index have already showed that from a total return perspective that non-institutional properties generally provide for a higher return than larger institutional assets. However, the question remains, should an investor allocate more of their portfolio to these smaller sized properties? Is there really inefficiency in the market? Solely considering the absolute total returns from the analysis, one cannot answer these questions rigorously. Prior to conducting an aggregation investment model, one must analyze the risk, defined as volatility, within each region and city that will be exposed for institutional and non-institutional assets. Within this thesis, risk is defined as the standard deviation of the Repeat Sales Regression return levels obtained. As previously stated, no analysis of volatility is provided for cap rate comparison since literature tells us that risk concentrates on the growth component of total returns[67]. Once the risks are analyzed, we could proceed to provide risk-adjusted measures of arbitrage opportunities in different regions and cities; then provide a data-backed suggestion that attempts to answer the questions posted above.

Our findings relative to risk measures of properties above and below the stated thresholds are very interesting. We observed similar or even lower volatility in the non-institutional properties for the regions and cities that comply with our assumptions of greater arbitrage potential. The results also showed a very significant trend of higher volatility for the non-institutional properties in the regions and cities that are not as prone to arbitrage. The following charts display these findings.

[67] David M. Geltner et al., *Commercial Real Estate Analysis and Investments.* 3rd edn.

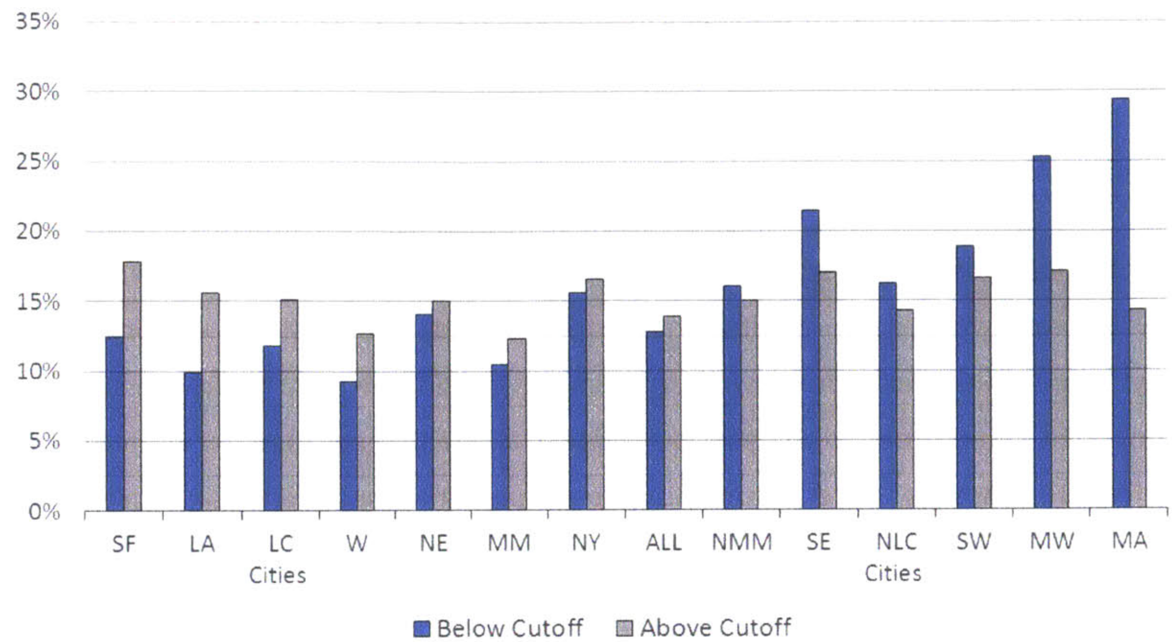

Figure 9-11. Apartment standard deviation spread on repeat sales index bar chart for properties above and below $10 million cutoff
Source: Sacchini & Shipps

The following chart amplifies the spread difference for better visualization.

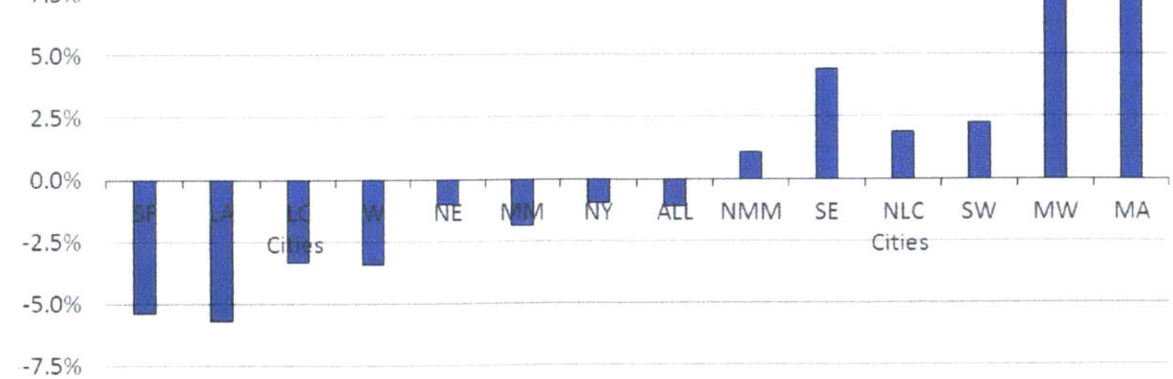

Figure 9-12. Apartment standard deviation spread difference on repeat sales index bar chart for properties above and below $10 million cutoff
Source: Sacchini & Shipps

These results further fortify the arbitrage hypothesis of this paper. Findings for cutoff at $5 million are similar to the above.

Bringing It All Together. Risk-Adjusted Arbitrage

We have already discussed our findings for cap rates, growth, total return, and volatility spreads between smaller, non-institutional properties and larger, institutional properties. Employing the risk-adjusted framework, particularly the Sharpe Ratio metric explained previously, we can proceed to analyze and combine all the findings together rather than separately. Our findings are very stimulating to the potential contained in an aggregation model.

We observe evidence that supports our hypothesis that there is inefficiency in the real estate market regarding the pricing of smaller non-institutional assets in constrained, older cities and regions. Furthermore, it is interesting to note that institutions are not capitalizing on this apparent inefficiency. Moreover, we witness the great majority of institutional buyers, when priced out of core markets, pursue secondary and tertiary markets in search of institutional properties, for which we show evidence that their risk-adjusted returns are considerably less appealing.

The following chart shows the Sharpe Ratio comparison between above and below properties for the 10 million cutoff for all regions and cities analyzed.

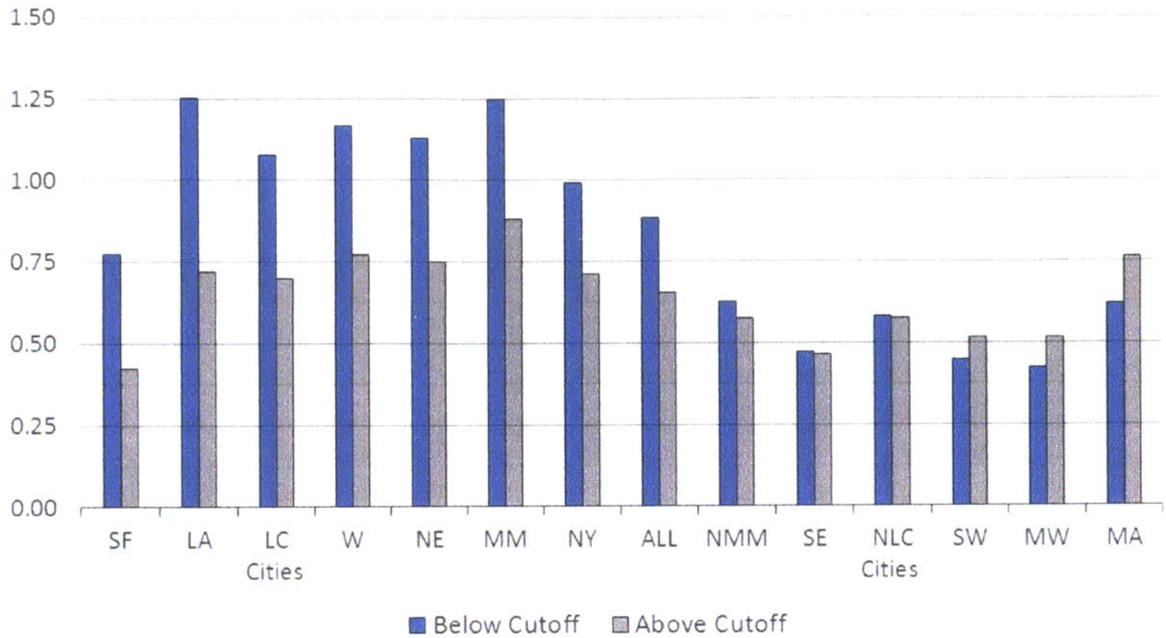

Figure 9-13. Apartment Sharpe Ratio bar chart for properties above and below 10 million cutoff
Source: Sacchini & Shipps

Furthermore, our arbitrage hypothesis is based on the comparison of results between smaller non-institutional properties and larger institutional properties within the same market (e.g.: difference in return and risk metrics of non-institutional vs. institutional assets in San Francisco). Given these findings, we considered it relevant to show a bar chart revealing arbitrage potential that displays the relative difference between the return premium that is obtained for each unit of volatility acquired (i.e.: Sharpe Ratio) for small vs. large properties in the same market[68].

[68] Relative Sharpe Ratio difference is calculated as follows:

$$\text{Relative Difference} = \frac{\text{Sharpe Ratio}_{\text{non-institutional}} - \text{Sharpe Ratio}_{\text{institutional}}}{\text{Sharpe Ratio}_{\text{institutional}}}$$

Figure 9-14. Apartment relative Sharpe Ratio difference (arbitrage potential) bar chart for properties above and below a $10 million cutoff
Source: Sacchini & Shipps

The above chart is very compelling in support of the hypothesis regarding inefficiencies yet to be capitalized in the non-institutional market, specifically for cities and regions that are more inclined to arbitrage as previously defined.

CHAPTER 10. Conclusions

The research process conducted throughout this paper produced positive, interesting results for the hypothesis of multifamily arbitrage by aggregation of smaller non-institutional assets in high barrier to entry, older regions and cities of the U.S. The Repeat Sales datasets obtained from Real Capital Analytics were analyzed under yield and growth performance perspectives for the two different types of assets we defined, non-institutional and institutional. These two value based thresholds were determined after exhaustive literature review and interviews with industry professionals and were determined at $5 and $10 million.

Yield spreads presented unexpected results. More arbitrage-prone regions and cities did not show considerable spreads amongst non-institutional versus institutional properties. Alternatively, less arbitrage-prone regions and cities did show considerable spreads. The reasons for these two outcomes are not apparent to us. We think it has to do with the different competition levels that are encountered in the two types of regions. The increased competition in arbitrage prone markets may have already started to incentivize institutional participants into these smaller assets, reducing yields to similar levels of their institutional counterpart, the opposite would occur for the less arbitrage prone markets.

Spreads observed in growth comparisons were more aligned with what we assumed. Older, land constrained, coastal cities and regions generally displayed the greatest difference between the smaller and larger properties. Nevertheless, spreads were positive all throughout the different regions and cities considered. The reason for this trend is not known either, but we believe it is related to the ownership differences between the two types of properties. Smaller assets are usually owned by smaller owners, which probably are not as diversified as bigger owners, obliging them to have a more hands-on management which possibly is of better quality, although not as efficient, as the more generalized, big scale operations of big owners. However, higher growth for land-constrained regions is possible due to the additional effect similar to the yield effect discussed above.

Since the typology of ownership for small and large assets is relatively constant, irrelevant of the location (e.g.: small assets are generally owned by small owners if they are in San Francisco, Raleigh or New York) we see that bigger growth is correlated with smaller properties all throughout.

In juxtaposition, levels of competition are not similar across the country and they depend on the virtues (and defects) of each market and the desire of investors to participate in them. This heterogeneity might explain why the behavior of yield is different from growth.

By aggregating these two metrics for total return averages for small, non-institutional and large, institutional properties, and by analyzing the risk performance of each, we conclude that evidence shows the existence of a different pricing of risk generating an arbitrage potential. Particularly, smaller properties exhibited better risk-adjusted returns relative to their larger counterparts for land constrained, older regions and cities, confirming our hypothesis.

The arbitrage is possible as long as institutional investors can achieve the capital appreciation that is observed in the non-institutional market, which might have some relation to the type of management of non-institutional owners, however, based on interviews with operating and capital partners, and literature reviews, we found that operationally, the ability to aggregate and effectively manage assets across a varying geographic location is feasible and can be successfully executed. This was most common in areas where assets were within an hour's drive of each other and had achieved a critical mass of 100-300 units for operational cost efficiency.

The results are very compelling and should, at least incentivize the innovative-driven institutions to look into this hypothesis with much attention, to attempt to be "first movers" into markets that will provide them with better, sometimes, much better returns.

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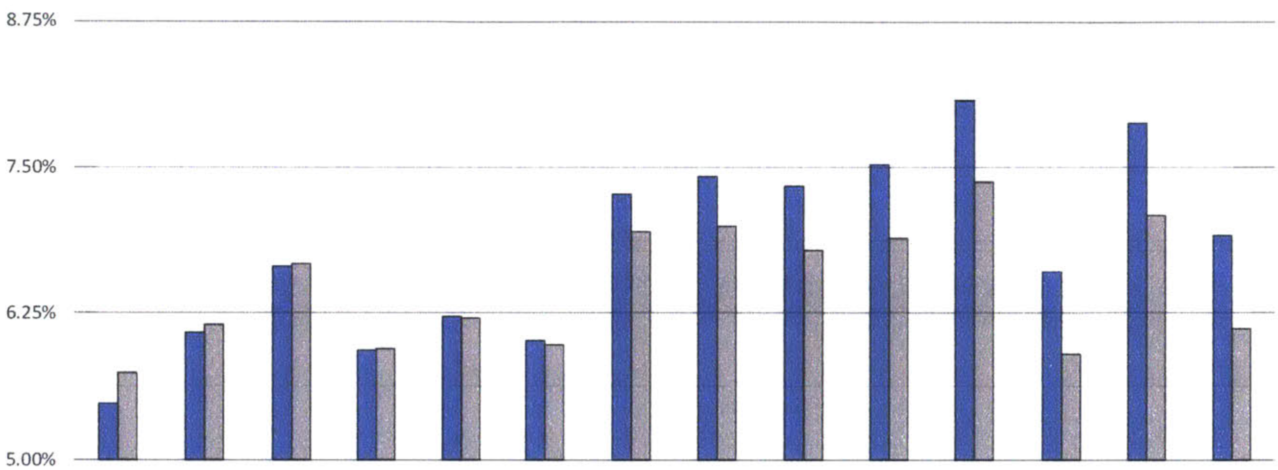
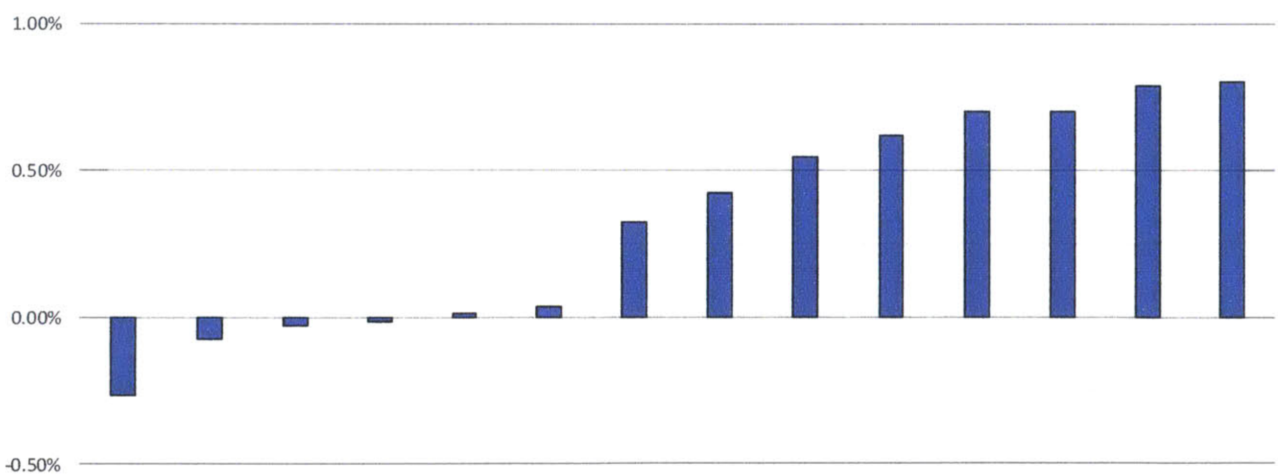
Exhibit A. Apartment arbitrage results for $5 million cutoff

This exhibit will show the charts displaying cap rate, growth, total return, risk and risk-adjusted return performance for data set 2, as specified in CHAPTER 6, of multifamily residential rental assets, the datasets correspond to the $5 million threshold. The following charts depict cap rate performance.



Caps	SF	W	ALL	LA	LC Cities	MM	NMM	NLC Cities	MA	SW	MW	NY	SE	NE
B5	5.5%	6.1%	6.7%	5.9%	6.2%	6.0%	7.3%	7.4%	7.3%	7.5%	8.1%	6.6%	7.9%	6.9%
A5	5.7%	6.2%	6.7%	5.9%	6.2%	6.0%	6.9%	7.0%	6.8%	6.9%	7.4%	5.9%	7.1%	6.1%

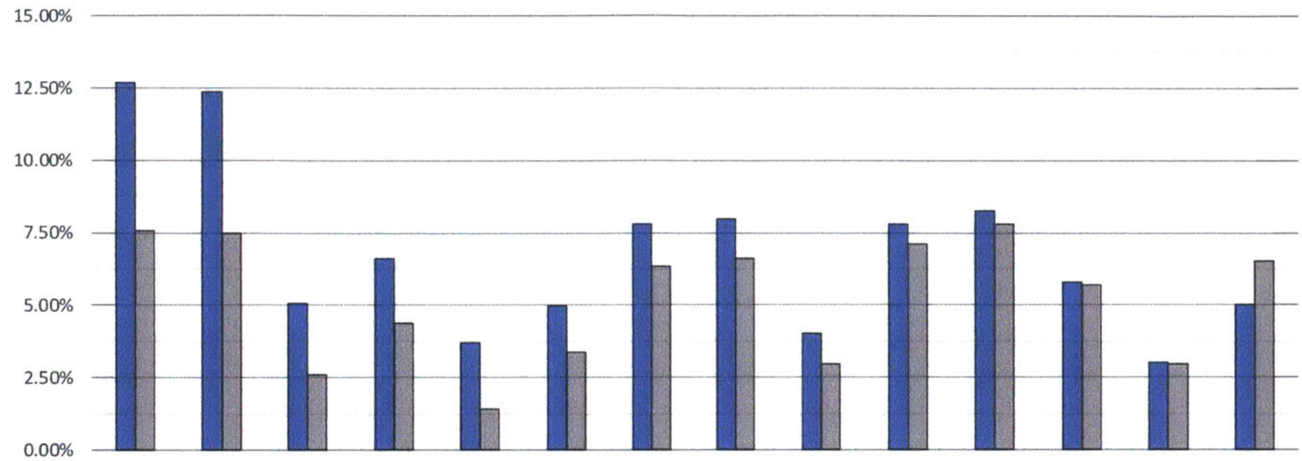


Dif.	**-0.3%**	**-0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.3%**	**0.4%**	**0.5%**	**0.6%**	**0.7%**	**0.7%**	**0.8%**	**0.8%**

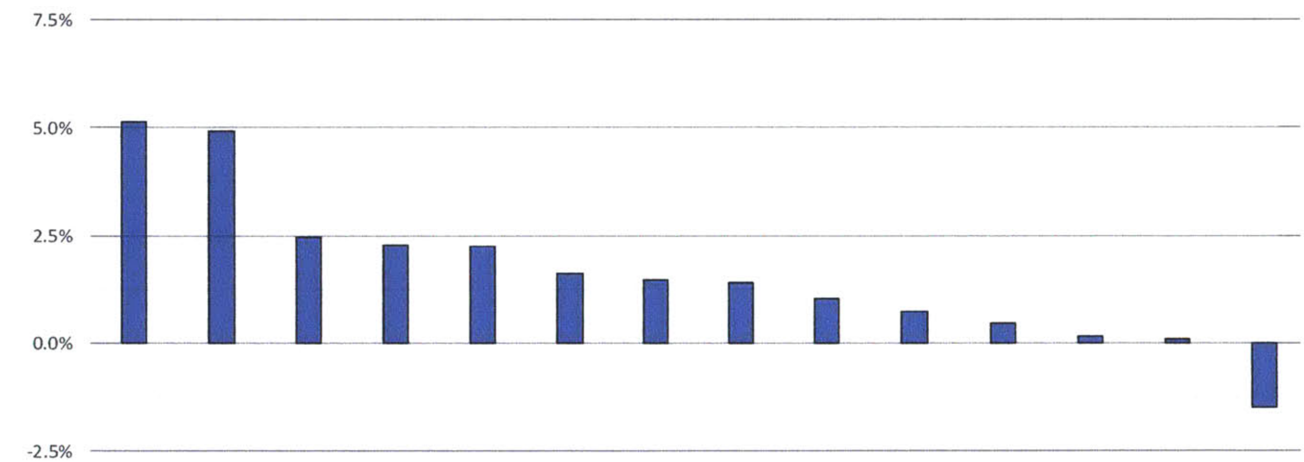
Figure A-1. Apartment cap rate spread bar chart and cap rate spread difference bar chart for properties above and below a $5 million cutoff

Source: Sacchini & Shipps

The following charts depict growth rate performance.



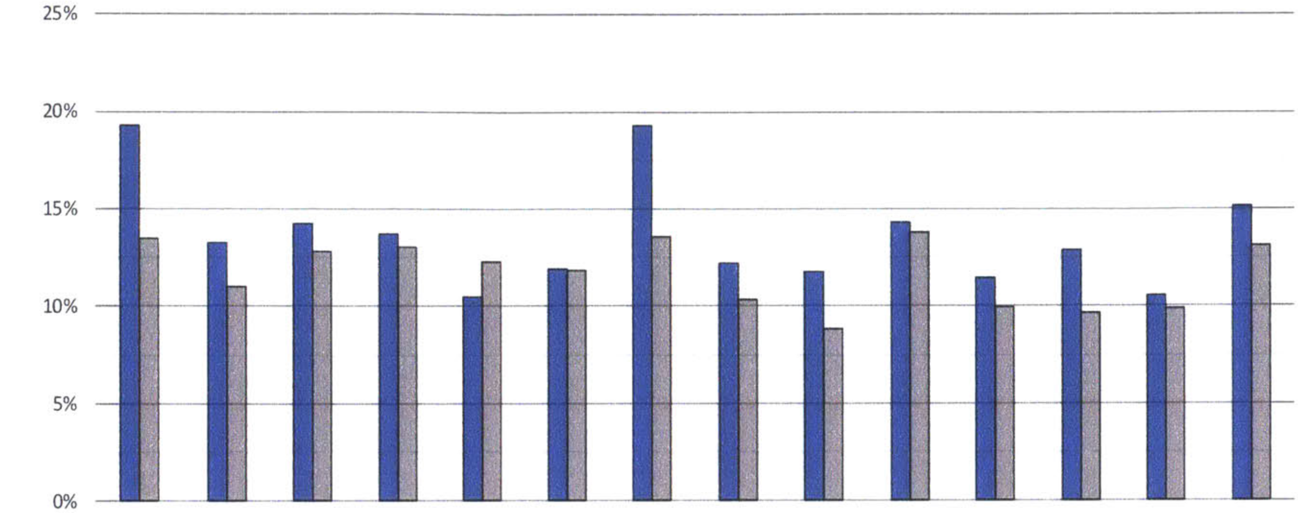
Growth	NY	NE	SE	ALL	MW	NMM	MA	LC Cities	NLC Cities	LA	MM	W	SW	SF
B5	12.7%	12.4%	5.0%	6.6%	3.7%	5.0%	7.8%	8.0%	4.0%	7.8%	8.3%	5.8%	3.0%	5.0%
A5	7.6%	7.5%	2.6%	4.4%	1.4%	3.4%	6.3%	6.6%	3.0%	7.1%	7.8%	5.7%	2.9%	6.5%



Dif.	5.1%	4.9%	2.4%	2.3%	2.2%	1.6%	1.5%	1.4%	1.0%	0.7%	0.5%	0.1%	0.1%	-1.5%

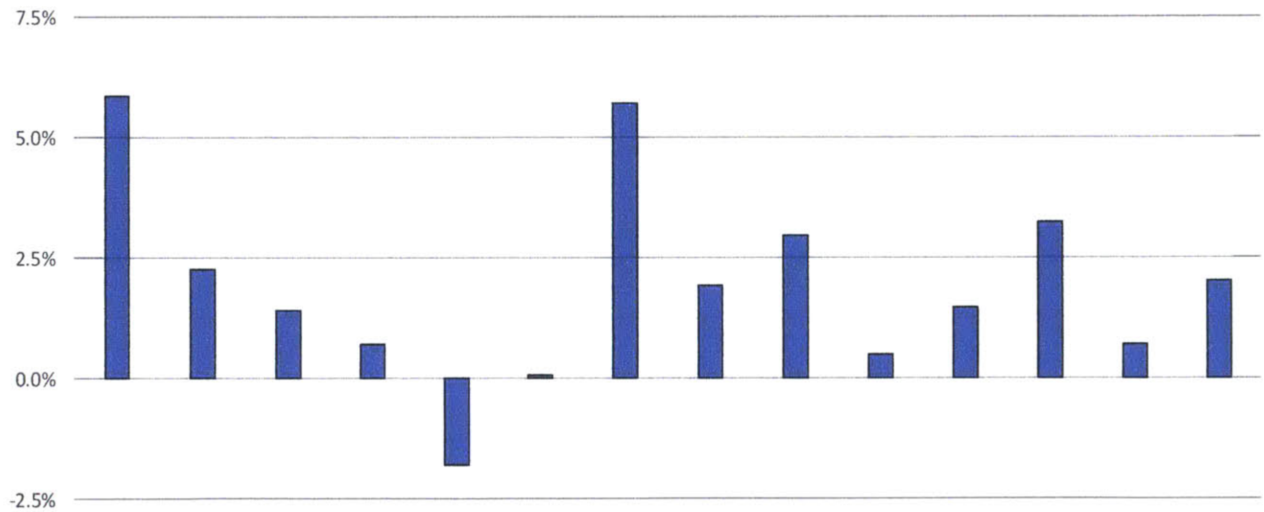
Figure A-2. Apartment growth rate spread bar chart and growth rate spread difference bar chart for properties above and below a $5 million cutoff
Source: Sacchini & Shipps

The following chart depicts total return performance.



Total Return

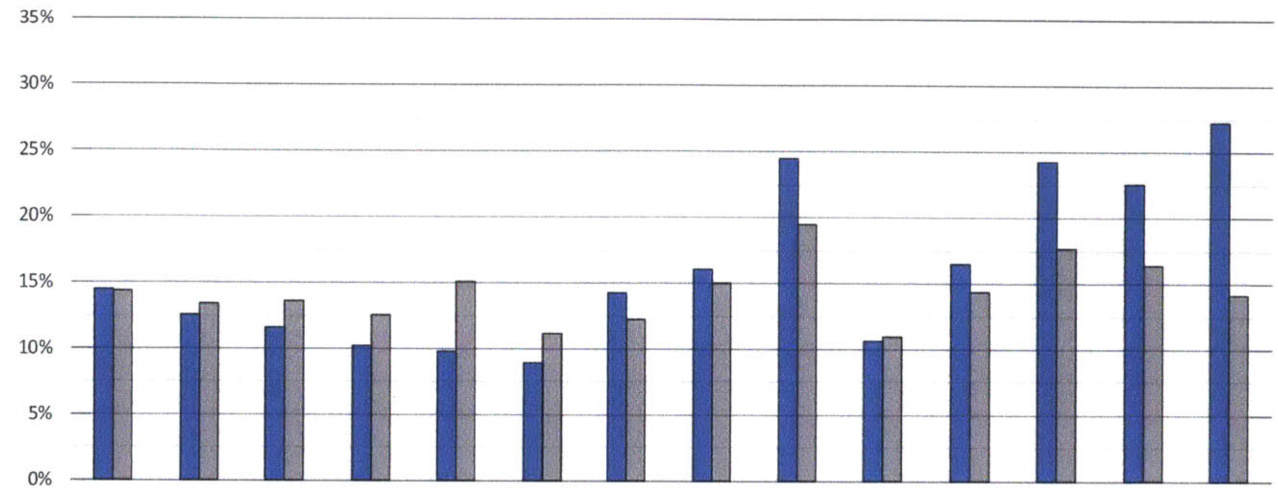
	NY	ALL	LC Cities	LA	SF	W	NE	NMM	MW	MM	NLC Cities	SE	SW	MA
B5	19.3%	13.3%	14.2%	13.7%	10.5%	11.9%	19.3%	12.2%	11.8%	14.3%	11.4%	12.9%	10.5%	15.1%
A5	13.5%	11.0%	12.8%	13.1%	12.3%	11.8%	13.6%	10.3%	8.8%	13.8%	10.0%	9.7%	9.8%	13.1%



Dif.	**5.8%**	**2.3%**	**1.4%**	**0.7%**	**-1.8%**	**0.1%**	**5.7%**	**1.9%**	**2.9%**	**0.5%**	**1.5%**	**3.2%**	**0.7%**	**2.0%**

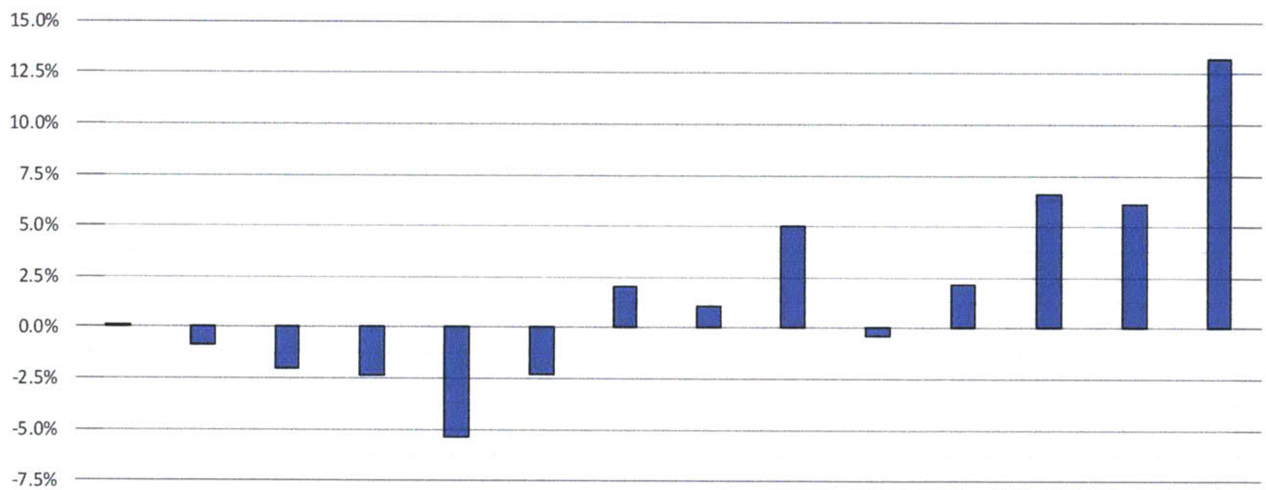
Figure A-3. Apartment total return rate spread bar chart and total return rate spread difference bar chart for properties above and below a $5 million cutoff
Source: Sacchini & Shipps

The following chart depicts standard deviation (risk) performance.



St Deviation

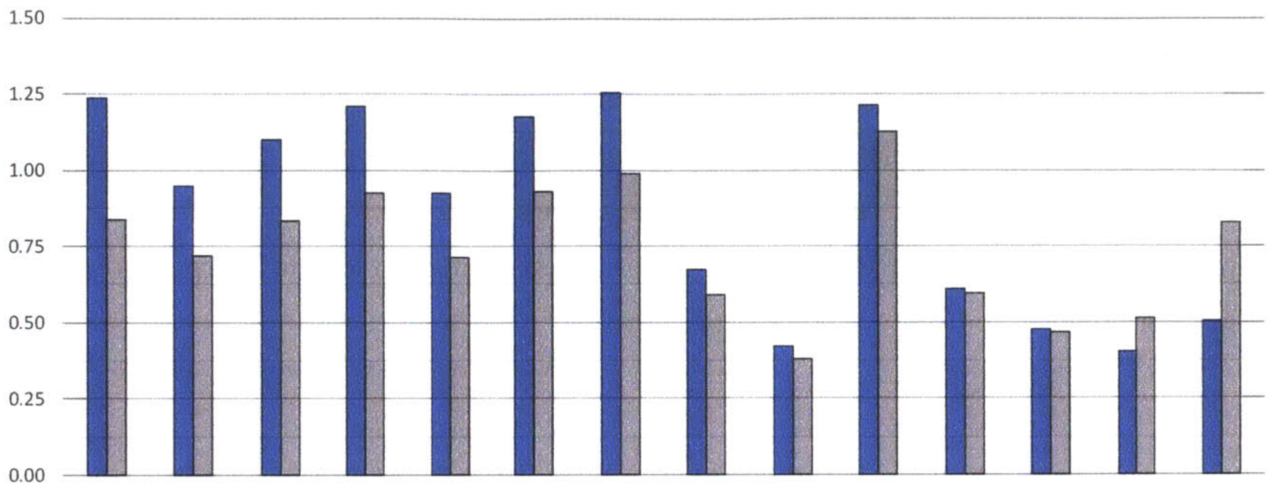
	NY	ALL	LC Cities	LA	SF	W	NE	NMM	MW	MM	NLC Cities	SE	SW	MA
B5	14.5%	12.5%	11.6%	10.2%	9.8%	8.9%	14.3%	16.1%	24.5%	10.6%	16.5%	24.2%	22.5%	27.3%
A5	14.3%	13.4%	13.6%	12.5%	15.1%	11.2%	12.3%	15.1%	19.5%	11.0%	14.3%	17.6%	16.4%	14.1%



Dif.	**0.1%**	**-0.9%**	**-2.0%**	**-2.4%**	**-5.4%**	**-2.3%**	**2.0%**	**1.0%**	**5.0%**	**-0.4%**	**2.2%**	**6.6%**	**6.1%**	**13.2%**

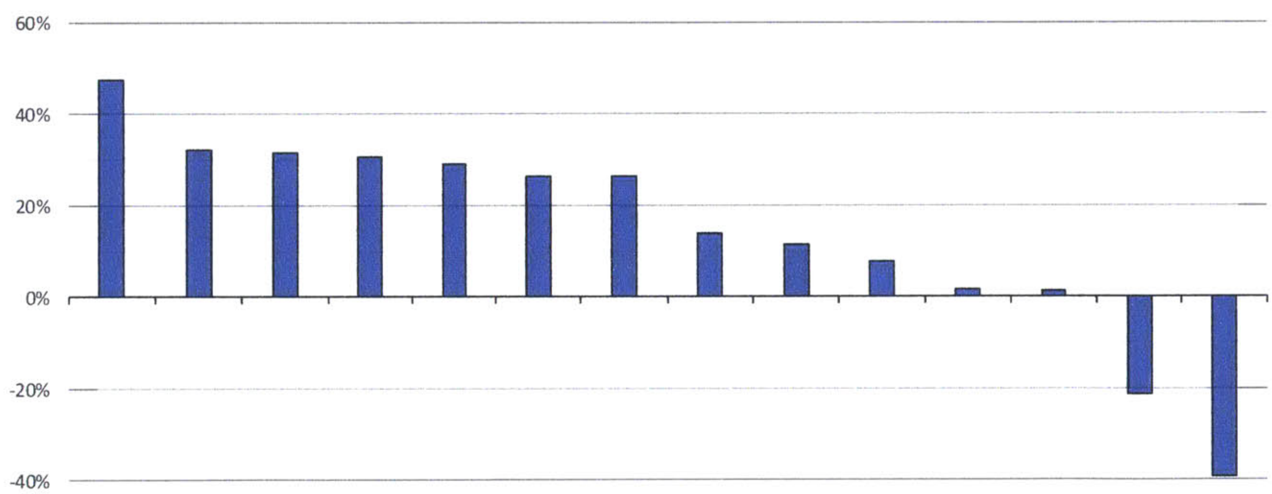
Figure A-4. Apartment standard deviation spread on repeat sales index bar chart and standard deviation spread difference for properties above and below $5 million cutoff
Source: Sacchini & Shipps

The following chart depicts risk-adjusted performance, or Sharpe Ratio.



Sharpe Ratio

	NY	ALL	LC Cities	LA	SF	W	NE	NMM	MW	MM	NLC Cities	SE	SW	MA
B5	123.7%	94.7%	109.8%	121.0%	92.5%	117.7%	125.3%	67.1%	42.2%	121.5%	60.7%	47.4%	40.4%	50.3%
A5	83.9%	71.8%	83.5%	92.7%	71.6%	93.1%	99.1%	59.0%	37.9%	112.6%	59.7%	46.9%	51.3%	83.0%



Rel. Dif.	**47.4%**	**32.0%**	**31.5%**	**30.5%**	**29.2%**	**26.5%**	**26.4%**	**13.8%**	**11.5%**	**7.8%**	**1.7%**	**1.2%**	**-21.2%**	**-39.4%**

Figure A- 5. Apartment Sharpe Ratio bar chart and relative Sharpe Ratio difference bar chart for properties above and below $5 million cutoff

Source: Sacchini & Shipps

Exhibit B. Summary table of ranks for apartment product type

The following table shows the rank for different regions and cities relative to different performance measures. The first three columns represent ranks on total return, risk (as standard deviation, or volatility of growth) and Sharpe Ratio. The last column displays the arbitrage potential or the relative difference, as we defined it, between non-institutional properties and institutional properties within the same market for the Sharpe Ratio measurement.

Rank	Return - Total Return			Risk - St. Dev			Risk Adjusted Return - Sharpe Ratio			Arbitrage Potential - Relative Difference		
1	19.6%	B10	MA	8.9%	B5	W	1.25	B10	LA	82%	10	SF
2	19.3%	B5	NY	9.3%	B10	W	1.25	B5	NE	75%	10	LA
3	19.3%	B5	NE	9.8%	B5	SF	1.25	B10	MM	54%	10	LC Cities
4	17.3%	B10	NE	9.9%	B10	LA	1.24	B5	NY	51%	10	W
5	16.9%	B10	NY	10.2%	B5	LA	1.21	B5	MM	50%	10	NE
6	15.1%	B5	MA	10.5%	B10	MM	1.21	B5	LA	47%	5	NY
7	14.5%	B10	MM	10.6%	B5	MM	1.18	B5	W	42%	10	MM
8	14.3%	B5	MM	11.0%	A5	MM	1.17	B10	W	39%	10	NY
9	14.2%	B5	LC Cities	11.2%	A5	W	1.13	B10	NE	35%	10	ALL
10	14.2%	B10	LC Cities	11.6%	B5	LC Cities	1.13	A5	MM	32%	5	ALL
11	13.8%	B10	LA	11.8%	B10	LC Cities	1.10	B5	LC Cities	32%	5	LC Cities
12	13.8%	A5	MM	12.3%	A5	NE	1.08	B10	LC Cities	31%	5	LA
13	13.7%	B5	LA	12.3%	A10	MM	0.99	A5	NE	29%	5	SF
14	13.6%	A10	CHICAGO	12.5%	B10	SF	0.99	B10	NY	27%	5	W
15	13.6%	A5	NE	12.5%	B5	ALL	0.95	B5	ALL	26%	5	NE
16	13.5%	A5	NY	12.5%	A5	LA	0.93	A5	W	14%	5	NMM
17	13.3%	B5	ALL	12.7%	A10	W	0.93	A5	LA	11%	5	MW
18	13.2%	A10	NY	12.8%	B10	ALL	0.93	B5	SF	9%	10	NMM
19	13.1%	A5	MA	13.4%	A5	ALL	0.89	B10	ALL	8%	5	MM
20	13.1%	A5	LA	13.6%	A5	LC Cities	0.88	A10	MM	2%	5	NLC Cities
21	12.9%	B5	SE	13.9%	A10	ALL	0.84	A5	NY	2%	5	SE
22	12.8%	A5	LC Cities	14.1%	B10	NE	0.83	A5	LC Cities	1%	10	SE
23	12.7%	B10	ALL	14.1%	A5	MA	0.83	A5	MA	1%	10	NLC Cities
24	12.7%	A10	NE	14.3%	B5	NE	0.77	B10	SF	-14%	10	SW
25	12.6%	A10	LA	14.3%	A10	MA	0.77	A10	W	-18%	10	MW
26	12.3%	A10	MA	14.3%	A5	NLC Cities	0.76	A10	MA	-20%	10	MA
27	12.3%	A10	MM	14.3%	A5	NY	0.75	A10	NE	-22%	5	SW
28	12.3%	A5	SF	14.3%	A10	NLC Cities	0.72	A10	LA	-33%	10	CHICAGO
29	12.2%	B5	NMM	14.5%	B5	NY	0.72	A5	ALL	-40%	5	MA
30	12.2%	B10	W	15.0%	A10	NMM	0.72	A5	SF			
31	12.2%	B10	MW	15.1%	A5	NMM	0.71	A10	NY			
32	12.0%	A10	LC Cities	15.1%	A10	NE	0.70	A10	LC Cities			
33	11.9%	B5	W	15.1%	A5	SF	0.67	B5	NMM			
34	11.8%	A5	W	15.2%	A10	LC Cities	0.65	A10	ALL			
35	11.8%	B5	MW	15.6%	B10	NY	0.63	B10	NMM			
36	11.5%	B10	SE	15.6%	A10	LA	0.62	B10	MA			
37	11.5%	B10	NMM	16.1%	B10	NMM	0.61	B5	NLC Cities			
38	11.4%	B5	NLC Cities	16.1%	B5	NMM	0.60	A5	NLC Cities			
39	11.2%	A10	W	16.2%	B10	NLC Cities	0.59	A5	NMM			
40	11.1%	B10	SF	16.4%	A5	SW	0.58	B10	NLC Cities			
41	11.0%	A5	ALL	16.5%	B5	NLC Cities	0.58	A10	NLC Cities			
42	10.9%	B10	NLC Cities	16.6%	A10	NY	0.57	A10	NMM			
43	10.5%	B5	SW	16.6%	A10	SW	0.52	A10	MW			
44	10.5%	A10	ALL	17.0%	A10	SE	0.52	A10	SW			
45	10.5%	B5	SF	17.1%	A10	MW	0.51	A5	SW			
46	10.3%	B10	CHICAGO	17.6%	A5	SE	0.50	B5	MA			
47	10.3%	A5	NMM	17.8%	A10	SF	0.47	B5	SE			
48	10.3%	A10	MW	18.9%	B10	SW	0.47	B10	SE			
49	10.0%	A10	NMM	19.5%	A5	MW	0.47	A5	SE			
50	10.0%	A10	SW	21.5%	B10	SE	0.46	A10	SE			
51	10.0%	A5	NLC Cities	22.5%	B5	SW	0.45	B10	SW			
52	9.9%	B10	SW	24.2%	B5	SE	0.42	A10	SF			
53	9.8%	A5	SW	24.5%	B5	MW	0.42	B10	MW			
54	9.7%	A10	NLC Cities	25.3%	B10	MW	0.42	B5	MW			
55	9.7%	A5	SE	27.3%	B5	MA	0.40	B5	SW			
56	9.4%	A10	SE	29.4%	B10	MA	0.38	A5	MW			
57	9.0%	A10	SF	32.2%	A10	CHICAGO	0.38	A10	CHICAGO			
58	8.8%	A5	MW	35.0%	B10	CHICAGO	0.25	B10	CHICAGO			

Legend

BX	Below x treshold
Ax	Above x threshold
NLC	Non Land Constrained Cities
LC	Land Constrained Cities
MM	Major Metros
NMM	Non Major Metros
MW	Mid West
SW	South West
MA	Mid Atlantic
NE	North East
SE	South East
W	West

Table B-1. Summary table of ranks for apartment product type in different regions and cities
Source: Sacchini & Shipps

Exhibit C. Result summary tables for all property types

This exhibit displays the summary tables where we show the results obtained for every property type analyzed (multifamily apartment, industrial, office and retail) for every region and city that we defined as criteria for filtering.

The tables are divided into sections such that each analyzes one particular metric of performance. These sections are: cap rate performance, growth performance, risk performance (displayed as standard deviation of Repeat Sales Index, and cycle amplitude of repeat sales index) and risk adjusted performance (displayed as Sharpe Ratio).

Some specific markets for specific product types presented scarce data, so full analysis couldn't be completed, we display them either with a "0" or "n/a" signs, the partial analyses are displayed however to show partial results.

Specific markets that presented more scarcity of data, as is logic to think, where the cities when analyzed by themselves, however some regions presented insufficient data also for product types other than apartments

RESULTS SUMMARY TABLE.
Sorting Criteria Sub-Institutional Treshold: $5 million
Filter: None (All regions)

CAP RATE PERFORMANCE

		Apartment Above		Apartment Below		Industrial Above		Industrial Below		Office Above		Office Below		Retail Above		Retail Below	
Year	Months	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs
2001	12	8.54%	198	8.72%	26	9.61%	42	9.49%	11	9.43%	210	9.14%	20	9.31%	63	8.82%	11
2002	12	8.08%	248	8.04%	27	9.27%	34	9.08%	14	9.12%	275	9.10%	20	9.00%	142	8.82%	20
2003	12	7.40%	343	7.68%	38	8.83%	55	9.35%	10	8.59%	298	8.53%	23	8.20%	190	8.26%	24
2004	12	6.68%	395	6.72%	96	8.12%	76	8.41%	19	7.83%	385	7.89%	35	7.74%	234	7.75%	50
2005	12	5.92%	579	6.00%	428	7.46%	143	8.09%	80	7.08%	535	7.59%	121	7.02%	347	7.14%	195
2006	12	5.91%	604	6.00%	358	7.03%	162	7.04%	76	6.56%	490	7.17%	119	6.68%	321	6.82%	181
2007	12	5.91%	536	6.22%	350	6.82%	138	6.85%	95	6.12%	443	6.93%	155	6.51%	326	6.72%	220
2008	12	6.37%	263	6.22%	225	7.27%	68	7.44%	59	6.78%	163	7.29%	73	6.97%	117	6.96%	135
2009	12	7.12%	163	6.67%	105	8.51%	27	8.47%	13	8.31%	65	8.13%	23	7.89%	86	7.54%	45
2010	12	6.63%	238	6.63%	97	8.02%	48	7.75%	15	7.47%	110	8.11%	20	8.02%	89	8.11%	62
2011	12	6.56%	351	6.46%	143	7.63%	71	7.88%	23	7.09%	172	8.27%	26	7.70%	147	7.96%	87
2012	12	6.22%	397	6.22%	186	7.31%	82	7.86%	21	6.65%	192	7.26%	28	7.35%	167	7.76%	119
2013	12	6.01%	313	5.84%	176	7.22%	61	7.17%	24	6.57%	191	7.36%	19	7.24%	182	7.42%	82
2014	9	6.13%	180	5.71%	144	6.94%	55	7.00%	13	6.32%	153	7.37%	15	6.65%	114	6.98%	75
Weigthed Average		6.49%	4,808	6.23%	2,399	7.57%	1,062	7.60%	473	7.32%	3,682	7.51%	697	7.36%	2,525	7.27%	1,306
Simple Average		6.68%		6.65%	-0.03%	7.86%		7.99%	0.13%	7.42%		7.87%	0.45%	7.59%		7.65%	0.06%
Relative Dif.					0%				2%				6%				1%

Note: Relative difference calculated as [CapBelow-CapAbove]/CapAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

GROWTH PERFORMANCE

		Apartment Above	Apartment Below	Yearly	Industrial Above	Industrial Below	Yearly	Office Above	Office Below	Yearly	Retail Above	Retail Below	Yearly
Year	Month	Year Cap Return	Year Cap Return	Difference	Year Cap Return	Year Cap Return	Difference	Year Cap Return	Year Cap Return	Difference	Year Cap Return	Year Cap Return	Difference
2001	12	-0.55%	9.77%	10.31%	-8.56%	6.80%	15.36%	-7.10%	2.91%	10.00%	-4.30%	7.90%	12.20%
2002	12	9.86%	14.96%	5.10%	4.49%	2.18%	-2.31%	4.55%	6.27%	1.72%	19.83%	-2.22%	-22.05%
2003	12	4.21%	4.76%	0.56%	5.15%	3.74%	-1.41%	7.47%	1.60%	-5.87%	11.73%	11.01%	-0.72%
2004	12	12.43%	17.29%	4.86%	4.57%	13.82%	9.25%	11.10%	14.76%	3.65%	11.16%	21.44%	10.28%
2005	12	18.44%	17.22%	-1.22%	22.28%	6.29%	-15.99%	16.57%	15.69%	-0.88%	23.43%	10.88%	-12.55%
2006	12	2.31%	-0.98%	-3.29%	6.80%	18.71%	11.91%	11.63%	9.07%	-2.56%	1.47%	10.51%	9.05%
2007	12	4.48%	6.59%	2.11%	13.21%	4.34%	-8.88%	12.73%	9.48%	-3.24%	6.50%	2.52%	-3.98%
2008	12	-21.26%	-13.24%	8.02%	-17.93%	-14.01%	3.93%	-20.33%	-20.92%	-0.58%	-23.50%	-17.28%	6.21%
2009	12	-24.82%	-19.84%	4.98%	-26.56%	-13.10%	13.46%	-37.37%	-16.52%	20.85%	-23.66%	-14.77%	8.89%
2010	12	15.16%	1.26%	-13.90%	12.81%	-11.95%	-24.76%	24.64%	-5.20%	-29.84%	-1.23%	-4.84%	-3.61%
2011	12	17.82%	18.88%	1.07%	0.81%	17.92%	17.11%	9.20%	7.13%	-2.07%	9.61%	7.04%	-2.57%
2012	12	15.13%	9.84%	-5.29%	5.37%	-5.00%	-10.36%	0.49%	8.72%	8.23%	9.08%	4.34%	-4.74%
2013	12	9.22%	16.71%	7.49%	15.06%	6.58%	-8.47%	20.34%	6.14%	-14.20%	19.50%	18.52%	-0.98%
2014	9	13.30%	23.98%	10.68%	-2.18%	30.30%	32.48%	12.49%	23.65%	11.17%	-0.85%	8.53%	9.38%
Geometric Mean		4.36%	6.64%	2.28%	1.75%	3.60%	1.84%	3.12%	3.47%	0.35%	3.27%	3.88%	0.61%
Relative Dif.				52%			105%			11%			19%
Arithmetic Mean		5.41%	7.66%	2.25%	2.52%	4.76%	2.24%	4.74%	4.48%	-0.26%	4.20%	4.54%	0.34%
Relative Dif.				42%			89%			-5%			8%

Note: Returns Calculated on a Yearly Compounded Basis
Relative difference calculated as [GrowthBelow-GrowthAbove]/GrowthAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

RISK PERFORMANCE (ON GROWTH)

	Apartment Above	Apartment Below		Industrial Above	Industrial Below		Office Above	Office Below		Retail Above	Retail Below	
St. Deviation	13.39%	12.52%	-0.87%	13.07%	12.91%	-0.16%	16.59%	11.98%	-4.61%	14.38%	11.16%	-3.22%
Relative Dif.			-6%			-1%			-28%			-22%
Min	94.46%	126.15%		93.51%	110.78%		84.33%	109.73%		106.70%	114.16%	
Max	162.25%	192.53%		155.56%	172.41%		170.13%	176.48%		191.44%	182.77%	
Range	67.79%	66.38%	-1.41%	62.05%	61.63%	-0.41%	85.80%	66.75%	-19.05%	84.74%	68.60%	-16.14%
Relative Dif.			-2%			-1%			-22%			-19%

Note: Relative difference calculated as [RiskBelow-RiskAbove]/RiskAbove. Positive relative difference means better performance of above-threshold properties. Negative relative difference means better performance of below-treshold properties.

SHARPE RATIO

	Apartment Above	Apartment Below		Industrial Above	Industrial Below		Office Above	Office Below		Retail Above	Retail Below	
Total Return	11.04%	13.29%		9.61%	11.59%		10.54%	11.34%		10.86%	11.53%	
Risk Free Rate	1.43%	1.43%		1.43%	1.43%		1.43%	1.43%		1.43%	1.43%	
Risk Premium	9.61%	11.86%		8.18%	10.16%		9.12%	9.91%		9.43%	10.10%	
Sharpe Ratio	0.72	0.95	0.23	0.63	0.79	0.16	0.55	0.83	0.28	0.66	0.90	0.25
Relative Dif.			32%			26%			50%			38%

Note: Relative difference calculated as [SharpeRBelow-SharpeRAbove]/SharpeRAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

Table C-1. Results summary table for all property types. Cutoff $5 million. Filter: none (all regions and cities)
Source: Sacchini & Shipps

RESULTS SUMMARY TABLE.

Sorting Criteria Sub-Institutional Treshold: $10 million

Filter: None (All observations)

CAP RATE PERFORMANCE

Year	Months	Apartment Above Avg. Cap	Apartment Above # Obs	Apartment Below Avg. Cap	Apartment Below # Obs	Industrial Above Avg. Cap	Industrial Above # Obs	Industrial Below Avg. Cap	Industrial Below # Obs	Office Above Avg. Cap	Office Above # Obs	Office Below Avg. Cap	Office Below # Obs	Retail Above Avg. Cap	Retail Above # Obs	Retail Below Avg. Cap	Retail Below # Obs
2001	12	8.53%	137	8.61%	87	9.63%	23	9.56%	30	9.34%	157	9.55%	73	9.27%	35	9.22%	39
2002	12	7.96%	178	8.30%	97	9.27%	17	9.18%	31	8.99%	218	9.48%	77	8.93%	78	9.02%	84
2003	12	7.22%	226	7.73%	155	9.05%	35	8.75%	30	8.54%	240	8.71%	81	8.15%	121	8.27%	93
2004	12	6.64%	269	6.73%	222	8.04%	49	8.32%	46	7.72%	309	8.14%	111	7.64%	137	7.84%	147
2005	12	5.78%	365	6.06%	642	7.23%	76	7.92%	147	6.97%	409	7.52%	247	6.92%	178	7.13%	364
2006	12	5.71%	374	6.09%	588	6.85%	103	7.17%	135	6.47%	401	7.10%	208	6.55%	152	6.81%	350
2007	12	5.70%	321	6.23%	565	6.72%	77	6.89%	156	5.84%	325	6.92%	273	6.34%	166	6.70%	380
2008	12	6.28%	155	6.31%	333	7.07%	29	7.43%	98	6.50%	113	7.34%	123	6.91%	53	6.98%	199
2009	12	7.22%	110	6.76%	158	8.47%	17	8.51%	23	8.40%	54	8.05%	34	7.51%	33	7.86%	98
2010	12	6.46%	173	6.81%	162	7.93%	28	7.98%	35	7.37%	92	8.04%	38	8.33%	35	7.97%	116
2011	12	6.32%	230	6.72%	264	7.47%	45	7.90%	49	7.04%	146	7.80%	52	7.63%	65	7.86%	169
2012	12	6.05%	261	6.36%	322	7.44%	52	7.42%	51	6.43%	165	7.63%	55	7.25%	75	7.62%	211
2013	12	5.99%	193	5.92%	296	7.27%	34	7.16%	51	6.45%	165	7.35%	45	7.15%	88	7.37%	176
2014	9	6.12%	101	5.87%	223	6.95%	41	6.96%	27	6.14%	129	7.32%	39	6.46%	52	6.90%	137
Weigthed Average		**6.39%**	**3,093**	**6.41%**	**4,114**	**7.49%**	**626**	**7.64%**	**909**	**7.19%**	**2,923**	**7.68%**	**1,456**	**7.29%**	**1,268**	**7.35%**	**2,563**
Simple Average		**6.57%**		**6.75%**	**0.18%**	**7.81%**		**7.94%**	**0.13%**	**7.30%**		**7.92%**	**0.62%**	**7.50%**		**7.68%**	**0.18%**
Relative Dif.					**3%**				**2%**				**9%**				**2%**

Note: Relative difference calculated as [CapBelow-CapAbove]/CapAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

GROWTH PERFORMANCE

Year	Month	Apartment Above Year Cap Return	Apartment Below Year Cap Return	Yearly Difference	Industrial Above Year Cap Return	Industrial Below Year Cap Return	Yearly Difference	Office Above Year Cap Return	Office Below Year Cap Return	Yearly Difference	Retail Above Year Cap Return	Retail Below Year Cap Return	Yearly Difference
2001	12	-3.61%	7.41%	11.02%	-23.47%	4.82%	28.30%	-2.59%	-8.59%	-6.00%	-3.47%	2.78%	6.25%
2002	12	11.38%	11.58%	0.20%	10.92%	2.05%	-8.87%	2.03%	9.60%	7.57%	25.06%	4.77%	-20.29%
2003	12	3.12%	4.71%	1.59%	9.19%	2.31%	-6.88%	9.07%	2.78%	-6.30%	12.49%	11.57%	-0.92%
2004	12	13.31%	16.34%	3.03%	-0.06%	13.44%	13.51%	10.90%	14.50%	3.60%	13.17%	15.61%	2.44%
2005	12	20.24%	15.84%	-4.40%	30.05%	9.66%	-20.39%	17.07%	15.13%	-1.94%	22.13%	17.72%	-4.41%
2006	12	0.52%	2.28%	1.75%	4.57%	14.49%	9.91%	14.89%	8.80%	-6.10%	3.49%	5.42%	1.93%
2007	12	5.15%	4.71%	-0.44%	15.53%	7.31%	-8.23%	12.60%	10.34%	-2.26%	7.27%	3.62%	-3.65%
2008	12	-23.58%	-15.11%	8.46%	-19.75%	-15.12%	4.64%	-22.27%	-19.92%	2.35%	-18.39%	-21.94%	-3.55%
2009	12	-23.28%	-22.15%	1.13%	-28.64%	-16.64%	12.00%	-36.19%	-24.74%	11.46%	-28.04%	-16.15%	11.89%
2010	12	20.43%	2.43%	-18.00%	22.77%	-7.36%	-30.12%	25.91%	3.44%	-22.47%	2.31%	-6.55%	-8.86%
2011	12	16.01%	20.50%	4.49%	-0.49%	11.61%	12.11%	14.86%	1.10%	-13.76%	8.14%	8.76%	0.62%
2012	12	13.26%	12.70%	-0.56%	2.78%	-0.67%	-3.45%	1.35%	4.85%	3.50%	11.24%	6.41%	-4.83%
2013	12	9.01%	13.86%	4.85%	12.04%	12.49%	0.45%	19.68%	15.68%	-4.00%	15.21%	20.87%	5.66%
2014	9	7.44%	23.64%	16.20%	13.89%	10.37%	-3.52%	13.35%	15.50%	2.15%	17.47%	-2.15%	-19.62%
Geometric Mean		**3.94%**	**5.98%**	**2.04%**	**1.88%**	**2.85%**	**0.97%**	**4.11%**	**2.41%**	**-1.70%**	**5.01%**	**3.01%**	**-2.00%**
Relative Dif.				**52%**			**51%**			**-41%**			**-40%**
Arithmetic Mean		**4.96%**	**7.05%**	**2.09%**	**3.52%**	**3.48%**	**-0.04%**	**5.76%**	**3.46%**	**-2.30%**	**6.29%**	**3.63%**	**-2.67%**
Relative Dif.				**42%**			**-1%**			**-40%**			**-42%**

Note: Returns Calculated on a Yearly Compounded Basis

Relative difference calculated as [GrowthBelow-GrowthAbove]/GrowthAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

RISK PERFORMANCE (ON GROWTH)

	Apartment Above	Apartment Below	Difference	Industrial Above	Industrial Below	Difference	Office Above	Office Below	Difference	Retail Above	Retail Below	Difference
St. Deviation	**13.88%**	**12.76%**	**-1.12%**	**17.14%**	**10.22%**	**-6.92%**	**16.84%**	**12.89%**	**-3.94%**	**14.75%**	**12.16%**	**-2.59%**
Relative Dif.			**-8%**			**-40%**			**-23%**			**-18%**
Min	91.25%	115.35%		83.34%	109.36%		89.37%	98.21%		119.77%	106.46%	
Max	159.47%	182.23%		145.68%	168.25%		182.34%	162.95%		211.56%	181.02%	
Range	68.22%	66.89%	-1.33%	62.34%	58.89%	-3.44%	92.98%	64.74%	-28.23%	91.78%	74.57%	-17.22%
Relative Dif.			-2%			-6%			-30%			-19%

Note: Relative difference calculated as [RiskBelow-RiskAbove]/RiskAbove. Positive relative difference means better performance of above-threshold properties. Negative relative difference means better performance of below-treshold properties.

SHARPE RATIO

	Apartment Above	Apartment Below	Difference	Industrial Above	Industrial Below	Difference	Office Above	Office Below	Difference	Retail Above	Retail Below	Difference
Total Return	10.51%	12.73%		9.70%	10.79%		11.41%	10.34%		12.51%	10.69%	
Risk Free Rate	1.43%	1.43%		1.43%	1.43%		1.43%	1.43%		1.43%	1.43%	
Risk Premium	9.08%	11.30%		8.27%	9.37%		9.98%	8.91%		11.08%	9.27%	
Sharpe Ratio	**0.65**	**0.89**	**0.23**	**0.48**	**0.92**	**0.43**	**0.59**	**0.69**	**0.10**	**0.75**	**0.76**	**0.01**
Relative Dif.			**35%**			**90%**			**17%**			**1%**

Note: Relative difference calculated as [SharpeRBelow-SharpeRAbove]/SharpeRAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

Table C-2. Results summary table for all property types. Cutoff $10 million. Filter: none (all regions and cities)

Source: Sacchini & Shipps

RESULTS SUMMARY TABLE.

Sorting Criteria Sub-Institutional Treshold: $5 million

Filter: Land Constrained Cities

CAP RATE PERFORMANCE

		Apartment Above		Apartment Below		Industrial Above		Industrial Below		Office Above		Office Below		Retail Above		Retail Below	
Year	Months	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs
2001	12	8.03%	72	8.13%	9	9.32%	21	9.63%	4	9.18%	133	9.26%	14	9.48%	27	8.90%	4
2002	12	7.73%	111	8.04%	16	9.06%	17	8.83%	8	8.86%	157	9.33%	9	8.80%	61	9.15%	10
2003	12	7.08%	139	7.56%	17	8.68%	28	9.37%	7	8.36%	191	8.37%	15	8.02%	73	8.51%	7
2004	12	6.27%	152	6.05%	45	7.92%	41	7.82%	9	7.71%	235	7.37%	18	7.57%	92	7.35%	22
2005	12	5.44%	235	5.39%	232	7.42%	81	7.38%	26	6.80%	282	7.15%	58	6.76%	137	6.80%	92
2006	12	5.33%	200	5.50%	225	6.61%	51	6.87%	35	6.17%	258	6.60%	53	6.32%	118	6.51%	70
2007	12	5.47%	197	5.67%	202	6.32%	58	6.44%	45	5.66%	250	6.48%	69	6.13%	131	6.35%	88
2008	12	5.82%	102	5.67%	135	6.82%	31	7.12%	28	6.35%	90	6.37%	28	6.71%	38	6.30%	49
2009	12	6.70%	75	6.30%	78	8.18%	18	7.99%	8	8.41%	38	8.13%	14	7.38%	38	6.51%	14
2010	12	6.07%	93	6.20%	72	7.78%	30	7.72%	8	6.99%	68	8.23%	13	7.50%	34	7.76%	27
2011	12	6.15%	165	6.12%	109	7.69%	31	7.65%	13	6.59%	103	7.92%	13	7.45%	53	7.29%	29
2012	12	5.87%	165	5.94%	134	7.20%	43	7.90%	7	6.27%	134	7.24%	16	6.86%	62	7.39%	39
2013	12	5.40%	132	5.36%	125	6.70%	31	6.52%	11	6.11%	115	6.20%	9	6.59%	56	7.37%	35
2014	9	5.57%	76	5.20%	103	6.44%	21	6.91%	9	5.74%	90	7.00%	9	6.33%	51	6.36%	25
Weigthed Average		6.05%	1,914	5.73%	1,502	7.38%	502	7.25%	218	7.02%	2,144	7.16%	338	7.06%	971	6.88%	511
Simple Average		6.21%		6.22%	0.01%	7.58%		7.72%	0.14%	7.09%		7.55%	0.46%	7.28%		7.32%	0.05%
Relative Dif.					0%				2%				6%				1%

Note: Relative difference calculated as [CapBelow-CapAbove]/CapAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

GROWTH PERFORMANCE

		Apartment Above	Apartment Below	Yearly	Industrial Above	Industrial Below	Yearly	Office Above	Office Below	Yearly	Retail Above	Retail Below	Yearly
Year	Month	Year Cap Return	Year Cap Return	Difference	Year Cap Return	Year Cap Return	Difference	Year Cap Return	Year Cap Return	Difference	Year Cap Return	Year Cap Return	Difference
2001	12	2.87%	10.68%	7.80%	-9.85%	13.17%	23.02%	-3.40%	-3.68%	-0.28%	-5.13%	10.32%	15.45%
2002	12	18.16%	19.25%	1.09%	4.58%	-2.99%	-7.58%	-0.30%	12.49%	12.80%	16.96%	0.67%	-16.29%
2003	12	7.71%	8.39%	0.68%	2.30%	7.22%	4.91%	10.45%	0.48%	-9.97%	16.56%	12.15%	-4.40%
2004	12	11.96%	15.78%	3.83%	6.67%	13.37%	6.71%	10.14%	18.31%	8.18%	8.92%	14.28%	5.36%
2005	12	20.00%	18.15%	-1.85%	24.87%	6.42%	-18.45%	19.96%	11.70%	-8.26%	24.23%	21.99%	-2.24%
2006	12	-3.51%	-4.06%	-0.55%	11.32%	21.04%	9.72%	13.20%	10.31%	-2.89%	-1.22%	0.64%	1.86%
2007	12	12.66%	11.85%	-0.81%	10.89%	6.00%	-4.88%	15.59%	15.19%	-0.40%	13.95%	12.25%	-1.70%
2008	12	-23.07%	-13.76%	9.31%	-10.93%	-15.54%	-4.61%	-18.13%	-16.92%	1.22%	-30.96%	-22.39%	8.57%
2009	12	-17.39%	-7.36%	10.03%	-34.02%	-17.18%	16.84%	-41.21%	-18.51%	22.70%	-18.04%	-8.60%	9.44%
2010	12	18.99%	-3.05%	-22.03%	12.92%	-0.83%	-13.75%	32.85%	-7.43%	-40.28%	7.31%	-4.90%	-12.20%
2011	12	17.91%	14.49%	-3.42%	8.41%	14.82%	6.41%	9.62%	16.71%	7.09%	21.85%	14.31%	-7.53%
2012	12	10.92%	11.81%	0.89%	3.90%	-2.26%	-6.16%	9.89%	0.34%	-9.55%	-3.59%	-1.01%	2.58%
2013	12	11.70%	15.18%	3.49%	15.35%	8.25%	-7.10%	12.69%	18.90%	6.22%	29.88%	20.09%	-9.80%
2014	9	19.08%	27.36%	8.29%	-0.34%	15.47%	15.81%	16.05%	2.32%	-13.73%	-11.36%	11.84%	23.20%
Geometric Mean		6.60%	7.98%	1.39%	2.28%	3.98%	1.70%	4.30%	3.58%	-0.72%	3.79%	5.00%	1.21%
Relative Dif.				21%			74%			-17%			32%
Arithmetic Mean		7.71%	8.91%	1.20%	3.29%	4.78%	1.49%	6.24%	4.30%	-1.94%	4.95%	5.83%	0.88%
Relative Dif.				16%			45%			-31%			18%

Note: Returns Calculated on a Yearly Compounded Basis

Relative difference calculated as [GrowthBelow-GrowthAbove]/GrowthAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

RISK PERFORMANCE (ON GROWTH)

	Apartment Above	Apartment Below		Industrial Above	Industrial Below		Office Above	Office Below		Retail Above	Retail Below	
St. Deviation	13.63%	11.64%	-1.99%	14.27%	11.38%	-2.89%	17.99%	12.54%	-5.45%	17.45%	12.30%	-5.15%
Relative Dif.			-15%			-20%			-30%			-30%
Min	118.68%	158.13%		90.80%	126.40%		88.49%	113.28%		111.16%	130.49%	
Max	191.22%	210.03%		159.03%	183.86%		183.87%	183.06%		200.89%	196.80%	
Range	72.53%	51.89%	-20.64%	68.23%	57.47%	-10.76%	95.38%	69.78%	-25.60%	89.73%	66.31%	-23.42%
Relative Dif.			-28%			-16%			-27%			-26%

Note: Relative difference calculated as [RiskBelow-RiskAbove]/RiskAbove. Positive relative difference means better performance of above-threshold properties. Negative relative difference means better performance of below-treshold properties.

SHARPE RATIO

	Apartment Above	Apartment Below		Industrial Above	Industrial Below		Office Above	Office Below		Retail Above	Retail Below	
Total Return	12.81%	14.21%		9.86%	11.71%		11.39%	11.13%		11.06%	12.32%	
Risk Free Rate	1.43%	1.43%		1.43%	1.43%		1.43%	1.43%		1.43%	1.43%	
Risk Premium	11.38%	12.78%		8.44%	10.28%		9.96%	9.70%		9.64%	10.90%	
Sharpe Ratio	0.83	1.10	0.26	0.59	0.90	0.31	0.55	0.77	0.22	0.55	0.89	0.33
Relative Dif.			32%			53%			40%			60%

Note: Relative difference calculated as [SharpeRBelow-SharpeRAbove]/SharpeRAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

Table C-3. Results summary table for all property types. Cutoff $5 million. Filter: Land Constrained Cities

Source: Sacchini & Shipps

RESULTS SUMMARY TABLE.

Sorting Criteria Sub-Institutional Treshold: $10 million

Filter: Land Constrained Cities

CAP RATE PERFORMANCE

Year	Months	Apartment Above Avg. Cap	Apartment Above # Obs	Apartment Below Avg. Cap	Apartment Below # Obs	Industrial Above Avg. Cap	Industrial Above # Obs	Industrial Below Avg. Cap	Industrial Below # Obs	Office Above Avg. Cap	Office Above # Obs	Office Below Avg. Cap	Office Below # Obs	Retail Above Avg. Cap	Retail Above # Obs	Retail Below Avg. Cap	Retail Below # Obs
2001	12	7.95%	46	8.16%	35	9.39%	9	9.35%	16	9.06%	106	9.53%	41	9.55%	16	9.25%	15
2002	12	7.52%	78	8.16%	49	9.25%	8	8.87%	17	8.76%	133	9.36%	33	8.68%	36	9.02%	35
2003	12	6.87%	90	7.48%	66	8.74%	16	8.88%	19	8.28%	154	8.61%	52	7.98%	51	8.20%	29
2004	12	6.20%	91	6.24%	106	7.83%	26	7.98%	24	7.62%	192	7.90%	61	7.35%	56	7.69%	58
2005	12	5.36%	139	5.44%	328	7.09%	42	7.62%	65	6.68%	218	7.19%	122	6.76%	81	6.78%	148
2006	12	5.18%	119	5.51%	306	6.37%	33	6.93%	53	6.12%	218	6.52%	93	6.27%	58	6.44%	130
2007	12	5.35%	95	5.64%	304	6.34%	32	6.39%	71	5.38%	192	6.53%	127	5.98%	72	6.34%	147
2008	12	5.93%	58	5.67%	179	6.79%	14	7.02%	45	6.14%	68	6.65%	50	6.55%	20	6.46%	67
2009	12	7.01%	44	6.29%	109	7.96%	11	8.24%	15	8.46%	34	8.09%	18	6.89%	18	7.28%	34
2010	12	6.08%	60	6.16%	105	7.68%	15	7.83%	23	6.96%	60	7.84%	21	7.97%	17	7.47%	44
2011	12	5.90%	104	6.29%	170	7.53%	18	7.78%	26	6.55%	89	7.35%	27	7.46%	23	7.37%	59
2012	12	5.76%	99	5.97%	200	7.37%	25	7.22%	25	6.13%	119	7.29%	31	6.74%	32	7.21%	69
2013	12	5.49%	69	5.34%	188	6.61%	15	6.68%	27	6.03%	101	6.53%	23	6.31%	32	7.21%	59
2014	9	5.62%	35	5.29%	144	6.66%	14	6.51%	16	5.59%	80	6.96%	19	6.22%	27	6.40%	49
Weigthed Average		**6.02%**	**1,127**	**5.85%**	**2,289**	**7.28%**	**278**	**7.38%**	**442**	**6.90%**	**1,764**	**7.37%**	**718**	**7.00%**	**539**	**6.99%**	**943**
Simple Average		**6.16%**		**6.26%**	**0.10%**	**7.54%**		**7.66%**	**0.12%**	**6.98%**		**7.60%**	**0.61%**	**7.19%**		**7.37%**	**0.17%**
Relative Dif.					**2%**				**2%**				**9%**				**2%**

Note: Relative difference calculated as [CapBelow-CapAbove]/CapAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

GROWTH PERFORMANCE

Year	Month	Apartment Above Year Cap Return	Apartment Below Year Cap Return	Yearly Difference	Industrial Above Year Cap Return	Industrial Below Year Cap Return	Yearly Difference	Office Above Year Cap Return	Office Below Year Cap Return	Yearly Difference	Retail Above Year Cap Return	Retail Below Year Cap Return	Yearly Difference
2001	12	-2.76%	11.32%	14.07%	-15.00%	7.90%	22.90%	2.45%	-11.76%	-14.21%	-2.20%	4.85%	7.05%
2002	12	21.94%	17.06%	-4.88%	-6.61%	0.56%	7.17%	-5.36%	13.46%	18.82%	22.79%	4.36%	-18.44%
2003	12	5.77%	9.29%	3.52%	18.97%	1.75%	-17.22%	10.82%	3.16%	-7.65%	13.45%	16.45%	2.99%
2004	12	12.59%	14.86%	2.27%	-5.77%	14.46%	20.23%	11.23%	14.44%	3.22%	13.05%	8.96%	-4.09%
2005	12	24.88%	16.01%	-8.87%	44.26%	9.56%	-34.70%	16.47%	18.30%	1.84%	20.34%	25.30%	4.96%
2006	12	-6.40%	-1.88%	4.51%	-0.26%	19.78%	20.05%	16.82%	8.23%	-8.59%	0.17%	-0.99%	-1.16%
2007	12	8.65%	13.31%	4.66%	15.88%	6.70%	-9.18%	14.93%	14.59%	-0.34%	18.23%	11.40%	-6.82%
2008	12	-24.64%	-16.62%	8.02%	-8.74%	-14.46%	-5.71%	-21.71%	-14.19%	7.52%	-30.58%	-26.49%	4.09%
2009	12	-17.09%	-10.40%	6.69%	-42.33%	-20.51%	21.82%	-41.86%	-25.60%	16.26%	-27.23%	-6.31%	20.92%
2010	12	23.76%	2.17%	-21.58%	32.82%	-2.19%	-35.02%	37.63%	-0.37%	-38.00%	21.10%	-7.64%	-28.74%
2011	12	21.60%	14.15%	-7.44%	0.39%	14.88%	14.49%	15.87%	5.80%	-10.07%	13.76%	21.82%	8.05%
2012	12	5.86%	13.73%	7.87%	-1.99%	1.03%	3.02%	6.38%	8.25%	1.87%	-3.29%	-2.92%	0.37%
2013	12	13.79%	12.89%	-0.90%	12.47%	10.85%	-1.62%	14.23%	12.75%	-1.48%	24.64%	26.35%	1.71%
2014	9	9.93%	28.63%	18.70%	21.20%	5.52%	-15.68%	12.81%	13.99%	1.18%	7.07%	-5.72%	-12.80%
Geometric Mean		**5.83%**	**7.92%**	**2.08%**	**2.07%**	**3.37%**	**1.29%**	**4.39%**	**3.34%**	**-1.04%**	**4.93%**	**4.13%**	**-0.80%**
Relative Dif.				**36%**			**62%**			**-24%**			**-16%**
Arithmetic Mean		**6.99%**	**8.89%**	**1.90%**	**4.66%**	**3.99%**	**-0.68%**	**6.48%**	**4.36%**	**-2.12%**	**6.52%**	**4.96%**	**-1.56%**
Relative Dif.				**27%**			**-14%**			**-33%**			**-24%**

Note: Returns Calculated on a Yearly Compounded Basis

Relative difference calculated as [GrowthBelow-GrowthAbove]/GrowthAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

RISK PERFORMANCE (ON GROWTH)

	Apartment Above	Apartment Below	Difference	Industrial Above	Industrial Below	Difference	Office Above	Office Below	Difference	Retail Above	Retail Below	Difference
St. Deviation	**15.15%**	**11.83%**	**-3.32%**	**21.70%**	**11.04%**	**-10.66%**	**19.15%**	**13.02%**	**-6.13%**	**17.55%**	**14.76%**	**-2.79%**
Relative Dif.			**-22%**			**-49%**			**-32%**			**-16%**
Min	109.58%	155.82%		78.09%	117.38%		85.06%	106.95%		110.57%	120.95%	
Max	180.10%	210.99%		151.64%	178.77%		186.98%	174.39%		221.21%	193.85%	
Range	70.52%	55.17%	-15.35%	73.54%	61.39%	-12.16%	101.92%	67.44%	-34.49%	110.64%	72.91%	-37.73%
Relative Dif.			-22%			-17%			-34%			-34%

Note: Relative difference calculated as [RiskBelow-RiskAbove]/RiskAbove. Positive relative difference means better performance of above-threshold properties. Negative relative difference means better performance of below-treshold properties.

SHARPE RATIO

	Apartment Above	Apartment Below	Difference	Industrial Above	Industrial Below	Difference	Office Above	Office Below	Difference	Retail Above	Retail Below	Difference
Total Return	11.99%	14.18%		9.62%	11.03%		11.37%	10.94%		12.13%	11.50%	
Risk Free Rate	1.43%	1.43%		1.43%	1.43%		1.43%	1.43%		1.43%	1.43%	
Risk Premium	10.57%	12.75%		8.19%	9.60%		9.94%	9.51%		10.70%	10.07%	
Sharpe Ratio	**0.70**	**1.08**	**0.38**	**0.38**	**0.87**	**0.49**	**0.52**	**0.73**	**0.21**	**0.61**	**0.68**	**0.07**
Relative Dif.			**55%**			**130%**			**41%**			**12%**

Note: Relative difference calculated as [SharpeRBelow-SharpeRAbove]/SharpeRAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

Table C-4. Results summary table for all property types. Cutoff $10 million. Filter: Land Constrained Cities

Source: Sacchini & Shipps

RESULTS SUMMARY TABLE.

Sorting Criteria Sub-Institutional Treshold: $5 million

Filter: Non Land Constrained Cities

CAP RATE PERFORMANCE

Year	Months	Apartment Above Avg. Cap	Apartment Above # Obs	Apartment Below Avg. Cap	Apartment Below # Obs	Industrial Above Avg. Cap	Industrial Above # Obs	Industrial Below Avg. Cap	Industrial Below # Obs	Office Above Avg. Cap	Office Above # Obs	Office Below Avg. Cap	Office Below # Obs	Retail Above Avg. Cap	Retail Above # Obs	Retail Below Avg. Cap	Retail Below # Obs
2001	12	8.83%	126	9.03%	17	9.91%	21	9.41%	7	9.87%	77	8.87%	6	9.19%	36	8.77%	7
2002	12	8.36%	137	8.06%	11	9.47%	17	9.40%	6	9.47%	118	8.91%	11	9.14%	81	8.49%	10
2003	12	7.62%	204	7.79%	21	8.98%	27	9.30%	3	8.98%	107	8.84%	8	8.31%	117	8.15%	17
2004	12	6.93%	243	7.30%	51	8.35%	35	8.94%	10	8.02%	150	8.44%	17	7.86%	142	8.06%	28
2005	12	6.26%	344	6.72%	196	7.52%	62	8.43%	54	7.40%	253	8.00%	63	7.19%	210	7.45%	103
2006	12	6.20%	404	6.83%	133	7.22%	111	7.18%	41	7.00%	232	7.62%	66	6.90%	203	7.03%	111
2007	12	6.17%	339	6.98%	148	7.19%	80	7.22%	50	6.72%	193	7.30%	86	6.76%	195	6.97%	132
2008	12	6.72%	161	7.05%	90	7.65%	37	7.73%	31	7.31%	73	7.87%	45	7.10%	79	7.34%	86
2009	12	7.48%	88	7.74%	27	9.16%	9	9.24%	5	8.16%	27	8.13%	9	8.29%	48	8.00%	31
2010	12	6.99%	145	7.86%	25	8.41%	18	7.79%	7	8.24%	42	7.90%	7	8.35%	55	8.38%	35
2011	12	6.93%	186	7.55%	34	7.58%	40	8.19%	10	7.83%	69	8.61%	13	7.84%	94	8.30%	58
2012	12	6.47%	232	6.95%	52	7.45%	39	7.84%	14	7.54%	58	7.28%	12	7.64%	105	7.95%	80
2013	12	6.45%	181	7.02%	51	7.75%	30	7.72%	13	7.27%	76	8.41%	10	7.53%	126	7.46%	47
2014	9	6.55%	104	7.01%	41	7.25%	34	7.21%	4	7.15%	63	7.92%	6	6.91%	63	7.29%	50
Weigthed Average		**6.79%**	**2,894**	**7.07%**	**897**	**7.74%**	**560**	**7.89%**	**255**	**7.74%**	**1,538**	**7.84%**	**359**	**7.55%**	**1,554**	**7.52%**	**795**
Simple Average		**7.00%**		**7.42%**	**0.42%**	**8.13%**		**8.26%**	**0.12%**	**7.92%**		**8.15%**	**0.23%**	**7.79%**		**7.83%**	**0.04%**
Relative Dif.					**6%**				**2%**				**3%**				**1%**

Note: Relative difference calculated as [CapBelow-CapAbove]/CapAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

GROWTH PERFORMANCE

Year	Month	Apartment Above Year Cap Return	Apartment Below Year Cap Return	Yearly Difference	Industrial Above Year Cap Return	Industrial Below Year Cap Return	Yearly Difference	Office Above Year Cap Return	Office Below Year Cap Return	Yearly Difference	Retail Above Year Cap Return	Retail Below Year Cap Return	Yearly Difference
2001	12	-1.61%	11.77%	13.38%	-3.98%	2.21%	6.19%	-11.07%	7.14%	18.21%	-4.89%	5.46%	10.36%
2002	12	3.62%	5.71%	2.08%	3.66%	9.67%	6.01%	10.14%	1.25%	-8.89%	23.14%	-4.63%	-27.77%
2003	12	2.39%	-0.39%	-2.78%	9.03%	-3.95%	-12.98%	4.80%	4.37%	-0.43%	7.23%	12.15%	4.91%
2004	12	12.73%	20.32%	7.58%	2.42%	16.72%	14.31%	9.75%	8.41%	-1.34%	11.49%	25.86%	14.37%
2005	12	17.95%	14.41%	-3.54%	18.89%	4.87%	-14.02%	14.43%	20.84%	6.41%	22.69%	3.50%	-19.19%
2006	12	5.30%	4.83%	-0.46%	2.70%	16.50%	13.80%	8.66%	5.60%	-3.05%	3.98%	17.36%	13.39%
2007	12	0.78%	-0.53%	-1.31%	14.25%	0.86%	-13.39%	8.96%	6.88%	-2.08%	0.09%	-4.62%	-4.70%
2008	12	-20.91%	-13.26%	7.66%	-23.18%	-10.06%	13.12%	-23.04%	-26.21%	-3.16%	-19.19%	-12.06%	7.12%
2009	12	-30.28%	-39.43%	-9.15%	-18.93%	-8.03%	10.90%	-32.42%	-16.31%	16.11%	-26.04%	-21.26%	4.78%
2010	12	13.42%	8.31%	-5.11%	13.63%	-25.90%	-39.53%	14.75%	-0.24%	-14.99%	-9.84%	-5.45%	4.39%
2011	12	16.19%	23.46%	7.26%	-7.55%	18.70%	26.25%	5.22%	-3.99%	-9.21%	7.71%	5.24%	-2.47%
2012	12	19.29%	7.67%	-11.62%	7.05%	-3.84%	-10.89%	-7.03%	19.55%	26.58%	10.91%	6.84%	-4.07%
2013	12	7.32%	25.42%	18.10%	14.17%	-0.31%	-14.48%	26.63%	-4.91%	-31.54%	16.04%	13.87%	-2.17%
2014	9	12.35%	9.41%	-2.94%	-1.60%	58.22%	59.82%	11.36%	42.87%	31.51%	4.06%	6.46%	2.40%
Geometric Mean		**2.97%**	**4.00%**	**1.03%**	**1.48%**	**3.11%**	**1.62%**	**1.47%**	**2.85%**	**1.37%**	**2.35%**	**2.71%**	**0.37%**
Relative Dif.				**35%**			**109%**			**93%**			**16%**
Arithmetic Mean		**4.18%**	**5.55%**	**1.37%**	**2.18%**	**5.40%**	**3.22%**	**2.94%**	**4.66%**	**1.72%**	**3.38%**	**3.48%**	**0.10%**
Relative Dif.				**33%**			**148%**			**59%**			**3%**

Note: Returns Calculated on a Yearly Compounded Basis

Relative difference calculated as [GrowthBelow-GrowthAbove]/GrowthAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

RISK PERFORMANCE (ON GROWTH)

	Apartment Above	Apartment Below	Difference	Industrial Above	Industrial Below	Difference	Office Above	Office Below	Difference	Retail Above	Retail Below	Difference
St. Deviation	**14.32%**	**16.47%**	**2.16%**	**12.43%**	**19.36%**	**6.93%**	**15.93%**	**16.56%**	**0.62%**	**14.44%**	**12.31%**	**-2.13%**
Relative Dif.			**15%**			**56%**			**4%**			**-15%**
Min	80.28%	82.54%		94.18%	91.66%		77.18%	91.67%		94.51%	99.50%	
Max	148.80%	170.72%		155.59%	159.79%		154.41%	169.32%		182.44%	174.12%	
Range	68.52%	88.18%	19.66%	61.41%	68.14%	6.72%	77.23%	77.64%	0.41%	87.93%	74.63%	-13.30%
Relative Dif.			29%			11%			1%			-15%

Note: Relative difference calculated as [RiskBelow-RiskAbove]/RiskAbove. Positive relative difference means better performance of above-threshold properties. Negative relative difference means better performance of below-treshold properties.

SHARPE RATIO

	Apartment Above	Apartment Below	Difference	Industrial Above	Industrial Below	Difference	Office Above	Office Below	Difference	Retail Above	Retail Below	Difference
Total Return	9.97%	11.42%		9.62%	11.37%		9.40%	11.00%		10.13%	10.54%	
Risk Free Rate	1.43%	1.43%		1.43%	1.43%		1.43%	1.43%		1.43%	1.43%	
Risk Premium	8.54%	9.99%		8.19%	9.94%		7.97%	9.57%		8.71%	9.12%	
Sharpe Ratio	**0.60**	**0.61**	**0.01**	**0.66**	**0.51**	**-0.15**	**0.50**	**0.58**	**0.08**	**0.60**	**0.74**	**0.14**
Relative Dif.			**2%**			**-22%**			**16%**			**23%**

Note: Relative difference calculated as [SharpeRBelow-SharpeRAbove]/SharpeRAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

Table C-5. Results summary table for all property types. Cutoff $5 million. Filter: Non-Land Constrained Cities

Source: Sacchini & Shipps

RESULTS SUMMARY TABLE.
Sorting Criteria Sub-Institutional Treshold: $10 million
Filter: Non Land Constrained Cities

CAP RATE PERFORMANCE

Year	Months	Apartment Above Avg. Cap	# Obs	Apartment Below Avg. Cap	# Obs	Industrial Above Avg. Cap	# Obs	Industrial Below Avg. Cap	# Obs	Office Above Avg. Cap	# Obs	Office Below Avg. Cap	# Obs	Retail Above Avg. Cap	# Obs	Retail Below Avg. Cap	# Obs
2001	12	8.83%	91	8.90%	52	9.78%	14	9.79%	14	9.93%	51	9.58%	32	9.03%	19	9.20%	24
2002	12	8.29%	100	8.44%	48	9.28%	9	9.56%	14	9.34%	85	9.58%	44	9.14%	42	9.01%	49
2003	12	7.45%	136	7.92%	89	9.30%	19	8.52%	11	9.00%	86	8.88%	29	8.28%	70	8.30%	64
2004	12	6.87%	178	7.18%	116	8.27%	23	8.70%	22	7.90%	117	8.44%	50	7.85%	81	7.93%	89
2005	12	6.04%	226	6.70%	314	7.40%	34	8.16%	82	7.30%	191	7.85%	125	7.05%	97	7.37%	216
2006	12	5.96%	255	6.71%	282	7.08%	70	7.33%	82	6.87%	183	7.56%	115	6.72%	94	7.04%	220
2007	12	5.85%	226	6.91%	261	7.00%	45	7.31%	85	6.50%	133	7.26%	146	6.62%	94	6.94%	233
2008	12	6.49%	97	7.06%	154	7.34%	15	7.78%	53	7.05%	45	7.81%	73	7.13%	33	7.25%	132
2009	12	7.35%	66	7.81%	49	9.42%	6	9.01%	8	8.29%	20	7.99%	16	8.25%	15	8.16%	64
2010	12	6.67%	113	8.02%	57	8.22%	13	8.27%	12	8.14%	32	8.29%	17	8.67%	18	8.28%	72
2011	12	6.66%	126	7.51%	94	7.42%	27	8.04%	23	7.81%	57	8.27%	25	7.72%	42	8.13%	110
2012	12	6.23%	162	7.00%	122	7.50%	27	7.60%	26	7.19%	46	8.07%	24	7.63%	43	7.81%	142
2013	12	6.27%	124	6.93%	108	7.78%	19	7.71%	24	7.12%	64	8.20%	22	7.63%	56	7.45%	117
2014	9	6.39%	66	6.92%	79	7.09%	27	7.62%	11	7.03%	49	7.66%	20	6.72%	25	7.18%	88
Weigthed Average		6.61%	1,966	7.12%	1,825	7.66%	348	7.89%	467	7.62%	1,159	7.98%	738	7.51%	729	7.55%	1,620
Simple Average		6.81%		7.43%	0.62%	8.06%		8.24%	0.18%	7.82%		8.25%	0.43%	7.75%		7.86%	0.12%
Relative Dif.					9%				2%				5%				1%

Note: Relative difference calculated as [CapBelow-CapAbove]/CapAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

GROWTH PERFORMANCE

Year	Month	Apartment Above Year Cap Return	Apartment Below Year Cap Return	Yearly Difference	Industrial Above Year Cap Return	Industrial Below Year Cap Return	Yearly Difference	Office Above Year Cap Return	Office Below Year Cap Return	Yearly Difference	Retail Above Year Cap Return	Retail Below Year Cap Return	Yearly Difference
2001	12	-1.90%	3.81%	5.71%	-24.51%	4.15%	28.65%	-12.07%	-2.01%	10.06%	-11.99%	3.47%	15.45%
2002	12	3.71%	5.10%	1.38%	26.24%	2.90%	-23.34%	11.71%	4.89%	-6.82%	30.43%	5.63%	-24.80%
2003	12	0.21%	1.60%	1.39%	-4.30%	2.84%	7.14%	5.04%	4.15%	-0.89%	7.18%	8.71%	1.54%
2004	12	15.03%	16.35%	1.32%	0.16%	13.42%	13.26%	6.51%	13.16%	6.65%	8.54%	20.54%	12.00%
2005	12	17.89%	16.13%	-1.76%	19.32%	9.24%	-10.08%	17.95%	14.81%	-3.14%	23.95%	12.84%	-11.11%
2006	12	2.78%	7.26%	4.48%	6.78%	9.55%	2.77%	6.57%	8.86%	2.28%	0.46%	10.90%	10.44%
2007	12	4.74%	-3.54%	-8.28%	11.29%	6.82%	-4.47%	7.99%	7.98%	-0.01%	-5.85%	-0.95%	4.90%
2008	12	-23.08%	-14.06%	9.02%	-30.29%	-13.48%	16.80%	-24.30%	-24.04%	0.26%	-8.77%	-17.37%	-8.59%
2009	12	-27.44%	-37.98%	-10.54%	-12.67%	-12.50%	0.17%	-28.18%	-26.84%	1.34%	-28.73%	-23.03%	5.71%
2010	12	18.56%	4.41%	-14.15%	12.58%	-14.51%	-27.09%	9.29%	9.50%	0.21%	-10.82%	-7.98%	2.83%
2011	12	10.48%	28.37%	17.89%	-7.13%	7.98%	15.11%	10.02%	-1.71%	-11.73%	3.69%	5.97%	2.28%
2012	12	21.39%	9.36%	-12.03%	8.91%	-1.43%	-10.34%	-7.53%	4.07%	11.60%	9.80%	11.33%	1.53%
2013	12	4.58%	21.47%	16.90%	1.25%	12.97%	11.72%	21.88%	16.41%	-5.46%	14.90%	14.88%	-0.02%
2014	9	9.42%	11.15%	1.73%	15.80%	18.96%	3.17%	16.82%	17.98%	1.17%	18.32%	0.17%	-18.14%
Geometric Mean		2.88%	3.44%	0.56%	0.11%	2.56%	2.46%	1.55%	2.16%	0.61%	2.19%	2.53%	0.34%
Relative Dif.				19%			2283%			39%			15%
Arithmetic Mean		4.03%	4.96%	0.93%	1.67%	3.35%	1.68%	2.98%	3.37%	0.39%	3.65%	3.22%	-0.43%
Relative Dif.				23%			100%			13%			-12%

Note: Returns Calculated on a Yearly Compounded Basis
Relative difference calculated as [GrowthBelow-GrowthAbove]/GrowthAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

RISK PERFORMANCE (ON GROWTH)

	Apartment Above	Apartment Below	Difference	Industrial Above	Industrial Below	Difference	Office Above	Office Below	Difference	Retail Above	Retail Below	Difference
St. Deviation	14.34%	16.24%	1.90%	16.25%	10.46%	-5.79%	15.31%	13.65%	-1.66%	15.94%	12.28%	-3.65%
Relative Dif.			13%			-36%			-11%			-23%
Min	80.95%	76.74%		78.70%	100.87%		76.21%	90.84%		88.61%	99.52%	
Max	148.85%	160.66%		131.07%	161.64%		150.47%	165.91%		171.01%	182.26%	
Range	67.90%	83.92%	16.02%	52.36%	60.77%	8.41%	74.26%	75.06%	0.80%	82.39%	82.75%	0.35%
Relative Dif.			24%			16%			1%			0%

Note: Relative difference calculated as [RiskBelow-RiskAbove]/RiskAbove. Positive relative difference means better performance of above-threshold properties. Negative relative difference means better performance of below-treshold properties.

SHARPE RATIO

	Apartment Above	Apartment Below	Difference	Industrial Above	Industrial Below	Difference	Office Above	Office Below	Difference	Retail Above	Retail Below	Difference
Total Return	9.69%	10.87%		8.17%	10.81%		9.37%	10.40%		9.94%	10.39%	
Risk Free Rate	1.43%	1.43%		1.43%	1.43%		1.43%	1.43%		1.43%	1.43%	
Risk Premium	8.27%	9.44%		6.74%	9.38%		7.94%	8.98%		8.51%	8.96%	
Sharpe Ratio	0.58	0.58	0.00	0.42	0.90	0.48	0.52	0.66	0.14	0.53	0.73	0.20
Relative Dif.			1%			116%			27%			37%

Note: Relative difference calculated as [SharpeRBelow-SharpeRAbove]/SharpeRAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

Table C-6. Results summary table for all property types. Cutoff $10 million. Filter: Non-Land Constrained Cities

Source: Sacchini & Shipps

RESULTS SUMMARY TABLE.

Sorting Criteria Sub-Institutional Treshold: $5 million

Filter: 6 Major Metros

CAP RATE PERFORMANCE

		Apartment Above		Apartment Below		Industrial Above		Industrial Below		Office Above		Office Below		Retail Above		Retail Below	
Year	Months	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs
2001	12	7.93%	48	8.01%	7	9.27%	19	9.04%	4	9.21%	114	8.91%	10	9.18%	16	9.50%	2
2002	12	7.29%	54	7.41%	8	9.27%	11	8.93%	6	8.85%	153	8.79%	6	8.68%	31	8.23%	5
2003	12	6.89%	75	6.53%	10	9.02%	22	9.65%	4	8.24%	160	8.70%	9	7.91%	56	8.47%	6
2004	12	6.15%	103	5.92%	37	8.42%	30	8.56%	8	7.67%	213	7.30%	16	7.47%	55	7.05%	15
2005	12	5.33%	150	5.30%	189	7.35%	65	7.62%	21	6.77%	237	7.10%	37	6.57%	88	6.54%	55
2006	12	4.99%	133	5.32%	176	6.78%	56	6.69%	33	6.24%	225	6.61%	35	6.02%	82	6.23%	44
2007	12	5.43%	160	5.51%	180	6.12%	49	6.17%	32	5.51%	217	6.36%	48	6.12%	92	6.12%	63
2008	12	5.42%	70	5.42%	113	6.92%	27	7.22%	19	6.27%	81	6.46%	19	6.44%	28	6.23%	34
2009	12	6.47%	50	6.38%	67	8.76%	14	8.60%	6	8.23%	39	7.75%	10	7.17%	28	6.64%	13
2010	12	5.98%	71	6.09%	61	7.87%	13	7.49%	6	6.96%	65	7.32%	9	7.60%	23	7.78%	18
2011	12	5.98%	110	5.99%	90	7.22%	27	7.97%	12	6.59%	97	7.41%	5	7.13%	42	7.31%	22
2012	12	5.53%	108	5.94%	122	7.39%	35	7.73%	5	6.10%	101	6.57%	13	6.80%	43	6.92%	29
2013	12	5.22%	113	5.40%	114	6.87%	30	6.00%	9	5.98%	84	5.58%	4	6.51%	36	7.04%	19
2014	9	5.11%	56	5.02%	80	6.56%	23	7.01%	6	5.67%	73	6.42%	5	5.96%	35	6.13%	23
Weigthed Average		**5.78%**	**1,301**	**5.60%**	**1,254**	**7.38%**	**421**	**7.25%**	**171**	**7.00%**	**1,859**	**6.99%**	**226**	**6.86%**	**655**	**6.64%**	**348**
Simple Average		**5.98%**		**6.02%**	**0.04%**	**7.70%**		**7.76%**	**0.06%**	**7.02%**		**7.23%**	**0.21%**	**7.11%**		**7.16%**	**0.04%**
Relative Dif.					**1%**				**1%**				**3%**				**1%**

Note: Relative difference calculated as [CapBelow-CapAbove]/CapAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

GROWTH PERFORMANCE

		Apartment Above	Apartment Below	Yearly	Industrial Above	Industrial Below	Yearly	Office Above	Office Below	Yearly	Retail Above	Retail Below	Yearly
Year	Month	Year Cap Return	Year Cap Return	Difference	Year Cap Return	Year Cap Return	Difference	Year Cap Return	Year Cap Return	Difference	Year Cap Return	Year Cap Return	Difference
2001	12	5.54%	9.43%	3.89%	-6.21%	13.00%	19.22%	-2.68%	-7.28%	-4.60%	-4.00%	14.80%	18.81%
2002	12	19.61%	13.16%	-6.45%	0.20%	-1.78%	-1.99%	3.77%	10.10%	6.33%	10.15%	-13.44%	-23.59%
2003	12	12.70%	16.60%	3.90%	6.79%	7.51%	0.72%	5.64%	1.46%	-4.19%	20.97%	38.51%	17.55%
2004	12	12.93%	12.65%	-0.29%	5.19%	13.03%	7.84%	13.59%	14.88%	1.30%	2.93%	8.60%	5.68%
2005	12	11.72%	19.02%	7.30%	17.20%	3.75%	-13.45%	16.64%	14.44%	-2.20%	20.75%	27.52%	6.76%
2006	12	8.56%	-2.65%	-11.22%	15.31%	21.65%	6.34%	12.97%	4.86%	-8.11%	7.17%	0.05%	-7.12%
2007	12	9.91%	14.17%	4.27%	12.20%	5.66%	-6.55%	16.31%	18.52%	2.21%	10.28%	11.40%	1.11%
2008	12	-14.85%	-12.12%	2.72%	-19.46%	-14.18%	5.28%	-20.11%	-21.55%	-1.44%	-23.25%	-18.22%	5.03%
2009	12	-17.14%	-6.67%	10.47%	-24.61%	-15.14%	9.47%	-37.48%	-15.98%	21.50%	-18.29%	-22.58%	-4.29%
2010	12	13.49%	-0.26%	-13.75%	11.18%	-2.35%	-13.53%	30.54%	0.04%	-30.50%	-3.37%	13.40%	16.77%
2011	12	18.23%	9.96%	-8.27%	6.10%	16.37%	10.27%	15.02%	15.02%	-0.01%	33.26%	4.71%	-28.55%
2012	12	10.37%	13.06%	2.69%	6.17%	0.87%	-5.30%	5.76%	3.95%	-1.82%	-8.36%	3.75%	12.11%
2013	12	13.79%	14.89%	1.09%	14.10%	3.42%	-10.68%	16.02%	13.20%	-2.82%	30.31%	25.41%	-4.89%
2014	9	14.27%	25.65%	11.38%	4.73%	21.01%	16.28%	13.26%	2.45%	-10.81%	-7.90%	11.87%	19.77%
Geometric Mean		**7.82%**	**8.27%**	**0.46%**	**2.68%**	**4.33%**	**1.66%**	**4.68%**	**3.18%**	**-1.50%**	**3.95%**	**6.11%**	**2.16%**
Relative Dif.				**6%**			**62%**			**-32%**			**55%**
Arithmetic Mean		**8.51%**	**9.06%**	**0.55%**	**3.49%**	**5.20%**	**1.71%**	**6.37%**	**3.86%**	**-2.51%**	**5.05%**	**7.56%**	**2.51%**
Relative Dif.				**6%**			**49%**			**-39%**			**50%**

Note: Returns Calculated on a Yearly Compounded Basis

Relative difference calculated as [GrowthBelow-GrowthAbove]/GrowthAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

RISK PERFORMANCE (ON GROWTH)

St. Deviation	**10.98%**	**10.59%**	**-0.39%**	**12.48%**	**11.41%**	**-1.08%**	**17.13%**	**12.04%**	**-5.08%**	**17.19%**	**17.30%**	**0.10%**
Relative Dif.			**-4%**			**-9%**			**-30%**			**1%**
Min	148.17%	169.65%		96.22%	127.92%		92.08%	103.80%		110.02%	131.73%	
Max	214.23%	215.48%		160.56%	180.29%		185.71%	169.22%		192.42%	212.58%	
Range	66.06%	45.83%	-20.23%	64.33%	52.38%	-11.96%	93.63%	65.42%	-28.21%	82.40%	80.86%	-1.54%
Relative Dif.			-31%			-19%			-30%			-2%

Note: Relative difference calculated as [RiskBelow-RiskAbove]/RiskAbove. Positive relative difference means better performance of above-threshold properties. Negative relative difference means better performance of below-treshold properties.

SHARPE RATIO

Total Return	13.80%	14.29%		10.38%	12.09%		11.70%	10.41%		11.06%	13.27%	
Risk Free Rate	1.43%	1.43%		1.43%	1.43%		1.43%	1.43%		1.43%	1.43%	
Risk Premium	12.37%	12.86%		8.95%	10.67%		10.28%	8.99%		9.63%	11.84%	
Sharpe Ratio	**1.13**	**1.21**	**0.09**	**0.72**	**0.94**	**0.22**	**0.60**	**0.75**	**0.15**	**0.56**	**0.68**	**0.12**
Relative Dif.			**8%**			**30%**			**24%**			**22%**

Note: Relative difference calculated as [SharpeRBelow-SharpeRAbove]/SharpeRAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

Table C-7. Results summary table for all property types. Cutoff $5 million. Filter: 6 Major Metros

Source: Sacchini & Shipps

RESULTS SUMMARY TABLE.

Sorting Criteria Sub-Institutional Treshold: $10 million
Filter: 6 Major Metros

CAP RATE PERFORMANCE

Year	Months	Apartment Above Avg. Cap	Apartment Above # Obs	Apartment Below Avg. Cap	Apartment Below # Obs	Industrial Above Avg. Cap	Industrial Above # Obs	Industrial Below Avg. Cap	Industrial Below # Obs
2001	12	7.95%	31	7.93%	24	9.14%	9	9.28%	14
2002	12	7.14%	40	7.61%	22	9.31%	7	9.04%	10
2003	12	6.81%	50	6.89%	35	9.46%	14	8.72%	12
2004	12	6.23%	71	5.94%	69	8.18%	21	8.79%	17
2005	12	5.39%	96	5.28%	243	7.06%	39	7.71%	47
2006	12	4.87%	75	5.28%	234	6.64%	37	6.83%	52
2007	12	5.47%	78	5.47%	262	6.10%	31	6.17%	50
2008	12	5.43%	34	5.42%	149	6.96%	13	7.07%	33
2009	12	6.79%	30	6.29%	87	8.78%	10	8.64%	10
2010	12	6.01%	46	6.04%	86	7.91%	11	7.54%	8
2011	12	5.95%	72	6.00%	128	6.92%	19	7.95%	20
2012	12	5.38%	60	5.88%	170	7.53%	24	7.28%	16
2013	12	5.30%	57	5.31%	170	6.95%	18	6.42%	21
2014	9	5.19%	24	5.03%	112	6.82%	19	6.35%	10
Weigthed Average		**5.85%**	**764**	**5.62%**	**1,791**	**7.33%**	**272**	**7.36%**	**320**
Simple Average		**5.99%**		**6.03%**	**0.03%**	**7.70%**		**7.70%**	**0.00%**
Relative Dif.					**1%**				**0%**

Year	Months	Office Above Avg. Cap	Office Above # Obs	Office Below Avg. Cap	Office Below # Obs	Retail Above Avg. Cap	Retail Above # Obs	Retail Below Avg. Cap	Retail Below # Obs
2001	12	9.07%	91	9.52%	33	9.38%	12	8.88%	6
2002	12	8.76%	131	9.25%	28	8.45%	17	8.77%	19
2003	12	8.15%	131	8.64%	38	7.98%	38	7.95%	24
2004	12	7.60%	180	7.80%	49	7.35%	33	7.40%	37
2005	12	6.65%	189	7.19%	85	6.72%	50	6.47%	93
2006	12	6.17%	194	6.62%	66	6.00%	44	6.15%	82
2007	12	5.32%	181	6.39%	84	6.08%	60	6.15%	95
2008	12	6.01%	63	6.81%	37	6.52%	16	6.26%	46
2009	12	8.38%	35	7.51%	14	6.73%	16	7.18%	25
2010	12	6.92%	57	7.30%	17	8.28%	10	7.49%	31
2011	12	6.53%	85	7.14%	17	7.12%	19	7.22%	45
2012	12	6.00%	93	6.83%	21	6.94%	24	6.80%	48
2013	12	5.93%	77	6.17%	11	6.51%	23	6.82%	32
2014	9	5.50%	67	7.02%	11	5.90%	23	6.11%	35
Weigthed Average		**6.88%**	**1,574**	**7.36%**	**511**	**6.88%**	**385**	**6.73%**	**618**
Simple Average		**6.93%**		**7.44%**	**0.51%**	**7.14%**		**7.12%**	**-0.02%**
Relative Dif.					**7%**				**0%**

Note: Relative difference calculated as [CapBelow-CapAbove]/CapAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

GROWTH PERFORMANCE

Year	Month	Apartment Above Year Cap Return	Apartment Below Year Cap Return	Yearly Difference	Industrial Above Year Cap Return	Industrial Below Year Cap Return	Yearly Difference
2001	12	1.07%	10.29%	9.23%	-17.72%	6.27%	23.98%
2002	12	21.39%	14.08%	-7.31%	-7.17%	4.19%	11.35%
2003	12	13.38%	14.90%	1.52%	19.39%	1.90%	-17.49%
2004	12	10.44%	13.65%	3.21%	-5.00%	14.38%	19.38%
2005	12	15.66%	15.57%	-0.09%	31.90%	4.97%	-26.93%
2006	12	2.83%	2.05%	-0.78%	8.91%	21.21%	12.30%
2007	12	7.35%	12.64%	5.29%	13.09%	6.78%	-6.31%
2008	12	-19.00%	-11.86%	7.14%	-20.42%	-15.80%	4.62%
2009	12	-14.01%	-10.38%	3.63%	-25.06%	-17.63%	7.43%
2010	12	13.87%	3.39%	-10.49%	9.58%	1.23%	-8.35%
2011	12	23.15%	10.59%	-12.56%	8.22%	10.89%	2.67%
2012	12	2.99%	15.34%	12.36%	3.06%	3.57%	0.51%
2013	12	17.17%	11.77%	-5.40%	4.60%	9.58%	4.98%
2014	9	0.05%	27.43%	27.38%	33.75%	7.64%	-26.12%
Geometric Mean		**6.29%**	**8.44%**	**2.16%**	**2.12%**	**3.65%**	**1.53%**
Relative Dif.				**34%**			**72%**
Arithmetic Mean		**6.88%**	**9.25%**	**2.37%**	**4.08%**	**4.23%**	**0.14%**
Relative Dif.				**34%**			**4%**

Year	Month	Office Above Year Cap Return	Office Below Year Cap Return	Yearly Difference	Retail Above Year Cap Return	Retail Below Year Cap Return	Yearly Difference
2001	12	-0.82%	-11.05%	-10.23%	-10.26%	11.55%	21.80%
2002	12	0.80%	13.73%	12.93%	15.69%	-7.04%	-22.73%
2003	12	6.94%	-1.00%	-7.94%	20.61%	28.58%	7.97%
2004	12	13.19%	16.08%	2.90%	8.05%	5.38%	-2.66%
2005	12	13.13%	20.09%	6.96%	15.54%	27.25%	11.71%
2006	12	16.58%	2.36%	-14.22%	7.79%	1.94%	-5.85%
2007	12	15.94%	18.72%	2.78%	10.47%	9.14%	-1.33%
2008	12	-25.17%	-16.39%	8.79%	-21.71%	-19.55%	2.16%
2009	12	-34.93%	-26.23%	8.70%	-26.59%	-18.29%	8.30%
2010	12	29.13%	7.57%	-21.56%	11.83%	-0.99%	-12.81%
2011	12	20.73%	10.39%	-10.33%	20.53%	22.83%	2.30%
2012	12	1.21%	8.38%	7.17%	-0.43%	-6.51%	-6.08%
2013	12	17.72%	11.21%	-6.51%	8.49%	38.09%	29.60%
2014	9	11.44%	11.53%	0.09%	31.34%	-11.78%	-43.12%
Geometric Mean		**4.43%**	**3.60%**	**-0.83%**	**4.82%**	**4.65%**	**-0.17%**
Relative Dif.				**-19%**			**-4%**
Arithmetic Mean		**6.13%**	**4.67%**	**-1.46%**	**6.52%**	**5.76%**	**-0.77%**
Relative Dif.				**-24%**			**-12%**

Note: Returns Calculated on a Yearly Compounded Basis
Relative difference calculated as [GrowthBelow-GrowthAbove]/GrowthAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

RISK PERFORMANCE (ON GROWTH)

	Apartment Above	Apartment Below	Difference	Industrial Above	Industrial Below	Difference
St. Deviation	**12.34%**	**10.45%**	**-1.89%**	**17.92%**	**10.31%**	**-7.61%**
Relative Dif.			**-15%**			**-42%**
Min	132.88%	170.68%		83.94%	120.01%	
Max	196.64%	218.28%		141.42%	175.43%	
Range	63.76%	47.60%	-16.16%	57.48%	55.42%	-2.06%
Relative Dif.			-25%			-4%

	Office Above	Office Below	Difference	Retail Above	Retail Below	Difference
St. Deviation	**17.49%**	**13.80%**	**-3.69%**	**16.29%**	**18.11%**	**1.82%**
Relative Dif.			**-21%**			**11%**
Min	89.13%	103.55%		106.99%	122.03%	
Max	185.29%	172.87%		188.67%	201.83%	
Range	96.17%	69.32%	-26.85%	81.68%	79.80%	-1.88%
Relative Dif.			-28%			-2%

Note: Relative difference calculated as [RiskBelow-RiskAbove]/RiskAbove. Positive relative difference means better performance of above-threshold properties. Negative relative difference means better performance of below-treshold properties.

SHARPE RATIO

	Apartment Above	Apartment Below	Difference	Industrial Above	Industrial Below	Difference
Total Return	12.28%	14.47%		9.82%	11.35%	
Risk Free Rate	1.43%	1.43%		1.43%	1.43%	
Risk Premium	10.85%	13.04%		8.39%	9.92%	
Sharpe Ratio	**0.88**	**1.25**	**0.37**	**0.47**	**0.96**	**0.49**
Relative Dif.			**42%**			**106%**

	Office Above	Office Below	Difference	Retail Above	Retail Below	Difference
Total Return	11.36%	11.04%		11.96%	11.77%	
Risk Free Rate	1.43%	1.43%		1.43%	1.43%	
Risk Premium	9.93%	9.61%		10.53%	10.34%	
Sharpe Ratio	**0.57**	**0.70**	**0.13**	**0.65**	**0.57**	**-0.08**
Relative Dif.			**23%**			**-12%**

Note: Relative difference calculated as [SharpeRBelow-SharpeRAbove]/SharpeRAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

Table C-8. Results summary table for all property types. Cutoff $10 million. Filter: 6 Major Metros

Source: Sacchini & Shipps

RESULTS SUMMARY TABLE.
Sorting Criteria Sub-Institutional Treshold: $5 million
Filter: Non Major Metros

CAP RATE PERFORMANCE

		Apartment Above		Apartment Below		Industrial Above		Industrial Below		Office Above		Office Below		Retail Above		Retail Below	
Year	Months	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs
2001	12	8.74%	150	8.98%	19	9.90%	23	9.75%	7	9.70%	96	9.38%	10	9.36%	47	8.67%	9
2002	12	8.30%	194	8.31%	19	9.27%	23	9.19%	8	9.46%	122	9.23%	14	9.08%	111	9.02%	15
2003	12	7.55%	268	8.10%	28	8.70%	33	9.15%	6	8.99%	138	8.42%	14	8.32%	134	8.19%	18
2004	12	6.86%	292	7.22%	59	7.92%	46	8.31%	11	8.02%	172	8.39%	19	7.83%	179	8.05%	35
2005	12	6.13%	429	6.55%	239	7.56%	78	8.26%	59	7.33%	298	7.81%	84	7.17%	259	7.38%	140
2006	12	6.17%	471	6.65%	182	7.16%	106	7.30%	43	6.84%	265	7.40%	84	6.91%	239	7.01%	137
2007	12	6.12%	376	6.98%	170	7.21%	89	7.19%	63	6.70%	226	7.19%	107	6.66%	234	6.96%	157
2008	12	6.71%	193	7.03%	112	7.50%	41	7.55%	40	7.28%	82	7.59%	54	7.14%	89	7.21%	101
2009	12	7.41%	113	7.18%	38	8.24%	13	8.36%	7	8.42%	26	8.42%	13	8.24%	58	7.91%	32
2010	12	6.91%	167	7.53%	36	8.07%	35	7.93%	9	8.19%	45	8.77%	11	8.17%	66	8.24%	44
2011	12	6.83%	241	7.26%	53	7.88%	44	7.79%	11	7.72%	75	8.47%	21	7.92%	105	8.18%	65
2012	12	6.48%	289	6.76%	64	7.26%	47	7.90%	16	7.27%	91	7.85%	15	7.54%	124	8.04%	90
2013	12	6.46%	200	6.65%	62	7.56%	31	7.87%	15	7.04%	107	7.84%	15	7.42%	146	7.53%	63
2014	9	6.60%	124	6.58%	64	7.21%	32	6.99%	7	6.91%	80	7.84%	10	6.96%	79	7.36%	52
Weigthed Average		**6.76%**	**3,507**	**6.92%**	**1,145**	**7.69%**	**641**	**7.79%**	**302**	**7.65%**	**1,823**	**7.76%**	**471**	**7.53%**	**1,870**	**7.50%**	**958**
Simple Average		**6.95%**		**7.27%**	**0.32%**	**7.96%**		**8.11%**	**0.15%**	**7.85%**		**8.19%**	**0.34%**	**7.77%**		**7.84%**	**0.07%**
Relative Dif.					**5%**				**2%**				**4%**				**1%**

Note: Relative difference calculated as [CapBelow-CapAbove]/CapAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

GROWTH PERFORMANCE

		Apartment Above	Apartment Below	Yearly	Industrial Above	Industrial Below	Yearly	Office Above	Office Below	Yearly	Retail Above	Retail Below	Yearly
Year	Month	Year Cap Return	Year Cap Return	Difference	Year Cap Return	Year Cap Return	Difference	Year Cap Return	Year Cap Return	Difference	Year Cap Return	Year Cap Return	Difference
2001	12	-2.49%	14.71%	17.20%	-9.99%	0.59%	10.58%	-13.23%	9.43%	22.66%	-7.31%	5.45%	12.76%
2002	12	6.59%	14.70%	8.11%	8.59%	6.41%	-2.17%	6.34%	3.90%	-2.44%	25.53%	2.12%	-23.41%
2003	12	1.93%	-3.53%	-5.46%	3.43%	0.46%	-2.97%	9.10%	1.40%	-7.70%	6.59%	2.98%	-3.60%
2004	12	13.85%	21.58%	7.72%	4.52%	14.67%	10.15%	8.74%	13.44%	4.70%	14.90%	26.27%	11.38%
2005	12	20.21%	15.39%	-4.83%	25.96%	8.13%	-17.83%	16.37%	17.86%	1.48%	24.35%	5.48%	-18.87%
2006	12	0.93%	2.24%	1.31%	0.74%	16.17%	15.42%	10.63%	10.74%	0.11%	-0.47%	13.41%	13.88%
2007	12	3.49%	-2.31%	-5.80%	13.89%	2.24%	-11.64%	8.61%	3.46%	-5.14%	4.53%	0.16%	-4.37%
2008	12	-24.09%	-12.35%	11.73%	-17.32%	-11.84%	5.48%	-19.91%	-19.76%	0.15%	-24.82%	-19.35%	5.48%
2009	12	-29.11%	-36.29%	-7.18%	-28.18%	-12.10%	16.09%	-36.55%	-18.41%	18.14%	-24.71%	-9.58%	15.14%
2010	12	15.82%	7.52%	-8.30%	15.45%	-20.17%	-35.62%	14.57%	-6.18%	-20.76%	-0.99%	-12.40%	-11.40%
2011	12	19.22%	18.73%	-0.49%	-4.34%	18.62%	22.96%	5.33%	1.29%	-4.04%	3.07%	9.54%	6.47%
2012	12	16.31%	11.38%	-4.93%	5.91%	-7.92%	-13.83%	-1.57%	10.85%	12.41%	11.82%	3.19%	-8.63%
2013	12	9.35%	20.43%	11.08%	13.44%	3.64%	-9.80%	21.32%	2.63%	-18.69%	18.91%	12.79%	-6.12%
2014	9	13.68%	19.89%	6.21%	-2.27%	48.09%	50.36%	15.53%	33.08%	17.55%	0.73%	8.84%	8.11%
Geometric Mean		**3.36%**	**4.97%**	**1.61%**	**1.23%**	**2.94%**	**1.71%**	**1.63%**	**3.23%**	**1.60%**	**2.60%**	**2.77%**	**0.17%**
Relative Dif.				**48%**			**139%**			**98%**			**7%**
Arithmetic Mean		**4.69%**	**6.58%**	**1.88%**	**2.13%**	**4.79%**	**2.66%**	**3.24%**	**4.55%**	**1.32%**	**3.72%**	**3.49%**	**-0.23%**
Relative Dif.				**40%**			**125%**			**41%**			**-6%**

Note: Returns Calculated on a Yearly Compounded Basis
Relative difference calculated as [GrowthBelow-GrowthAbove]/GrowthAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

RISK PERFORMANCE (ON GROWTH)

St. Deviation	**15.06%**	**16.10%**	**1.05%**	**14.09%**	**16.86%**	**2.77%**	**16.06%**	**13.67%**	**-2.39%**	**15.51%**	**11.55%**	**-3.95%**
Relative Dif.			**7%**			**20%**			**-15%**			**-25%**
Min	80.58%	94.06%		89.62%	94.12%		77.50%	99.58%		101.03%	103.23%	
Max	152.26%	182.06%		154.60%	162.62%		154.72%	178.06%		186.64%	174.59%	
Range	71.68%	88.00%	16.32%	64.98%	68.51%	3.53%	77.22%	78.48%	1.26%	85.60%	71.36%	-14.25%
Relative Dif.			23%			5%			2%			-17%

Note: Relative difference calculated as [RiskBelow-RiskAbove]/RiskAbove. Positive relative difference means better performance of above-threshold properties. Negative relative difference means better performance of below-treshold properties.

SHARPE RATIO

Total Return	10.31%	12.24%		9.19%	11.05%		9.48%	11.42%		10.37%	10.61%	
Risk Free Rate	1.43%	1.43%		1.43%	1.43%		1.43%	1.43%		1.43%	1.43%	
Risk Premium	8.88%	10.81%		7.76%	9.62%		8.05%	9.99%		8.94%	9.18%	
Sharpe Ratio	**0.59**	**0.67**	**0.08**	**0.55**	**0.57**	**0.02**	**0.50**	**0.73**	**0.23**	**0.58**	**0.79**	**0.22**
Relative Dif.			**14%**			**4%**			**46%**			**38%**

Note: Relative difference calculated as [SharpeRBelow-SharpeRAbove]/SharpeRAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

Table C-9. Results summary table for all property types. Cutoff $5 million. Filter: Non Major Metros
Source: Sacchini & Shipps

RESULTS SUMMARY TABLE.
Sorting Criteria Sub-Institutional Treshold: $10 million
Filter: Non Major Metros

CAP RATE PERFORMANCE

		Apartment Above		Apartment Below		Industrial Above		Industrial Below		Office Above		Office Below		Retail Above		Retail Below	
Year	Months	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs
2001	12	8.71%	106	8.86%	63	9.94%	14	9.80%	16	9.72%	66	9.58%	40	9.20%	23	9.28%	33
2002	12	8.19%	138	8.50%	75	9.23%	10	9.25%	21	9.33%	87	9.62%	49	9.06%	61	9.09%	65
2003	12	7.34%	176	7.98%	120	8.77%	21	8.76%	18	9.01%	109	8.77%	43	8.24%	83	8.38%	69
2004	12	6.79%	198	7.09%	153	7.94%	28	8.05%	29	7.89%	129	8.41%	62	7.74%	104	7.99%	110
2005	12	5.92%	269	6.53%	399	7.41%	37	8.02%	100	7.24%	220	7.70%	162	7.00%	128	7.36%	271
2006	12	5.93%	299	6.62%	354	6.97%	66	7.39%	83	6.74%	207	7.32%	142	6.78%	108	7.02%	268
2007	12	5.77%	243	6.88%	303	7.15%	46	7.23%	106	6.48%	144	7.15%	189	6.49%	106	6.89%	285
2008	12	6.52%	121	7.04%	184	7.17%	16	7.61%	65	7.12%	50	7.57%	86	7.08%	37	7.20%	153
2009	12	7.38%	80	7.33%	71	8.04%	7	8.41%	13	8.43%	19	8.42%	20	8.24%	17	8.09%	73
2010	12	6.63%	127	7.68%	76	7.95%	17	8.10%	27	8.11%	35	8.63%	21	8.35%	25	8.15%	85
2011	12	6.48%	158	7.40%	136	7.86%	26	7.86%	29	7.76%	61	8.11%	35	7.83%	46	8.09%	124
2012	12	6.25%	201	6.90%	152	7.36%	28	7.48%	35	6.99%	72	8.12%	34	7.40%	51	7.86%	163
2013	12	6.28%	136	6.74%	126	7.62%	16	7.68%	30	6.91%	88	7.73%	34	7.37%	65	7.49%	144
2014	9	6.41%	77	6.71%	111	7.06%	22	7.32%	17	6.82%	62	7.44%	28	6.91%	29	7.17%	102
Weigthed Average		**6.57%**	**2,329**	**7.02%**	**2,323**	**7.61%**	**354**	**7.80%**	**589**	**7.55%**	**1,349**	**7.85%**	**945**	**7.47%**	**883**	**7.54%**	**1,945**
Simple Average		**6.76%**		**7.30%**	**0.55%**	**7.89%**		**8.07%**	**0.18%**	**7.75%**		**8.18%**	**0.43%**	**7.69%**		**7.86%**	**0.17%**
Relative Dif.					**8%**				**2%**				**6%**				**2%**

Note: Relative difference calculated as [CapBelow-CapAbove]/CapAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

GROWTH PERFORMANCE

		Apartment Above	Apartment Below	Yearly	Industrial Above	Industrial Below	Yearly	Office Above	Office Below	Yearly	Retail Above	Retail Below	Yearly
Year	Month	Year Cap Return	Year Cap Return	Difference	Year Cap Return	Year Cap Return	Difference	Year Cap Return	Year Cap Return	Difference	Year Cap Return	Year Cap Return	Difference
2001	12	-2.85%	5.66%	8.51%	-26.32%	2.48%	28.80%	-10.60%	-4.19%	6.40%	-10.32%	0.05%	10.37%
2002	12	6.27%	11.35%	5.09%	31.27%	2.23%	-29.03%	4.43%	7.00%	2.57%	33.66%	9.75%	-23.92%
2003	12	-0.08%	-0.44%	-0.36%	-3.54%	1.82%	5.36%	8.57%	4.75%	-3.83%	2.68%	6.35%	3.67%
2004	12	15.45%	18.14%	2.69%	-2.41%	12.96%	15.37%	7.36%	13.83%	6.47%	15.17%	20.09%	4.92%
2005	12	20.82%	17.03%	-3.80%	31.26%	13.57%	-17.68%	19.06%	14.90%	-4.16%	23.30%	15.16%	-8.14%
2006	12	-0.17%	3.13%	3.30%	-3.05%	10.16%	13.21%	9.52%	11.86%	2.34%	-2.44%	6.53%	8.98%
2007	12	4.68%	-1.62%	-6.30%	14.60%	6.89%	-7.71%	6.80%	6.43%	-0.38%	2.68%	2.46%	-0.22%
2008	12	-24.54%	-16.51%	8.03%	-21.10%	-13.06%	8.04%	-20.08%	-20.67%	-0.59%	-19.68%	-23.20%	-3.52%
2009	12	-26.81%	-35.63%	-8.82%	-32.53%	-17.15%	15.38%	-35.19%	-25.98%	9.21%	-29.21%	-14.67%	14.54%
2010	12	20.97%	6.82%	-14.15%	37.62%	-13.13%	-50.75%	13.19%	1.67%	-11.52%	1.86%	-9.05%	-10.90%
2011	12	14.02%	25.30%	11.28%	-13.18%	11.55%	24.73%	10.77%	-1.45%	-12.21%	-1.90%	5.88%	7.77%
2012	12	18.28%	9.68%	-8.60%	3.24%	-2.37%	-5.61%	-2.07%	4.25%	6.32%	6.30%	10.52%	4.22%
2013	12	5.21%	21.62%	16.41%	7.35%	10.83%	3.48%	17.25%	15.93%	-1.31%	24.55%	13.69%	-10.86%
2014	9	12.62%	15.72%	3.10%	11.00%	19.14%	8.14%	19.37%	21.02%	1.64%	4.77%	3.84%	-0.93%
Geometric Mean		**3.28%**	**4.19%**	**0.91%**	**0.09%**	**2.41%**	**2.32%**	**1.87%**	**2.33%**	**0.45%**	**2.28%**	**2.68%**	**0.39%**
Relative Dif.				**28%**			**2654%**			**24%**			**17%**
Arithmetic Mean		**4.56%**	**5.73%**	**1.17%**	**2.44%**	**3.28%**	**0.84%**	**3.46%**	**3.52%**	**0.07%**	**3.67%**	**3.39%**	**-0.29%**
Relative Dif.				**26%**			**34%**			**2%**			**-8%**

Note: Returns Calculated on a Yearly Compounded Basis
Relative difference calculated as [GrowthBelow-GrowthAbove]/GrowthAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

RISK PERFORMANCE (ON GROWTH)

	Apartment Above	Apartment Below	Difference	Industrial Above	Industrial Below	Difference	Office Above	Office Below	Difference	Retail Above	Retail Below	Difference
St. Deviation	**15.01%**	**16.10%**	**1.09%**	**21.63%**	**11.18%**	**-10.45%**	**15.69%**	**13.39%**	**-2.30%**	**17.00%**	**11.90%**	**-5.10%**
Relative Dif.			**7%**			**-48%**			**-15%**			**-30%**
Min	80.91%	84.56%		70.39%	99.02%		77.61%	93.20%		93.59%	102.70%	
Max	150.37%	168.35%		135.29%	162.78%		152.65%	169.80%		180.12%	179.64%	
Range	69.45%	83.79%	14.34%	64.90%	63.75%	-1.15%	75.04%	76.60%	1.56%	86.53%	76.93%	-9.60%
Relative Dif.			21%			-2%			2%			-11%

Note: Relative difference calculated as [RiskBelow-RiskAbove]/RiskAbove. Positive relative difference means better performance of above-threshold properties. Negative relative difference means better performance of below-treshold properties.

SHARPE RATIO

	Apartment Above	Apartment Below	Difference	Industrial Above	Industrial Below	Difference	Office Above	Office Below	Difference	Retail Above	Retail Below	Difference
Total Return	10.04%	11.50%		7.98%	10.48%		9.63%	10.51%		9.98%	10.54%	
Risk Free Rate	1.43%	1.43%		1.43%	1.43%		1.43%	1.43%		1.43%	1.43%	
Risk Premium	8.61%	10.07%		6.55%	9.05%		8.20%	9.08%		8.55%	9.11%	
Sharpe Ratio	**0.57**	**0.63**	**0.05**	**0.30**	**0.81**	**0.51**	**0.52**	**0.68**	**0.16**	**0.50**	**0.77**	**0.26**
Relative Dif.			**9%**			**167%**			**30%**			**52%**

Note: Relative difference calculated as [SharpeRBelow-SharpeRAbove]/SharpeRAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

Table C-10. Results summary table for all property types. Cutoff $10 million. Filter: Non Major Metros
Source: Sacchini & Shipps

RESULTS SUMMARY TABLE.

Sorting Criteria Sub-Institutional Treshold: $5 million

Filter: Region - Midatlantic

CAP RATE PERFORMANCE

		Apartment Above		Apartment Below		Industrial Above		Industrial Below		Office Above		Office Below		Retail Above		Retail Below	
Year	Months	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs
2001	12	9.05%	13	8.55%	2	9.50%	3	9.78%	3	9.10%	44	10.00%	1	10.50%	1	8.23%	1
2002	12	7.77%	9	0.00%	-	10.80%	2	9.03%	3	8.99%	67	9.44%	1	8.93%	5	9.19%	2
2003	12	7.36%	12	9.68%	1	9.53%	10	0.00%	-	8.32%	53	10.00%	2	7.96%	7	8.14%	1
2004	12	7.18%	13	8.34%	3	8.67%	10	9.00%	1	7.50%	66	8.09%	3	7.97%	13	10.60%	1
2005	12	5.83%	28	7.09%	4	7.45%	11	7.17%	4	6.90%	70	6.92%	4	7.19%	19	8.42%	6
2006	12	6.00%	23	6.33%	5	6.82%	16	6.89%	6	6.64%	67	8.02%	8	7.38%	9	7.99%	10
2007	12	5.71%	30	6.94%	11	7.59%	8	8.22%	9	6.15%	48	7.05%	15	6.37%	21	6.91%	13
2008	12	6.59%	10	5.86%	4	7.74%	4	7.36%	5	6.86%	24	7.91%	5	7.46%	6	7.87%	5
2009	12	7.48%	10	7.78%	4	8.50%	1	0.00%	-	7.89%	10	8.50%	1	7.85%	3	8.94%	4
2010	12	6.29%	16	7.30%	1	7.95%	5	0.00%	-	7.33%	22	0.00%	-	8.02%	10	8.83%	3
2011	12	6.79%	18	6.58%	2	7.39%	11	0.00%	-	6.98%	27	9.10%	3	7.34%	13	7.42%	5
2012	12	6.10%	23	6.00%	2	6.56%	11	7.65%	4	6.20%	19	6.73%	3	7.04%	13	7.16%	5
2013	12	6.34%	18	7.98%	3	8.10%	5	6.78%	4	6.29%	14	6.40%	1	7.23%	15	8.32%	2
2014	9	6.60%	7	7.00%	1	6.87%	6	0.00%	-	6.87%	19	8.05%	1	6.58%	8	4.78%	2
Weigthed Average		**6.55%**	**230**	**7.12%**	**43**	**7.75%**	**103**	**7.79%**	**39**	**7.44%**	**550**	**7.74%**	**48**	**7.33%**	**143**	**7.77%**	**60**
Simple Average		**6.79%**		**7.34%**	**0.55%**	**8.10%**		**7.99%**	**-0.12%**	**7.29%**		**8.17%**	**0.88%**	**7.70%**		**8.06%**	**0.35%**
Relative Dif.					**8%**				**-1%**				**12%**				**5%**

Note: Relative difference calculated as [CapBelow-CapAbove]/CapAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

GROWTH PERFORMANCE

		Apartment Above	Apartment Below	Yearly	Industrial Above	Industrial Below	Yearly	Office Above	Office Below	Yearly	Retail Above	Retail Below	Yearly
Year	Month	Year Cap Return	Year Cap Return	Difference	Year Cap Return	Year Cap Return	Difference	Year Cap Return	Year Cap Return	Difference	Year Cap Return	Year Cap Return	Difference
2001	12	15.50%	24.92%	9.42%	32.46%	31.76%	-0.70%	0.22%	29.94%	29.72%	29.31%	-29.30%	-58.61%
2002	12	6.68%	-15.64%	-22.32%	1.52%	-15.22%	-16.74%	17.44%	13.14%	-4.30%	20.52%	25.79%	5.27%
2003	12	23.18%	37.47%	14.29%	16.05%	31.44%	15.39%	1.08%	-1.25%	-2.33%	12.08%	1.62%	-10.47%
2004	12	6.29%	-4.66%	-10.96%	-14.55%	24.59%	39.13%	12.69%	-2.63%	-15.32%	6.26%	54.08%	47.83%
2005	12	22.54%	68.96%	46.42%	21.59%	-7.08%	-28.67%	18.14%	31.09%	12.94%	44.63%	14.29%	-30.34%
2006	12	1.59%	7.72%	6.12%	7.71%	15.69%	7.98%	5.53%	13.50%	7.97%	-7.58%	-11.08%	-3.50%
2007	12	3.06%	-20.56%	-23.62%	-5.11%	-6.10%	-0.98%	10.68%	-8.03%	-18.71%	-1.16%	11.09%	12.25%
2008	12	-1.77%	-19.63%	-17.86%	6.49%	9.54%	3.05%	-18.84%	-5.15%	13.68%	-2.18%	-4.00%	-1.82%
2009	12	-26.00%	24.45%	50.45%	-29.80%	-18.70%	11.10%	-21.49%	-19.45%	2.05%	-36.88%	-14.70%	22.18%
2010	12	13.18%	-1.53%	-14.71%	-0.86%	-4.56%	-3.70%	37.69%	-14.43%	-52.12%	23.94%	4.65%	-19.29%
2011	12	25.59%	16.28%	-9.30%	28.60%	9.62%	-18.99%	-7.12%	40.89%	48.01%	9.71%	-14.69%	-24.40%
2012	12	2.07%	-16.27%	-18.34%	-16.22%	6.62%	22.83%	-14.76%	3.51%	18.27%	3.98%	3.50%	-0.48%
2013	12	5.42%	0.00%	-5.42%	-100.00%	-100.00%	0.00%	12.12%	-100.00%	-112.12%	-100.00%	-100.00%	0.00%
2014	9	9.09%	0.00%	-9.09%	n/a	n/a	0.00%	16.90%	n/a	0.00%	n/a	n/a	0.00%
Geometric Mean		**6.75%**	**-100.00%**	**0.00%**	**-100.00%**	**-100.00%**	**0.00%**	**3.57%**	**-100.00%**	**0.00%**	**-100.00%**	**-100.00%**	**0.00%**
Relative Dif.				**0%**			**0%**			**0%**			**0%**
Arithmetic Mean		**7.60%**	**7.25%**	**0.00%**	**-4.01%**	**-1.72%**	**0.00%**	**5.02%**	**-1.45%**	**0.00%**	**0.20%**	**-4.52%**	**0.00%**
Relative Dif.				**0%**			**0%**			**0%**			**0%**

Note: Returns Calculated on a Yearly Compounded Basis

Relative difference calculated as [GrowthBelow-GrowthAbove]/GrowthAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

RISK PERFORMANCE (ON GROWTH)

St. Deviation	**13.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**16.47%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**
Relative Dif.			**0%**			**0%**			**0%**			**0%**
Min	150.47%	0.00%		0.00%	0.00%		114.54%	0.00%		0.00%	0.00%	
Max	222.00%	0.00%		0.00%	0.00%		185.64%	0.00%		0.00%	0.00%	
Range	71.53%	0.00%	0.00%	0.00%	0.00%	0.00%	71.11%	0.00%	0.00%	0.00%	0.00%	0.00%
Relative Dif.			0%			0%			0%			0%

Note: Relative difference calculated as [RiskBelow-RiskAbove]/RiskAbove. Positive relative difference means better performance of above-threshold properties. Negative relative difference means better performance of below-treshold properties.

SHARPE RATIO

Total Return	13.55%	0.00%		0.00%	0.00%		10.86%	0.00%		0.00%	0.00%	
Risk Free Rate	1.43%	1.43%		1.43%	1.43%		1.43%	1.43%		1.43%	1.43%	
Risk Premium	12.12%	0.00%		0.00%	0.00%		9.43%	0.00%		0.00%	0.00%	
Sharpe Ratio	**0.93**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.57**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Relative Dif.			**0%**			**0%**			**0%**			**0%**

Note: Relative difference calculated as [SharpeRBelow-SharpeRAbove]/SharpeRAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

Table C-11. Results summary table for all property types. Cutoff $5 million. Filter: Region – Midatlantic

Source: Sacchini & Shipps

RESULTS SUMMARY TABLE.

Sorting Criteria Sub-Institutional Treshold: $10 million

Filter: Region - Midatlantic

CAP RATE PERFORMANCE

Year	Months	Apartment Above Avg. Cap	Apartment Above # Obs	Apartment Below Avg. Cap	Apartment Below # Obs	Industrial Above Avg. Cap	Industrial Above # Obs	Industrial Below Avg. Cap	Industrial Below # Obs
2001	12	9.00%	12	8.88%	3	9.67%	2	9.63%	4
2002	12	7.72%	8	8.10%	1	0.00%	-	9.74%	5
2003	12	7.30%	11	8.84%	2	9.94%	8	7.90%	2
2004	12	6.94%	11	8.40%	5	8.67%	7	8.77%	4
2005	12	5.79%	27	7.06%	5	7.26%	8	7.49%	7
2006	12	5.92%	17	6.28%	11	6.20%	7	7.13%	15
2007	12	5.62%	23	6.58%	18	7.72%	4	7.99%	13
2008	12	6.63%	5	6.24%	9	8.08%	2	7.37%	7
2009	12	7.45%	9	7.76%	5	0.00%	-	8.50%	1
2010	12	6.21%	15	7.40%	2	7.95%	5	0.00%	-
2011	12	6.53%	14	7.31%	6	6.27%	5	8.33%	6
2012	12	5.81%	17	6.70%	8	6.68%	8	7.06%	7
2013	12	6.10%	16	8.11%	5	7.90%	4	7.20%	5
2014	9	6.51%	6	7.05%	2	6.88%	5	6.78%	1
Weigthed Average		**6.45%**	**191**	**7.06%**	**82**	**7.67%**	**65**	**7.84%**	**77**
Simple Average		**6.68%**		**7.48%**	**0.80%**	**7.77%**		**7.99%**	**0.22%**
Relative Dif.					**12%**				**3%**

Year	Months	Office Above Avg. Cap	Office Above # Obs	Office Below Avg. Cap	Office Below # Obs	Retail Above Avg. Cap	Retail Above # Obs	Retail Below Avg. Cap	Retail Below # Obs
2001	12	9.05%	36	9.39%	9	0.00%	-	9.37%	2
2002	12	8.86%	54	9.54%	14	9.41%	3	8.70%	4
2003	12	8.20%	47	9.49%	8	8.34%	5	7.39%	3
2004	12	7.41%	56	7.98%	13	7.98%	8	8.39%	6
2005	12	6.85%	58	7.09%	16	7.28%	7	7.56%	18
2006	12	6.48%	61	8.11%	14	7.59%	7	7.76%	12
2007	12	5.68%	38	7.41%	25	6.13%	12	6.82%	22
2008	12	6.57%	19	7.94%	10	7.79%	3	7.59%	8
2009	12	7.84%	9	8.40%	2	0.00%	-	8.47%	7
2010	12	7.23%	18	7.80%	4	8.33%	3	8.17%	10
2011	12	6.95%	25	8.41%	5	7.30%	7	7.41%	11
2012	12	6.20%	19	6.73%	3	7.38%	6	6.92%	12
2013	12	6.29%	14	6.40%	1	7.29%	9	7.43%	8
2014	9	6.79%	16	7.46%	4	6.61%	3	6.05%	7
Weigthed Average		**7.29%**	**470**	**8.09%**	**128**	**7.41%**	**73**	**7.49%**	**130**
Simple Average		**7.17%**		**8.01%**	**0.84%**	**7.62%**		**7.72%**	**0.10%**
Relative Dif.					**12%**				**1%**

Note: Relative difference calculated as [CapBelow-CapAbove]/CapAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

GROWTH PERFORMANCE

Year	Month	Apartment Above Year Cap Return	Apartment Below Year Cap Return	Yearly Difference	Industrial Above Year Cap Return	Industrial Below Year Cap Return	Yearly Difference
2001	12	16.26%	26.47%	10.21%	10.73%	42.10%	31.37%
2002	12	5.37%	-11.50%	-16.87%	11.53%	-11.49%	-23.02%
2003	12	15.09%	61.71%	46.61%	8.78%	21.61%	12.83%
2004	12	14.25%	-16.08%	-30.33%	-19.23%	13.38%	32.61%
2005	12	20.44%	42.72%	22.28%	22.25%	3.35%	-18.90%
2006	12	-6.11%	20.36%	26.47%	10.70%	14.72%	4.02%
2007	12	17.77%	-24.90%	-42.68%	22.53%	-12.72%	-35.25%
2008	12	-9.64%	-1.21%	8.43%	-22.89%	15.90%	38.79%
2009	12	-26.19%	-0.48%	25.71%	-17.96%	-24.68%	-6.71%
2010	12	14.86%	-0.63%	-15.49%	-26.70%	13.09%	39.79%
2011	12	27.29%	17.74%	-9.54%	59.41%	-4.35%	-63.76%
2012	12	2.85%	-0.54%	-3.40%	-15.13%	4.75%	19.87%
2013	12	-3.17%	44.47%	47.63%	3.06%	0.26%	-2.80%
2014	9	3.06%	70.05%	66.99%	48.97%	-3.32%	-52.28%
Geometric Mean		**5.66%**	**12.12%**	**6.47%**	**3.33%**	**4.09%**	**0.76%**
Relative Dif.				**114%**			**23%**
Arithmetic Mean		**6.58%**	**16.30%**	**9.72%**	**6.86%**	**5.19%**	**-1.67%**
Relative Dif.				**148%**			**-24%**

Year	Month	Office Above Year Cap Return	Office Below Year Cap Return	Yearly Difference	Retail Above Year Cap Return	Retail Below Year Cap Return	Yearly Difference
2001	12	3.66%	-16.28%	-19.94%	10.81%	14.79%	3.98%
2002	12	13.17%	34.15%	20.98%	20.39%	30.01%	9.62%
2003	12	2.74%	-1.46%	-4.21%	19.89%	-0.06%	-19.95%
2004	12	13.06%	-0.19%	-13.25%	-2.14%	22.83%	24.96%
2005	12	18.31%	23.38%	5.07%	65.67%	28.25%	-37.42%
2006	12	2.89%	12.64%	9.75%	-23.15%	-4.66%	18.49%
2007	12	21.40%	-4.62%	-26.02%	4.79%	3.69%	-1.10%
2008	12	-31.78%	-1.33%	30.45%	20.24%	-6.93%	-27.17%
2009	12	-12.35%	-19.13%	-6.78%	-58.69%	-15.77%	42.92%
2010	12	33.38%	2.71%	-30.67%	58.98%	5.20%	-53.79%
2011	12	-3.34%	2.78%	6.12%	6.65%	-6.14%	-12.79%
2012	12	-14.38%	-2.62%	11.75%	-5.29%	3.94%	9.24%
2013	12	-4.59%	20.34%	24.93%	-100.00%	-100.00%	0.00%
2014	9	55.93%	-11.26%	-67.19%	n/a	n/a	0.00%
Geometric Mean		**4.24%**	**2.05%**	**-2.19%**	**-100.00%**	**-100.00%**	**0.00%**
Relative Dif.				**-52%**			**0%**
Arithmetic Mean		**7.01%**	**2.79%**	**-4.21%**	**1.40%**	**-1.91%**	**0.00%**
Relative Dif.				**-60%**			**0%**

Note: Returns Calculated on a Yearly Compounded Basis

Relative difference calculated as [GrowthBelow-GrowthAbove]/GrowthAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

RISK PERFORMANCE (ON GROWTH)

	Apartment Above	Apartment Below	Difference	Industrial Above	Industrial Below	Difference	Office Above	Office Below	Difference	Retail Above	Retail Below	Difference
St. Deviation	**14.31%**	**29.41%**	**15.10%**	**26.13%**	**16.76%**	**-9.38%**	**21.70%**	**15.15%**	**-6.56%**	**0.00%**	**0.00%**	**0.00%**
Relative Dif.			**106%**			**-36%**			**-30%**			**0%**
Min	141.06%	188.20%		75.89%	154.37%		111.74%	111.15%		0.00%	0.00%	
Max	228.95%	272.95%		188.99%	208.01%		201.39%	161.44%		0.00%	0.00%	
Range	87.89%	84.75%	-3.14%	113.10%	53.64%	-59.46%	89.65%	50.29%	-39.35%	0.00%	0.00%	0.00%
Relative Dif.			-4%			-53%			-44%			0%

Note: Relative difference calculated as [RiskBelow-RiskAbove]/RiskAbove. Positive relative difference means better performance of above-threshold properties. Negative relative difference means better performance of below-treshold properties.

SHARPE RATIO

	Apartment Above	Apartment Below	Difference	Industrial Above	Industrial Below	Difference	Office Above	Office Below	Difference	Retail Above	Retail Below	Difference
Total Return	12.34%	19.60%		11.09%	12.08%		11.41%	10.06%		0.00%	0.00%	
Risk Free Rate	1.43%	1.43%		1.43%	1.43%		1.43%	1.43%		1.43%	1.43%	
Risk Premium	10.91%	18.17%		9.67%	10.65%		9.98%	8.63%		0.00%	0.00%	
Sharpe Ratio	**0.76**	**0.62**	**-0.14**	**0.37**	**0.64**	**0.27**	**0.46**	**0.57**	**0.11**	**0.00**	**0.00**	**0.00**
Relative Dif.			**-19%**			**72%**			**24%**			**0%**

Note: Relative difference calculated as [SharpeRBelow-SharpeRAbove]/SharpeRAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

Table C-12. Results summary table for all property types. Cutoff $10 million. Filter: Region – Midatlantic

Source: Sacchini & Shipps

RESULTS SUMMARY TABLE.
Sorting Criteria Sub-Institutional Treshold: $5 million
Filter: Region - Midwest

CAP RATE PERFORMANCE

Year	Months	Apartment Above Avg. Cap	# Obs	Apartment Below Avg. Cap	# Obs	Industrial Above Avg. Cap	# Obs	Industrial Below Avg. Cap	# Obs	Office Above Avg. Cap	# Obs	Office Below Avg. Cap	# Obs	Retail Above Avg. Cap	# Obs	Retail Below Avg. Cap	# Obs
2001	12	8.91%	14	12.20%	1	10.00%	3	9.77%	1	9.99%	14	0.00%	-	9.32%	4	0.00%	-
2002	12	8.58%	10	0.00%	-	10.39%	5	8.52%	1	9.36%	35	0.00%	-	8.47%	5	0.00%	-
2003	12	8.03%	20	9.18%	1	9.16%	5	0.00%	-	8.33%	26	9.00%	2	8.28%	18	7.41%	1
2004	12	7.59%	28	6.57%	4	8.24%	11	9.26%	3	8.34%	22	8.75%	1	8.07%	26	7.73%	4
2005	12	6.85%	23	7.60%	13	7.83%	19	8.70%	12	7.59%	45	8.40%	12	7.38%	40	7.37%	19
2006	12	7.10%	31	7.74%	24	7.67%	23	7.82%	14	6.86%	53	7.53%	7	7.20%	31	7.22%	13
2007	12	7.01%	32	7.38%	16	7.27%	23	7.43%	4	7.02%	36	7.48%	5	7.06%	32	7.26%	22
2008	12	7.66%	33	7.61%	10	8.05%	12	8.66%	10	7.92%	17	8.78%	8	7.25%	15	7.55%	15
2009	12	7.04%	8	8.08%	4	8.35%	3	10.75%	1	9.57%	5	8.70%	3	7.88%	7	7.44%	4
2010	12	7.25%	15	9.22%	2	8.75%	6	8.65%	2	8.16%	7	8.00%	1	7.91%	11	8.75%	3
2011	12	6.76%	20	7.28%	3	8.66%	9	8.30%	1	7.70%	10	8.50%	2	8.18%	18	7.99%	9
2012	12	6.83%	23	8.91%	5	7.90%	10	8.27%	3	7.00%	13	8.10%	2	7.27%	13	7.92%	18
2013	12	6.57%	23	7.38%	5	7.53%	5	9.20%	2	7.44%	21	8.97%	2	7.79%	20	7.13%	12
2014	9	7.04%	15	5.81%	1	6.93%	11	7.35%	1	6.81%	10	7.96%	4	6.79%	16	7.42%	18
Weigthed Average		**7.30%**	**295**	**7.71%**	**89**	**7.97%**	**145**	**8.42%**	**55**	**7.83%**	**314**	**8.26%**	**49**	**7.58%**	**256**	**7.50%**	**138**
Simple Average		**7.37%**		**8.07%**	**0.70%**	**8.34%**		**8.67%**	**0.33%**	**8.01%**		**8.35%**	**0.34%**	**7.77%**		**7.60%**	**-0.17%**
Relative Dif.					**9%**				**4%**				**4%**				**-2%**

Note: Relative difference calculated as [CapBelow-CapAbove]/CapAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

GROWTH PERFORMANCE

Year	Month	Apartment Above Year Cap Return	Apartment Below Year Cap Return	Yearly Difference	Industrial Above Year Cap Return	Industrial Below Year Cap Return	Yearly Difference	Office Above Year Cap Return	Office Below Year Cap Return	Yearly Difference	Retail Above Year Cap Return	Retail Below Year Cap Return	Yearly Difference
2001	12	2.31%	34.42%	32.10%	19.99%	-11.13%	-31.12%	6.76%	11.60%	4.85%	-26.75%	-45.11%	-18.36%
2002	12	-0.45%	7.73%	8.18%	-5.00%	17.03%	22.03%	-7.94%	-2.00%	5.94%	23.09%	20.07%	-3.02%
2003	12	22.06%	-17.19%	-39.25%	-8.38%	7.49%	15.88%	1.24%	31.02%	29.78%	-8.84%	14.63%	23.47%
2004	12	-13.35%	44.03%	57.38%	22.75%	-0.04%	-22.79%	5.85%	-3.22%	-9.07%	31.57%	1.81%	-29.76%
2005	12	22.04%	11.95%	-10.09%	-5.14%	8.71%	13.85%	22.55%	5.09%	-17.46%	10.12%	19.84%	9.72%
2006	12	-5.33%	-5.42%	-0.10%	4.86%	13.33%	8.47%	2.69%	1.90%	-0.79%	-3.32%	-0.59%	2.73%
2007	12	9.17%	7.33%	-1.83%	21.30%	-3.22%	-24.51%	16.97%	17.72%	0.75%	20.61%	24.42%	3.81%
2008	12	-24.72%	-19.25%	5.47%	-27.07%	5.58%	32.65%	-1.92%	-16.49%	-14.56%	-43.97%	-28.35%	15.62%
2009	12	-21.16%	-36.13%	-14.97%	-18.56%	-32.10%	-13.54%	-56.06%	-23.71%	32.34%	-15.09%	7.19%	22.27%
2010	12	4.42%	-1.32%	-5.74%	6.16%	1.93%	-4.22%	54.45%	29.51%	-24.94%	13.65%	-31.78%	-45.43%
2011	12	45.01%	51.19%	6.18%	11.38%	23.05%	11.67%	-12.38%	-38.00%	-25.62%	-1.98%	33.07%	35.05%
2012	12	5.55%	-10.47%	-16.02%	-6.85%	-17.71%	-10.86%	-19.93%	94.15%	114.08%	10.58%	-12.77%	-23.35%
2013	12	-2.74%	0.00%	2.74%	24.88%	8.34%	-16.53%	64.63%	-33.99%	-98.63%	-0.55%	4.75%	5.30%
2014	9	30.17%	0.00%	-30.17%	-21.03%	17.39%	38.42%	7.33%	13.87%	6.55%	27.14%	32.89%	5.75%
Geometric Mean		**3.13%**	**-100.00%**	**0.00%**	**0.41%**	**1.36%**	**0.95%**	**1.68%**	**1.72%**	**0.04%**	**-0.23%**	**-0.77%**	**-0.54%**
Relative Dif.				**0%**			**229%**			**2%**			**239%**
Arithmetic Mean		**5.21%**	**4.77%**	**0.00%**	**1.38%**	**2.76%**	**1.38%**	**6.02%**	**6.25%**	**0.23%**	**2.59%**	**2.86%**	**0.27%**
Relative Dif.				**0%**			**101%**			**4%**			**10%**

Note: Returns Calculated on a Yearly Compounded Basis
Relative difference calculated as [GrowthBelow-GrowthAbove]/GrowthAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

RISK PERFORMANCE (ON GROWTH)

	Apartment Above	Apartment Below	Difference	Industrial Above	Industrial Below	Difference	Office Above	Office Below	Difference	Retail Above	Retail Below	Difference
St. Deviation	**19.50%**	**0.00%**	**0.00%**	**17.19%**	**14.96%**	**-2.23%**	**29.53%**	**33.13%**	**3.60%**	**21.43%**	**24.43%**	**3.00%**
Relative Dif.			**0%**			**-13%**			**12%**			**14%**
Min	72.25%	0.00%		84.46%	87.49%		66.70%	88.40%		63.82%	57.36%	
Max	137.14%	0.00%		158.33%	142.81%		155.89%	180.21%		143.61%	114.00%	
Range	64.89%	0.00%	0.00%	73.87%	55.31%	-18.55%	89.19%	91.81%	2.62%	79.79%	56.64%	-23.15%
Relative Dif.			0%			-25%			3%			-29%

Note: Relative difference calculated as [RiskBelow-RiskAbove]/RiskAbove. Positive relative difference means better performance of above-threshold properties. Negative relative difference means better performance of below-treshold properties.

SHARPE RATIO

	Apartment Above	Apartment Below	Difference	Industrial Above	Industrial Below	Difference	Office Above	Office Below	Difference	Retail Above	Retail Below	Difference
Total Return	10.50%	0.00%		8.75%	10.03%		9.68%	10.06%		7.55%	6.83%	
Risk Free Rate	1.43%	1.43%		1.43%	1.43%		1.43%	1.43%		1.43%	1.43%	
Risk Premium	9.07%	0.00%		7.32%	8.61%		8.26%	8.64%		6.12%	5.40%	
Sharpe Ratio	**0.47**	**0.00**	**0.00**	**0.43**	**0.58**	**0.15**	**0.28**	**0.26**	**-0.02**	**0.29**	**0.22**	**-0.06**
Relative Dif.			**0%**			**35%**			**-7%**			**-23%**

Note: Relative difference calculated as [SharpeRBelow-SharpeRAbove]/SharpeRAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

Table C-13. Results summary table for all property types. Cutoff $5 million. Filter: Region – Midwest
Source: Sacchini & Shipps

RESULTS SUMMARY TABLE.

Sorting Criteria Sub-Institutional Treshold: $10 million

Filter: Region - Midwest

CAP RATE PERFORMANCE

		Apartment Above		Apartment Below		Industrial Above		Industrial Below		Office Above		Office Below		Retail Above		Retail Below	
Year	Months	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs
2001	12	8.60%	10	10.17%	5	9.46%	1	10.10%	3	10.00%	11	9.97%	3	8.99%	3	10.30%	1
2002	12	8.99%	6	7.97%	4	10.24%	4	9.76%	2	9.14%	28	10.27%	7	8.58%	2	8.39%	3
2003	12	7.92%	14	8.42%	7	9.40%	4	8.20%	1	8.28%	24	8.93%	4	8.83%	12	7.20%	7
2004	12	7.39%	24	7.69%	8	8.18%	9	8.96%	5	8.32%	21	8.83%	2	8.10%	19	7.88%	11
2005	12	6.79%	18	7.44%	18	7.64%	12	8.50%	19	7.41%	34	8.28%	23	7.08%	26	7.61%	33
2006	12	6.82%	17	7.64%	38	7.01%	13	8.12%	24	6.79%	48	7.53%	12	6.82%	16	7.42%	28
2007	12	6.45%	19	7.58%	29	6.44%	14	8.21%	13	6.59%	25	7.84%	16	7.03%	13	7.18%	41
2008	12	6.97%	19	8.18%	24	7.75%	4	8.46%	18	7.75%	7	8.37%	18	7.28%	12	7.47%	18
2009	12	7.11%	5	7.59%	7	8.86%	2	9.05%	2	9.22%	4	9.28%	4	8.00%	1	7.70%	10
2010	12	6.99%	11	8.38%	6	8.72%	4	8.73%	4	8.02%	6	8.50%	2	8.44%	4	7.95%	10
2011	12	6.64%	15	7.19%	8	8.62%	7	8.63%	3	7.03%	7	8.96%	5	8.55%	6	7.99%	21
2012	12	6.69%	18	8.12%	10	8.17%	7	7.77%	6	6.82%	12	8.46%	3	7.38%	5	7.70%	26
2013	12	6.29%	17	7.36%	11	8.12%	4	7.86%	3	7.43%	19	8.27%	4	8.31%	8	7.28%	24
2014	9	6.99%	14	6.74%	2	7.03%	9	6.78%	3	6.47%	8	8.03%	6	6.37%	8	7.36%	26
Weigthed Average		**7.05%**	**207**	**7.80%**	**177**	**7.78%**	**94**	**8.37%**	**106**	**7.66%**	**254**	**8.42%**	**109**	**7.58%**	**135**	**7.53%**	**259**
Simple Average		**7.19%**		**7.89%**	**0.70%**	**8.26%**		**8.51%**	**0.25%**	**7.80%**		**8.68%**	**0.88%**	**7.84%**		**7.82%**	**-0.02%**
Relative Dif.					**10%**				**3%**				**11%**				**0%**

Note: Relative difference calculated as [CapBelow-CapAbove]/CapAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

GROWTH PERFORMANCE

		Apartment Above	Apartment Below	Yearly	Industrial Above	Industrial Below	Yearly	Office Above	Office Below	Yearly	Retail Above	Retail Below	Yearly
Year	Month	Year Cap Return	Year Cap Return	Difference	Year Cap Return	Year Cap Return	Difference	Year Cap Return	Year Cap Return	Difference	Year Cap Return	Year Cap Return	Difference
2001	12	3.81%	17.19%	13.38%	34.53%	-6.19%	-40.72%	4.85%	10.80%	5.95%	-61.61%	-21.11%	40.50%
2002	12	2.49%	8.21%	5.72%	-23.94%	17.92%	41.86%	-3.05%	-0.72%	2.33%	18.73%	20.28%	1.55%
2003	12	12.56%	-3.43%	-15.99%	-9.66%	2.71%	12.38%	2.48%	2.03%	-0.45%	0.10%	3.98%	3.88%
2004	12	-10.88%	23.35%	34.22%	15.94%	6.46%	-9.47%	2.10%	6.46%	4.36%	36.56%	10.45%	-26.11%
2005	12	21.74%	16.61%	-5.12%	14.75%	3.12%	-11.63%	26.26%	14.36%	-11.89%	8.12%	14.99%	6.87%
2006	12	-9.36%	-3.30%	6.06%	-10.82%	12.77%	23.58%	-0.87%	6.18%	7.06%	4.80%	-5.23%	-10.03%
2007	12	17.99%	1.95%	-16.05%	22.22%	4.54%	-17.68%	17.21%	16.62%	-0.59%	3.52%	32.00%	28.48%
2008	12	-33.15%	-14.41%	18.73%	-9.23%	-9.62%	-0.40%	-11.35%	-9.96%	1.39%	-32.39%	-39.73%	-7.34%
2009	12	-14.20%	-34.31%	-20.11%	-36.46%	-25.30%	11.15%	-54.19%	-42.97%	11.23%	-42.84%	3.36%	46.21%
2010	12	15.82%	-10.57%	-26.39%	-1.12%	8.07%	9.19%	55.84%	54.17%	-1.67%	45.75%	-15.26%	-61.01%
2011	12	27.56%	73.21%	45.65%	58.20%	2.82%	-55.38%	0.23%	-37.96%	-38.19%	-20.49%	19.08%	39.57%
2012	12	11.12%	-8.06%	-19.19%	-32.18%	-1.97%	30.21%	-24.21%	41.58%	65.78%	31.17%	-5.81%	-36.98%
2013	12	-0.72%	5.05%	5.77%	35.27%	10.07%	-25.20%	66.14%	-2.80%	-68.94%	-9.43%	1.28%	10.71%
2014	9	22.70%	30.13%	7.44%	1.91%	-6.27%	-8.19%	1.59%	21.23%	19.65%	84.58%	20.18%	-64.40%
Geometric Mean		**3.07%**	**4.28%**	**1.22%**	**0.86%**	**0.92%**	**0.05%**	**1.70%**	**2.05%**	**0.35%**	**-3.46%**	**0.55%**	**4.02%**
Relative Dif.				**40%**			**6%**			**20%**			**-116%**
Arithmetic Mean		**4.82%**	**7.26%**	**2.44%**	**4.24%**	**1.37%**	**-2.88%**	**5.93%**	**5.65%**	**-0.29%**	**4.75%**	**2.75%**	**-2.01%**
Relative Dif.				**51%**			**-68%**			**-5%**			**-42%**

Note: Returns Calculated on a Yearly Compounded Basis

Relative difference calculated as [GrowthBelow-GrowthAbove]/GrowthAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

RISK PERFORMANCE (ON GROWTH)

St. Deviation	**17.11%**	**25.31%**	**8.20%**	**27.42%**	**10.84%**	**-16.59%**	**29.98%**	**25.94%**	**-4.04%**	**38.11%**	**19.18%**	**-18.93%**
Relative Dif.			**48%**			**-60%**			**-13%**			**-50%**
Min	65.23%	78.86%		66.67%	98.27%		62.78%	83.11%		27.59%	76.34%	
Max	139.75%	180.18%		175.54%	150.30%		156.02%	172.28%		88.31%	158.25%	
Range	74.52%	101.32%	26.80%	108.87%	52.03%	-56.84%	93.25%	89.17%	-4.08%	60.72%	81.92%	21.20%
Relative Dif.			36%			-52%			-4%			35%

Note: Relative difference calculated as [RiskBelow-RiskAbove]/RiskAbove. Positive relative difference means better performance of above-threshold properties. Negative relative difference means better performance of below-treshold properties.

SHARPE RATIO

Total Return	10.25%	12.17%		9.12%	9.43%		9.50%	10.73%		4.37%	8.37%	
Risk Free Rate	1.43%	1.43%		1.43%	1.43%		1.43%	1.43%		1.43%	1.43%	
Risk Premium	8.83%	10.74%		7.70%	8.00%		8.08%	9.30%		2.95%	6.94%	
Sharpe Ratio	**0.52**	**0.42**	**-0.09**	**0.28**	**0.74**	**0.46**	**0.27**	**0.36**	**0.09**	**0.08**	**0.36**	**0.28**
Relative Dif.			**-18%**			**163%**			**33%**			**368%**

Note: Relative difference calculated as [SharpeRBelow-SharpeRAbove]/SharpeRAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

Table C-14. Results summary table for all property types. Cutoff $10 million. Filter: Region – Midwest

Source: Sacchini & Shipps

RESULTS SUMMARY TABLE.
Sorting Criteria Sub-Institutional Treshold: $5 million
Filter: Region - Northeast

CAP RATE PERFORMANCE

Year	Months	Apartment Above Avg. Cap	Apartment Above # Obs	Apartment Below Avg. Cap	Apartment Below # Obs	Industrial Above Avg. Cap	Industrial Above # Obs	Industrial Below Avg. Cap	Industrial Below # Obs
2001	12	9.04%	8	9.60%	1	10.03%	4	9.80%	1
2002	12	7.47%	8	9.50%	1	9.75%	2	9.80%	1
2003	12	6.99%	11	7.19%	2	8.52%	5	13.00%	1
2004	12	6.29%	17	6.58%	6	8.27%	3	8.61%	2
2005	12	4.71%	19	7.14%	17	6.88%	16	8.58%	11
2006	12	5.07%	35	6.22%	34	7.25%	5	5.77%	4
2007	12	5.41%	32	6.35%	36	6.75%	12	7.08%	7
2008	12	5.75%	21	6.22%	19	8.08%	4	8.33%	3
2009	12	6.94%	9	6.92%	19	9.81%	2	8.40%	2
2010	12	6.22%	17	6.89%	15	8.41%	3	9.30%	2
2011	12	5.97%	18	6.51%	11	8.00%	1	8.55%	2
2012	12	5.86%	21	6.57%	32	7.24%	7	8.58%	3
2013	12	4.93%	38	5.60%	24	7.43%	9	6.50%	1
2014	9	4.99%	26	5.59%	24	6.93%	5	0.00%	-
Weigthed Average		5.69%	280	6.38%	241	7.59%	78	8.16%	40
Simple Average		6.12%		6.92%	0.80%	8.10%		8.64%	0.54%
Relative Dif.					13%				7%

Year	Months	Office Above Avg. Cap	Office Above # Obs	Office Below Avg. Cap	Office Below # Obs	Retail Above Avg. Cap	Retail Above # Obs	Retail Below Avg. Cap	Retail Below # Obs
2001	12	9.20%	40	8.41%	5	9.89%	6	9.50%	2
2002	12	8.72%	35	8.49%	2	8.82%	10	7.87%	3
2003	12	8.36%	33	8.88%	2	8.27%	16	7.95%	3
2004	12	7.70%	61	8.30%	4	7.49%	17	7.69%	4
2005	12	6.68%	69	7.06%	5	6.60%	24	8.10%	6
2006	12	5.99%	69	7.14%	10	5.93%	24	6.63%	11
2007	12	5.45%	74	7.42%	12	6.42%	28	6.53%	14
2008	12	5.90%	28	8.80%	4	6.08%	10	7.05%	9
2009	12	7.64%	10	8.06%	4	6.87%	11	7.18%	3
2010	12	6.30%	23	6.57%	3	7.76%	9	8.51%	8
2011	12	6.21%	32	8.40%	2	7.64%	9	8.37%	5
2012	12	6.08%	36	0.00%	-	7.27%	16	7.48%	13
2013	12	5.76%	25	4.34%	1	6.34%	16	7.67%	6
2014	9	5.45%	24	6.91%	1	6.30%	18	7.01%	7
Weigthed Average		6.75%	559	7.65%	55	6.98%	214	7.42%	94
Simple Average		6.82%		7.60%	0.78%	7.26%		7.68%	0.42%
Relative Dif.					11%				6%

Note: Relative difference calculated as [CapBelow-CapAbove]/CapAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

GROWTH PERFORMANCE

Year	Month	Apartment Above Year Cap Return	Apartment Below Year Cap Return	Yearly Difference	Industrial Above Year Cap Return	Industrial Below Year Cap Return	Yearly Difference	Office Above Year Cap Return	Office Below Year Cap Return	Yearly Difference	Retail Above Year Cap Return	Retail Below Year Cap Return	Yearly Difference
2001	12	-6.02%	25.20%	31.22%	-17.82%	18.32%	36.14%	0.61%	-25.80%	-26.41%	-5.88%	21.94%	27.82%
2002	12	26.04%	25.17%	-0.87%	10.36%	-22.96%	-33.32%	5.54%	32.05%	26.51%	5.78%	-10.33%	-16.10%
2003	12	3.34%	22.86%	19.51%	3.18%	33.23%	30.05%	9.47%	-3.42%	-12.89%	27.19%	22.28%	-4.91%
2004	12	13.53%	5.50%	-8.03%	2.18%	12.72%	10.54%	6.98%	26.61%	19.63%	-3.18%	8.15%	11.33%
2005	12	10.99%	32.01%	21.02%	18.90%	1.13%	-17.77%	15.01%	20.69%	5.68%	8.31%	41.76%	33.45%
2006	12	7.41%	-6.22%	-13.63%	15.83%	12.98%	-2.85%	16.71%	-11.55%	-28.26%	7.73%	6.54%	-1.19%
2007	12	18.92%	22.05%	3.14%	-8.18%	20.88%	29.07%	18.69%	20.76%	2.07%	32.78%	8.14%	-24.64%
2008	12	-15.82%	-9.79%	6.03%	4.53%	-37.83%	-42.35%	-14.07%	-22.58%	-8.51%	-29.79%	-29.61%	0.18%
2009	12	-10.78%	-10.89%	-0.10%	-31.07%	21.30%	52.37%	-49.55%	-12.71%	36.83%	-14.68%	-11.07%	3.61%
2010	12	4.87%	5.92%	1.05%	12.95%	-8.41%	-21.37%	59.76%	23.69%	-36.07%	25.45%	45.85%	20.40%
2011	12	17.64%	14.57%	-3.07%	-3.89%	29.23%	33.12%	12.59%	12.77%	0.18%	8.75%	-16.19%	-24.93%
2012	12	13.51%	19.56%	6.04%	27.94%	1.54%	-26.40%	8.15%	-3.48%	-11.63%	-0.56%	17.96%	18.52%
2013	12	12.26%	16.45%	4.19%	-19.89%	3.50%	23.39%	20.80%	-100.00%	-120.80%	16.67%	-100.00%	-116.67%
2014	9	21.58%	26.69%	5.10%	10.95%	28.55%	17.60%	1.22%	n/a	0.00%	-5.57%	n/a	0.00%
Geometric Mean		7.47%	12.38%	4.91%	0.34%	5.69%	5.35%	5.31%	-100.00%	0.00%	4.04%	-100.00%	0.00%
Relative Dif.				66%			1567%			0%			0%
Arithmetic Mean		8.39%	13.51%	5.11%	1.86%	8.16%	6.30%	8.00%	-3.31%	0.00%	5.21%	0.42%	0.00%
Relative Dif.				61%			339%			0%			0%

Note: Returns Calculated on a Yearly Compounded Basis
Relative difference calculated as [GrowthBelow-GrowthAbove]/GrowthAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

RISK PERFORMANCE (ON GROWTH)

	Apartment Above	Apartment Below	Difference	Industrial Above	Industrial Below	Difference	Office Above	Office Below	Difference	Retail Above	Retail Below	Difference
St. Deviation	12.27%	14.26%	1.99%	16.48%	20.46%	3.98%	23.22%	0.00%	0.00%	17.04%	0.00%	0.00%
Relative Dif.			16%			24%			0%			0%
Min	146.31%	243.59%		83.98%	111.50%		85.54%	0.00%		112.89%	0.00%	
Max	197.01%	311.98%		131.70%	189.07%		204.19%	0.00%		189.92%	0.00%	
Range	50.70%	68.39%	17.69%	47.72%	77.57%	29.85%	118.65%	0.00%	0.00%	77.02%	0.00%	0.00%
Relative Dif.			35%			63%			0%			0%

Note: Relative difference calculated as [RiskBelow-RiskAbove]/RiskAbove. Positive relative difference means better performance of above-threshold properties. Negative relative difference means better performance of below-treshold properties.

SHARPE RATIO

	Apartment Above	Apartment Below	Difference	Industrial Above	Industrial Below	Difference	Office Above	Office Below	Difference	Retail Above	Retail Below	Difference
Total Return	13.59%	19.30%		8.44%	14.33%		12.13%	0.00%		11.31%	0.00%	
Risk Free Rate	1.43%	1.43%		1.43%	1.43%		1.43%	1.43%		1.43%	1.43%	
Risk Premium	12.16%	17.88%		7.01%	12.91%		10.70%	0.00%		9.88%	0.00%	
Sharpe Ratio	0.99	1.25	0.26	0.43	0.63	0.21	0.46	0.00	0.00	0.58	0.00	0.00
Relative Dif.			26%			48%			0%			0%

Note: Relative difference calculated as [SharpeRBelow-SharpeRAbove]/SharpeRAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

Table C-15. Results summary table for all property types. Cutoff $5 million. Filter: Region – Northeast
Source: Sacchini & Shipps

RESULTS SUMMARY TABLE.

Sorting Criteria Sub-Institutional Treshold: $10 million

Filter: Region - Northeast

CAP RATE PERFORMANCE

		Apartment Above		Apartment Below		Industrial Above		Industrial Below		Office Above		Office Below		Retail Above		Retail Below	
Year	Months	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs
2001	12	8.98%	7	9.55%	2	0.00%	-	9.99%	5	8.79%	29	9.68%	16	9.89%	6	9.50%	2
2002	12	6.44%	5	9.26%	4	0.00%	-	9.77%	3	8.64%	30	9.02%	7	8.80%	8	8.28%	5
2003	12	7.00%	9	7.08%	4	8.51%	4	10.78%	2	8.37%	28	8.47%	7	7.99%	12	8.63%	7
2004	12	6.29%	9	6.42%	14	7.31%	1	8.68%	4	7.64%	56	8.36%	9	7.67%	11	7.38%	10
2005	12	4.66%	15	6.71%	21	6.65%	10	8.11%	17	6.60%	57	7.02%	17	6.84%	16	6.97%	14
2006	12	4.58%	17	5.98%	52	7.25%	5	5.77%	4	5.86%	58	6.90%	21	5.85%	14	6.36%	21
2007	12	4.96%	16	6.20%	52	7.11%	8	6.70%	11	5.23%	61	6.92%	25	6.17%	16	6.63%	26
2008	12	5.42%	10	6.16%	30	7.50%	1	8.30%	6	5.61%	25	8.60%	7	6.15%	5	6.68%	14
2009	12	6.80%	7	6.97%	21	0.00%	-	9.11%	4	7.64%	10	8.06%	4	6.82%	9	7.17%	5
2010	12	6.12%	11	6.75%	21	8.41%	3	9.30%	2	6.32%	20	6.34%	6	8.32%	3	8.06%	14
2011	12	5.99%	12	6.31%	17	8.00%	1	8.55%	2	6.13%	29	7.56%	5	7.67%	4	7.99%	10
2012	12	5.72%	10	6.42%	43	6.84%	6	8.84%	4	5.86%	33	8.53%	3	6.71%	6	7.54%	23
2013	12	4.84%	19	5.35%	43	7.89%	6	6.51%	4	5.62%	22	6.21%	4	6.47%	12	6.97%	10
2014	9	4.97%	11	5.37%	39	7.67%	3	5.83%	2	5.25%	22	7.41%	3	6.12%	11	6.79%	14
Weigthed Average		5.61%	158	6.18%	363	7.36%	48	8.07%	70	6.59%	480	7.69%	134	7.01%	133	7.19%	175
Simple Average		5.91%		6.75%	0.84%	7.56%		8.30%	0.74%	6.68%		7.79%	1.11%	7.25%		7.50%	0.25%
Relative Dif.					14%				10%				17%				3%

Note: Relative difference calculated as [CapBelow-CapAbove]/CapAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

GROWTH PERFORMANCE

		Apartment Above	Apartment Below	Yearly	Industrial Above	Industrial Below	Yearly	Office Above	Office Below	Yearly	Retail Above	Retail Below	Yearly
Year	Month	Year Cap Return	Year Cap Return	Difference	Year Cap Return	Year Cap Return	Difference	Year Cap Return	Year Cap Return	Difference	Year Cap Return	Year Cap Return	Difference
2001	12	6.29%	4.31%	-1.99%	-36.85%	13.26%	50.12%	3.39%	-20.94%	-24.34%	35.56%	-2.27%	-37.83%
2002	12	28.61%	20.42%	-8.19%	8.57%	-14.97%	-23.54%	-1.86%	40.80%	42.66%	-2.06%	1.65%	3.71%
2003	12	6.08%	22.92%	16.85%	6.70%	21.88%	15.18%	11.28%	-7.14%	-18.41%	31.70%	22.89%	-8.81%
2004	12	0.79%	7.38%	6.59%	-22.54%	11.73%	34.27%	9.80%	14.50%	4.70%	1.31%	3.85%	2.54%
2005	12	30.26%	24.41%	-5.85%	50.06%	5.92%	-44.14%	6.65%	33.07%	26.42%	1.66%	35.77%	34.11%
2006	12	-7.17%	-0.78%	6.39%	6.96%	12.65%	5.69%	23.75%	-9.23%	-32.98%	6.89%	1.52%	-5.38%
2007	12	15.02%	23.25%	8.23%	-5.26%	10.05%	15.31%	17.01%	22.55%	5.54%	45.22%	15.83%	-29.39%
2008	12	-18.58%	-12.69%	5.89%	15.00%	-24.92%	-39.92%	-18.13%	-14.59%	3.54%	-35.35%	-26.08%	9.26%
2009	12	-7.17%	-10.82%	-3.66%	-40.29%	-3.23%	37.06%	-46.36%	-34.88%	11.48%	-10.97%	-12.04%	-1.06%
2010	12	4.47%	5.86%	1.39%	12.08%	4.67%	-7.41%	43.95%	53.21%	9.25%	40.18%	22.71%	-17.47%
2011	12	22.41%	15.18%	-7.22%	2.20%	11.78%	9.58%	25.77%	-1.01%	-26.78%	-4.97%	7.09%	12.06%
2012	12	2.90%	18.87%	15.98%	36.41%	6.47%	-29.93%	5.08%	-3.63%	-8.71%	7.58%	1.73%	-5.85%
2013	12	26.74%	10.24%	-16.50%	-37.40%	3.18%	40.58%	15.69%	33.36%	17.68%	-7.73%	47.53%	55.26%
2014	9	-4.68%	36.99%	41.68%	76.19%	2.67%	-73.52%	7.06%	-8.08%	-15.14%	4.66%	-9.63%	-14.29%
Geometric Mean		6.80%	10.55%	3.75%	-0.88%	3.67%	4.55%	4.97%	4.30%	-0.67%	5.91%	6.59%	0.68%
Relative Dif.				55%			-515%			-14%			12%
Arithmetic Mean		7.57%	11.82%	4.26%	5.13%	4.37%	-0.76%	7.36%	7.00%	-0.36%	8.12%	7.90%	-0.22%
Relative Dif.				56%			-15%			-5%			-3%

Note: Returns Calculated on a Yearly Compounded Basis

Relative difference calculated as [GrowthBelow-GrowthAbove]/GrowthAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

RISK PERFORMANCE (ON GROWTH)

St. Deviation	15.06%	14.05%	-1.01%	33.66%	12.08%	-21.58%	21.07%	26.05%	4.97%	22.52%	19.52%	-3.01%
Relative Dif.			-7%			-64%			24%			-13%
Min	141.93%	194.48%		52.10%	109.19%		81.79%	92.22%		158.34%	131.60%	
Max	206.07%	252.45%		98.97%	172.20%		191.89%	188.28%		279.54%	206.35%	
Range	64.13%	57.97%	-6.17%	46.87%	63.02%	16.15%	110.10%	96.05%	-14.04%	121.20%	74.75%	-46.46%
Relative Dif.			-10%			34%			-13%			-38%

Note: Relative difference calculated as [RiskBelow-RiskAbove]/RiskAbove. Positive relative difference means better performance of above-threshold properties. Negative relative difference means better performance of below-treshold properties.

SHARPE RATIO

Total Return	12.71%	17.31%		6.67%	11.97%		11.65%	12.09%		13.16%	14.09%	
Risk Free Rate	1.43%	1.43%		1.43%	1.43%		1.43%	1.43%		1.43%	1.43%	
Risk Premium	11.29%	15.88%		5.25%	10.54%		10.22%	10.66%		11.73%	12.66%	
Sharpe Ratio	0.75	1.13	0.38	0.16	0.87	0.72	0.49	0.41	-0.08	0.52	0.65	0.13
Relative Dif.			51%			460%			-16%			25%

Note: Relative difference calculated as [SharpeRBelow-SharpeRAbove]/SharpeRAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

Table C-16. Results summary table for all property types. Cutoff $10 million. Filter: Region – Northeast

Source: Sacchini & Shipps

RESULTS SUMMARY TABLE.

Sorting Criteria Sub-Institutional Treshold: $5 million
Filter: Region - Southeast

CAP RATE PERFORMANCE

		Apartment Above		Apartment Below		Industrial Above		Industrial Below		Office Above		Office Below		Retail Above		Retail Below	
Year	Months	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs
2001	12	8.85%	68	9.21%	5	10.14%	12	10.45%	2	10.06%	30	9.50%	2	9.56%	18	8.48%	3
2002	12	8.42%	70	9.00%	7	8.89%	8	9.24%	2	9.60%	27	9.94%	6	9.09%	56	8.91%	9
2003	12	7.50%	108	9.13%	5	9.02%	9	9.24%	1	8.80%	44	8.40%	3	8.36%	49	8.18%	8
2004	12	6.78%	86	7.92%	14	8.03%	12	7.14%	2	7.85%	47	8.42%	8	7.82%	70	8.24%	14
2005	12	6.42%	163	7.23%	51	7.73%	22	8.54%	18	7.30%	95	7.64%	26	7.43%	81	7.49%	56
2006	12	6.44%	179	6.78%	46	7.13%	38	7.31%	8	6.69%	97	7.33%	22	7.05%	82	7.17%	64
2007	12	6.13%	123	7.37%	57	7.18%	28	7.00%	21	6.56%	64	7.34%	42	6.77%	87	7.15%	74
2008	12	6.65%	70	7.05%	25	7.71%	13	7.99%	9	7.61%	29	7.39%	14	7.35%	44	7.28%	43
2009	12	7.80%	49	7.86%	9	9.09%	4	10.46%	2	7.33%	8	7.94%	7	8.70%	22	7.94%	12
2010	12	7.20%	77	9.13%	2	8.20%	10	7.30%	1	8.44%	17	8.27%	4	8.25%	24	8.30%	23
2011	12	6.84%	110	8.15%	12	8.06%	10	7.98%	4	7.98%	21	8.50%	9	7.87%	41	8.25%	36
2012	12	6.53%	126	7.02%	15	7.29%	14	9.07%	3	8.08%	19	8.22%	9	7.84%	48	7.95%	48
2013	12	6.72%	76	6.96%	20	7.74%	8	7.84%	6	7.74%	34	8.35%	4	7.30%	58	7.64%	28
2014	9	6.94%	51	7.47%	22	8.00%	11	0.00%	-	6.66%	29	6.95%	2	6.87%	26	7.45%	18
Weigthed Average		6.92%	1,356	7.37%	290	7.86%	199	7.95%	79	7.63%	561	7.78%	158	7.68%	706	7.61%	436
Simple Average		7.09%		7.88%	0.79%	8.16%		8.43%	0.27%	7.91%		8.16%	0.25%	7.88%		7.89%	0.01%
Relative Dif.					11%				3%				3%				0%

Note: Relative difference calculated as [CapBelow-CapAbove]/CapAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

GROWTH PERFORMANCE

		Apartment Above	Apartment Below	Yearly	Industrial Above	Industrial Below	Yearly	Office Above	Office Below	Yearly	Retail Above	Retail Below	Yearly
Year	Month	Year Cap Return	Year Cap Return	Difference	Year Cap Return	Year Cap Return	Difference	Year Cap Return	Year Cap Return	Difference	Year Cap Return	Year Cap Return	Difference
2001	12	-11.59%	28.02%	39.62%	-1.49%	20.87%	22.35%	-14.22%	15.41%	29.63%	-2.09%	27.05%	29.14%
2002	12	11.24%	16.32%	5.08%	-2.13%	8.01%	10.14%	11.40%	-0.53%	-11.93%	26.23%	-7.83%	-34.07%
2003	12	-1.29%	-16.94%	-15.65%	13.60%	-10.68%	-24.28%	2.07%	1.41%	-0.66%	7.16%	-5.65%	-12.81%
2004	12	22.18%	38.66%	16.49%	-3.59%	35.89%	39.48%	21.96%	28.04%	6.08%	17.09%	37.31%	20.22%
2005	12	25.21%	16.01%	-9.20%	31.12%	-3.12%	-34.24%	10.97%	6.85%	-4.12%	20.80%	1.18%	-19.62%
2006	12	-6.00%	6.19%	12.19%	7.77%	27.56%	19.80%	11.00%	18.20%	7.20%	2.24%	22.45%	20.21%
2007	12	3.55%	-6.84%	-10.39%	10.18%	-5.57%	-15.75%	4.58%	-7.26%	-11.85%	0.73%	-2.66%	-3.39%
2008	12	-27.51%	-10.00%	17.50%	-17.61%	-8.73%	8.87%	-21.45%	-15.99%	5.46%	-26.93%	-25.20%	1.73%
2009	12	-28.91%	-47.21%	-18.31%	-21.07%	-8.61%	12.46%	-30.91%	-21.53%	9.38%	-19.06%	11.30%	30.36%
2010	12	21.00%	23.32%	2.32%	-0.03%	-18.44%	-18.41%	3.66%	6.04%	2.38%	-5.30%	-18.45%	-13.14%
2011	12	13.83%	24.01%	10.18%	-2.54%	14.88%	17.42%	-0.62%	1.97%	2.59%	23.74%	9.14%	-14.60%
2012	12	12.10%	-3.14%	-15.24%	13.48%	-11.15%	-24.63%	9.05%	3.75%	-5.30%	6.25%	4.03%	-2.22%
2013	12	21.54%	43.24%	21.70%	-2.76%	5.57%	8.33%	5.13%	2.13%	-3.00%	14.16%	6.55%	-7.61%
2014	9	2.48%	-1.13%	-3.61%	10.50%	53.86%	43.36%	26.67%	30.03%	3.36%	2.37%	0.70%	-1.66%
Geometric Mean		2.60%	5.04%	2.44%	1.57%	4.67%	3.10%	1.17%	3.50%	2.34%	3.71%	3.05%	-0.66%
Relative Dif.				94%			197%			200%			-18%
Arithmetic Mean		4.13%	7.89%	3.76%	2.53%	7.17%	4.64%	2.81%	4.89%	2.09%	4.81%	4.28%	-0.53%
Relative Dif.				91%			183%			74%			-11%

Note: Returns Calculated on a Yearly Compounded Basis
Relative difference calculated as [GrowthBelow-GrowthAbove]/GrowthAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

RISK PERFORMANCE (ON GROWTH)

St. Deviation	17.63%	24.23%	6.60%	13.32%	21.03%	7.71%	15.74%	14.68%	-1.06%	15.38%	16.91%	1.53%
Relative Dif.			37%			58%			-7%			10%
Min	73.50%	93.50%		96.22%	117.63%		83.17%	114.21%		106.85%	122.01%	
Max	149.85%	213.98%		165.86%	200.14%		159.87%	191.84%		203.45%	197.42%	
Range	76.35%	120.47%	44.12%	69.64%	82.51%	12.87%	76.70%	77.63%	0.93%	96.60%	75.41%	-21.20%
Relative Dif.			58%			18%			1%			-22%

Note: Relative difference calculated as [RiskBelow-RiskAbove]/RiskAbove. Positive relative difference means better performance of above-threshold properties. Negative relative difference means better performance of below-treshold properties.

SHARPE RATIO

Total Return	9.69%	12.92%		9.73%	13.09%		9.07%	11.66%		11.59%	10.93%	
Risk Free Rate	1.43%	1.43%		1.43%	1.43%		1.43%	1.43%		1.43%	1.43%	
Risk Premium	8.26%	11.49%		8.30%	11.67%		7.65%	10.23%		10.16%	9.51%	
Sharpe Ratio	0.47	0.47	0.01	0.62	0.55	-0.07	0.49	0.70	0.21	0.66	0.56	-0.10
Relative Dif.			1%			-11%			43%			-15%

Note: Relative difference calculated as [SharpeRBelow-SharpeRAbove]/SharpeRAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

Table C-17. Results summary table for all property types. Cutoff $5 million. Filter: Region – Southeast

Source: Sacchini & Shipps

RESULTS SUMMARY TABLE.
Sorting Criteria Sub-Institutional Treshold: $10 million
Filter: Region - Southeast

CAP RATE PERFORMANCE

		Apartment Above		Apartment Below		Industrial Above		Industrial Below		Office Above		Office Below		Retail Above		Retail Below	
Year	Months	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs
2001	12	8.80%	53	9.08%	20	10.00%	7	10.37%	7	10.16%	20	9.79%	12	9.27%	8	9.49%	13
2002	12	8.26%	56	9.02%	21	8.99%	4	8.95%	6	9.48%	21	9.97%	12	8.99%	31	9.14%	34
2003	12	7.24%	80	8.37%	33	8.93%	5	9.15%	5	8.73%	35	8.89%	12	8.16%	26	8.49%	31
2004	12	6.65%	70	7.60%	30	7.99%	9	7.74%	5	7.68%	37	8.45%	18	7.71%	39	8.05%	45
2005	12	6.20%	104	7.00%	110	7.41%	10	8.32%	30	7.29%	63	7.46%	58	7.27%	40	7.53%	97
2006	12	6.18%	121	6.89%	104	6.95%	25	7.41%	21	6.50%	71	7.26%	48	6.60%	31	7.24%	115
2007	12	5.78%	83	7.15%	97	7.14%	15	7.08%	34	6.37%	41	7.18%	65	6.49%	36	7.07%	125
2008	12	6.48%	50	7.06%	45	7.53%	7	7.96%	15	7.57%	23	7.50%	20	7.33%	17	7.31%	70
2009	12	7.50%	38	8.40%	20	9.05%	3	10.04%	3	7.37%	5	7.74%	10	8.45%	5	8.43%	29
2010	12	6.88%	59	8.33%	20	8.03%	4	8.17%	7	8.32%	14	8.58%	7	8.41%	7	8.25%	40
2011	12	6.34%	77	8.04%	45	8.34%	7	7.73%	7	7.99%	20	8.43%	10	7.78%	17	8.12%	60
2012	12	6.37%	88	6.93%	53	7.37%	7	7.77%	10	7.70%	13	8.49%	15	8.02%	19	7.86%	77
2013	12	6.58%	49	6.97%	47	6.85%	2	7.94%	12	7.39%	25	8.59%	13	7.19%	30	7.53%	56
2014	9	6.82%	28	7.28%	45	7.79%	7	8.36%	4	6.74%	23	6.52%	8	6.99%	9	7.14%	35
Weigthed Average		6.72%	956	7.38%	690	7.75%	112	7.98%	166	7.55%	411	7.81%	308	7.57%	315	7.69%	827
Simple Average		6.86%		7.72%	0.86%	8.03%		8.36%	0.33%	7.81%		8.20%	0.40%	7.76%		7.97%	0.21%
Relative Dif.					13%				4%				5%				3%

Note: Relative difference calculated as [CapBelow-CapAbove]/CapAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

GROWTH PERFORMANCE

		Apartment Above	Apartment Below	Yearly	Industrial Above	Industrial Below	Yearly	Office Above	Office Below	Yearly	Retail Above	Retail Below	Yearly
Year	Month	Year Cap Return	Year Cap Return	Difference	Year Cap Return	Year Cap Return	Difference	Year Cap Return	Year Cap Return	Difference	Year Cap Return	Year Cap Return	Difference
2001	12	-11.96%	5.30%	17.26%	-24.92%	19.30%	44.22%	-17.48%	-1.25%	16.23%	7.59%	14.42%	6.83%
2002	12	11.03%	13.89%	2.86%	37.91%	-4.50%	-42.41%	17.16%	2.99%	-14.17%	45.98%	1.36%	-44.62%
2003	12	-1.96%	-8.78%	-6.83%	-12.69%	2.29%	14.98%	-1.11%	4.52%	5.63%	-4.18%	2.21%	6.39%
2004	12	22.93%	29.26%	6.32%	8.30%	18.17%	9.87%	21.85%	25.60%	3.75%	25.98%	21.78%	-4.19%
2005	12	25.15%	21.88%	-3.26%	17.86%	9.49%	-8.37%	15.52%	6.38%	-9.13%	16.03%	14.66%	-1.37%
2006	12	-9.87%	4.33%	14.20%	7.28%	19.21%	11.93%	5.65%	21.07%	15.42%	-1.21%	13.77%	14.98%
2007	12	3.30%	-2.63%	-5.93%	3.74%	2.30%	-1.44%	0.88%	-0.94%	-1.82%	-7.00%	-0.89%	6.11%
2008	12	-23.69%	-22.68%	1.02%	-15.35%	-10.62%	4.73%	-18.25%	-21.71%	-3.46%	-12.89%	-30.33%	-17.44%
2009	12	-27.38%	-40.45%	-13.07%	-36.74%	-12.75%	23.99%	-30.88%	-25.23%	5.64%	-28.74%	1.90%	30.65%
2010	12	22.76%	19.19%	-3.57%	74.70%	-24.21%	-98.90%	-2.72%	14.27%	16.98%	-6.01%	-12.85%	-6.84%
2011	12	11.47%	23.92%	12.45%	-32.33%	20.48%	52.81%	13.11%	-10.75%	-23.86%	19.28%	17.46%	-1.82%
2012	12	12.21%	0.77%	-11.44%	7.43%	-0.72%	-8.15%	7.78%	7.16%	-0.61%	-1.21%	4.54%	5.75%
2013	12	18.47%	41.67%	23.20%	-8.83%	4.85%	13.68%	-0.23%	5.90%	6.13%	26.03%	10.14%	-15.88%
2014	9	1.78%	-2.16%	-3.93%	26.26%	30.43%	4.17%	40.73%	22.18%	-18.55%	1.96%	-3.61%	-5.57%
Geometric Mean		2.49%	3.81%	1.32%	-0.38%	3.77%	4.16%	1.57%	2.16%	0.59%	4.27%	3.09%	-1.18%
Relative Dif.				53%			-1085%			37%			-28%
Arithmetic Mean		3.87%	5.97%	2.09%	3.76%	5.27%	1.51%	3.72%	3.59%	-0.13%	5.83%	3.90%	-1.93%
Relative Dif.				54%			40%			-3%			-33%

Note: Returns Calculated on a Yearly Compounded Basis
Relative difference calculated as [GrowthBelow-GrowthAbove]/GrowthAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

RISK PERFORMANCE (ON GROWTH)

St. Deviation	17.05%	21.47%	4.42%	29.75%	15.28%	-14.47%	18.28%	15.18%	-3.10%	19.17%	13.62%	-5.55%
Relative Dif.			26%			-49%			-17%			-29%
Min	75.06%	80.61%		64.93%	101.45%		78.17%	99.24%		110.18%	113.49%	
Max	148.03%	182.61%		134.51%	185.21%		152.12%	180.80%		224.20%	201.05%	
Range	72.96%	101.99%	29.03%	69.58%	83.76%	14.18%	73.95%	81.56%	7.61%	114.02%	87.56%	-26.46%
Relative Dif.			40%			20%			10%			-23%

Note: Relative difference calculated as [RiskBelow-RiskAbove]/RiskAbove. Positive relative difference means better performance of above-threshold properties. Negative relative difference means better performance of below-treshold properties.

SHARPE RATIO

Total Return	9.35%	11.53%		7.64%	12.13%		9.38%	10.36%		12.03%	11.06%	
Risk Free Rate	1.43%	1.43%		1.43%	1.43%		1.43%	1.43%		1.43%	1.43%	
Risk Premium	7.92%	10.11%		6.22%	10.70%		7.95%	8.93%		10.60%	9.64%	
Sharpe Ratio	0.46	0.47	0.01	0.21	0.70	0.49	0.43	0.59	0.15	0.55	0.71	0.15
Relative Dif.			1%			235%			35%			28%

Note: Relative difference calculated as [SharpeRBelow-SharpeRAbove]/SharpeRAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

Table C-18. Results summary table for all property types. Cutoff $10 million. Filter: Region – Southeast
Source: Sacchini & Shipps

RESULTS SUMMARY TABLE.

Sorting Criteria Sub-Institutional Treshold: $5 million

Filter: Region - Southwest

CAP RATE PERFORMANCE

Year	Months	Apartment Above Avg. Cap	Apartment Above # Obs	Apartment Below Avg. Cap	Apartment Below # Obs	Industrial Above Avg. Cap	Industrial Above # Obs	Industrial Below Avg. Cap	Industrial Below # Obs
2001	12	8.76%	34	8.79%	7	9.84%	2	7.89%	1
2002	12	8.39%	56	7.67%	3	8.60%	1	10.47%	1
2003	12	7.75%	78	8.34%	11	8.58%	3	9.50%	1
2004	12	6.92%	89	7.44%	19	7.94%	8	8.30%	3
2005	12	5.87%	137	6.84%	72	7.54%	13	8.05%	12
2006	12	5.99%	163	6.63%	59	7.35%	25	7.81%	12
2007	12	6.21%	145	7.22%	40	7.03%	19	6.92%	19
2008	12	7.22%	32	7.97%	31	7.26%	10	7.21%	13
2009	12	7.10%	32	7.70%	5	6.85%	2	9.50%	2
2010	12	6.62%	46	8.18%	9	8.15%	5	0.00%	-
2011	12	6.72%	62	7.73%	13	7.29%	11	8.30%	1
2012	12	6.58%	79	7.24%	15	8.27%	6	7.43%	3
2013	12	6.14%	60	6.54%	11	7.80%	7	8.32%	3
2014	9	6.34%	34	6.98%	9	6.58%	8	7.17%	1
Weigthed Average		**6.64%**	**1,047**	**7.22%**	**304**	**7.47%**	**120**	**7.64%**	**72**
Simple Average		**6.90%**		**7.52%**	**0.62%**	**7.79%**		**8.22%**	**0.43%**
Relative Dif.					**9%**				**6%**

Year	Months	Office Above Avg. Cap	Office Above # Obs	Office Below Avg. Cap	Office Below # Obs	Retail Above Avg. Cap	Retail Above # Obs	Retail Below Avg. Cap	Retail Below # Obs
2001	12	9.68%	33	9.70%	4	9.12%	14	8.83%	4
2002	12	9.66%	34	9.06%	4	9.50%	20	9.07%	3
2003	12	9.30%	39	9.14%	4	8.32%	35	8.16%	2
2004	12	8.48%	48	8.38%	6	8.02%	38	7.91%	9
2005	12	7.23%	84	8.10%	27	7.15%	68	7.51%	31
2006	12	6.78%	80	7.63%	18	6.79%	72	7.00%	27
2007	12	6.53%	74	7.25%	27	6.54%	50	6.79%	28
2008	12	6.71%	22	7.58%	15	7.09%	15	7.22%	19
2009	12	8.71%	8	10.02%	3	8.23%	14	7.68%	10
2010	12	7.64%	11	9.37%	5	8.15%	10	8.10%	11
2011	12	7.58%	21	8.74%	4	7.80%	21	8.58%	12
2012	12	7.08%	36	7.40%	1	7.12%	25	8.11%	13
2013	12	6.69%	37	7.60%	4	7.64%	28	7.60%	14
2014	9	7.18%	27	9.69%	2	6.99%	13	7.03%	12
Weigthed Average		**7.59%**	**554**	**8.03%**	**124**	**7.48%**	**423**	**7.51%**	**195**
Simple Average		**7.80%**		**8.55%**	**0.74%**	**7.75%**		**7.83%**	**0.08%**
Relative Dif.					**10%**				**1%**

Note: Relative difference calculated as [CapBelow-CapAbove]/CapAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

GROWTH PERFORMANCE

Year	Month	Apartment Above Year Cap Return	Apartment Below Year Cap Return	Yearly Difference	Industrial Above Year Cap Return	Industrial Below Year Cap Return	Yearly Difference
2001	12	-4.19%	5.71%	9.90%	-30.97%	-18.59%	12.38%
2002	12	8.05%	6.95%	-1.10%	15.10%	3.57%	-11.53%
2003	12	-3.73%	-4.43%	-0.70%	12.29%	-7.01%	-19.30%
2004	12	3.40%	14.85%	11.45%	-12.87%	29.51%	42.38%
2005	12	21.33%	17.03%	-4.30%	25.29%	-1.38%	-26.67%
2006	12	11.16%	5.49%	-5.67%	3.19%	23.23%	20.04%
2007	12	-5.22%	0.70%	5.92%	24.92%	2.60%	-22.32%
2008	12	-21.32%	-33.38%	-12.06%	-24.06%	-27.47%	-3.41%
2009	12	-30.87%	-45.25%	-14.37%	-25.11%	-5.92%	19.19%
2010	12	15.22%	31.85%	16.63%	16.18%	-23.23%	-39.41%
2011	12	22.90%	9.61%	-13.29%	-14.55%	-2.14%	12.41%
2012	12	20.75%	39.99%	19.25%	12.01%	22.07%	10.06%
2013	12	5.19%	17.99%	12.81%	41.36%	-100.00%	-141.36%
2014	9	21.39%	16.38%	-5.01%	-18.93%	n/a	0.00%
Geometric Mean		**2.94%**	**3.02%**	**0.08%**	**-0.30%**	**-100.00%**	**0.00%**
Relative Dif.				**3%**			**0%**
Arithmetic Mean		**4.57%**	**5.96%**	**1.39%**	**1.70%**	**-8.06%**	**0.00%**
Relative Dif.				**30%**			**0%**

Year	Month	Office Above Year Cap Return	Office Below Year Cap Return	Yearly Difference	Retail Above Year Cap Return	Retail Below Year Cap Return	Yearly Difference
2001	12	-10.83%	1.36%	12.20%	-4.72%	24.49%	29.21%
2002	12	-4.13%	-13.88%	-9.75%	7.11%	-18.35%	-25.45%
2003	12	15.91%	9.59%	-6.32%	12.95%	28.72%	15.77%
2004	12	6.67%	11.31%	4.64%	7.67%	0.24%	-7.43%
2005	12	13.08%	23.50%	10.43%	33.92%	28.36%	-5.57%
2006	12	17.15%	0.54%	-16.61%	-14.10%	-14.24%	-0.13%
2007	12	8.74%	20.41%	11.67%	14.38%	7.44%	-6.93%
2008	12	-23.30%	-14.06%	9.25%	-26.61%	0.69%	27.30%
2009	12	-46.42%	-41.34%	5.09%	-36.18%	-49.12%	-12.94%
2010	12	28.01%	-2.71%	-30.72%	9.39%	-4.47%	-13.85%
2011	12	28.43%	-10.39%	-38.82%	-15.43%	37.10%	52.53%
2012	12	4.02%	25.47%	21.44%	30.05%	-12.54%	-42.60%
2013	12	8.90%	34.25%	25.35%	24.09%	28.70%	4.60%
2014	9	11.38%	2.05%	-9.33%	-19.68%	6.85%	26.53%
Geometric Mean		**1.71%**	**1.32%**	**-0.40%**	**-0.23%**	**1.52%**	**1.76%**
Relative Dif.				**-23%**			**-760%**
Arithmetic Mean		**4.11%**	**3.29%**	**-0.82%**	**1.63%**	**4.56%**	**2.93%**
Relative Dif.				**-20%**			**180%**

Note: Returns Calculated on a Yearly Compounded Basis

Relative difference calculated as [GrowthBelow-GrowthAbove]/GrowthAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

RISK PERFORMANCE (ON GROWTH)

	Apartment Above	Apartment Below	Difference	Industrial Above	Industrial Below	Difference	Office Above	Office Below	Difference	Retail Above	Retail Below	Difference
St. Deviation	**16.41%**	**22.54%**	**6.13%**	**22.58%**	**0.00%**	**0.00%**	**20.10%**	**19.77%**	**-0.33%**	**21.54%**	**23.81%**	**2.27%**
Relative Dif.			**37%**			**0%**			**-2%**			**11%**
Min	70.84%	55.83%		64.78%	0.00%		58.82%	61.57%		65.66%	69.69%	
Max	140.95%	156.52%		126.33%	0.00%		156.02%	164.46%		170.63%	172.96%	
Range	70.12%	100.69%	30.57%	61.55%	0.00%	0.00%	97.20%	102.90%	5.69%	104.98%	103.27%	-1.71%
Relative Dif.			44%			0%			6%			-2%

Note: Relative difference calculated as [RiskBelow-RiskAbove]/RiskAbove. Positive relative difference means better performance of above-threshold properties. Negative relative difference means better performance of below-treshold properties.

SHARPE RATIO

	Apartment Above	Apartment Below	Difference	Industrial Above	Industrial Below	Difference	Office Above	Office Below	Difference	Retail Above	Retail Below	Difference
Total Return	9.84%	10.54%		7.49%	0.00%		9.52%	9.86%		7.52%	9.35%	
Risk Free Rate	1.43%	1.43%		1.43%	1.43%		1.43%	1.43%		1.43%	1.43%	
Risk Premium	8.42%	9.11%		6.06%	0.00%		8.09%	8.43%		6.09%	7.92%	
Sharpe Ratio	**0.51**	**0.40**	**-0.11**	**0.27**	**0.00**	**0.00**	**0.40**	**0.43**	**0.02**	**0.28**	**0.33**	**0.05**
Relative Dif.			**-21%**			**0%**			**6%**			**18%**

Note: Relative difference calculated as [SharpeRBelow-SharpeRAbove]/SharpeRAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

Table C-19. Results summary table for all property types. Cutoff $5 million. Filter: Region – Southwest

Source: Sacchini & Shipps

RESULTS SUMMARY TABLE.

Sorting Criteria Sub-Institutional Treshold: $10 million

Filter: Region - Southwest

CAP RATE PERFORMANCE

Year	Months	Apartment Above Avg. Cap	Apartment Above # Obs	Apartment Below Avg. Cap	Apartment Below # Obs	Industrial Above Avg. Cap	Industrial Above # Obs	Industrial Below Avg. Cap	Industrial Below # Obs	Office Above Avg. Cap	Office Above # Obs	Office Below Avg. Cap	Office Below # Obs	Retail Above Avg. Cap	Retail Above # Obs	Retail Below Avg. Cap	Retail Below # Obs
2001	12	8.66%	21	8.87%	20	9.67%	1	8.95%	2	9.70%	25	9.65%	12	8.98%	8	9.12%	10
2002	12	8.22%	40	8.63%	19	0.00%	-	9.54%	2	9.50%	24	9.76%	14	9.40%	10	9.48%	13
2003	12	7.58%	45	8.07%	44	8.90%	1	8.78%	3	9.30%	33	9.20%	10	8.26%	21	8.38%	16
2004	12	6.81%	54	7.21%	54	7.80%	6	8.32%	5	8.31%	31	8.69%	23	7.90%	20	8.07%	27
2005	12	5.40%	83	6.73%	126	7.20%	2	7.84%	23	7.15%	66	7.86%	45	6.93%	34	7.43%	65
2006	12	5.75%	101	6.50%	121	7.36%	14	7.58%	23	6.61%	60	7.43%	38	6.80%	36	6.87%	63
2007	12	5.85%	88	6.96%	97	7.36%	10	6.84%	28	6.43%	50	7.01%	51	6.36%	24	6.75%	54
2008	12	7.14%	20	7.80%	43	6.88%	5	7.33%	18	6.58%	11	7.27%	26	6.80%	3	7.19%	31
2009	12	7.18%	23	7.19%	14	4.50%	1	9.40%	3	8.54%	6	9.69%	5	8.41%	6	7.86%	18
2010	12	6.33%	37	8.01%	18	7.70%	3	8.82%	2	7.48%	9	9.08%	7	7.88%	6	8.23%	15
2011	12	6.54%	41	7.32%	34	6.80%	6	7.94%	6	7.55%	18	8.33%	7	7.46%	8	8.28%	25
2012	12	6.22%	54	7.30%	40	10.00%	2	7.42%	7	6.85%	27	7.73%	10	7.08%	14	7.68%	24
2013	12	5.98%	45	6.59%	26	7.84%	5	8.07%	5	6.66%	33	7.28%	8	7.46%	7	7.66%	35
2014	9	6.10%	21	6.83%	22	6.31%	6	7.33%	3	7.07%	21	8.11%	8	7.45%	5	6.90%	20
Weigthed Average		**6.40%**	**673**	**7.14%**	**678**	**7.36%**	**62**	**7.62%**	**130**	**7.50%**	**414**	**7.94%**	**264**	**7.41%**	**202**	**7.53%**	**416**
Simple Average		**6.70%**		**7.43%**	**0.73%**	**7.56%**		**8.15%**	**0.59%**	**7.69%**		**8.36%**	**0.67%**	**7.65%**		**7.85%**	**0.19%**
Relative Dif.					**11%**				**8%**				**9%**				**3%**

Note: Relative difference calculated as [CapBelow-CapAbove]/CapAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

GROWTH PERFORMANCE

Year	Month	Apartment Above Year Cap Return	Apartment Below Year Cap Return	Yearly Difference	Industrial Above Year Cap Return	Industrial Below Year Cap Return	Yearly Difference	Office Above Year Cap Return	Office Below Year Cap Return	Yearly Difference	Retail Above Year Cap Return	Retail Below Year Cap Return	Yearly Difference
2001	12	1.90%	-4.28%	-6.17%	-49.40%	-11.95%	37.45%	-6.44%	-11.77%	-5.33%	-29.07%	18.37%	47.44%
2002	12	6.56%	8.28%	1.72%	76.15%	-4.07%	-80.22%	-7.98%	-3.17%	4.81%	30.35%	-13.03%	-43.38%
2003	12	-10.04%	-0.77%	9.27%	0.12%	0.80%	0.68%	19.77%	9.24%	-10.53%	13.10%	21.05%	7.94%
2004	12	6.21%	6.73%	0.52%	-25.76%	19.85%	45.62%	0.56%	14.65%	14.09%	2.27%	4.85%	2.57%
2005	12	24.52%	20.32%	-4.20%	25.09%	3.92%	-21.17%	21.37%	10.31%	-11.06%	40.52%	31.20%	-9.31%
2006	12	10.36%	6.58%	-3.78%	12.37%	13.92%	1.55%	14.33%	12.90%	-1.43%	-16.15%	-14.12%	2.03%
2007	12	-3.25%	-3.97%	-0.72%	12.03%	12.19%	0.17%	5.18%	15.51%	10.32%	9.19%	6.83%	-2.36%
2008	12	-20.07%	-27.97%	-7.90%	-2.14%	-29.51%	-27.37%	-16.62%	-24.24%	-7.62%	-8.06%	-12.02%	-3.96%
2009	12	-28.91%	-39.08%	-10.17%	-57.15%	-7.98%	49.17%	-47.50%	-43.08%	4.42%	-54.97%	-39.27%	15.70%
2010	12	20.62%	14.30%	-6.32%	92.68%	-14.66%	-107.34%	34.68%	-0.23%	-34.91%	23.87%	-2.00%	-25.87%
2011	12	15.61%	25.62%	10.01%	-36.08%	-2.91%	33.17%	25.39%	14.22%	-11.17%	-22.18%	4.37%	26.55%
2012	12	25.27%	21.22%	-4.05%	76.23%	5.91%	-70.32%	0.00%	18.60%	18.59%	26.37%	13.95%	-12.42%
2013	12	-1.56%	22.35%	23.91%	-20.32%	42.28%	62.60%	15.76%	10.71%	-5.05%	55.29%	13.36%	-41.94%
2014	9	22.20%	14.30%	-7.90%	-2.18%	-6.66%	-4.48%	2.10%	21.36%	19.27%	-23.43%	3.05%	26.48%
Geometric Mean		**3.32%**	**2.46%**	**-0.86%**	**-2.13%**	**0.30%**	**2.43%**	**2.02%**	**1.01%**	**-1.00%**	**-0.91%**	**0.93%**	**1.84%**
Relative Dif.				**-26%**			**-114%**			**-50%**			**-202%**
Arithmetic Mean		**4.96%**	**4.55%**	**-0.41%**	**7.26%**	**1.51%**	**-5.75%**	**4.33%**	**3.21%**	**-1.11%**	**3.37%**	**2.61%**	**-0.75%**
Relative Dif.				**-8%**			**-79%**			**-26%**			**-22%**

Note: Returns Calculated on a Yearly Compounded Basis

Relative difference calculated as [GrowthBelow-GrowthAbove]/GrowthAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

RISK PERFORMANCE (ON GROWTH)

	Apartment Above	Apartment Below	Difference	Industrial Above	Industrial Below	Difference	Office Above	Office Below	Difference	Retail Above	Retail Below	Difference
St. Deviation	**16.65%**	**18.89%**	**2.25%**	**46.81%**	**17.33%**	**-29.48%**	**20.67%**	**18.36%**	**-2.32%**	**30.66%**	**17.95%**	**-12.71%**
Relative Dif.			**13%**			**-63%**			**-11%**			**-41%**
Min	77.65%	56.00%		39.43%	72.29%		61.36%	63.02%		53.81%	77.91%	
Max	143.80%	142.46%		130.33%	141.17%		154.30%	155.42%		154.46%	176.85%	
Range	66.15%	86.46%	20.31%	90.90%	68.87%	-22.03%	92.94%	92.40%	-0.54%	100.65%	98.94%	-1.71%
Relative Dif.			31%			-24%			-1%			-2%

Note: Relative difference calculated as [RiskBelow-RiskAbove]/RiskAbove. Positive relative difference means better performance of above-threshold properties. Negative relative difference means better performance of below-treshold properties.

SHARPE RATIO

	Apartment Above	Apartment Below	Difference	Industrial Above	Industrial Below	Difference	Office Above	Office Below	Difference	Retail Above	Retail Below	Difference
Total Return	10.01%	9.89%		5.44%	8.45%		9.71%	9.37%		6.75%	8.78%	
Risk Free Rate	1.43%	1.43%		1.43%	1.43%		1.43%	1.43%		1.43%	1.43%	
Risk Premium	8.59%	8.46%		4.01%	7.03%		8.28%	7.95%		5.32%	7.35%	
Sharpe Ratio	**0.52**	**0.45**	**-0.07**	**0.09**	**0.41**	**0.32**	**0.40**	**0.43**	**0.03**	**0.17**	**0.41**	**0.24**
Relative Dif.			**-13%**			**373%**			**8%**			**136%**

Note: Relative difference calculated as [SharpeRBelow-SharpeRAbove]/SharpeRAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

Table C-20. Results summary table for all property types. Cutoff $10 million. Filter: Region – Southwest

Source: Sacchini & Shipps

RESULTS SUMMARY TABLE.

Sorting Criteria Sub-Institutional Treshold: $5 million

Filter: Region - West

CAP RATE PERFORMANCE

Year	Months	Apartment Above Avg. Cap	Apartment Above # Obs	Apartment Below Avg. Cap	Apartment Below # Obs	Industrial Above Avg. Cap	Industrial Above # Obs	Industrial Below Avg. Cap	Industrial Below # Obs	Office Above Avg. Cap	Office Above # Obs	Office Below Avg. Cap	Office Below # Obs	Retail Above Avg. Cap	Retail Above # Obs	Retail Below Avg. Cap	Retail Below # Obs
2001	12	7.82%	61	8.02%	10	9.10%	18	8.89%	3	9.22%	49	9.13%	8	8.99%	20	9.00%	1
2002	12	7.68%	95	7.60%	16	8.89%	16	8.79%	6	8.89%	77	8.53%	7	8.76%	46	9.02%	3
2003	12	7.01%	114	6.74%	18	8.47%	23	8.82%	7	8.50%	103	7.87%	10	7.99%	65	8.56%	9
2004	12	6.33%	162	6.03%	50	7.97%	32	8.33%	8	7.73%	141	7.11%	13	7.42%	70	7.14%	18
2005	12	5.60%	209	5.38%	271	7.39%	62	7.36%	23	7.01%	172	7.19%	47	6.58%	115	6.52%	77
2006	12	5.23%	173	5.34%	190	6.59%	55	6.52%	32	6.48%	124	6.78%	54	6.28%	103	6.09%	56
2007	12	5.44%	174	5.51%	190	6.21%	48	6.26%	35	5.83%	147	6.28%	54	6.17%	108	6.07%	69
2008	12	5.56%	97	5.58%	136	6.47%	25	6.58%	19	6.33%	43	6.31%	27	6.36%	27	6.23%	44
2009	12	6.50%	55	6.19%	64	8.43%	15	7.11%	6	8.69%	24	6.90%	5	7.50%	29	6.68%	12
2010	12	6.04%	67	6.20%	68	7.62%	19	7.31%	10	7.68%	30	7.81%	7	7.90%	25	7.27%	14
2011	12	6.26%	123	6.07%	102	7.37%	29	7.71%	15	7.02%	61	7.05%	6	7.42%	45	7.09%	20
2012	12	5.66%	125	5.79%	117	7.24%	34	6.87%	5	6.40%	69	6.57%	13	7.13%	52	7.34%	22
2013	12	5.61%	98	5.50%	113	6.62%	27	6.02%	8	5.94%	60	6.79%	7	7.00%	45	6.99%	20
2014	9	5.38%	47	5.15%	87	6.35%	14	6.95%	11	5.68%	44	6.08%	5	6.48%	33	6.27%	18
Weigthed Average		6.02%	1,600	5.65%	1,432	7.28%	417	7.02%	188	7.13%	1,144	6.89%	263	7.04%	783	6.57%	383
Simple Average		6.15%		6.08%	-0.07%	7.48%		7.39%	-0.09%	7.24%		7.17%	-0.07%	7.28%		7.16%	-0.12%
Relative Dif.					-1%				-1%				-1%				-2%

Note: Relative difference calculated as [CapBelow-CapAbove]/CapAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

GROWTH PERFORMANCE

Year	Month	Apartment Above Year Cap Return	Apartment Below Year Cap Return	Yearly Difference	Industrial Above Year Cap Return	Industrial Below Year Cap Return	Yearly Difference	Office Above Year Cap Return	Office Below Year Cap Return	Yearly Difference	Retail Above Year Cap Return	Retail Below Year Cap Return	Yearly Difference
2001	12	12.75%	5.55%	-7.20%	-17.02%	10.08%	27.10%	-15.68%	5.31%	20.99%	-7.21%	5.52%	12.73%
2002	12	8.04%	14.37%	6.34%	4.89%	5.12%	0.24%	0.03%	9.89%	9.86%	14.78%	7.22%	-7.56%
2003	12	11.01%	9.71%	-1.30%	3.61%	3.55%	-0.05%	12.57%	-1.86%	-14.43%	20.83%	20.02%	-0.82%
2004	12	16.60%	16.51%	-0.09%	12.22%	4.13%	-8.09%	11.77%	8.89%	-2.88%	7.34%	18.80%	11.47%
2005	12	10.20%	9.45%	-0.75%	26.70%	18.53%	-8.17%	19.12%	21.06%	1.94%	25.90%	7.89%	-18.01%
2006	12	6.68%	1.27%	-5.41%	8.41%	13.69%	5.28%	11.18%	7.22%	-3.96%	6.91%	15.32%	8.41%
2007	12	8.35%	1.86%	-6.49%	14.46%	11.42%	-3.03%	11.70%	16.29%	4.59%	2.71%	-1.40%	-4.12%
2008	12	-20.23%	-4.55%	15.69%	-20.18%	-13.37%	6.81%	-23.82%	-22.79%	1.04%	-16.11%	-15.94%	0.17%
2009	12	-17.16%	-8.61%	8.56%	-30.74%	-21.40%	9.34%	-26.72%	-6.13%	20.59%	-23.45%	-25.74%	-2.29%
2010	12	7.70%	-8.39%	-16.10%	23.40%	-5.91%	-29.31%	-1.16%	-24.08%	-22.92%	-16.84%	9.92%	26.76%
2011	12	17.71%	6.88%	-10.83%	-1.23%	15.75%	16.97%	26.26%	22.14%	-4.12%	10.45%	-5.21%	-15.67%
2012	12	11.96%	12.65%	0.69%	2.40%	-2.28%	-4.68%	-2.95%	-1.46%	1.49%	4.26%	15.13%	10.87%
2013	12	5.67%	15.38%	9.72%	22.47%	8.79%	-13.68%	28.85%	-100.00%	-128.85%	41.79%	3.83%	-37.96%
2014	9	10.04%	16.86%	6.82%	7.22%	33.18%	25.96%	10.96%	n/a	0.00%	-18.07%	34.81%	52.89%
Geometric Mean		5.68%	5.81%	0.13%	2.57%	4.50%	1.93%	2.89%	-100.00%	0.00%	2.66%	4.88%	2.22%
Relative Dif.				2%			75%			0%			84%
Arithmetic Mean		6.38%	6.36%	-0.03%	4.04%	5.81%	1.76%	4.44%	-5.04%	0.00%	3.81%	6.44%	2.63%
Relative Dif.				0%			44%			0%			69%

Note: Returns Calculated on a Yearly Compounded Basis

Relative difference calculated as [GrowthBelow-GrowthAbove]/GrowthAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

RISK PERFORMANCE (ON GROWTH)

	Apartment Above	Apartment Below	Difference	Industrial Above	Industrial Below	Difference	Office Above	Office Below	Difference	Retail Above	Retail Below	Difference
St. Deviation	11.18%	8.89%	-2.29%	16.88%	13.73%	-3.15%	17.16%	0.00%	0.00%	18.76%	15.32%	-3.44%
Relative Dif.			-21%			-19%			0%			-18%
Min	128.98%	137.20%		87.57%	119.65%		84.41%	0.00%		101.16%	121.42%	
Max	201.19%	174.54%		160.15%	188.94%		158.38%	0.00%		196.74%	208.73%	
Range	72.21%	37.34%	-34.87%	72.57%	69.29%	-3.29%	73.98%	0.00%	0.00%	95.57%	87.32%	-8.26%
Relative Dif.			-48%			-5%			0%			-9%

Note: Relative difference calculated as [RiskBelow-RiskAbove]/RiskAbove. Positive relative difference means better performance of above-threshold properties. Negative relative difference means better performance of below-treshold properties.

SHARPE RATIO

	Apartment Above	Apartment Below	Difference	Industrial Above	Industrial Below	Difference	Office Above	Office Below	Difference	Retail Above	Retail Below	Difference
Total Return	11.84%	11.89%		10.05%	11.89%		10.13%	0.00%		9.94%	12.04%	
Risk Free Rate	1.43%	1.43%		1.43%	1.43%		1.43%	1.43%		1.43%	1.43%	
Risk Premium	10.41%	10.46%		8.62%	10.47%		8.70%	0.00%		8.51%	10.61%	
Sharpe Ratio	0.93	1.18	0.25	0.51	0.76	0.25	0.51	0.00	0.00	0.45	0.69	0.24
Relative Dif.			26%			49%			0%			53%

Note: Relative difference calculated as [SharpeRBelow-SharpeRAbove]/SharpeRAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

Table C-21. Results summary table for all property types. Cutoff $5 million. Filter: Region – West

Source: Sacchini & Shipps

RESULTS SUMMARY TABLE.

Sorting Criteria Sub-Institutional Treshold: $10 million

Filter: Region - West

CAP RATE PERFORMANCE

Year	Months	Apartment Above Avg. Cap	# Obs	Apartment Below Avg. Cap	# Obs	Industrial Above Avg. Cap	# Obs	Industrial Below Avg. Cap	# Obs	Office Above Avg. Cap	# Obs	Office Below Avg. Cap	# Obs	Retail Above Avg. Cap	# Obs	Retail Below Avg. Cap	# Obs
2001	12	7.77%	34	7.93%	37	9.42%	12	8.61%	9	9.18%	36	9.27%	21	9.20%	10	8.81%	11
2002	12	7.57%	63	7.80%	48	8.96%	9	8.80%	13	8.83%	61	8.93%	23	8.67%	24	8.87%	25
2003	12	6.84%	67	7.12%	65	8.61%	13	8.51%	17	8.47%	73	8.39%	40	7.95%	45	8.23%	29
2004	12	6.37%	101	6.16%	111	7.86%	17	8.17%	23	7.66%	108	7.72%	46	7.16%	40	7.53%	48
2005	12	5.66%	118	5.41%	362	7.20%	34	7.51%	51	6.82%	131	7.37%	88	6.55%	55	6.56%	137
2006	12	5.09%	101	5.36%	262	6.62%	39	6.53%	48	6.54%	103	6.62%	75	6.30%	48	6.18%	111
2007	12	5.47%	92	5.48%	272	6.12%	26	6.28%	57	5.59%	110	6.38%	91	6.19%	65	6.09%	112
2008	12	5.62%	51	5.56%	182	6.34%	10	6.57%	34	6.03%	28	6.52%	42	6.15%	13	6.31%	58
2009	12	6.90%	28	6.16%	91	8.61%	11	7.44%	10	9.07%	20	6.84%	9	7.14%	12	7.31%	29
2010	12	6.02%	40	6.17%	95	7.45%	9	7.54%	20	7.58%	25	7.97%	12	8.48%	12	7.31%	27
2011	12	6.10%	71	6.20%	154	7.22%	19	7.69%	25	7.07%	47	6.91%	20	7.42%	23	7.26%	42
2012	12	5.49%	74	5.82%	168	7.43%	22	6.89%	17	6.28%	61	6.85%	21	6.84%	25	7.37%	49
2013	12	5.72%	47	5.50%	164	6.36%	13	6.55%	22	5.92%	52	6.43%	15	6.89%	22	7.06%	43
2014	9	5.14%	21	5.25%	113	6.52%	11	6.69%	14	5.44%	39	6.82%	10	6.11%	16	6.54%	35
Weigthed Average		6.02%	908	5.77%	2,124	7.27%	245	7.15%	360	7.01%	894	7.20%	513	6.99%	410	6.82%	756
Simple Average		6.13%		6.14%	0.01%	7.48%		7.41%	-0.06%	7.18%		7.36%	0.18%	7.22%		7.24%	0.03%
Relative Dif.					0%				-1%				3%				0%

Note: Relative difference calculated as [CapBelow-CapAbove]/CapAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

GROWTH PERFORMANCE

Year	Month	Apartment Above Year Cap Return	Apartment Below Year Cap Return	Yearly Difference	Industrial Above Year Cap Return	Industrial Below Year Cap Return	Yearly Difference	Office Above Year Cap Return	Office Below Year Cap Return	Yearly Difference	Retail Above Year Cap Return	Retail Below Year Cap Return	Yearly Difference
2001	12	1.15%	15.01%	13.87%	-18.71%	-0.52%	18.19%	-10.42%	-6.70%	3.72%	-12.47%	1.46%	13.93%
2002	12	12.05%	9.19%	-2.86%	-3.22%	9.89%	13.11%	-4.99%	8.35%	13.34%	27.30%	5.94%	-21.36%
2003	12	11.75%	9.96%	-1.79%	16.44%	-2.61%	-19.05%	16.56%	2.98%	-13.58%	13.98%	20.66%	6.68%
2004	12	16.70%	17.86%	1.16%	4.60%	9.14%	4.54%	9.22%	12.35%	3.14%	4.88%	17.58%	12.70%
2005	12	10.49%	8.11%	-2.38%	40.62%	18.44%	-22.18%	17.41%	21.76%	4.35%	25.90%	13.80%	-12.10%
2006	12	12.09%	2.32%	-9.77%	3.76%	12.99%	9.23%	18.17%	3.00%	-15.18%	8.77%	10.26%	1.50%
2007	12	4.88%	4.14%	-0.75%	14.79%	11.39%	-3.39%	11.32%	15.56%	4.23%	3.68%	0.02%	-3.65%
2008	12	-24.61%	-8.15%	16.46%	-27.41%	-13.91%	13.50%	-29.84%	-19.40%	10.44%	-21.59%	-15.98%	5.61%
2009	12	-17.62%	-10.62%	7.00%	-26.37%	-25.00%	1.38%	-25.53%	-11.74%	13.79%	-16.96%	-26.19%	-9.23%
2010	12	16.45%	-6.55%	-23.00%	29.23%	1.29%	-27.94%	6.40%	-24.10%	-30.50%	-18.92%	-1.83%	17.09%
2011	12	19.73%	8.94%	-10.79%	-8.84%	10.96%	19.80%	26.24%	24.86%	-1.38%	18.62%	-3.82%	-22.45%
2012	12	9.89%	13.69%	3.80%	3.17%	-1.53%	-4.71%	-1.63%	-5.49%	-3.86%	-1.12%	14.32%	15.44%
2013	12	2.20%	13.21%	11.01%	22.56%	12.53%	-10.03%	28.51%	22.97%	-5.54%	29.03%	24.06%	-4.97%
2014	9	7.91%	15.98%	8.07%	7.29%	24.56%	17.27%	6.02%	25.53%	19.51%	2.62%	-0.12%	-2.74%
Geometric Mean		5.08%	6.09%	1.01%	2.19%	3.67%	1.48%	3.24%	3.36%	0.11%	3.19%	3.42%	0.23%
Relative Dif.				20%			68%			3%			7%
Arithmetic Mean		5.93%	6.65%	0.72%	4.14%	4.83%	0.69%	4.82%	4.99%	0.18%	4.55%	4.30%	-0.25%
Relative Dif.				12%			17%			4%			-6%

Note: Returns Calculated on a Yearly Compounded Basis

Relative difference calculated as [GrowthBelow-GrowthAbove]/GrowthAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

RISK PERFORMANCE (ON GROWTH)

	Apartment Above	Apartment Below	Difference	Industrial Above	Industrial Below	Difference	Office Above	Office Below	Difference	Retail Above	Retail Below	Difference
St. Deviation	12.68%	9.27%	-3.42%	20.09%	13.02%	-7.07%	17.66%	16.58%	-1.07%	17.32%	14.02%	-3.31%
Relative Dif.			-27%			-35%			-6%			-19%
Min	115.94%	143.26%		82.65%	109.58%		86.71%	90.48%		95.21%	112.06%	
Max	195.07%	187.49%		160.65%	173.92%		169.68%	169.49%		197.45%	194.73%	
Range	79.13%	44.22%	-34.91%	78.00%	64.34%	-13.67%	82.97%	79.01%	-3.97%	102.24%	82.67%	-19.57%
Relative Dif.			-44%			-18%			-5%			-19%

Note: Relative difference calculated as [RiskBelow-RiskAbove]/RiskAbove. Positive relative difference means better performance of above-threshold properties. Negative relative difference means better performance of below-treshold properties.

SHARPE RATIO

	Apartment Above	Apartment Below	Difference	Industrial Above	Industrial Below	Difference	Office Above	Office Below	Difference	Retail Above	Retail Below	Difference
Total Return	11.21%	12.23%		9.67%	11.09%		10.42%	10.72%		10.41%	10.66%	
Risk Free Rate	1.43%	1.43%		1.43%	1.43%		1.43%	1.43%		1.43%	1.43%	
Risk Premium	9.78%	10.80%		8.24%	9.66%		8.99%	9.29%		8.98%	9.24%	
Sharpe Ratio	0.77	1.17	0.39	0.41	0.74	0.33	0.51	0.56	0.05	0.52	0.66	0.14
Relative Dif.			51%			81%			10%			27%

Note: Relative difference calculated as [SharpeRBelow-SharpeRAbove]/SharpeRAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

Table C-22. Results summary table for all property types. Cutoff $10 million. Filter: Region – West

Source: Sacchini & Shipps

RESULTS SUMMARY TABLE.

Sorting Criteria Sub-Institutional Treshold: $5 million
Filter: Major Metros - Los Angeles

CAP RATE PERFORMANCE

Year	Months	Apartment Above Avg. Cap	Apartment Above # Obs	Apartment Below Avg. Cap	Apartment Below # Obs	Industrial Above Avg. Cap	Industrial Above # Obs	Industrial Below Avg. Cap	Industrial Below # Obs	Office Above Avg. Cap	Office Above # Obs	Office Below Avg. Cap	Office Below # Obs	Retail Above Avg. Cap	Retail Above # Obs	Retail Below Avg. Cap	Retail Below # Obs
2001	12	7.70%	27	7.79%	6	8.94%	8	9.30%	1	9.22%	21	8.72%	4	8.77%	7	0.00%	-
2002	12	7.35%	36	7.16%	5	8.80%	4	8.87%	3	8.78%	38	9.00%	2	9.05%	17	8.78%	2
2003	12	6.75%	50	7.08%	4	8.87%	9	8.53%	3	8.34%	54	8.87%	2	7.94%	22	8.71%	4
2004	12	6.08%	66	5.65%	19	8.64%	9	7.25%	4	7.66%	69	6.81%	9	7.58%	27	6.49%	9
2005	12	5.38%	92	5.13%	115	7.41%	23	6.44%	7	6.87%	69	6.99%	16	6.48%	45	6.34%	37
2006	12	4.97%	83	5.06%	97	6.21%	25	6.32%	12	6.11%	45	6.35%	17	5.99%	46	6.09%	22
2007	12	5.25%	70	5.44%	93	5.78%	23	5.93%	13	5.48%	63	5.98%	23	5.97%	48	5.80%	32
2008	12	5.33%	33	5.37%	60	5.96%	11	6.10%	6	6.40%	19	5.76%	7	6.25%	6	5.78%	16
2009	12	6.22%	25	6.06%	34	7.90%	7	8.94%	2	8.83%	11	7.18%	4	7.09%	12	6.22%	6
2010	12	6.00%	28	6.04%	34	8.11%	5	7.15%	2	7.82%	12	7.39%	4	7.39%	7	6.87%	7
2011	12	6.02%	59	5.98%	52	6.69%	7	7.45%	4	7.13%	16	0.00%	-	6.87%	17	6.79%	10
2012	12	5.43%	46	5.76%	51	7.09%	10	7.00%	1	6.53%	15	6.09%	3	6.65%	14	7.25%	6
2013	12	5.39%	30	5.48%	50	6.34%	12	3.12%	3	6.11%	17	3.17%	1	6.64%	13	7.21%	5
2014	9	5.39%	14	5.08%	38	5.94%	5	6.54%	3	6.77%	6	5.26%	2	5.83%	9	5.99%	8
Weigthed Average		**5.81%**	**659**	**5.49%**	**658**	**7.01%**	**158**	**6.61%**	**64**	**7.18%**	**455**	**6.59%**	**94**	**6.80%**	**290**	**6.33%**	**164**
Simple Average		**5.95%**		**5.93%**	**-0.01%**	**7.33%**		**7.07%**	**-0.27%**	**7.29%**		**6.73%**	**-0.55%**	**7.03%**		**6.79%**	**-0.24%**
Relative Dif.					**0%**				**-4%**				**-8%**				**-3%**

Note: Relative difference calculated as [CapBelow-CapAbove]/CapAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

GROWTH PERFORMANCE

Year	Month	Apartment Above Year Cap Return	Apartment Below Year Cap Return	Yearly Difference	Industrial Above Year Cap Return	Industrial Below Year Cap Return	Yearly Difference	Office Above Year Cap Return	Office Below Year Cap Return	Yearly Difference	Retail Above Year Cap Return	Retail Below Year Cap Return	Yearly Difference
2001	12	9.87%	15.22%	5.35%	-0.10%	-0.89%	-0.79%	7.08%	-1.47%	-8.54%	18.57%	-0.75%	-19.31%
2002	12	22.24%	12.90%	-9.34%	5.31%	14.23%	8.92%	-16.06%	8.24%	24.30%	-2.06%	-15.74%	-13.67%
2003	12	14.35%	21.57%	7.22%	6.73%	-3.17%	-9.91%	26.79%	6.67%	-20.11%	31.46%	45.29%	13.83%
2004	12	16.40%	17.29%	0.89%	6.94%	16.83%	9.89%	13.34%	19.54%	6.19%	3.54%	10.14%	6.60%
2005	12	11.46%	18.09%	6.63%	29.43%	10.36%	-19.07%	25.83%	12.94%	-12.89%	29.04%	18.73%	-10.31%
2006	12	7.41%	-2.67%	-10.07%	21.79%	27.54%	5.74%	11.68%	19.28%	7.60%	7.94%	7.78%	-0.16%
2007	12	4.77%	6.50%	1.73%	7.87%	5.52%	-2.35%	13.86%	16.90%	3.04%	4.59%	5.50%	0.92%
2008	12	-16.17%	-5.54%	10.62%	-15.09%	-5.65%	9.44%	-23.17%	-24.31%	-1.15%	-24.32%	-5.74%	18.58%
2009	12	-16.07%	-5.18%	10.89%	-30.31%	-27.32%	2.99%	-45.06%	-0.82%	44.24%	-20.69%	-45.19%	-24.49%
2010	12	4.74%	-5.44%	-10.18%	0.84%	-3.28%	-4.12%	35.87%	-25.59%	-61.47%	-14.29%	30.02%	44.31%
2011	12	20.72%	1.66%	-19.06%	20.53%	9.93%	-10.60%	5.25%	16.71%	11.45%	53.97%	-3.78%	-57.75%
2012	12	-3.49%	9.33%	12.82%	1.98%	7.72%	5.74%	4.52%	3.92%	-0.60%	-23.09%	13.34%	36.43%
2013	12	22.94%	14.08%	-8.86%	-100.00%	2.79%	102.79%	20.93%	-100.00%	-120.93%	67.44%	-100.00%	-167.44%
2014	9	11.60%	21.06%	9.45%	n/a	27.83%	0.00%	4.79%	n/a	0.00%	-28.15%	n/a	0.00%
Geometric Mean		**7.11%**	**7.81%**	**0.71%**	**-100.00%**	**4.56%**	**0.00%**	**3.63%**	**-100.00%**	**0.00%**	**4.50%**	**-100.00%**	**0.00%**
Relative Dif.				**10%**			**0%**			**0%**			**0%**
Arithmetic Mean		**7.91%**	**8.49%**	**0.58%**	**-3.39%**	**5.89%**	**0.00%**	**6.12%**	**-3.69%**	**0.00%**	**7.42%**	**-3.11%**	**0.00%**
Relative Dif.				**7%**			**0%**			**0%**			**0%**

Note: Returns Calculated on a Yearly Compounded Basis
Relative difference calculated as [GrowthBelow-GrowthAbove]/GrowthAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

RISK PERFORMANCE (ON GROWTH)

	Apartment Above	Apartment Below	Difference	Industrial Above	Industrial Below	Difference	Office Above	Office Below	Difference	Retail Above	Retail Below	Difference
St. Deviation	**12.54%**	**10.18%**	**-2.36%**	**0.00%**	**14.24%**	**0.00%**	**21.55%**	**0.00%**	**0.00%**	**29.76%**	**0.00%**	**0.00%**
Relative Dif.			**-19%**			**0%**			**0%**			**0%**
Min	154.07%	182.50%		0.00%	126.16%		85.05%	0.00%		108.22%	0.00%	
Max	224.22%	227.49%		0.00%	193.41%		210.75%	0.00%		235.75%	0.00%	
Range	70.15%	44.99%	-25.16%	0.00%	67.25%	0.00%	125.70%	0.00%	0.00%	127.53%	0.00%	0.00%
Relative Dif.			-36%			0%			0%			0%

Note: Relative difference calculated as [RiskBelow-RiskAbove]/RiskAbove. Positive relative difference means better performance of above-threshold properties. Negative relative difference means better performance of below-treshold properties.

SHARPE RATIO

	Apartment Above	Apartment Below	Difference	Industrial Above	Industrial Below	Difference	Office Above	Office Below	Difference	Retail Above	Retail Below	Difference
Total Return	13.05%	13.75%		0.00%	11.62%		10.92%	0.00%		11.54%	0.00%	
Risk Free Rate	1.43%	1.43%		1.43%	1.43%		1.43%	1.43%		1.43%	1.43%	
Risk Premium	11.63%	12.32%		0.00%	10.20%		9.49%	0.00%		10.11%	0.00%	
Sharpe Ratio	**0.93**	**1.21**	**0.28**	**0.00**	**0.72**	**0.00**	**0.44**	**0.00**	**0.00**	**0.34**	**0.00**	**0.00**
Relative Dif.			**30%**			**0%**			**0%**			**0%**

Note: Relative difference calculated as [SharpeRBelow-SharpeRAbove]/SharpeRAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

Table C-23. Results summary table for all property types. Cutoff $5 million. Filter: Major Metros – Los Angeles

Source: Sacchini & Shipps

RESULTS SUMMARY TABLE.

Sorting Criteria Sub-Institutional Treshold: $10 million

Filter: Major Metros - Los Angeles

CAP RATE PERFORMANCE

Year	Months	Apartment Above Avg. Cap	Apartment Above # Obs	Apartment Below Avg. Cap	Apartment Below # Obs	Industrial Above Avg. Cap	Industrial Above # Obs	Industrial Below Avg. Cap	Industrial Below # Obs	Office Above Avg. Cap	Office Above # Obs	Office Below Avg. Cap	Office Below # Obs	Retail Above Avg. Cap	Retail Above # Obs	Retail Below Avg. Cap	Retail Below # Obs
2001	12	7.66%	14	7.75%	19	9.09%	5	8.84%	4	9.21%	18	8.98%	7	9.02%	3	8.58%	4
2002	12	7.16%	26	7.60%	15	8.95%	2	8.78%	5	8.68%	32	9.24%	8	8.71%	8	9.24%	11
2003	12	6.66%	32	6.94%	22	9.32%	5	8.41%	7	8.23%	40	8.67%	16	7.78%	14	8.37%	12
2004	12	6.18%	42	5.80%	43	7.88%	5	8.42%	8	7.54%	49	7.61%	29	7.34%	15	7.29%	21
2005	12	5.56%	49	5.14%	158	7.52%	12	6.95%	18	6.62%	47	7.23%	38	6.55%	21	6.37%	61
2006	12	4.82%	43	5.08%	137	6.19%	16	6.29%	21	6.19%	34	6.16%	28	6.01%	23	6.03%	45
2007	12	5.10%	33	5.42%	130	5.50%	12	6.00%	24	5.41%	52	5.92%	34	6.03%	30	5.83%	50
2008	12	5.77%	13	5.28%	80	6.30%	5	5.89%	12	6.17%	13	6.28%	13	6.17%	3	5.86%	19
2009	12	6.67%	12	5.99%	47	7.91%	6	8.57%	3	9.02%	10	7.12%	5	6.51%	7	6.99%	11
2010	12	6.19%	12	5.99%	50	8.39%	3	7.43%	4	7.85%	11	7.41%	5	8.13%	3	6.85%	11
2011	12	6.17%	32	5.93%	79	6.67%	5	7.22%	6	7.00%	14	8.04%	2	6.81%	8	6.85%	19
2012	12	5.15%	24	5.76%	73	7.43%	5	6.80%	6	6.72%	12	5.92%	6	6.84%	8	6.82%	12
2013	12	5.67%	12	5.41%	68	6.25%	5	5.41%	10	5.83%	14	6.34%	4	6.60%	7	6.93%	11
2014	9	4.99%	4	5.18%	48	5.94%	5	6.54%	3	6.41%	4	6.37%	4	5.71%	4	5.97%	13
Weigthed Average		5.90%	348	5.56%	969	7.03%	91	6.80%	131	7.11%	350	7.04%	199	6.75%	154	6.57%	300
Simple Average		5.98%		5.95%	-0.03%	7.38%		7.25%	-0.13%	7.21%		7.23%	0.03%	7.01%		7.00%	-0.02%
Relative Dif.					-1%				-2%				0%				0%

Note: Relative difference calculated as [CapBelow-CapAbove]/CapAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

GROWTH PERFORMANCE

Year	Month	Apartment Above Year Cap Return	Apartment Below Year Cap Return	Yearly Difference	Industrial Above Year Cap Return	Industrial Below Year Cap Return	Yearly Difference	Office Above Year Cap Return	Office Below Year Cap Return	Yearly Difference	Retail Above Year Cap Return	Retail Below Year Cap Return	Yearly Difference
2001	12	4.46%	17.45%	12.99%	3.77%	-0.19%	-3.96%	13.08%	-3.13%	-16.21%	-21.83%	24.76%	46.60%
2002	12	24.71%	14.03%	-10.68%	-9.03%	16.76%	25.79%	-17.16%	-8.39%	8.78%	30.36%	-25.05%	-55.41%
2003	12	17.90%	18.04%	0.14%	10.19%	-3.03%	-13.22%	26.61%	20.39%	-6.22%	2.16%	49.07%	46.92%
2004	12	15.05%	18.46%	3.41%	25.33%	11.13%	-14.20%	11.95%	18.09%	6.14%	23.72%	3.52%	-20.20%
2005	12	11.38%	15.64%	4.26%	13.77%	17.87%	4.10%	24.58%	17.79%	-6.79%	12.11%	28.41%	16.30%
2006	12	9.80%	0.21%	-9.59%	38.70%	23.61%	-15.09%	15.15%	13.25%	-1.90%	17.64%	2.56%	-15.08%
2007	12	-1.67%	7.40%	9.07%	0.59%	6.28%	5.69%	9.68%	16.31%	6.63%	-8.30%	7.11%	15.41%
2008	12	-16.87%	-8.92%	7.96%	-16.48%	-8.71%	7.76%	-35.00%	-11.61%	23.39%	-20.04%	-12.04%	7.99%
2009	12	-22.20%	-6.78%	15.42%	-37.03%	-25.50%	11.53%	-37.74%	-24.52%	13.22%	-18.72%	-39.47%	-20.75%
2010	12	15.18%	-3.26%	-18.43%	21.86%	-6.63%	-28.49%	60.77%	-23.86%	-84.62%	-24.12%	14.36%	38.48%
2011	12	23.91%	4.17%	-19.74%	6.11%	15.59%	9.48%	-8.70%	26.25%	34.95%	62.35%	16.28%	-46.07%
2012	12	-9.58%	9.75%	19.32%	5.88%	3.19%	-2.69%	4.67%	4.14%	-0.53%	-15.06%	-7.90%	7.15%
2013	12	29.51%	13.06%	-16.46%	5.35%	9.42%	4.06%	30.20%	1.52%	-28.68%	24.79%	43.43%	18.64%
2014	9	7.18%	20.12%	12.94%	56.61%	16.87%	-39.74%	-3.36%	47.14%	50.50%	20.91%	-18.07%	-38.99%
Geometric Mean		6.64%	7.89%	1.25%	5.89%	4.42%	-1.48%	3.70%	4.25%	0.55%	3.11%	3.66%	0.55%
Relative Dif.				19%			-25%			15%			18%
Arithmetic Mean		7.77%	8.53%	0.76%	8.97%	5.48%	-3.50%	6.77%	6.67%	-0.10%	6.14%	6.21%	0.07%
Relative Dif.				10%			-39%			-1%			1%

Note: Returns Calculated on a Yearly Compounded Basis

Relative difference calculated as [GrowthBelow-GrowthAbove]/GrowthAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

RISK PERFORMANCE (ON GROWTH)

	Apartment Above	Apartment Below	Difference	Industrial Above	Industrial Below	Difference	Office Above	Office Below	Difference	Retail Above	Retail Below	Difference
St. Deviation	15.58%	9.89%	-5.68%	22.92%	13.32%	-9.59%	26.26%	19.99%	-6.27%	25.52%	25.47%	-0.04%
Relative Dif.			-36%			-42%			-24%			0%
Min	137.44%	182.62%		105.38%	121.20%		82.45%	97.15%		70.93%	103.96%	
Max	216.35%	233.08%		221.08%	195.83%		215.07%	196.30%		171.76%	203.56%	
Range	78.90%	50.46%	-28.44%	115.70%	74.63%	-41.07%	132.62%	99.15%	-33.47%	100.83%	99.60%	-1.23%
Relative Dif.			-36%			-35%			-25%			-1%

Note: Relative difference calculated as [RiskBelow-RiskAbove]/RiskAbove. Positive relative difference means better performance of above-threshold properties. Negative relative difference means better performance of below-treshold properties.

SHARPE RATIO

	Apartment Above	Apartment Below	Difference	Industrial Above	Industrial Below	Difference	Office Above	Office Below	Difference	Retail Above	Retail Below	Difference
Total Return	12.62%	13.83%		13.28%	11.67%		10.91%	11.49%		10.13%	10.66%	
Risk Free Rate	1.43%	1.43%		1.43%	1.43%		1.43%	1.43%		1.43%	1.43%	
Risk Premium	11.19%	12.41%		11.85%	10.24%		9.48%	10.06%		8.70%	9.23%	
Sharpe Ratio	0.72	1.25	0.54	0.52	0.77	0.25	0.36	0.50	0.14	0.34	0.36	0.02
Relative Dif.			75%			49%			39%			6%

Note: Relative difference calculated as [SharpeRBelow-SharpeRAbove]/SharpeRAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

Table C-24. Results summary table for all property types. Cutoff $10 million. Filter: Major Metros – Los Angeles

Source: Sacchini & Shipps

RESULTS SUMMARY TABLE.

Sorting Criteria Sub-Institutional Treshold: $5 million

Filter: Major Metros - San Francisco

CAP RATE PERFORMANCE

		Apartment Above		Apartment Below		Industrial Above		Industrial Below		Office Above		Office Below		Retail Above		Retail Below	
Year	Months	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs
2001	12	6.76%	6	0.00%	-	8.56%	4	8.50%	1	9.17%	6	9.00%	1	8.66%	2	0.00%	-
2002	12	6.85%	4	7.01%	2	8.95%	4	0.00%	-	8.86%	5	8.30%	1	8.44%	3	0.00%	-
2003	12	7.05%	8	5.65%	4	8.25%	2	0.00%	-	8.68%	12	7.22%	2	8.00%	8	7.78%	1
2004	12	5.76%	10	6.16%	10	8.11%	8	13.46%	1	7.95%	17	6.30%	1	6.88%	6	8.80%	1
2005	12	5.44%	23	4.97%	52	7.64%	13	7.05%	3	6.92%	39	7.05%	10	6.31%	11	4.96%	4
2006	12	4.53%	11	5.16%	39	7.36%	13	6.27%	6	6.50%	39	6.92%	8	5.58%	4	5.31%	6
2007	12	5.52%	38	4.85%	43	6.48%	10	5.41%	8	5.60%	38	5.62%	7	6.12%	10	5.97%	9
2008	12	5.39%	14	5.06%	33	6.92%	5	6.69%	6	5.68%	10	6.01%	7	6.19%	4	6.12%	6
2009	12	6.62%	10	6.07%	11	10.43%	3	7.49%	2	8.40%	7	5.80%	1	8.23%	2	5.50%	1
2010	12	5.51%	10	5.76%	14	6.50%	3	6.03%	2	7.13%	10	8.30%	2	8.10%	4	8.00%	1
2011	12	6.00%	23	5.64%	24	7.12%	9	8.12%	6	6.79%	22	7.09%	2	7.92%	6	7.12%	3
2012	12	5.29%	27	5.46%	38	7.49%	10	6.51%	2	5.99%	29	6.63%	6	7.34%	6	5.62%	4
2013	12	4.98%	27	5.19%	38	7.16%	7	8.56%	1	5.39%	19	7.40%	2	6.71%	3	6.76%	5
2014	9	4.76%	13	4.24%	18	6.68%	5	7.56%	2	5.03%	25	0.00%	-	5.80%	4	4.98%	3
Weigthed Average		**5.54%**	**224**	**5.21%**	**326**	**7.49%**	**96**	**6.91%**	**40**	**6.52%**	**278**	**6.73%**	**50**	**6.98%**	**73**	**6.02%**	**44**
Simple Average		**5.75%**		**5.48%**	**-0.27%**	**7.69%**		**7.64%**	**-0.05%**	**7.01%**		**7.05%**	**0.04%**	**7.16%**		**6.41%**	**-0.75%**
Relative Dif.					**-5%**				**-1%**				**1%**				**-11%**

Note: Relative difference calculated as [CapBelow-CapAbove]/CapAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

GROWTH PERFORMANCE

		Apartment Above	Apartment Below	Yearly	Industrial Above	Industrial Below	Yearly	Office Above	Office Below	Yearly	Retail Above	Retail Below	Yearly
Year	Month	Year Cap Return	Year Cap Return	Difference	Year Cap Return	Year Cap Return	Difference	Year Cap Return	Year Cap Return	Difference	Year Cap Return	Year Cap Return	Difference
2001	12	21.00%	4.34%	-16.66%	-19.14%	24.35%	43.49%	-21.37%	12.80%	34.17%	-16.34%	39.41%	55.75%
2002	12	8.81%	12.77%	3.96%	-16.67%	10.87%	27.53%	7.57%	-13.99%	-21.56%	37.06%	-1.74%	-38.80%
2003	12	-3.85%	-6.34%	-2.49%	15.02%	-1.78%	-16.80%	-23.59%	-12.47%	11.12%	1.93%	26.81%	24.87%
2004	12	7.13%	13.23%	6.10%	31.13%	-7.36%	-38.49%	22.11%	17.99%	-4.12%	6.56%	20.85%	14.29%
2005	12	13.89%	6.65%	-7.25%	-2.32%	6.75%	9.07%	17.23%	6.39%	-10.84%	0.14%	-7.75%	-7.89%
2006	12	2.48%	12.94%	10.47%	11.93%	5.35%	-6.59%	11.42%	8.34%	-3.08%	51.01%	24.68%	-26.32%
2007	12	1.82%	-1.58%	-3.40%	36.11%	29.30%	-6.80%	10.25%	37.19%	26.95%	-34.37%	-7.53%	26.84%
2008	12	-9.87%	-8.66%	1.21%	-53.26%	-21.74%	31.52%	-34.01%	-34.75%	-0.75%	12.85%	-21.72%	-34.57%
2009	12	-24.62%	-14.74%	9.88%	1.47%	-22.75%	-24.22%	11.07%	-10.82%	-21.90%	-5.33%	-4.37%	0.97%
2010	12	28.98%	8.21%	-20.77%	43.82%	13.22%	-30.60%	-21.56%	-14.31%	7.25%	-43.99%	-18.86%	25.13%
2011	12	16.49%	4.58%	-11.90%	-7.38%	10.52%	17.90%	51.82%	30.05%	-21.77%	119.64%	38.72%	-80.92%
2012	12	22.90%	15.73%	-7.17%	32.56%	12.22%	-20.33%	5.10%	7.82%	2.72%	-43.38%	-8.31%	35.07%
2013	12	0.00%	31.66%	31.66%	-100.00%	-100.00%	0.00%	31.29%	-100.00%	-131.29%	-100.00%	-100.00%	0.00%
2014	9	0.00%	-0.94%	-0.94%	n/a	n/a	0.00%	6.80%	n/a	0.00%	n/a	n/a	0.00%
Geometric Mean		**-100.00%**	**5.06%**	**0.00%**	**-100.00%**	**-100.00%**	**0.00%**	**2.68%**	**-100.00%**	**0.00%**	**-100.00%**	**-100.00%**	**0.00%**
Relative Dif.				**0%**			**0%**			**0%**			**0%**
Arithmetic Mean		**6.08%**	**5.56%**	**0.00%**	**-2.06%**	**-3.16%**	**0.00%**	**5.30%**	**-5.06%**	**0.00%**	**-1.09%**	**-1.52%**	**0.00%**
Relative Dif.				**0%**			**0%**			**0%**			**0%**

Note: Returns Calculated on a Yearly Compounded Basis

Relative difference calculated as [GrowthBelow-GrowthAbove]/GrowthAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

RISK PERFORMANCE (ON GROWTH)

	Apartment Above	Apartment Below	Difference	Industrial Above	Industrial Below	Difference	Office Above	Office Below	Difference	Retail Above	Retail Below	Difference
St. Deviation	**0.00%**	**11.80%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**23.50%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**
Relative Dif.			**0%**			**0%**			**0%**			**0%**
Min	0.00%	111.56%		0.00%	0.00%		62.22%	0.00%		0.00%	0.00%	
Max	0.00%	153.29%		0.00%	0.00%		118.03%	0.00%		0.00%	0.00%	
Range	0.00%	41.73%	0.00%	0.00%	0.00%	0.00%	55.81%	0.00%	0.00%	0.00%	0.00%	0.00%
Relative Dif.			0%			0%			0%			0%

Note: Relative difference calculated as [RiskBelow-RiskAbove]/RiskAbove. Positive relative difference means better performance of above-threshold properties. Negative relative difference means better performance of below-treshold properties.

SHARPE RATIO

	Apartment Above	Apartment Below	Difference	Industrial Above	Industrial Below	Difference	Office Above	Office Below	Difference	Retail Above	Retail Below	Difference
Total Return	0.00%	10.54%		0.00%	0.00%		9.68%	0.00%		0.00%	0.00%	
Risk Free Rate	1.43%	1.43%		1.43%	1.43%		1.43%	1.43%		1.43%	1.43%	
Risk Premium	0.00%	9.12%		0.00%	0.00%		8.26%	0.00%		0.00%	0.00%	
Sharpe Ratio	**0.00**	**0.77**	**0.00**	**0.00**	**0.00**	**0.00**	**0.35**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Relative Dif.			**0%**			**0%**			**0%**			**0%**

Note: Relative difference calculated as [SharpeRBelow-SharpeRAbove]/SharpeRAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

Table C-25. Results summary table for all property types. Cutoff $5 million. Filter: Major Metros – San Francisco

Source: Sacchini & Shipps

RESULTS SUMMARY TABLE.

Sorting Criteria Sub-Institutional Treshold: $10 million

Filter: Major Metros - San Francisco

CAP RATE PERFORMANCE

Year	Months	Apartment Above Avg. Cap	Apartment Above # Obs	Apartment Below Avg. Cap	Apartment Below # Obs	Industrial Above Avg. Cap	Industrial Above # Obs	Industrial Below Avg. Cap	Industrial Below # Obs	Office Above Avg. Cap	Office Above # Obs	Office Below Avg. Cap	Office Below # Obs	Retail Above Avg. Cap	Retail Above # Obs	Retail Below Avg. Cap	Retail Below # Obs
2001	12	6.52%	4	7.25%	2	8.74%	3	8.27%	2	9.25%	4	9.01%	3	8.66%	2	0.00%	-
2002	12	6.80%	3	7.00%	3	8.95%	4	0.00%	-	8.98%	3	8.55%	3	8.44%	3	0.00%	-
2003	12	6.77%	5	6.44%	7	0.00%	-	8.25%	2	9.08%	8	7.66%	6	8.03%	6	7.86%	3
2004	12	5.85%	9	6.06%	11	8.04%	6	10.02%	3	7.95%	17	6.30%	1	6.88%	3	7.36%	4
2005	12	5.38%	18	5.03%	57	6.90%	7	8.02%	9	6.91%	37	7.05%	12	6.44%	9	5.22%	6
2006	12	4.17%	8	5.18%	42	7.41%	10	6.58%	9	6.50%	36	6.82%	11	5.67%	3	5.31%	7
2007	12	6.75%	14	4.83%	67	6.42%	7	5.74%	11	5.34%	31	6.17%	14	6.10%	8	6.01%	11
2008	12	5.30%	9	5.13%	38	6.45%	3	6.92%	8	5.44%	7	6.07%	10	5.58%	2	6.29%	8
2009	12	7.06%	6	6.04%	15	10.43%	3	7.49%	2	9.26%	5	6.09%	3	8.75%	1	6.61%	2
2010	12	5.66%	7	5.66%	17	6.50%	3	6.03%	2	6.32%	6	8.34%	6	8.80%	2	7.60%	3
2011	12	5.67%	18	5.90%	29	6.52%	5	8.02%	10	6.87%	17	6.67%	7	7.77%	4	7.56%	5
2012	12	5.25%	14	5.42%	51	7.77%	8	6.43%	4	5.79%	26	6.99%	9	8.08%	3	6.04%	7
2013	12	4.70%	9	5.17%	56	6.70%	5	8.39%	3	5.56%	18	5.72%	3	6.30%	2	6.89%	6
2014	9	4.78%	5	4.39%	26	7.23%	4	6.54%	3	5.03%	25	0.00%	-	6.04%	3	5.01%	4
Weigthed Average		**5.65%**	**129**	**5.25%**	**421**	**7.43%**	**68**	**7.22%**	**68**	**6.43%**	**240**	**6.89%**	**88**	**7.04%**	**51**	**6.29%**	**66**
Simple Average		**5.76%**		**5.68%**	**-0.08%**	**7.54%**		**7.44%**	**-0.11%**	**7.02%**		**7.03%**	**0.01%**	**7.25%**		**6.48%**	**-0.77%**
Relative Dif.					**-1%**				**-1%**				**0%**				**-11%**

Note: Relative difference calculated as [CapBelow-CapAbove]/CapAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

GROWTH PERFORMANCE

Year	Month	Apartment Above Year Cap Return	Apartment Below Year Cap Return	Yearly Difference	Industrial Above Year Cap Return	Industrial Below Year Cap Return	Yearly Difference	Office Above Year Cap Return	Office Below Year Cap Return	Yearly Difference	Retail Above Year Cap Return	Retail Below Year Cap Return	Yearly Difference
2001	12	-15.93%	15.72%	31.66%	-36.60%	10.12%	46.72%	-31.75%	11.23%	42.98%	-16.04%	38.85%	54.90%
2002	12	7.46%	10.09%	2.63%	20.05%	13.14%	-6.91%	2.61%	-7.59%	-10.19%	38.49%	25.79%	-12.70%
2003	12	9.87%	-3.68%	-13.55%	-7.06%	-10.21%	-3.15%	-10.82%	-19.46%	-8.64%	1.07%	-5.68%	-6.75%
2004	12	12.88%	9.52%	-3.36%	15.03%	9.44%	-5.60%	18.33%	19.62%	1.29%	2.72%	23.22%	20.50%
2005	12	-0.36%	8.37%	8.73%	24.73%	-6.48%	-31.20%	19.11%	12.27%	-6.84%	24.40%	-7.13%	-31.53%
2006	12	22.65%	9.44%	-13.21%	-7.28%	14.71%	22.00%	15.54%	0.98%	-14.56%	34.91%	26.93%	-7.98%
2007	12	0.62%	-1.12%	-1.74%	64.09%	23.50%	-40.58%	18.23%	16.04%	-2.19%	-25.01%	-12.37%	12.65%
2008	12	-20.94%	-7.62%	13.32%	-70.57%	-26.59%	43.99%	-36.99%	-21.52%	15.47%	-10.17%	-12.97%	-2.80%
2009	12	-15.00%	-19.62%	-4.62%	85.15%	-23.85%	-109.01%	-5.01%	-3.83%	1.18%	-32.62%	16.37%	48.99%
2010	12	29.63%	14.57%	-15.06%	14.83%	24.72%	9.89%	-12.93%	-18.66%	-5.73%	1.81%	-47.34%	-49.15%
2011	12	19.65%	4.30%	-15.35%	-15.31%	8.84%	24.15%	62.43%	27.54%	-34.89%	82.65%	92.54%	9.88%
2012	12	20.57%	21.36%	0.79%	28.69%	15.27%	-13.42%	-5.61%	17.31%	22.92%	-40.73%	-21.25%	19.48%
2013	12	13.88%	26.93%	13.05%	0.00%	0.00%	0.00%	38.28%	19.93%	-18.36%	0.00%	0.00%	0.00%
2014	9	-27.35%	-5.96%	21.38%	0.00%	0.00%	0.00%	4.03%	15.52%	11.49%	0.00%	0.00%	0.00%
Geometric Mean		**3.25%**	**5.38%**	**2.14%**	**-100.00%**	**-100.00%**	**0.00%**	**2.31%**	**3.47%**	**1.17%**	**-100.00%**	**-100.00%**	**0.00%**
Relative Dif.				**66%**			**0%**			**51%**			**0%**
Arithmetic Mean		**4.12%**	**5.88%**	**1.76%**	**8.27%**	**3.76%**	**0.00%**	**5.39%**	**4.96%**	**-0.43%**	**4.39%**	**8.36%**	**0.00%**
Relative Dif.				**43%**			**0%**			**-8%**			**0%**

Note: Returns Calculated on a Yearly Compounded Basis

Relative difference calculated as [GrowthBelow-GrowthAbove]/GrowthAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

RISK PERFORMANCE (ON GROWTH)

	Apartment Above	Apartment Below	Difference	Industrial Above	Industrial Below	Difference	Office Above	Office Below	Difference	Retail Above	Retail Below	Difference
St. Deviation	**17.85%**	**12.47%**	**-5.38%**	**0.00%**	**0.00%**	**0.00%**	**26.27%**	**16.49%**	**-9.78%**	**0.00%**	**0.00%**	**0.00%**
Relative Dif.			**-30%**			**0%**			**-37%**			**0%**
Min	91.92%	116.73%		0.00%	0.00%		56.68%	81.31%		0.00%	0.00%	
Max	143.10%	160.80%		0.00%	0.00%		122.02%	119.86%		0.00%	0.00%	
Range	51.19%	44.07%	-7.11%	0.00%	0.00%	0.00%	65.34%	38.55%	-26.78%	0.00%	0.00%	0.00%
Relative Dif.			-14%			0%			-41%			0%

Note: Relative difference calculated as [RiskBelow-RiskAbove]/RiskAbove. Positive relative difference means better performance of above-threshold properties. Negative relative difference means better performance of below-treshold properties.

SHARPE RATIO

	Apartment Above	Apartment Below	Difference	Industrial Above	Industrial Below	Difference	Office Above	Office Below	Difference	Retail Above	Retail Below	Difference
Total Return	9.01%	11.06%		0.00%	0.00%		9.33%	10.51%		0.00%	0.00%	
Risk Free Rate	1.43%	1.43%		1.43%	1.43%		1.43%	1.43%		1.43%	1.43%	
Risk Premium	7.58%	9.64%		0.00%	0.00%		7.90%	9.08%		0.00%	0.00%	
Sharpe Ratio	**0.42**	**0.77**	**0.35**	**0.00**	**0.00**	**0.00**	**0.30**	**0.55**	**0.25**	**0.00**	**0.00**	**0.00**
Relative Dif.			**82%**			**0%**			**83%**			**0%**

Note: Relative difference calculated as [SharpeRBelow-SharpeRAbove]/SharpeRAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

Table C-26. Results summary table for all property types. Cutoff $10 million. Filter: Major Metros – San Francisco

Source: Sacchini & Shipps

RESULTS SUMMARY TABLE.

Sorting Criteria Sub-Institutional Treshold: $5 million
Filter: Major Metros - New York

CAP RATE PERFORMANCE

Year	Months	Apartment Above Avg. Cap	Apartment Above # Obs	Apartment Below Avg. Cap	Apartment Below # Obs	Industrial Above Avg. Cap	Industrial Above # Obs	Industrial Below Avg. Cap	Industrial Below # Obs
2001	12	9.01%	5	0.00%	-	10.50%	1	0.00%	-
2002	12	6.71%	3	9.50%	1	0.00%	-	0.00%	-
2003	12	6.44%	4	7.19%	2	8.75%	2	0.00%	-
2004	12	6.04%	12	6.41%	4	0.00%	-	8.21%	1
2005	12	4.54%	16	7.06%	15	6.86%	7	8.47%	6
2006	12	4.70%	24	5.98%	27	6.25%	2	2.40%	1
2007	12	5.31%	28	6.25%	34	7.07%	4	6.76%	6
2008	12	5.41%	14	6.22%	18	8.00%	1	8.50%	1
2009	12	6.90%	7	6.92%	18	0.00%	-	8.00%	1
2010	12	6.08%	15	6.58%	13	8.11%	2	0.00%	-
2011	12	6.00%	13	6.51%	11	8.00%	1	0.00%	-
2012	12	5.95%	17	6.57%	31	7.35%	3	0.00%	-
2013	12	4.70%	35	5.40%	22	7.08%	8	0.00%	-
2014	9	4.89%	23	5.35%	22	6.82%	4	0.00%	-
Weigthed Average		**5.41%**	**216**	**6.25%**	**218**	**7.29%**	**35**	**7.40%**	**16**
Simple Average		**5.91%**		**6.61%**	**0.70%**	**7.71%**		**7.06%**	**-0.65%**
Relative Dif.					**12%**				**-8%**

Year	Months	Office Above Avg. Cap	Office Above # Obs	Office Below Avg. Cap	Office Below # Obs	Retail Above Avg. Cap	Retail Above # Obs	Retail Below Avg. Cap	Retail Below # Obs
2001	12	9.15%	26	8.35%	2	9.82%	4	9.50%	2
2002	12	8.39%	25	8.49%	2	8.07%	5	7.54%	1
2003	12	8.03%	26	0.00%	-	8.07%	9	8.19%	1
2004	12	7.35%	42	8.30%	4	7.55%	6	7.69%	4
2005	12	6.41%	48	7.06%	5	6.64%	11	9.00%	2
2006	12	5.89%	48	6.17%	6	5.31%	13	5.93%	5
2007	12	5.34%	52	7.19%	8	5.99%	17	6.17%	7
2008	12	5.66%	21	8.67%	3	5.61%	7	6.38%	6
2009	12	6.66%	5	7.75%	2	6.51%	7	7.18%	3
2010	12	6.00%	17	6.57%	3	6.99%	4	8.60%	3
2011	12	6.21%	21	8.00%	1	7.54%	4	8.23%	3
2012	12	6.05%	26	0.00%	-	6.55%	9	7.32%	7
2013	12	5.81%	15	4.34%	1	5.53%	9	6.42%	3
2014	9	5.40%	17	6.91%	1	6.17%	10	6.46%	3
Weigthed Average		**6.57%**	**389**	**7.29%**	**38**	**6.56%**	**115**	**7.13%**	**50**
Simple Average		**6.60%**		**7.31%**	**0.72%**	**6.88%**		**7.47%**	**0.59%**
Relative Dif.					**11%**				**9%**

Note: Relative difference calculated as [CapBelow-CapAbove]/CapAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

GROWTH PERFORMANCE

Year	Month	Apartment Above Year Cap Return	Apartment Below Year Cap Return	Yearly Difference	Industrial Above Year Cap Return	Industrial Below Year Cap Return	Yearly Difference
2001	12	-19.01%	20.26%	39.28%	-53.22%	14.41%	67.63%
2002	12	25.62%	32.72%	7.10%	55.71%	-15.16%	-70.87%
2003	12	7.59%	24.21%	16.62%	2.98%	22.17%	19.19%
2004	12	17.60%	7.62%	-9.98%	-2.36%	20.75%	23.10%
2005	12	13.04%	29.82%	16.78%	15.49%	17.22%	1.73%
2006	12	8.28%	-5.62%	-13.89%	40.72%	-1.80%	-42.52%
2007	12	21.18%	21.82%	0.64%	-15.32%	43.34%	58.65%
2008	12	-15.62%	-6.14%	9.48%	-5.88%	-47.86%	-41.98%
2009	12	-10.16%	-16.25%	-6.10%	-7.56%	31.52%	39.08%
2010	12	2.91%	8.54%	5.63%	2.11%	-7.84%	-9.94%
2011	12	19.06%	16.10%	-2.96%	-24.09%	40.20%	64.29%
2012	12	12.27%	18.73%	6.45%	60.37%	-12.31%	-72.69%
2013	12	17.50%	17.80%	0.30%	-100.00%	-100.00%	0.00%
2014	9	22.32%	23.62%	1.30%	n/a	n/a	0.00%
Geometric Mean		**7.55%**	**12.70%**	**5.14%**	**-100.00%**	**-100.00%**	**0.00%**
Relative Dif.				**68%**			**0%**
Arithmetic Mean		**8.76%**	**13.80%**	**5.05%**	**-2.39%**	**0.36%**	**0.00%**
Relative Dif.				**58%**			**0%**

Year	Month	Office Above Year Cap Return	Office Below Year Cap Return	Yearly Difference	Retail Above Year Cap Return	Retail Below Year Cap Return	Yearly Difference
2001	12	10.98%	-24.68%	-35.66%	15.68%	-36.75%	-52.42%
2002	12	15.08%	36.14%	21.06%	0.55%	27.89%	27.34%
2003	12	2.86%	18.54%	15.68%	33.08%	18.61%	-14.48%
2004	12	15.48%	2.43%	-13.05%	-11.94%	29.28%	41.22%
2005	12	18.25%	31.98%	13.73%	40.26%	30.90%	-9.35%
2006	12	16.44%	-11.30%	-27.74%	-11.85%	13.01%	24.86%
2007	12	19.58%	17.90%	-1.68%	45.15%	2.35%	-42.80%
2008	12	-15.51%	-15.75%	-0.24%	-29.70%	-25.58%	4.12%
2009	12	-49.01%	-8.72%	40.29%	-16.45%	-23.55%	-7.10%
2010	12	63.80%	-4.19%	-67.99%	37.26%	76.38%	39.12%
2011	12	8.87%	53.85%	44.97%	-5.62%	-22.87%	-17.25%
2012	12	15.56%	-23.97%	-39.53%	22.57%	26.06%	3.49%
2013	12	12.39%	-100.00%	-112.39%	18.76%	-100.00%	-118.76%
2014	9	32.82%	n/a	0.00%	-25.85%	n/a	0.00%
Geometric Mean		**8.54%**	**-100.00%**	**0.00%**	**5.78%**	**-100.00%**	**0.00%**
Relative Dif.				**0%**			**0%**
Arithmetic Mean		**11.97%**	**-2.14%**	**0.00%**	**7.99%**	**1.21%**	**0.00%**
Relative Dif.				**0%**			**0%**

Note: Returns Calculated on a Yearly Compounded Basis
Relative difference calculated as [GrowthBelow-GrowthAbove]/GrowthAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

RISK PERFORMANCE (ON GROWTH)

	Apartment Above	Apartment Below	Difference	Industrial Above	Industrial Below	Difference	Office Above	Office Below	Difference	Retail Above	Retail Below	Difference
St. Deviation	**14.34%**	**14.45%**	**0.11%**	**0.00%**	**0.00%**	**0.00%**	**24.56%**	**0.00%**	**0.00%**	**25.56%**	**0.00%**	**0.00%**
Relative Dif.			**1%**			**0%**			**0%**			**0%**
Min	140.80%	248.95%		0.00%	0.00%		106.94%	0.00%		141.60%	0.00%	
Max	191.00%	329.06%		0.00%	0.00%		255.06%	0.00%		249.71%	0.00%	
Range	50.20%	80.11%	29.91%	0.00%	0.00%	0.00%	148.13%	0.00%	0.00%	108.12%	0.00%	0.00%
Relative Dif.			60%			0%			0%			0%

Note: Relative difference calculated as [RiskBelow-RiskAbove]/RiskAbove. Positive relative difference means better performance of above-threshold properties. Negative relative difference means better performance of below-treshold properties.

SHARPE RATIO

	Apartment Above	Apartment Below	Difference	Industrial Above	Industrial Below	Difference	Office Above	Office Below	Difference	Retail Above	Retail Below	Difference
Total Return	13.46%	19.31%		0.00%	0.00%		15.13%	0.00%		12.66%	0.00%	
Risk Free Rate	1.43%	1.43%		1.43%	1.43%		1.43%	1.43%		1.43%	1.43%	
Risk Premium	12.03%	17.88%		0.00%	0.00%		13.71%	0.00%		11.23%	0.00%	
Sharpe Ratio	**0.84**	**1.24**	**0.40**	**0.00**	**0.00**	**0.00**	**0.56**	**0.00**	**0.00**	**0.44**	**0.00**	**0.00**
Relative Dif.			**47%**			**0%**			**0%**			**0%**

Note: Relative difference calculated as [SharpeRBelow-SharpeRAbove]/SharpeRAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

Table C-27. Results summary table for all property types. Cutoff $5 million. Filter: Major Metros – New York
Source: Sacchini & Shipps

RESULTS SUMMARY TABLE.

Sorting Criteria Sub-Institutional Treshold: $10 million

Filter: Major Metros - New York

CAP RATE PERFORMANCE

Year	Months	Apartment Above Avg. Cap	Apartment Above # Obs	Apartment Below Avg. Cap	Apartment Below # Obs	Industrial Above Avg. Cap	Industrial Above # Obs	Industrial Below Avg. Cap	Industrial Below # Obs	Office Above Avg. Cap	Office Above # Obs	Office Below Avg. Cap	Office Below # Obs	Retail Above Avg. Cap	Retail Above # Obs	Retail Below Avg. Cap	Retail Below # Obs
2001	12	9.01%	5	0.00%	-	0.00%	-	10.50%	1	8.83%	19	9.67%	9	9.82%	4	9.50%	2
2002	12	6.02%	2	8.80%	2	0.00%	-	0.00%	-	8.38%	21	8.47%	6	7.72%	4	8.51%	2
2003	12	6.69%	3	6.68%	3	8.75%	2	0.00%	-	7.96%	21	8.31%	5	7.97%	7	8.34%	3
2004	12	6.24%	6	6.07%	10	0.00%	-	8.21%	1	7.34%	39	7.98%	7	7.08%	4	7.96%	6
2005	12	4.43%	12	6.60%	19	6.86%	7	8.47%	6	6.28%	39	6.97%	14	7.28%	7	6.67%	6
2006	12	4.48%	13	5.68%	38	6.25%	2	2.40%	1	5.88%	42	6.05%	12	4.88%	6	5.79%	12
2007	12	4.89%	14	6.10%	48	7.73%	2	6.67%	8	5.19%	46	6.89%	14	5.91%	12	6.18%	12
2008	12	3.88%	4	6.15%	28	0.00%	-	8.25%	2	5.39%	19	8.50%	5	6.00%	4	5.95%	9
2009	12	6.78%	6	6.95%	19	0.00%	-	8.00%	1	6.66%	5	7.75%	2	6.47%	6	7.07%	4
2010	12	5.87%	9	6.52%	19	8.11%	2	0.00%	-	6.08%	15	6.10%	5	8.18%	1	7.60%	6
2011	12	6.05%	7	6.31%	17	8.00%	1	0.00%	-	6.14%	20	7.75%	2	7.00%	1	7.98%	6
2012	12	5.90%	8	6.44%	40	7.35%	3	0.00%	-	5.82%	24	8.81%	2	6.65%	4	6.97%	12
2013	12	4.54%	17	5.16%	40	7.42%	5	6.51%	3	5.63%	13	6.12%	3	5.45%	6	6.05%	6
2014	9	4.96%	10	5.16%	35	7.80%	2	5.83%	2	5.40%	17	6.91%	1	5.70%	6	6.69%	7
Weigthed Average		**5.34%**	**116**	**6.01%**	**318**	**7.40%**	**26**	**7.24%**	**25**	**6.42%**	**340**	**7.46%**	**87**	**6.62%**	**72**	**6.82%**	**93**
Simple Average		**5.70%**		**6.36%**	**0.66%**	**7.59%**		**7.20%**	**-0.38%**	**6.50%**		**7.59%**	**1.09%**	**6.87%**		**7.23%**	**0.37%**
Relative Dif.					**12%**				**-5%**				**17%**				**5%**

Note: Relative difference calculated as [CapBelow-CapAbove]/CapAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

GROWTH PERFORMANCE

Year	Month	Apartment Above Year Cap Return	Apartment Below Year Cap Return	Yearly Difference	Industrial Above Year Cap Return	Industrial Below Year Cap Return	Yearly Difference	Office Above Year Cap Return	Office Below Year Cap Return	Yearly Difference	Retail Above Year Cap Return	Retail Below Year Cap Return	Yearly Difference
2001	12	10.41%	-9.33%	-19.74%	629.58%	9.20%	-620.38%	16.76%	-16.71%	-33.47%	36.59%	-40.74%	-77.33%
2002	12	26.05%	32.15%	6.11%	-7.53%	-2.96%	4.56%	5.18%	49.12%	43.94%	-14.23%	45.37%	59.60%
2003	12	-3.99%	25.26%	29.25%	26.85%	-0.09%	-26.95%	8.89%	-6.44%	-15.33%	40.40%	15.66%	-24.74%
2004	12	7.97%	7.74%	-0.23%	-44.48%	34.34%	78.83%	11.36%	18.78%	7.42%	-5.11%	16.50%	21.61%
2005	12	36.62%	24.46%	-12.15%	75.04%	3.49%	-71.55%	16.08%	34.14%	18.05%	28.58%	36.75%	8.17%
2006	12	-6.72%	-0.17%	6.55%	22.89%	24.31%	1.42%	19.46%	-4.01%	-23.47%	-18.09%	0.02%	18.10%
2007	12	18.43%	23.85%	5.42%	-13.22%	10.64%	23.86%	17.86%	19.39%	1.53%	53.10%	18.75%	-34.35%
2008	12	-18.86%	-11.18%	7.67%	22.21%	-37.69%	-59.90%	-19.66%	-7.07%	12.59%	-24.77%	-27.60%	-2.83%
2009	12	-3.53%	-13.00%	-9.47%	-36.03%	17.11%	53.14%	-47.71%	-31.95%	15.77%	-23.90%	-18.48%	5.42%
2010	12	-1.37%	6.25%	7.62%	14.04%	5.02%	-9.01%	57.46%	29.58%	-27.87%	69.67%	40.50%	-29.17%
2011	12	24.93%	16.64%	-8.29%	-30.63%	6.79%	37.43%	18.96%	8.19%	-10.78%	-18.42%	-6.53%	11.89%
2012	12	1.10%	18.71%	17.60%	158.56%	-2.07%	-160.63%	12.99%	-1.10%	-14.09%	17.91%	19.98%	2.06%
2013	12	31.14%	13.40%	-17.73%	-56.93%	13.88%	70.81%	10.93%	20.73%	9.80%	11.47%	37.77%	26.30%
2014	9	-3.68%	31.74%	35.43%	177.95%	12.18%	-165.77%	51.51%	4.20%	-47.31%	-17.67%	-16.62%	1.05%
Geometric Mean		**7.51%**	**10.49%**	**2.98%**	**20.61%**	**5.22%**	**-15.38%**	**9.02%**	**6.30%**	**-2.72%**	**6.13%**	**5.57%**	**-0.56%**
Relative Dif.				**40%**			**-75%**			**-30%**			**-9%**
Arithmetic Mean		**8.46%**	**11.89%**	**3.43%**	**67.02%**	**6.72%**	**-60.30%**	**12.86%**	**8.35%**	**-4.52%**	**9.68%**	**8.67%**	**-1.01%**
Relative Dif.				**41%**			**-90%**			**-35%**			**-10%**

Note: Returns Calculated on a Yearly Compounded Basis

Relative difference calculated as [GrowthBelow-GrowthAbove]/GrowthAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

RISK PERFORMANCE (ON GROWTH)

	Apartment Above	Apartment Below	Difference	Industrial Above	Industrial Below	Difference	Office Above	Office Below	Difference	Retail Above	Retail Below	Difference
St. Deviation	**16.56%**	**15.57%**	**-0.98%**	**176.62%**	**16.38%**	**-160.25%**	**25.45%**	**21.72%**	**-3.74%**	**31.62%**	**27.42%**	**-4.20%**
Relative Dif.			**-6%**			**-91%**			**-15%**			**-13%**
Min	146.93%	190.41%		518.11%	113.94%		98.82%	127.40%		140.15%	110.76%	
Max	220.92%	250.75%		1112.57%	202.42%		244.54%	230.32%		256.04%	191.80%	
Range	73.99%	60.33%	-13.66%	594.46%	88.47%	-505.99%	145.72%	102.93%	-42.79%	115.89%	81.05%	-34.84%
Relative Dif.			-18%			-85%			-29%			-30%

Note: Relative difference calculated as [RiskBelow-RiskAbove]/RiskAbove. Positive relative difference means better performance of above-threshold properties. Negative relative difference means better performance of below-treshold properties.

SHARPE RATIO

	Apartment Above	Apartment Below	Difference	Industrial Above	Industrial Below	Difference	Office Above	Office Below	Difference	Retail Above	Retail Below	Difference
Total Return	13.21%	16.85%		28.19%	12.43%		15.52%	13.89%		12.99%	12.80%	
Risk Free Rate	1.43%	1.43%		1.43%	1.43%		1.43%	1.43%		1.43%	1.43%	
Risk Premium	11.78%	15.42%		26.77%	11.00%		14.09%	12.46%		11.57%	11.38%	
Sharpe Ratio	**0.71**	**0.99**	**0.28**	**0.15**	**0.67**	**0.52**	**0.55**	**0.57**	**0.02**	**0.37**	**0.41**	**0.05**
Relative Dif.			**39%**			**343%**			**4%**			**13%**

Note: Relative difference calculated as [SharpeRBelow-SharpeRAbove]/SharpeRAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

Table C-28. Results summary table for all property types. Cutoff $10 million. Filter: Major Metros – New York

Source: Sacchini & Shipps

RESULTS SUMMARY TABLE.

Sorting Criteria Sub-Institutional Treshold: $5 million

Filter: Major Metros - Chicago

CAP RATE PERFORMANCE

Year	Months	Apartment Above Avg. Cap	# Obs	Apartment Below Avg. Cap	# Obs	Industrial Above Avg. Cap	# Obs	Industrial Below Avg. Cap	# Obs	Office Above Avg. Cap	# Obs	Office Below Avg. Cap	# Obs	Retail Above Avg. Cap	# Obs	Retail Below Avg. Cap	# Obs
2001	12	8.00%	3	0.00%	-	10.39%	1	0.00%	-	10.05%	10	0.00%	-	8.99%	2	0.00%	-
2002	12	6.89%	2	0.00%	-	11.50%	1	8.52%	1	9.18%	26	0.00%	-	7.42%	2	0.00%	-
2003	12	7.30%	1	0.00%	-	8.93%	3	0.00%	-	7.66%	16	9.00%	2	7.27%	8	0.00%	-
2004	12	6.84%	6	4.72%	2	8.18%	6	8.80%	1	8.16%	14	8.75%	1	7.64%	9	7.73%	1
2005	12	6.06%	3	6.69%	4	7.57%	10	9.12%	2	7.45%	14	7.59%	4	7.28%	11	7.18%	8
2006	12	6.51%	3	6.47%	10	7.87%	8	8.04%	7	6.45%	28	7.50%	1	6.65%	11	6.90%	5
2007	12	6.94%	8	6.01%	4	5.51%	4	7.20%	2	6.21%	16	7.25%	3	6.90%	10	7.20%	8
2008	12	6.25%	6	6.55%	1	7.86%	4	8.78%	5	7.61%	7	0.00%	-	7.15%	6	6.95%	4
2009	12	5.91%	3	7.50%	2	8.18%	2	10.75%	1	9.10%	2	11.50%	1	7.87%	6	7.06%	2
2010	12	6.00%	6	0.00%	-	8.54%	2	0.00%	-	8.17%	3	0.00%	-	7.67%	4	9.01%	1
2011	12	5.89%	6	8.05%	1	8.50%	5	0.00%	-	6.78%	6	0.00%	-	7.17%	7	8.00%	2
2012	12	6.93%	6	10.17%	2	7.84%	7	9.02%	1	6.72%	7	7.20%	1	5.48%	3	7.08%	7
2013	12	6.37%	11	4.88%	2	6.30%	1	9.19%	1	7.08%	12	0.00%	-	6.70%	3	7.03%	4
2014	9	7.03%	1	5.81%	1	6.75%	6	7.35%	1	6.67%	6	7.34%	2	5.58%	5	7.06%	6
Weigthed Average		6.53%	65	6.56%	29	7.79%	60	8.47%	22	7.60%	167	7.98%	15	7.10%	87	7.17%	48
Simple Average		6.64%		6.68%	0.05%	8.14%		8.68%	0.54%	7.66%		8.27%	0.60%	7.12%		7.38%	0.26%
Relative Dif.					1%				7%				8%				4%

Note: Relative difference calculated as [CapBelow-CapAbove]/CapAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

GROWTH PERFORMANCE

Year	Month	Apartment Above Year Cap Return	Apartment Below Year Cap Return	Yearly Difference	Industrial Above Year Cap Return	Industrial Below Year Cap Return	Yearly Difference	Office Above Year Cap Return	Office Below Year Cap Return	Yearly Difference	Retail Above Year Cap Return	Retail Below Year Cap Return	Yearly Difference
2001	12	-20.66%	25.19%	45.84%	2.69%	9.69%	7.00%	19.06%	65.86%	46.80%	-2.09%	-53.82%	-51.73%
2002	12	36.65%	30.88%	-5.77%	-1.61%	13.95%	15.55%	-10.35%	-30.83%	-20.48%	17.68%	30.10%	12.41%
2003	12	16.38%	-25.41%	-41.79%	-9.96%	6.72%	16.67%	5.27%	83.72%	78.45%	-13.55%	40.97%	54.52%
2004	12	-21.00%	58.48%	79.48%	16.82%	6.22%	-10.59%	-0.22%	-25.26%	-25.03%	39.21%	-16.15%	-55.36%
2005	12	28.75%	6.88%	-21.87%	-0.83%	-4.23%	-3.40%	24.21%	21.10%	-3.11%	3.35%	57.55%	54.19%
2006	12	12.97%	-17.87%	-30.85%	13.43%	24.32%	10.88%	6.92%	-16.33%	-23.25%	-4.00%	-26.24%	-22.24%
2007	12	-3.76%	19.32%	23.08%	20.34%	-5.42%	-25.76%	12.00%	-2.88%	-14.88%	29.22%	80.39%	51.17%
2008	12	1.89%	-19.02%	-20.91%	-30.45%	3.58%	34.02%	6.19%	67.59%	61.40%	-50.38%	-46.74%	3.64%
2009	12	-33.75%	-53.30%	-19.55%	3.36%	-30.46%	-33.82%	-59.99%	-56.54%	3.44%	-4.89%	67.77%	72.66%
2010	12	27.89%	59.24%	31.35%	-23.30%	6.56%	29.86%	28.77%	64.12%	35.35%	34.05%	-70.48%	-104.54%
2011	12	37.78%	10.75%	-27.03%	14.07%	32.89%	18.82%	34.30%	-39.93%	-74.23%	-13.75%	90.53%	104.28%
2012	12	-3.98%	10.79%	14.77%	0.31%	-26.33%	-26.64%	-6.68%	78.45%	85.13%	31.53%	-10.45%	-41.98%
2013	12	-100.00%	-100.00%	0.00%	33.11%	-100.00%	-133.11%	26.75%	-100.00%	-126.75%	-100.00%	-7.80%	92.20%
2014	9	n/a	n/a	0.00%	-25.22%	n/a	0.00%	1.83%	n/a	0.00%	n/a	57.97%	0.00%
Geometric Mean		-100.00%	-100.00%	0.00%	-0.21%	-100.00%	0.00%	2.84%	-100.00%	0.00%	-100.00%	-1.01%	0.00%
Relative Dif.				0%			0%			0%			0%
Arithmetic Mean		-1.60%	0.46%	0.00%	0.91%	-4.81%	0.00%	6.29%	8.39%	0.00%	-2.59%	13.83%	0.00%
Relative Dif.				0%			0%			0%			0%

Note: Returns Calculated on a Yearly Compounded Basis

Relative difference calculated as [GrowthBelow-GrowthAbove]/GrowthAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

RISK PERFORMANCE (ON GROWTH)

	Apartment Above	Apartment Below	Difference	Industrial Above	Industrial Below	Difference	Office Above	Office Below	Difference	Retail Above	Retail Below	Difference
St. Deviation	0.00%	0.00%	0.00%	18.37%	0.00%	0.00%	23.41%	0.00%	0.00%	0.00%	53.35%	0.00%
Relative Dif.			0%			0%			0%			0%
Min	0.00%	0.00%		71.52%	0.00%		70.82%	0.00%		0.00%	32.08%	
Max	0.00%	0.00%		149.01%	0.00%		185.82%	0.00%		0.00%	151.08%	
Range	0.00%	0.00%	0.00%	77.49%	0.00%	0.00%	115.00%	0.00%	0.00%	0.00%	119.00%	0.00%
Relative Dif.			0%			0%			0%			0%

Note: Relative difference calculated as [RiskBelow-RiskAbove]/RiskAbove. Positive relative difference means better performance of above-threshold properties. Negative relative difference means better performance of below-treshold properties.

SHARPE RATIO

	Apartment Above	Apartment Below	Difference	Industrial Above	Industrial Below	Difference	Office Above	Office Below	Difference	Retail Above	Retail Below	Difference
Total Return	0.00%	0.00%		7.93%	0.00%		10.50%	0.00%		0.00%	6.38%	
Risk Free Rate	1.43%	1.43%		1.43%	1.43%		1.43%	1.43%		1.43%	1.43%	
Risk Premium	0.00%	0.00%		6.50%	0.00%		9.07%	0.00%		0.00%	4.95%	
Sharpe Ratio	0.00	0.00	0.00	0.35	0.00	0.00	0.39	0.00	0.00	0.00	0.09	0.00
Relative Dif.			0%			0%			0%			0%

Note: Relative difference calculated as [SharpeRBelow-SharpeRAbove]/SharpeRAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

Table C-29. Results summary table for all property types. Cutoff $5 million. Filter: Major Metros – Chicago

Source: Sacchini & Shipps

RESULTS SUMMARY TABLE.

Sorting Criteria Sub-Institutional Treshold: $10 million

Filter: Major Metros - Chicago

CAP RATE PERFORMANCE

Year	Months	Apartment Above Avg. Cap	Apartment Above # Obs	Apartment Below Avg. Cap	Apartment Below # Obs	Industrial Above Avg. Cap	Industrial Above # Obs	Industrial Below Avg. Cap	Industrial Below # Obs	Office Above Avg. Cap	Office Above # Obs	Office Below Avg. Cap	Office Below # Obs	Retail Above Avg. Cap	Retail Above # Obs	Retail Below Avg. Cap	Retail Below # Obs
2001	12	7.12%	2	9.75%	1	0.00%	-	10.39%	1	9.95%	8	10.45%	2	0.00%	-	8.99%	2
2002	12	8.30%	1	5.48%	1	11.50%	1	8.52%	1	8.99%	23	10.63%	3	7.42%	2	0.00%	-
2003	12	0.00%	-	7.30%	1	9.30%	2	8.20%	1	7.66%	16	9.00%	2	6.09%	3	7.97%	5
2004	12	6.45%	5	6.07%	3	8.18%	6	8.80%	1	8.11%	13	8.83%	2	7.35%	4	7.85%	6
2005	12	6.00%	1	6.49%	6	7.28%	8	8.91%	4	6.91%	9	8.06%	9	7.11%	11	7.41%	8
2006	12	7.76%	2	6.24%	11	6.90%	4	8.33%	11	6.38%	26	7.42%	3	7.09%	10	6.13%	6
2007	12	6.17%	5	6.96%	7	5.51%	4	7.20%	2	5.70%	12	7.53%	7	7.25%	13	6.48%	5
2008	12	6.30%	5	6.28%	2	8.00%	2	8.48%	7	7.70%	3	7.54%	4	6.95%	4	7.15%	6
2009	12	6.05%	2	6.88%	3	9.01%	1	9.05%	2	9.10%	2	11.50%	1	7.62%	7	8.00%	1
2010	12	6.00%	6	0.00%	-	8.54%	2	0.00%	-	8.17%	3	0.00%	-	7.92%	4	8.00%	1
2011	12	5.89%	6	8.05%	1	8.23%	4	9.60%	1	6.78%	6	0.00%	-	7.48%	6	7.10%	3
2012	12	6.63%	4	8.85%	4	7.93%	6	8.16%	2	6.72%	7	7.20%	1	6.95%	8	5.20%	2
2013	12	6.23%	9	5.95%	4	6.30%	1	9.19%	1	7.08%	11	7.01%	1	6.76%	5	7.21%	2
2014	9	7.03%	1	5.81%	1	7.04%	5	6.33%	2	6.31%	5	7.72%	3	6.83%	7	5.61%	4
Weigthed Average		**6.36%**	**49**	**6.74%**	**45**	**7.63%**	**46**	**8.41%**	**36**	**7.46%**	**144**	**8.29%**	**38**	**7.15%**	**84**	**7.08%**	**51**
Simple Average		**6.61%**		**6.93%**	**0.32%**	**7.98%**		**8.55%**	**0.57%**	**7.54%**		**8.57%**	**1.03%**	**7.14%**		**7.16%**	**0.02%**
Relative Dif.					**5%**				**7%**				**14%**				**0%**

Note: Relative difference calculated as [CapBelow-CapAbove]/CapAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

GROWTH PERFORMANCE

Year	Month	Apartment Above Year Cap Return	Apartment Below Year Cap Return	Yearly Difference	Industrial Above Year Cap Return	Industrial Below Year Cap Return	Yearly Difference	Office Above Year Cap Return	Office Below Year Cap Return	Yearly Difference	Retail Above Year Cap Return	Retail Below Year Cap Return	Yearly Difference
2001	12	-15.57%	10.55%	26.12%	12.86%	5.24%	-7.62%	19.16%	13.90%	-5.26%	-11.26%	-13.23%	-1.97%
2002	12	30.85%	33.11%	2.25%	-17.05%	18.83%	35.88%	-4.02%	-10.91%	-6.89%	19.29%	22.04%	2.75%
2003	12	33.53%	-24.51%	-58.05%	-12.30%	-0.36%	11.95%	6.95%	18.21%	11.26%	-23.35%	10.00%	33.35%
2004	12	-41.70%	49.22%	90.91%	20.91%	11.82%	-9.09%	-5.25%	-6.79%	-1.54%	62.06%	-1.47%	-63.53%
2005	12	69.49%	13.16%	-56.33%	-2.84%	-4.39%	-1.55%	28.26%	20.55%	-7.71%	-2.84%	42.59%	45.42%
2006	12	-11.56%	-16.73%	-5.17%	11.38%	22.84%	11.45%	3.84%	-0.95%	-4.80%	-0.59%	-25.16%	-24.57%
2007	12	15.71%	18.61%	2.90%	9.53%	0.47%	-9.06%	5.84%	11.26%	5.42%	38.92%	59.95%	21.03%
2008	12	-13.07%	-16.30%	-3.23%	-9.46%	-9.66%	-0.20%	-10.19%	18.63%	28.83%	-52.79%	-50.38%	2.41%
2009	12	-19.09%	-56.65%	-37.57%	-19.73%	-16.99%	2.74%	-51.35%	-54.00%	-2.65%	-23.56%	50.27%	73.83%
2010	12	10.15%	72.81%	62.65%	-12.96%	-4.76%	8.20%	19.93%	41.65%	21.72%	72.17%	-46.61%	-118.79%
2011	12	45.67%	27.80%	-17.86%	45.48%	6.96%	-38.51%	58.08%	-39.60%	-97.68%	-31.07%	37.03%	68.09%
2012	12	-12.29%	5.63%	17.93%	-19.72%	-8.00%	11.72%	-9.21%	70.99%	80.20%	80.00%	-4.62%	-84.62%
2013	12	0.00%	0.00%	0.00%	23.38%	25.91%	2.53%	15.36%	13.82%	-1.54%	-20.80%	-13.59%	7.21%
2014	9	0.00%	0.00%	0.00%	-2.50%	-12.86%	-10.36%	-3.29%	-34.91%	-31.62%	59.95%	32.21%	-27.74%
Geometric Mean		**-100.00%**	**-100.00%**	**0.00%**	**0.37%**	**1.99%**	**1.62%**	**2.38%**	**-0.16%**	**-2.54%**	**3.15%**	**0.60%**	**-2.55%**
Relative Dif.				**0%**			**436%**			**-107%**			**-81%**
Arithmetic Mean		**6.58%**	**8.33%**	**0.00%**	**1.93%**	**2.50%**	**0.58%**	**5.29%**	**4.42%**	**-0.88%**	**11.87%**	**7.07%**	**-4.79%**
Relative Dif.				**0%**			**30%**			**-17%**			**-40%**

Note: Returns Calculated on a Yearly Compounded Basis

Relative difference calculated as [GrowthBelow-GrowthAbove]/GrowthAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

RISK PERFORMANCE (ON GROWTH)

	Apartment Above	Apartment Below	Difference	Industrial Above	Industrial Below	Difference	Office Above	Office Below	Difference	Retail Above	Retail Below	Difference
St. Deviation	**0.00%**	**0.00%**	**0.00%**	**19.37%**	**13.39%**	**-5.98%**	**24.43%**	**32.79%**	**8.37%**	**43.32%**	**35.03%**	**-8.28%**
Relative Dif.			**0%**			**-31%**			**34%**			**-19%**
Min	0.00%	0.00%		67.20%	106.59%		70.84%	58.05%		43.19%	75.45%	
Max	0.00%	0.00%		150.55%	171.70%		174.26%	176.22%		177.68%	197.14%	
Range	0.00%	0.00%	0.00%	83.35%	65.11%	-18.24%	103.42%	118.17%	14.76%	134.49%	121.69%	-12.80%
Relative Dif.			0%			-22%			14%			-10%

Note: Relative difference calculated as [RiskBelow-RiskAbove]/RiskAbove. Positive relative difference means better performance of above-threshold properties. Negative relative difference means better performance of below-treshold properties.

SHARPE RATIO

	Apartment Above	Apartment Below	Difference	Industrial Above	Industrial Below	Difference	Office Above	Office Below	Difference	Retail Above	Retail Below	Difference
Total Return	0.00%	0.00%		8.35%	10.55%		9.92%	8.41%		10.29%	7.76%	
Risk Free Rate	1.43%	1.43%		1.43%	1.43%		1.43%	1.43%		1.43%	1.43%	
Risk Premium	0.00%	0.00%		6.92%	9.12%		8.50%	6.99%		8.86%	6.33%	
Sharpe Ratio	**0.00**	**0.00**	**0.00**	**0.36**	**0.68**	**0.32**	**0.35**	**0.21**	**-0.13**	**0.20**	**0.18**	**-0.02**
Relative Dif.			**0%**			**91%**			**-39%**			**-12%**

Note: Relative difference calculated as [SharpeRBelow-SharpeRAbove]/SharpeRAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

Table C-30. Results summary table for all property types. Cutoff $10 million. Filter: Major Metros – Chicago

Source: Sacchini & Shipps

RESULTS SUMMARY TABLE.

Sorting Criteria Sub-Institutional Treshold: $5 million

Filter: Major Metros - Boston

CAP RATE PERFORMANCE

		Apartment Above		Apartment Below		Industrial Above		Industrial Below	
Year	Months	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs
2001	12	9.50%	1	0.00%	-	9.88%	3	9.80%	1
2002	12	7.40%	4	0.00%	-	9.75%	2	9.80%	1
2003	12	7.19%	6	0.00%	-	8.30%	1	13.00%	1
2004	12	6.40%	3	6.90%	1	8.27%	3	9.00%	1
2005	12	5.89%	2	0.00%	-	7.05%	8	8.75%	2
2006	12	5.76%	4	6.30%	1	6.84%	2	6.89%	3
2007	12	5.66%	3	8.50%	1	6.55%	7	9.00%	1
2008	12	5.30%	2	0.00%	-	8.10%	3	8.00%	1
2009	12	7.08%	2	0.00%	-	9.81%	2	0.00%	-
2010	12	7.28%	2	0.00%	-	9.00%	1	9.30%	2
2011	12	5.90%	5	0.00%	-	0.00%	-	8.55%	2
2012	12	4.85%	3	0.00%	-	7.13%	3	9.60%	1
2013	12	6.40%	1	7.58%	1	10.20%	1	6.50%	1
2014	9	5.09%	2	8.70%	1	7.40%	1	0.00%	-
Weigthed Average		**6.33%**	**40**	**7.60%**	**5**	**7.84%**	**37**	**8.74%**	**17**
Simple Average		**6.41%**		**7.60%**	**1.19%**	**8.33%**		**9.02%**	**0.69%**
Relative Dif.					**19%**				**8%**

		Office Above		Office Below		Retail Above		Retail Below	
Year	Months	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs	Avg. Cap	# Obs
2001	12	9.00%	11	9.26%	2	10.98%	1	0.00%	-
2002	12	9.24%	9	0.00%	-	8.54%	2	8.03%	2
2003	12	9.16%	5	8.88%	2	8.79%	4	0.00%	-
2004	12	8.49%	18	0.00%	-	7.47%	4	0.00%	-
2005	12	7.20%	19	0.00%	-	6.12%	6	7.66%	3
2006	12	6.08%	19	9.00%	1	6.58%	5	7.17%	3
2007	12	5.43%	19	7.58%	3	6.45%	3	6.31%	3
2008	12	6.30%	6	0.00%	-	7.39%	2	9.50%	1
2009	12	8.62%	5	7.50%	1	6.50%	1	0.00%	-
2010	12	7.05%	5	0.00%	-	8.50%	1	8.45%	5
2011	12	6.22%	11	8.80%	1	7.27%	3	8.58%	2
2012	12	5.96%	9	0.00%	-	7.68%	3	6.95%	4
2013	12	5.59%	9	0.00%	-	7.43%	3	8.47%	1
2014	9	5.32%	6	0.00%	-	6.40%	6	6.75%	1
Weigthed Average		**7.00%**	**151**	**8.43%**	**10**	**7.21%**	**44**	**7.66%**	**25**
Simple Average		**7.12%**		**8.50%**	**1.38%**	**7.58%**		**7.79%**	**0.21%**
Relative Dif.					**19%**				**3%**

Note: Relative difference calculated as [CapBelow-CapAbove]/CapAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

GROWTH PERFORMANCE

		Apartment Above	Apartment Below	Yearly	Industrial Above	Industrial Below	Yearly
Year	Month	Year Cap Return	Year Cap Return	Difference	Year Cap Return	Year Cap Return	Difference
2001	12	5.82%	n/a	0.00%	7.66%	-17.84%	-25.50%
2002	12	27.48%	n/a	0.00%	-9.25%	-30.07%	-20.82%
2003	12	12.73%	n/a	0.00%	-0.52%	79.09%	79.60%
2004	12	6.04%	n/a	0.00%	4.31%	4.44%	0.13%
2005	12	-6.37%	n/a	0.00%	24.16%	-21.48%	-45.65%
2006	12	7.69%	n/a	0.00%	-1.27%	25.74%	27.00%
2007	12	-0.08%	n/a	0.00%	0.47%	-13.74%	-14.21%
2008	12	-12.01%	n/a	0.00%	18.47%	-7.74%	-26.21%
2009	12	-19.97%	n/a	0.00%	-51.01%	20.19%	71.20%
2010	12	38.36%	n/a	0.00%	34.11%	-23.53%	-57.64%
2011	12	22.67%	n/a	0.00%	28.61%	31.59%	2.97%
2012	12	-16.30%	n/a	0.00%	-14.49%	1.78%	16.27%
2013	12	-100.00%	n/a	0.00%	-25.86%	-100.00%	-74.14%
2014	9	n/a	n/a	0.00%	-14.05%	n/a	0.00%
Geometric Mean		**-100.00%**	**-100.00%**	**0.00%**	**-2.49%**	**-100.00%**	**0.00%**
Relative Dif.				**0%**			**0%**
Arithmetic Mean		**-2.61%**	**#DIV/0!**	**0.00%**	**0.10%**	**-3.97%**	**0.00%**
Relative Dif.				**0%**			**0%**

		Office Above	Office Below	Yearly	Retail Above	Retail Below	Yearly
Year	Month	Year Cap Return	Year Cap Return	Difference	Year Cap Return	Year Cap Return	Difference
2001	12	-12.61%	n/a	0.00%	-46.40%	105.73%	152.14%
2002	12	-6.75%	n/a	0.00%	8.00%	-30.44%	-38.44%
2003	12	8.14%	n/a	0.00%	35.27%	49.32%	14.05%
2004	12	5.38%	n/a	0.00%	5.51%	-36.47%	-41.97%
2005	12	-2.07%	n/a	0.00%	-27.76%	96.38%	124.14%
2006	12	26.68%	n/a	0.00%	36.50%	0.90%	-35.60%
2007	12	12.50%	n/a	0.00%	11.34%	0.94%	-10.40%
2008	12	-8.24%	n/a	0.00%	7.63%	-31.64%	-39.27%
2009	12	-49.03%	n/a	0.00%	-51.76%	9.62%	61.38%
2010	12	19.34%	n/a	0.00%	-4.94%	4.32%	9.26%
2011	12	36.69%	n/a	0.00%	116.84%	-15.48%	-132.32%
2012	12	-3.20%	n/a	0.00%	-41.65%	82.79%	124.45%
2013	12	36.77%	n/a	0.00%	-100.00%	-100.00%	0.00%
2014	9	-34.50%	n/a	0.00%	n/a	n/a	0.00%
Geometric Mean		**-0.35%**	**-100.00%**	**0.00%**	**-100.00%**	**-100.00%**	**0.00%**
Relative Dif.				**0%**			**0%**
Arithmetic Mean		**2.08%**	**#DIV/0!**	**0.00%**	**-3.96%**	**10.46%**	**0.00%**
Relative Dif.				**0%**			**0%**

Note: Returns Calculated on a Yearly Compounded Basis

Relative difference calculated as [GrowthBelow-GrowthAbove]/GrowthAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

RISK PERFORMANCE (ON GROWTH)

St. Deviation	**0.00%**	**0.00%**	**0.00%**	**22.79%**	**0.00%**	**0.00%**	**24.58%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**
Relative Dif.			**0%**			**0%**			**0%**			**0%**
Min	0.00%	0.00%		57.62%	0.00%		57.21%	0.00%		0.00%	0.00%	
Max	0.00%	0.00%		160.06%	0.00%		139.82%	0.00%		0.00%	0.00%	
Range	0.00%	0.00%	0.00%	102.44%	0.00%	0.00%	82.61%	0.00%	0.00%	0.00%	0.00%	0.00%
Relative Dif.			0%			0%			0%			0%

Note: Relative difference calculated as [RiskBelow-RiskAbove]/RiskAbove. Positive relative difference means better performance of above-threshold properties. Negative relative difference means better performance of below-treshold properties.

SHARPE RATIO

Total Return	0.00%	0.00%		5.84%	0.00%		6.77%	0.00%		0.00%	0.00%	
Risk Free Rate	1.43%	1.43%		1.43%	1.43%		1.43%	1.43%		1.43%	1.43%	
Risk Premium	0.00%	0.00%		4.42%	0.00%		5.34%	0.00%		0.00%	0.00%	
Sharpe Ratio	**0.00**	**0.00**	**0.00**	**0.19**	**0.00**	**0.00**	**0.22**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Relative Dif.			**0%**			**0%**			**0%**			**0%**

Note: Relative difference calculated as [SharpeRBelow-SharpeRAbove]/SharpeRAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

Table C-31. Results summary table for all property types. Cutoff $5 million. Filter: Major Metros – Boston

Source: Sacchini & Shipps

RESULTS SUMMARY TABLE.
Sorting Criteria Sub-Institutional Treshold: $10 million
Filter: Major Metros - Boston

CAP RATE PERFORMANCE

Year	Months	Apartment Above Avg. Cap	Apartment Above # Obs	Apartment Below Avg. Cap	Apartment Below # Obs	Industrial Above Avg. Cap	Industrial Above # Obs	Industrial Below Avg. Cap	Industrial Below # Obs	Office Above Avg. Cap	Office Above # Obs	Office Below Avg. Cap	Office Below # Obs	Retail Above Avg. Cap	Retail Above # Obs	Retail Below Avg. Cap	Retail Below # Obs
2001	12	0.00%	-	9.50%	1	0.00%	-	9.86%	4	8.62%	9	9.99%	4	10.98%	1	0.00%	-
2002	12	6.72%	3	9.43%	1	0.00%	-	9.77%	3	9.24%	9	0.00%	-	8.75%	1	8.13%	3
2003	12	6.98%	5	8.27%	1	8.30%	1	13.00%	1	9.16%	5	8.88%	2	8.60%	3	9.36%	1
2004	12	6.40%	3	6.90%	1	7.31%	1	8.83%	3	8.34%	16	9.70%	2	7.89%	2	7.05%	2
2005	12	5.89%	2	0.00%	-	6.14%	3	7.93%	7	7.19%	16	7.26%	3	5.31%	3	7.29%	6
2006	12	5.35%	3	6.65%	2	6.84%	2	6.89%	3	5.70%	15	7.80%	5	7.00%	4	6.61%	4
2007	12	5.43%	2	7.30%	2	6.90%	5	6.77%	3	5.12%	13	6.59%	9	6.60%	1	6.33%	5
2008	12	5.30%	2	0.00%	-	7.50%	1	8.27%	3	6.30%	6	0.00%	-	0.00%	-	8.09%	3
2009	12	6.90%	1	7.25%	1	0.00%	-	9.81%	2	8.62%	5	7.50%	1	6.50%	1	0.00%	-
2010	12	7.28%	2	0.00%	-	9.00%	1	9.30%	2	7.05%	5	0.00%	-	8.50%	1	8.45%	5
2011	12	5.90%	5	0.00%	-	0.00%	-	8.55%	2	6.10%	9	7.43%	3	7.65%	2	7.88%	3
2012	12	5.03%	2	4.51%	1	5.90%	2	9.60%	2	5.96%	9	0.00%	-	6.82%	2	7.44%	5
2013	12	6.40%	1	7.58%	1	10.20%	1	6.50%	1	5.59%	9	0.00%	-	7.43%	3	8.47%	1
2014	9	5.10%	1	6.89%	2	7.40%	1	0.00%	-	4.75%	5	8.20%	1	6.63%	5	6.00%	2
Weigthed Average		**6.12%**	**32**	**7.32%**	**13**	**7.12%**	**18**	**8.63%**	**36**	**6.91%**	**131**	**7.84%**	**30**	**7.28%**	**29**	**7.44%**	**40**
Simple Average		**6.05%**		**7.43%**	**1.38%**	**7.55%**		**8.85%**	**1.30%**	**6.98%**		**8.15%**	**1.17%**	**7.59%**		**7.59%**	**0.00%**
Relative Dif.					**23%**				**17%**				**17%**				**0%**

Note: Relative difference calculated as [CapBelow-CapAbove]/CapAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

GROWTH PERFORMANCE

Year	Month	Apartment Above Year Cap Return	Apartment Below Year Cap Return	Yearly Difference	Industrial Above Year Cap Return	Industrial Below Year Cap Return	Yearly Difference	Office Above Year Cap Return	Office Below Year Cap Return	Yearly Difference	Retail Above Year Cap Return	Retail Below Year Cap Return	Yearly Difference
2001	12	n/a	n/a	0.00%	-11.95%	0.19%	12.14%	-15.46%	-21.24%	-5.78%	28.10%	-0.32%	-28.42%
2002	12	n/a	n/a	0.00%	-10.00%	-18.79%	-8.80%	-7.91%	55.50%	63.41%	47.49%	-20.62%	-68.11%
2003	12	n/a	n/a	0.00%	-1.80%	51.24%	53.04%	-0.13%	-31.30%	-31.17%	1.44%	68.65%	67.21%
2004	12	n/a	n/a	0.00%	-2.82%	-6.10%	-3.28%	18.48%	24.05%	5.58%	36.94%	-32.11%	-69.05%
2005	12	n/a	n/a	0.00%	50.33%	4.78%	-45.55%	-14.71%	10.69%	25.40%	-43.31%	35.76%	79.07%
2006	12	n/a	n/a	0.00%	-9.74%	-1.32%	8.41%	39.90%	-3.92%	-43.83%	38.96%	5.95%	-33.01%
2007	12	n/a	n/a	0.00%	-1.49%	0.81%	2.30%	18.44%	10.41%	-8.02%	41.72%	14.27%	-27.45%
2008	12	n/a	n/a	0.00%	6.06%	-2.95%	-9.01%	-17.51%	-9.95%	7.56%	-58.66%	-25.47%	33.20%
2009	12	n/a	n/a	0.00%	-38.74%	-21.61%	17.13%	-41.00%	-53.20%	-12.20%	51.01%	18.08%	-32.93%
2010	12	n/a	n/a	0.00%	-1.83%	12.28%	14.11%	-9.67%	173.23%	182.89%	-46.36%	-20.02%	26.33%
2011	12	n/a	n/a	0.00%	106.82%	7.90%	-98.92%	85.36%	-39.22%	-124.58%	151.57%	53.61%	-97.96%
2012	12	n/a	n/a	0.00%	-36.87%	3.18%	40.05%	-16.49%	12.30%	28.79%	-34.19%	-30.87%	3.32%
2013	12	n/a	n/a	0.00%	-32.19%	10.13%	42.32%	35.76%	40.43%	4.67%	-100.00%	-100.00%	0.00%
2014	9	n/a	n/a	0.00%	25.64%	-33.41%	-59.06%	-43.16%	-16.95%	26.21%	n/a	n/a	0.00%
Geometric Mean		**-100.00%**	**-100.00%**	**0.00%**	**-2.79%**	**-0.53%**	**2.26%**	**-1.72%**	**1.19%**	**2.92%**	**-100.00%**	**-100.00%**	**0.00%**
Relative Dif.				**0%**			**-81%**			**-169%**			**0%**
Arithmetic Mean		**#DIV/0!**	**#DIV/0!**	**0.00%**	**2.96%**	**0.45%**	**-2.51%**	**2.28%**	**10.77%**	**8.50%**	**8.82%**	**-2.55%**	**0.00%**
Relative Dif.				**#DIV/0!**			**-85%**			**373%**			**0%**

Note: Returns Calculated on a Yearly Compounded Basis
Relative difference calculated as [GrowthBelow-GrowthAbove]/GrowthAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

RISK PERFORMANCE (ON GROWTH)

	Apartment Above	Apartment Below	Difference	Industrial Above	Industrial Below	Difference	Office Above	Office Below	Difference	Retail Above	Retail Below	Difference
St. Deviation	**0.00%**	**0.00%**	**0.00%**	**38.00%**	**19.53%**	**-18.47%**	**34.53%**	**55.64%**	**21.11%**	**0.00%**	**0.00%**	**0.00%**
Relative Dif.			**0%**			**-49%**			**61%**			**0%**
Min	0.00%	0.00%		39.48%	87.74%		52.23%	46.18%		0.00%	0.00%	
Max	0.00%	0.00%		161.24%	126.63%		133.33%	149.50%		0.00%	0.00%	
Range	0.00%	0.00%	0.00%	121.76%	38.89%	-82.87%	81.11%	103.32%	22.21%	0.00%	0.00%	0.00%
Relative Dif.			0%			-68%			27%			0%

Note: Relative difference calculated as [RiskBelow-RiskAbove]/RiskAbove. Positive relative difference means better performance of above-threshold properties. Negative relative difference means better performance of below-treshold properties.

SHARPE RATIO

	Apartment Above	Apartment Below	Difference	Industrial Above	Industrial Below	Difference	Office Above	Office Below	Difference	Retail Above	Retail Below	Difference
Total Return	0.00%	0.00%		4.76%	8.32%		5.26%	9.34%		0.00%	0.00%	
Risk Free Rate	1.43%	1.43%		1.43%	1.43%		1.43%	1.43%		1.43%	1.43%	
Risk Premium	0.00%	0.00%		3.33%	6.90%		3.83%	7.91%		0.00%	0.00%	
Sharpe Ratio	**0.00**	**0.00**	**0.00**	**0.09**	**0.35**	**0.27**	**0.11**	**0.14**	**0.03**	**0.00**	**0.00**	**0.00**
Relative Dif.			**0%**			**303%**			**28%**			**0%**

Note: Relative difference calculated as [SharpeRBelow-SharpeRAbove]/SharpeRAbove. Negative relative difference means better performance of above-threshold properties. Positive relative difference means better performance of below-treshold properties.

Table C-32. Results summary table for all property types. Cutoff $10 million. Filter: Major Metros – Boston
Source: Sacchini & Shipps