FORECASTING PERFORMANCE ON OPPORTUNISTIC INVESTMENTS
A case study of underwriting forecasts and actual outcomes

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Abstract
This thesis investigates the difficulty in making accurate forecasts on opportunistic commercial real estate investments. The purpose is to quantify the differences between unlevered cash flows from underwriting estimates and actual outcomes, analyse them and arrive at conclusions about the difficulty in producing forecasts on opportunistic investments.

The data used in this thesis comes from two opportunistic real estate portfolios previously owned by the private equity firm Niam. Both portfolios comprised Swedish office properties.

The results from analysing Niam’s investments shows that operating cash flows on individual properties are most difficult to forecast since the strategy for the assets constantly needs to be updated in order to adjust for current events like for example change in demand of office properties. This can have great impact on the profit allocation between property cash flows and exit cash flows in comparison to underwriting.

Furthermore the results show of an increased need of diversification for opportunistic investments, since individual investments have high volatility. Also, analysing investments on unlevered level has limitations. On an unlevered level an investment can have actual outcomes worse than in the underwriting, but when adding effects from financial leverage and currency movements the same asset can outperform the underwriting.
Acknowledgement

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We would like to extend a big gratitude towards Niam for allowing us to conduct this study and to Han-Suck Song who as our supervisor has helped us during this spring.

Stockholm, spring of 2013

Jakob Paljak & Per Edenström
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1. INTRODUCTION

1.1 Background
The Swedish commercial real estate market is one of the most healthy property markets in Europe following a swift recovery from the downturn in 2009. In 2012, the Swedish property market was the most liquid one in Europe with a turnover equal to 9.2 percentage of the total property stock and a transaction volume amounting to SEK 107 billion (Newsec, 2013). One of the main players on the Swedish property market is the private equity firm Niam who currently manages four funds with asset totalling a value of approximately SEK 30 billion (Niam, 2013).

The property markets are comprised of a broad range of investors, many of which are privately owned like Niam and hence do not publish public information regarding transactions and performance. This results in a highly non-transparent market for commercial real estate where track records of property transactions only are accessed by the parties involved. While successful private investors might report different key ratios on fund or portfolio level in order to attract new capital, they tend to not publish data on individual transactions. Also, regardless if the company is privately or publicly held, they will most likely not publish the confidential projections and estimates used in the decision-making of potential investments.

Given that concepts like volatility and opportunistic investments are often mentioned in course literature without really providing any real data to describe them, the authors found it interesting to investigate how difficult it really is to produce good estimates of opportunistic investments.

1.2 Purpose and research question
The purpose of this master thesis is to determine and analyse the discrepancies between actual historical cash flows and the estimations done during underwriting for a sample of Niam’s opportunistic investments on an unlevered level. We aim to investigate how Niam’s forecasts differ from actual outcomes on specific cash flow items on both property and portfolio level. Furthermore, we strive to determine how Niam’s total cash flow returns are divided between operating and exit cash flows.

The main purpose of this thesis is not to explain the reason behind the discrepancies but rather to quantify them. The investigated key cash flow items are:
1.3 Delimitations
The study is limited to only include realized properties from two of Niam’s Swedish office portfolios. All properties had been sold by 2012-12-31. Only realized properties have been included because of the necessity for actual outcomes on both operating and exit cash flows. Furthermore, the study only presents the relative difference between properties since the real figures are strictly confidential.

The study is conducted using unlevered cash flows from individual properties. By using unlevered cash flows the effect of financing and currencies are removed.

Given the limited data sample, the properties’ heterogeneous characteristics and the fact that the two portfolios were acquired three years apart, the results presented in this thesis is not intended to be applicable on other opportunistic real estate funds and should rather be viewed as case study specific for Niam.

Furthermore, since the reasons behind the discrepancies are not investigated, discrepancies originating from market conditions are not separated from discrepancies that Niam can influence.

1.4 Definitions
Underwriting – a part of the investment process in which cash flow projections of an investment is made

Actual outcome – the actual cash flows generated by an investment

1.5 Disposition
The thesis holds the following disposition.
Background and purpose holds a brief introduction to the Swedish property market and Niam. It also includes the purpose of the study, its limitations and definitions of relevant concepts.

Methodology describes the philosophies of science and how they have been applied to this study and what data sample that has been used.

Real estate investments – definitions and basic theory is a chapter that gives the reader an overlook of the theories behind commercial real estate investments.

Niam and real estate funds is a summary of Niam’s current and previous funds as well as an overview of its parent company Stronghold Investment AB. The chapter also describes the distinctions between real estate funds with different risk profiles.

Portfolio overview gives the reader an insight in the portfolios and properties that are included in the study.

Results and analysis presents the author’s results and their interpretation of it.

Conclusion comprises the author’s final discussion and their thoughts about the study as well as suggestions of further studies on the subject.
2. METHODOLOGY

2.1 Choice of methodology

Scientific research is often divided into two philosophies of science: positivism and hermeneutics. Positivism is associated with natural sciences and is based on the view that all valid knowledge is derived from logical and mathematical treatments as well as reports of sensory experience (Andersson, 1979). Since positivism states that all valid knowledge comes from scientific knowledge, knowledge derived through this philosophy will always need one or more studies to be validated, i.e. there needs to be empirical evidence. This means that valid results from a specific study should show the same or almost similar results if the study is conducted again (Bryman, 2004). With this criterion, positivism is mostly suited for quantitative studies where the researcher conducts a number of objective tests using a strictly standardized scheme.

Hermeneutics is more commonly used in social sciences and is unlike positivism based on interpretations. Studies using hermeneutics are generally not derived from logical treatments but are rather qualitative and therefore based on subjective interpretations of situations and behaviour. Many times, qualitative and quantitative methods can complement each other to give more comprehensive research.

This study is a combination of qualitative and quantitative methods. Initially the authors collected secondary data from Niam consisting of cash flow models containing projections and actual outcomes from their previous investments. Given the fact that the data was stored in several different excel files with deviant formats, the authors built an own excel model in which they transferred the data into, compiling it in one excel file. All results presented in this study are produced through the excel model. The analysis and conclusion are based on the authors’ own knowledge about Niam’s investments and investment theory in general.

2.2 Data sample

This study is conducted with secondary data representing Niam’s cash flow projections from the underwriting process and the actual cash flows generated by the properties post acquisition. While the data is confidential, and for Niam’s use only, the authors have been granted full access to it in order to conduct the study.

The data delivered by Niam has been used as input in the authors’ own excel model, in which underwriting projections and actual outcomes have been compiled.
Because of the confidential sensitivity of the data used, the authors have in most cases not been able to publish the results using the actual figures representing the differences between underwriting forecasts and actual outcomes but rather the relative differences.
3. REAL ESTATE INVESTMENTS - DEFINITIONS AND BASIC THEORY

3.1 Appraisal of commercial real estate

3.1.1 Theory of value
The theory of value is a fundamental economic theory that seeks to explain the exchange price for goods and service (Persson, 2008). The core of the value concept is that the value of a goods or service is created through expectations of future utility. Real estate is a goods and its value can also be explained through this function.

\[
\text{Value} = \text{Function of future potential utility} = f(a+b+c+\ldots+n)
\]

This function shows how value is created through the future utilities a to n. Since the value of a property is an estimate of future potential utility, appraisal of real estate (and all other goods and services) are afflicted with uncertainty. Also, because individuals and companies have different utility functions, values of goods and services will differ. For an economic value to exist, the four fundamental presumptions below need to be fulfilled.

- Demand
- Limited supply
- Proprietorship, the right to dispose of and exclude others
- The right to transfer the goods or service

3.1.2 Inherent value, reservation price and market value
The most primal concept of value is often referred to as the inherent value (Geltner et al., 2007). This term is the value of an object, which in our case is commercial real estate, to a specific owner or user (excluding the consideration of a market value or exchange value). The inherent value represents the maximum amount a given person or company would be willing to pay for the real estate. To an owner and user of a property this can also be called the usage value but for an investor (non-user owner) the inherent value will be referred to as the investment value.

In the graph below we have two different populations of user-owners of a specific property type. The left distribution consist of a population of buyers which are current non-owners and the right distribution of a population of sellers which are current owners. The horizontal axis
measures the inherent value for the specific property type and the vertical axis shows how many number of individuals in each distribution that has the inherent value pointed out on the horizontal axis.

Suppose that these two populations could interact and trade the specific properties with each other. For every price equal to an inherent value on the horizontal axis there will be a number of willing buyers corresponding to the area underneath the buyer curve to the right of the given value. Applying the same logic, there will also be a number of willing sellers corresponding to the area underneath the seller curve to the left of the given value. Just like the entire buyer population would be willing to pay at least price A for the property but no buyer more than D, any seller would be willing to sell at E but no one cheaper than B.

If buyers and sellers randomly find each other, observed transactions would take place with prices corresponding to inherent values between B and D. While transactions prices are actual price observations and can be viewed as objective values, inherent values contain subjective information and are most likely impossible to observe empirically. Therefore, if many transactions are observed the frequency distribution of transaction prices would expect to look like the triangle between the buyer and seller curve and price B and D. If the market was 100 percent transparent, thus revealing all buyers’ and sellers’ inherent values, all transactions would take place at the equilibrium price C.

However, since the real estate market is not fully transparent it will not reveal the equilibrium value C. Instead, buyers and sellers will use information regarding observed transaction prices to determine their reservation prices. The reservation price is the price at which the buyers and sellers will quit looking for a willing partner and agree to trade. Although this price is

![Graph](https://example.com/graph.png)
based on inherent values it also considers the information from the market. Buyers’ reservation prices will never be higher than their inherent values, but sometimes lower. In the same way sellers’ reservation prices will never be lower than their inherent values, but sometimes higher. If the market shows equilibrium prices that for buyers are lower than their inherent values then buyers will reduce their reservation price to fit the market information and similarly the opposite applies to sellers. Buyers with inherent values that are below the observed transaction prices will drop out of the buyer pool and sellers with inherent values above observed transaction prices drop out of the seller pool. This causes the distribution of reservation prices to be slightly tighter than that of the inherent values.

![Reservation Prices](image)

Figure 2. Geltner et al., 2007

The equilibrium value C is what is commonly referred to as the market value. Geltner et al. (2007) arrives at the fundamental principal that “observed transaction prices are dispersed around the contemporaneous market value” for objects that are traded in illiquid markets. Market value is the most frequently used and internationally applied value term. The European Valuation Standard (EVS) defines market value as follows:

“Market value is the estimated amount for which an asset would exchange on the date of valuation between a willing buyer and a willing seller in an arm’s length transaction after proper marketing wherein the parties had each acted knowledgeably and without compulsion.”

3.1.3 Factors influencing value of commercial real estate

The previously mentioned definition of value as a function of potential future utility is not applicable in real life (Persson 2007). What really influence and create value are concrete influential factors. A value can be derived from a number of factors.
Value = f(x₁, x₂, x₃,…, xₙ)

Where xᵢ, i=1 to n, can represent location, rents, net operation income etc.

The factors influencing the property values can roughly be divided into three groups:

- Economic, legal and technical factors directly associated with the property
  For example: location, neighbourhood, zoning plans, size, age, standard, rents, net operating income and other leasing terms
- Market factors
  For example: demand and supply on the rental market and asset market
- Internationally influenced factors regarding national and political economy
  For example: economic cycles, labour markets, inflation, interest rates, tax laws, rent legislation etc.

3.2 Discounted cash flow analysis

A discounted cash flow analysis (‘DCF’) is a procedure in which a discount rate is applied to a number of projected cash flows and is a commonly used tool to determine the value of commercial real estate (Appraisal, 2001). The DCF involves two major analytical steps: 1) forecasting the future expected net cash flows from the property, and 2) determining and applying the appropriate opportunity cost of capital as a discount rate (Geltner et al., 2007). In short, the DCF arrives at a value estimate by discounting the projected future cash flows into present value with the appropriate discount rate (Berk & DeMarzo, 2011). If the present value of the future cash flows exceeds the acquisition price of the property, i.e. the net present value is positive, then the investment is profitable and the investor should move forward with the investment.

3.2.1 Cash flow projection

Cash flows are usually projected during a relatively long holding period since real estate have long life-spans and investors tend to hold properties for longer periods of time (partly because of high transaction costs) (Geltner et al., 2007). Even if an investor might expect to hold the real estate for a short period of time the projection still needs to capture the property’s ability to generate cash flows over the long term as that is what determines it’s asset value. Therefore the most commonly used projection period is ten years.
A DCF should consist of two different cash flow projections: the operating cash flows and the reversion cash flows. The operating cash flows are derived from the normal operations of the property, i.e. rents minus costs, and occur throughout the holding period. The reversion cash flow on the other hand is the one-time cash flow that the investor receives when selling the property.

### 3.2.2 Potential gross income and Effective gross income

The first line in a DCF is the potential gross income (‘PGI’) which represents the rental revenue of a property that is fully rented and depicts the maximum income amount a property can yield (under given conditions). After adjusting PGI for negative net cash flow effects of vacant space, rental discounts and credit losses one arrives at the effective gross income (‘EGI’). The EGI is the actual cash flow the property will generate based on the projections of vacancies, discounts and credit losses.

\[
\text{PGI} = \text{Rental income of a fully rented property}
\]

\[
\text{EGI} = \text{PGI} - (\text{Vacancies} + \text{Discounts} + \text{Credit losses})
\]

### 3.2.3 Operating expenses

Operating expenses (‘OE’) are costs associated with the normal operations of the property. The OE is divided into heating & utilities and general expenses. The former consists of costs for heating, electricity, water and sewage. The latter will include costs for property caretaking, garbage removal, service fees, security, advertising, insurance, non-recoverable VAT, property management, property tax, leasehold, building repairs and maintenance and planned repairs and maintenance.

### 3.2.4 Net operating income

Net operating income (‘NOI’) is calculated by subtracting the operating expenses from the effective rental income. While NOI is the most widely used measurement of a property’s net cash flow it does not consider the negative cash flow consequences of capital expenditures (Geltner et al., 2007). However, because of the irregular and discretionary timing of capital expenditures the NOI is considered to be a more consistent and easily quantified number than the actual net cash flow after capital expenditures.

\[
\text{NOI} = \text{EGI} - \text{OE}
\]
3.2.5 Capital improvement expenditures

Capital improvement expenditures consist of expenditures for major improvements of the property’s physical quality. This item will refer to negative cash flows due to environmental costs, tenant improvements, general investments and leasing commissions. Unlike operating expenses which occur continuously, the capital expenditures occur irregularly.

Tenant improvements refer to the physical improvements of space which a tenant is going to lease or already is leasing. These improvements are often customized to the tenant’s needs and can be viewed as a way for the landlord of getting a tenant to sign a new long-term lease or extend a current one. Another cost associated with new leases is the leasing commissions, which is the cost for leasing brokers and sometimes tenant representatives.

Unlike operating expenses, which occur continuously, the capital expenditures appear at irregular intervals of time and while capital expenditures derived to new leases occur at the specific time of old leasing expiring’s, the timing and costs of general investments can be decided by the property owner.

On average over the long run, capital improvement expenditures typically equal 1-2% of the property value per year or about 10-20% of the NOI (Geltner et al., 2007). This will of course vary depending on the age of the property, being less in new buildings and more in middle-aged buildings, but it demonstrates the significance of including the capital improvement expenditures item when projecting future cash flows of a property.

3.2.6 Exit cash flows

Exit cash flows must always be included in the DCF on the year the property (or part of it) is expected to be sold and it typically accounts for well over one third of the total present value of a property in a 10-year DCF (Geltner et al., 2007). Most commonly the exit cash flow will appear in the last year of the DCF’s projection period since that is when the entire property is being sold.

Typically the exit cash flow is calculated by dividing the NOI for the year beyond the DCF horizon (i.e. year 11 in a 10-year DCF) by the estimated exit cap rate. If both the NOI and the cap rate have been correctly estimated, this approach should give a realistic estimate of the selling price.

\[
\text{Exit CF} = \frac{\text{NOI}_{\text{year 11}}}{\text{reversion cap rate}}
\]
3.2.7 Unlevered and levered cash flow
The use of debt to finance an equity investment creates what is called “leverage” in the equity investment because it allows investors to magnify the amount of underlying physical capital they control (Geltner et al., 2007). Although this might increase the return of equity it also brings on additional risk. This may not be desirable to risk-averse investors but it is most often unavoidable in commercial real estate investments because of the high capital requirements.

The unlevered cash flow is a property’s cash flow before interest expenses and amortisations are taken into account (Investopedia, 2013).

The levered cash flow is the cash that remains to the investor after debt services have been paid. A property’s levered cash flow is an important item in the DCF because it represents the pre-tax return on the investor’s equity.

3.2.8 Internal rate of return
The internal rate of return (‘IRR’) is the discount rate at which an investment results in a net present value of zero (Berk & DeMarzo, 2011). The IRR is a commonly used tool to measure and evaluate investments. Generally, the IRR investment rule states that an investor should make any investment that yields a higher IRR than the investor’s opportunity cost of capital. However, the IRR alone is not a complete evaluation tool since it only represents the return measured in terms of percentage.

3.2.9 Unlevered multiple
The unlevered multiple measures the return on unlevered capital, i.e. excluding the effect of financing.

\[ \text{Multiple}_{\text{Unlevered}} = \frac{(\text{Profit}_{\text{Unlevered}} - \text{Invested capital}_{\text{Unlevered}})}{\text{Invested capital}_{\text{Unlevered}}} \]
4. NIAM AND REAL ESTATE FUNDS

4.1 Company description

Niam is a real estate private equity firm originating from Sweden. The head office is located in Stockholm but they also have offices in Oslo, Helsinki and Copenhagen. Niam provides investors with the opportunity to invest in the Nordic and Baltic property markets through its real estate funds. Their investor base consists mainly of international institutions.

Niam was founded in 1998 and the company consists of approximately 40 professionals. The company possess in-house expertise in acquisition, management, development, financing and disposition across all the major asset classes. Niam started out as a business partner to Goldman Sachs, GE Capital and Morgan Stanley but launched their first own property fund in the year 2000. The main business focus has been on opportunistic real estate funds where Sweden, Finland and Norway have been the primary markets for investment but investments have also been carried out in Denmark and in the Baltics. Niam is currently raising money for their first core-plus fund, attracting investors with lower risk preferences.

Historically Niam has provided their investors with a 30 percent realized gross leveraged IRR for their opportunistic funds. At any given time there is only one fund per fund type in the investment phase. The purpose of this is to ensure the investors that the funds are not competing against each other in the search for lucrative investment opportunities. When a fund is fully invested a new fund is raised. Since the start in 1998 Niam has invested approximately €6.5 billion in total Capital and currently manages assets amounting to approximately €3 billion.
Table 1: Presentation of Niam’s funds: Niam’s previous and current funds

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>Opportunistic</td>
<td>Opportunistic</td>
<td>Opportunistic</td>
<td>Opportunistic</td>
<td>Core Plus</td>
</tr>
<tr>
<td><strong>Status</strong></td>
<td>Fully realized</td>
<td>Divestment period</td>
<td>Fully invested</td>
<td>Currently investing</td>
<td>Raising capital</td>
</tr>
<tr>
<td><strong>Equity raised</strong></td>
<td>n/a</td>
<td>€ 321 million</td>
<td>€ 700 million</td>
<td>€ 720 million</td>
<td>In progress, € 183 million raised</td>
</tr>
<tr>
<td><strong>Investment capacity</strong></td>
<td>€ 70-80 million/fund</td>
<td>€ 2 billion</td>
<td>€ 2,5-3 billion</td>
<td>€ 2-2,5 billion</td>
<td>n/a</td>
</tr>
<tr>
<td><strong>Investment classes</strong></td>
<td>Primarily residential properties</td>
<td>All real estate classes and development projects</td>
<td>All real estate classes and development projects</td>
<td>All real estate classes and development projects</td>
<td>Office, retail, residential</td>
</tr>
<tr>
<td><strong>Investment market</strong></td>
<td>Primarily Sweden</td>
<td>Sweden, Norway, Finland, Baltics</td>
<td>Sweden, Norway, Finland</td>
<td>Nordics and Baltics</td>
<td>Sweden, Norway, Finland, Denmark</td>
</tr>
</tbody>
</table>

4.2 Part of the Stronghold group

Niam is a part of the Stronghold group. Stronghold invests in property companies within the Nordic markets. Other companies within the Stronghold group include Newsec, Datscha and Eklund Stockholm New York. The synergy effects between these companies make Stronghold a diverse actor on the Nordic property market.

4.2.1 Newsec

Newsec – The Full Service Property House is a specialized commercial property firm with over 550 employees spread across 20 offices in northern Europe.

Newsec offers services in five different business areas:
Newsec manages many of Niam’s assets and also regularly aids Niam in their day-to-day business activities.

4.2.2 Datscha
Datscha is an internet based property valuation tool which also provides market data for its customers and the company’s services are available in Sweden and Finland. Customers consists of all actors with interest in the two property markets, including banks, law firms, property owners, property managers, educational establishments etc.

4.2.3 Eklund Stockholm New York
Strongholds have also invested in the private housing brokerage firm Eklund Stockholm New York. The company was founded in 2009 and focuses mainly on exclusive housing. Even though Eklund Stockholm New York does not focus on commercial properties they contribute to the stronghold group by identifying market fluctuations and market trends in their field.

4.3 Real estate funds as defined by Niam

Core fund
A core fund is the fund class with the lowest risk for the investors and also the lowest return requirement of up to 11.5 % yearly. Profit is mainly generated through the properties yearly cash flows and there is little focus on exit value growth. A core fund consists of properties in attractive locations with financially strong tenants and long leases. The properties do not require active property management and therefore these funds do not invest in development projects. The LTV (loan-to-value) in a core fund should not be higher than 60 % and the holding period should be 5-10 years.

Core-Plus fund
A core-plus fund differs from the core fund by having a slightly higher required rate of return at above 11.5 %. This is achieved by including properties that have a slightly higher requirement on active property management which results in a higher return on invested
capital. The majority of the profit should still consist of yearly cash flows generated by the properties and not by exit value growth.

**Value-Added fund**

A value-added fund is a medium risk fund with a required rate of return of 11.5-18.5 %. This increased return is achieved both from yearly cash flows and growth in property value. Acquired properties are often in need of renovation and some minor project development. A value-added fund also permits a slightly higher LTV with a maximum of 70 %.

**Opportunistic fund**

An opportunistic fund is a high risk fund with a required rate of return above 18.5 %. The majority of the profit is generated from value growth and not as much on the yearly cash flows as previous fund classes. LTV is above 70 % and the properties require active management and development projects are more highly represented within an opportunistic fund. These funds usually have shorter holding periods since the focus is on increasing property value and not as much on the yearly cash flows.

Table 2: Definition of different fund types as defined by Niam.

<table>
<thead>
<tr>
<th></th>
<th>Core</th>
<th>Core-Plus</th>
<th>Value-Added</th>
<th>Opportunistic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Risk</strong></td>
<td>Very Low</td>
<td>Low</td>
<td>Medium</td>
<td>High</td>
</tr>
<tr>
<td><strong>Holding period</strong></td>
<td>5-10 years</td>
<td>5-10 years</td>
<td>5-10 years</td>
<td>3-8 years</td>
</tr>
<tr>
<td><strong>Required Rate of Return</strong></td>
<td>Up to 11.5 %</td>
<td>Above 11.5 %</td>
<td>11.5-18.5 %</td>
<td>Above 18.5 %</td>
</tr>
<tr>
<td><strong>LTV</strong></td>
<td>Max 60 %</td>
<td>Max 60 %</td>
<td>Max 70 %</td>
<td>Above 70 %</td>
</tr>
</tbody>
</table>
5. PORTFOLIO OVERVIEWS

Short descriptions of each of the included portfolios and the concerned properties are presented below.

5.1 Marievik and Kista Office Portfolio – Fund III

The Marievik and Kista Office Portfolio was acquired on March 5 2005 through a joint venture agreement between Niam III and Whitehall Funds, one of Goldman Sach’s real estate funds. The seller was Fabege. The portfolio consists of eight office buildings and one garage in the Stockholm suburbs Marievik and Kista. The last remaining properties in the portfolio were sold in Mars 2008.

Overview

<table>
<thead>
<tr>
<th>Total Lettable Area (sq. m):</th>
<th>146,550</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office:</td>
<td>95%</td>
</tr>
<tr>
<td>Retail:</td>
<td>1%</td>
</tr>
<tr>
<td>Warehouse:</td>
<td>1%</td>
</tr>
<tr>
<td>Restaurant:</td>
<td>2%</td>
</tr>
<tr>
<td>Other:</td>
<td>1%</td>
</tr>
</tbody>
</table>

Figure 3. The geographical location of properties in the Marievik and Kista Office Portfolio (Datscha, 2013)
Property description

Marievik 22 is an office building totalling 4,800 sq. m. The building has seven floors and has continuously been rebuilt since it was raised in 1955. The property is located in Marievik, approximately 5 kilometres south-west of Stockholm CBD.

Marievik 23 comprises 16,826 sq. m arranged over eight floors plus a terrace floor. In addition to the office space, the building comprises stores and a garage. The building was raised in 188 and renovated in 2001. The property is located in Marievik, approximately 5 kilometres south-west of Stockholm CBD.

Marievik 25 comprises 10,712 sq. m. In addition to office space, the six-floor building comprises a garage. The building was constructed in 1995. The property is located in Marievik, approximately 5 kilometres south-west of Stockholm CBD.

Marievik 26 comprises 23,795 sq. m and is divided into stores, offices, a restaurant, a garage and an area categorized as laundry, hairdressing salon and gym. The building was constructed in 2001 and has nine floors. The property is located in Marievik, approximately 5 kilometres south-west of Stockholm CBD.

Marievik 27 comprises 11,400 sq. m. The building was raised in 1944 and has seven floors. It had been renovated prior to the acquisition by Niam III and Whitehall Fund. The property is located in Marievik, approximately 5 kilometres south-west of Stockholm CBD.

Marievik 29 and 30 is a five-floor car park consisting of 394 parking lots built in 1989. The property is located in Marievik, approximately 5 kilometres south-west of Stockholm CBD.

Lilla Katrineberg 4 comprises 2,436 sq. m and was constructed in 1993. The building has five floors of which three are office space and two are parking space. The property is located in Marievik, approximately 5 kilometres south-west of Stockholm CBD.

Reykjavik 1 comprises offices, restaurant, garage and other premises. The total area equals 31,817 and the building was raised in part 1987 and 2002. The property is located in Kista, approximately 15 kilometres north of Stockholm CBD.

Färöarna 1 comprises 56,576 sq. m, divided between two buildings. In addition to office space, the property also includes stores, restaurant, garage and a shelter. The property was built in 1987 and partly renovated in 2002 and 2004/2005. The property is located in Kista, approximately 15 kilometres north of Stockholm CBD.
5.2 Sweden Vasa Office Portfolio – Fund IV

The Sweden Vasa Office Portfolio was acquired from AP Fastigheter (now Vasakronan) on October 1 2008. The portfolio consists of 40 properties, mainly offices, in Stockholm, Gothenburg, Malmö, Lund and Uppsala. However, by the end of 2012 only 18 of these properties had been sold and have therefore been included in this study.

**Overview**

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office</td>
<td>74.7%</td>
</tr>
<tr>
<td>Retail</td>
<td>2.0%</td>
</tr>
<tr>
<td>Warehouse</td>
<td>2.9%</td>
</tr>
<tr>
<td>Garage &amp; Parking</td>
<td>6.9%</td>
</tr>
<tr>
<td>Other</td>
<td>13.5%</td>
</tr>
</tbody>
</table>

Total Lettable Area (sq. m): 454,684

Figure 4. The geographical location of properties in the Sweden Vasa Office Portfolio (Datscha, 2013)
**Property description**

Arkivet 1 is an office building that comprises 3,790 sq. m. The building was raised in 1901 and is located in Lund.

Bastionen Nyköping 1 is an office building that comprises 3,299 sq. m. The building was constructed in 1918 and is located in Malmö.

Boländerna 33:2 is an office building that comprises 18,770 sq. m. The building was raised in 1990 and is located in Uppsala.

Brämaregården 37:1 1 is an office building that comprises 3,111sq. m. The building was constructed in 1984 and is located in Gothenburg.

Inom Vallgraven 32:1 is an office building that comprises 2,844sq. m. The building was constructed in 1939 and is located in Gothenburg.

Inom Vallgraven 35:12 is an office building that comprises 1,906 sq. m. The building was constructed in 1956 and is located in Gothenburg.

Inom Vallgraven 60:8 1 is an office building that comprises 14,532 sq. m. The building was constructed in 1965 and is located in Gothenburg.

Inom Vallgraven 60:9-10 comprises of 14,003 sq. m divided between office space and garage. The building was built in 1964 and is located in Gothenburg.

Inom Vallgraven 69:5 is an office building that comprises 19,743 sq. m. The building was constructed in 1974 and is located in Gothenburg.

Järnplåten 29 is an office and retail building that comprises 3,116 sq. m. The building was constructed in 1929 and is located in Stockholm.

Juristen 4 is an office building that comprises 8,160 sq. m. The building was constructed in 1965 and is located in Mölndal.

Lagern 6 is an office building that comprises 3,024 sq. m. The building was constructed in 1870 and is located in Stockholm.

Masthugget 10:3 is an office building that comprises 2,409 sq. m. The building was constructed in 1950 and is located in Gothenburg.
Masthugget 30:6 is an office and retail building that comprises 16,717 sq. m. The building was constructed in 1941 and is located in Gothenburg.

Masthugget 4:5 is an office that comprises 2,139 sq. m. The building was constructed in 1911 and is located in Gothenburg.

Minan 4 is an office building that comprises 3,671 sq. m. The building was constructed in 1929 and is located in Stockholm.

Murmästaren 13 is an office building that comprises 3,418 sq. m. The building was constructed in 1965 and is located in Stockholm.

Spettet 3 is an office building that comprises 6,943 sq. m. The building was constructed in 1965 and is located in Lund.
6. RESULTS AND ANALYSIS

The following results are based on the outputs from the authors’ excel model. The results are presented on both property and portfolio level. Since the overall performance cannot be disclosed, the IRR and Unlevered multiple is only anonymously presented on a property level while the remaining results are presented on both property and portfolio level.

The cash flow items presented below represents the differences in the yearly average during the intended period with the exception of the sale price.

6.1 Marievik and Kista Portfolio – Fund III

6.1.1 Discounted cash flow items

Table 3: Shows the average yearly percentage difference between actual outcomes and estimations except for Sales Price which is displaying the total percentage difference.

<table>
<thead>
<tr>
<th>Property No.</th>
<th>EGI</th>
<th>Operating Expenses</th>
<th>NOI</th>
<th>Other Expenses</th>
<th>Property CF</th>
<th>Sales Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>-1 %</td>
<td>6 %</td>
<td>-4 %</td>
<td>n/a</td>
<td>-15 %</td>
<td>12 %</td>
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<tr>
<td>2</td>
<td>0 %</td>
<td>4 %</td>
<td>-1 %</td>
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<td>3 %</td>
<td>-12 %</td>
<td>83 %</td>
<td>-46 %</td>
<td>20 %</td>
</tr>
</tbody>
</table>

The table indicates a difficulty in estimating the outcomes of the different cash flow items on individual properties. Although the breaks only are expressed in percentage between yearly averages of underwriting estimates and actual outcomes, the table gives a good sense of how large discrepancies can be on individual investments. While some properties return big differences on, for example, EGI, it is important to notice that the break on the portfolio only was 8 %. This is in most cases explained by the fact that individual property breaks were consequences of big relative differences rather than big cash flow breaks.

It can be difficult to draw any conclusions from the relative differences, but when combining them with the underlying real figures the huge spread on Other Expenses can be explained by the fact that Niam proceeded to make all of their capital expenditures and tenant improvement
in a faster pace than forecasted, resulting in quicker divestments and therefore lower holding periods.

Sales prices, the only differences displayed as total relative breaks, were higher for nine out of ten properties and produced an accumulated total price increase of 20 % on the portfolio which offset the yearly average decrease of 46 % on property cash flows, resulting in a positive unlevered return.

6.1.2 Internal rate of return

Graph 1: Shows each property’s holding period (columns) and IRR (scatters) estimation and actual outcome

By looking at the underwriting columns in the diagram above it is easy to determine that the Marievik and Kista Portfolio was not planned to be owned for a longer period, which is somewhat significant for opportunistic real estate funds. Property 1 and 2 were planned to be sold within the first year and the majority of the remaining properties approximately four years after the acquisition date. The outcome was similar to the estimate for property 1 and 2 and they were both divested within the first year. The residual properties were sold after two and a half years, leaving an average holding period difference of eight months between underwriting and actual outcome on the portfolio level.

IRR forecasts were generally low during underwriting. Three properties were estimated to return zero IRR, meaning that they were estimated to be non-profitable investments on the
unlevered level. Another three properties also had rates below 10%. Property 4 and 10 on the other hand had unusually high unlevered IRRs representing 35% and 48% respectively.

In total the actual outcomes were very favourable for Niam and the total unlevered IRR on the portfolio was 10% higher than what was estimated in underwriting. On individual property levels only one property generated a lower actual IRR, which is displayed in the diagram below. Property 2 and 4 both had extraordinary unlevered IRRs going well over 30%. The high rates combined with the short holding periods indicate that the increases were a result of higher sales prices and not by yearly operating cash flows.

Graph 2: Shows the difference between actual and estimated holding periods and IRRs
6.1.3 Unlevered multiple

Graph 3: Shows each property’s holding period (columns) and unlevered multiple (scatters) estimation and actual outcome.

Holding periods were, as mentioned in the previous paragraph, on average eight months shorter than estimated in underwriting. This means that the properties were unable to generate cash flows for as long as forecasts show and that should therefore result in generally lower total incomes. The lower cash flows should translate into lower unlevered multiples since these are based on the relationship between amount of invested capital and generated incomes.

However, despite the fact that cash flows were generated on average eight months shorter than initially forecasted, only property 10 had a lower unlevered multiple. The average multiple on individual properties reached 1.30 compared to the average of 1.09 in underwriting. Unfortunately the confidentiality of the data prohibits publications of the portfolio’s multiple, but analysis of the difference on the portfolio level show that the actual unlevered multiple for the portfolio was approximately 15% higher. While this might not sound like a large increase, it needs to be pointed out that this is on an unlevered level and shows return on total capital, meaning that when adding the effects of financial leverage this will result in significantly higher increase on return on equity.
Graph 4: Shows the difference between actual and estimated holding periods and unlevered multiples

6.1.4 Transaction and Property cash flow profits

The graphs show how much of the total profit was generated from the property transaction and how much that was generated from the yearly cash flows compared to underwriting.

Graph 5: Shows the difference between actual and estimated transaction profits (sales price – purchase price) on individual properties and on the portfolio
Graph 6: Shows the difference between actual estimated and property cash flow profits (NOI – Other Expenses) on individual properties and on the portfolio.

In the underwriting 59% of the profit generated by the portfolio was forecasted to be made from transacting the properties. In reality 92% of the profit from the portfolio was generated from the transaction process. Many factors contribute to this difference but in the authors' opinion the two major factors were the increase in sales price combined with the accelerated timeframe for the investments done to the properties. The total amount of investments is still lower than in the underwriting but the investments were done in a shorter period of time. This fact has resulted in lower yearly property cash flows, shifting the profit allocation more heavily towards the transaction side. After analysing the properties the authors don’t believe that these investments can solely account for the 20% increase in the sales prices on the portfolio level, especially combined with the decrease in the properties net operating income. On average the properties were sold 20% above underwriting sales prices while the average yearly NOI decreased by 12%.

Given the high unlevered multiple on the assets combined with the short holding period the authors believe that the increased investments do not fully explain the increase in property value. The portfolio was either purchased at a discount below market value or sold above market value.
6.2 Sweden Vasa Office Portfolio – Fund IV

6.2.1 Discounted cash flow items

Table 4: Shows the average yearly percentage difference between actual outcomes and estimations except for Sales Price which is showing the total percentage difference

<table>
<thead>
<tr>
<th>Property No.</th>
<th>EGI</th>
<th>Operating Expenses</th>
<th>NOI</th>
<th>Other Expenses</th>
<th>Property CF</th>
<th>Sales Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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<tr>
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<td>-4%</td>
<td>-33%</td>
<td>3%</td>
</tr>
<tr>
<td>Portfolio</td>
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<td>6%</td>
<td>-20%</td>
<td>64%</td>
<td>-39%</td>
<td>-4%</td>
</tr>
</tbody>
</table>

The fact that the figures in the table above show the yearly differences has implications when interpreting the results. For example the 64 % increase in the Other Expenses column shows that on a yearly average this item increased with 64 % compared to the forecasts made in the underwriting. Since the dominant expense in this category is tenant improvements, and the holding period for the 18 realized assets were generally lower than forecasted in the underwriting, this increase could be explained by more rapid tenant improvements and not necessarily by an increase in actual costs.

Lower rental levels and higher vacancies combined with more rental discounts resulted in 12 % lower effective gross income for the portfolio on a yearly average. On the property level the fluctuations were more extreme with one property having as much as an 86% lower actual EGI than forecasted in the underwriting process. Lower income, combined with slightly elevated operating expenses resulted in a 20 % lower NOI for the portfolio on a yearly average. The lower NOI combined with the increased yearly investments in the properties
resulted in a property cash flow that was 39% below the forecasted level in the underwriting. The total net sales proceeds from the properties were 4.4% below the underwriting level.

6.2.2 Internal rate of return

Graph 7: Shows each property’s holding period (columns) and IRR (scatters) estimation and actual outcome

Given the fact that the expected sales dates in the underwriting for most of the assets in fund IV exceeds today’s date, most of the realized assets in the fund had shorter holding periods than originally forecasted in the underwriting. On average the realized properties sold 1.4 years ahead of what was estimated in underwriting, but there were also two properties that were held marginally longer than forecasted.

The graph shows that IRRs on individual property levels were highly volatile when comparing underwriting to actual outcome. Some properties had an actual IRR that was almost twice as high as the one forecasted in underwriting while others had an actual IRR of zero. However, one must remember that the IRR only shows profitability measured in percentage and do not demonstrate how much value that in fact has been gained or lost. Gazing blindly at the IRRs in this data sample could lead to the conclusion that they were highly volatile and hard to estimate, but when considering the fact that these properties were acquired for prices between approximately SEK 20 to 370 million this type of statement becomes skewed. Actually, the aggregated difference, i.e. the difference between the actual and underwriting IRR at portfolio level, was only 0.9 percentage points.
Graph 8: Shows the difference between actual and estimated holding periods and IRRs.

The graph presented above shows that of those properties that were held for a shorter amount of time than what was forecasted in underwriting, approximately 40% produced higher IRRs than presented in underwriting. The remaining 60% of the properties with shorter holding periods received actual lower IRR’s than in underwriting, indicating that actual cash flows had been lower than projected. But as mentioned in the previous paragraph, properties with lower acquisition prices and cash flows will more likely produce higher differences in IRRs since small changes are more easily absorbed by the IRR.

A conclusion that can be drawn from this is that IRRs can be hard to estimate on properties with lower cash flows since small differences will result in big discrepancies. But by measuring IRRs at portfolio levels these differences are absorbed by properties with higher cash flows and smaller IRR discrepancies, returning fairly small divergences between underwriting and actual.
6.2.3 Unlevered multiple

Graph 9: Shows each property’s holding period (columns) and unlevered multiple (scatters) estimation and actual outcome.

The unlevered multiples are based on the properties ability to generate cash flows and will naturally show higher values for longer holding periods, given that net cash flows are positive. The graph above displays that approximately 90% of the properties were estimated to be held for five years. In reality the properties were held for an average of 3.3 years instead.

The actual multiples also show lower values in general with nine out of ten properties producing lower multiples than in underwriting while also nine out of ten properties were held for a shorter amount of time than in underwriting, confirming the relationship between holding periods and multiples.
Graph 10: Shows the difference between actual and estimated holding periods and unlevered multiples

As previously stated a clear majority of holding periods for the concerned properties in the Sweden Vasa Office Portfolio was lower than forecasted in underwriting. This graph confirms the relationship between holding periods and unlevered multiples by showing that negative differences in holding period are followed by negative multiples. Only one property with a shorter holding period had a higher actual unlevered multiple, indicating that either the sales price was higher than estimated or that the property produced higher operating cash flows.

While on average the actual unlevered multiples were 0.25 percentage points lower than forecasted this should not come as any surprise since the actual holding periods were 30% lower (1.4 years).

A conclusion could be that lower multiples merely represent the fact that holding periods were shorter. And although multiples show rather big diverges on some properties this could be explained by their relatively low acquisition prices and ability to generate high cash flows, resulting in small changes having bigger impact on the unlevered multiples than if the same amount differed for properties with larger cash flows.

6.2.4 Transaction and Property cash flow profits

The following graphs show how much of the total profit is generated from transacting the property and how much is generated from the yearly cash flows, compared to the underwriting. The portfolio results are presented last.
Graph 11: Shows the difference between actual and estimated transaction profits (sales price – purchase price) on individual properties and on the portfolio.

Graph 12: Shows the difference between actual and property cash flow profits (NOI – Other Expenses) on individual properties and on the portfolio.

As shown by the graph a larger portion of the profit is allocated towards the transactions of the properties than originally forecasted in the underwriting on the portfolio level. The
original forecast for the portfolio stated that 51% of the profit would be allocated to the transaction of the properties and the remaining 49% a result from the property cash flows. The actual outcome for the portfolio shows that 67% of the profits were allocated to the transaction process and only 33% to the cash flows. There are however individual properties that stands out in the portfolio. When analysing the realized assets in the Sweden Vasa Office Portfolio the authors could identify that the development of the effective gross income fell short of the forecast made during the underwriting. To compensate for this fact Niam accelerated the timeframe and allocated more funds towards the investments within the properties. These facts resulted in lower yearly property cash flows since the income decreased whilst the costs increased in relation to the underwriting. For most of the properties the investments resulted in better performance at the end of the holding period, giving sales prices closer to the estimates in the underwriting. 11 of the 18 properties had a higher NOI at the end of the holding period than they had on an average during the period.

The tables presented earlier show the deviations between the estimates in the underwriting compared to the actual results. As the authors showed earlier, high volatility could be found in the cash flows on a property level but the overall IRR on the portfolio was only 0.87% lower than originally forecasted in the underwriting and the final result still meets Niams required rate of return.
7. CONCLUSION

7.1 Final discussion

When the authors first initiated this study they had no real experience with opportunistic investments and how their cash flows were divided between operational and exit cash flows. The only previous knowledge they had about this type of investments was from course literature and lectures. During the past years at the Royal Institute of Technology the authors have learned how important good estimations are and how garbage in returns garbage out, meaning that poor assumptions will return poor valuation estimates. With this study they wanted to gain further knowledge of the importance and implications of these forecasts and how difficult they are to produce. The best way of doing this was to look at how one of Northern Europe’s leading commercial real estate investors make their forecasts and how accurate these are compared to the actual outcomes. Another subject the authors found interesting, and that they knew was something they would encounter in this study, was how opportunistic investments perform on an unlevered level. Most often performance is measured including the effect of leverage and thus only presenting return on equity.

The authors have learned that the difference between forecasts and actual outcomes on individual opportunistic properties tend to be highly volatile. But when looking at the aggregate level, i.e. at the portfolios in which these properties are held, the differences are smoothed out to a high extent due to the diversifying effects of multiple properties in the funds, but also due to the fact that investments and therefore valuations in the acquisition phase usually are done on a portfolio level. This fact leads to a misguiding view when limiting the analysis to property levels. The authors believe that some properties will be undervalued and some overvalued in the underwriting, which then makes comparisons on property levels inconceivable.

Returning to the fact that their only previous experiences with opportunistic investments were theoretical, they had been told that opportunistic returns translated into increased risk. However, the Marievik and Kista Portfolio is in their opinion not a portfolio consisting of properties with opportunistic characteristics and hence did not expose Niam to opportunistic risk. In fact not only are the properties located within 15 kilometers of Stockholm CBD but also in attractive office areas. This lead the authors to believe that this portfolio was acquired below market value and that proposes that opportunistic funds don’t necessarily invest in opportunistic properties but rather in properties that will yield an opportunistic return.
Moreover, they believe that this could be a consequence of a non-transparent market where transactions are made with hidden motives and thus sometimes below market value. It may also be an outcome of the relatively small Swedish property market, where property owners will accept lower sales prices in return for quick and uncomplicated transactions.

Furthermore, by looking at the cash flows for the included properties the authors saw that many of them returned negative cash flows several years which was a result of high capital expenditures and/or vacancies. For opportunistic investments in general, negative cash flows are not unusual, opposed to core investments which usually generate steady streams of income. This indicates that an opportunistic portfolio needs to consist of many properties that together help diversify the risk. In this case negative cash flows were covered by other properties’ positive cash flows, meaning that no further capital had to be put into the portfolios once acquired. Investors who are unable to ensure enough liquidity to cover negative cash flows should therefore not consider investing in the opportunistic property segment and instead turn to safer investments like core properties. As a consequence of being able to ensure the liquidity in the portfolios without adding further equity they returned higher unlevered multiples.

Another consequence worth mentioning when analysing properties on an unlevered level is that the results regarding profitability can be misleading. When analyzing Niam’s assets the authors found that properties can perform worse than forecasted in the underwriting on an unlevered level but when adding financing and currency effects the same property could actually outperform the underwriting. This fact plays an important role when analysing the exit strategy of the properties.

Finally, the authors would like to stress the fact that it has been difficult to translate the results into an academic study because of the implications with the confidentiality of the data used. Although percentage differences are a good way of illustrating the breaks between underwriting and actual outcomes, it would have been preferable and more interesting for the readers to also publish the actual figures.

7.2 Suggestions for further research
When the authors analysed the results from their model they identified a high level of volatility on the property level in both portfolios even if the aggregated performance is less volatile. The study shows that cash flows for opportunistic investments are hard to predict since the strategy constantly needs to be adjusted in accordance with current events. A
suggestion for future studies would be to expand the sample data and conduct the analysis for all the different fund classes. It is their strong belief that the differences between the underwriting and actual outcome would be lower for funds in the lower risk segment since the cash flows are much easier to predict. By identifying the differences between underwriting and actual outcome, for all fund classes, going as far back in time as possible, it would be possible to analyse the level of risk for each class in combination with their internal rate of return. This would lead to the possibility to draw parallels between risks and returns with a more transparent property market as a result. Though, this kind of analysis would be impossible to conduct to a full extent due to the lacking availability of data as well as heterogeneity amongst the investors and funds within the same risk segment. However, in the authors opinion, the topic warrants further research. One idea could be to analyse the differences between Niam V with Niam Core-Plus once both are fully realized. This study could also be expanded to include an analysis describing how much of the discrepancies that are due to changing market conditions and how much are due to factors that Niam can influence.

Another topic the authors would like to suggest for future research is to investigate the profit allocation of the transaction process and the property cash flows for opportunistic investments in different market conditions. Given the short holding period of most opportunistic funds, it is believed that a in a downward market, opportunistic fund managers needs to increase or accelerate the investments in their properties in order to realize the assets at a level consistent with their required rate of return. This will shift the profit allocation from the property cash flows towards the exit of the investments. In a rising market the authors believe that the opposite will occur. Higher demand will result in a lower need for tenant improvements and other investments, increasing the properties cash flows and thereby increasing the allocation of the total profits that originates from the properties yearly cash flows. By identifying the differences in the property cash flows given alternative market conditions, it will be easier to estimate the level of financing a portfolio can manage without running the risk of breaking the banks interest cover ratio requirements and debt cover ratio requirements.
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