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PROFITABILITY ANALYSIS OF REAL ESTATE INVESTMENT IN FINLAND

Bachelor's Thesis

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Tallinn 2017

I declare that I have written the bachelor's thesis independently.
All works and major viewpoints of the other authors, data from other sources of literature and elsewhere used for writing this paper have been referenced.

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ABSTRACT

This thesis studies the profitability of real estate investment in Finland. The focus is on buy-to-rent investment of single-room dwellings in five major cities – Helsinki, Tampere, Turku, Jyväskylä and Oulu. The sample investment period is 2010-2016. An overview of real estate investment, the Finnish real estate market and the process of purchasing an apartment are presented. Relevant risks, reasons to invest in real estate and the formation of profit are viewed. The use of leverage is discussed. The objective is to calculate average returns from each city using data of rental rates, prices per square meter and management expenses. Rental returns and capital appreciation for each city are calculated using appropriate formulas. The formulas are presented accordingly.

The results show that each five cities can be considered as potential targets for real estate investment. Turku offers the highest average yearly returns of 10,4%, Jyväskylä being a close second with 10,1% returns. Tampere provides the lowest returns of 8,6%. Helsinki offers the highest capital appreciation, while rental returns are the lowest. For an investor preferring steady cash flows Jyväskylä is most suitable. At a time of low interest rates, leveraging proved an efficient way to boost profitability.

Keywords: real estate, investment, profitability, returns, dwelling, rent, capital appreciation

INTRODUCTION

The selection of different investment opportunities available for a private person in today's market is encompassing. Still, traditional forms, such as stocks, bonds, and investment funds are often regarded as intangible and hard to comprehend. For a risk-taking investor the stock market can offer high returns in a relatively short time period if all goes well, but for the average risk-averse Finnish person the whole idea can feel overwhelming. In Finland, this is mirrored to the fact that a significant portion of liquid assets sits in bank accounts. Even though this portion has been decreasing in recent years, it means that there is still much room for improvement in the investment behavior of Finnish consumers (Säylä 2012).

Investing in a more tangible asset, namely real estate, is a growing trend amongst Finnish private investors. Real estate and its strong potential as an alternative form of investment is a wide spoken topic in the Finnish media today. Success stories of normal Finnish investors that have jumped in to the real estate business and articles with interviews of seasoned professionals can be found in newspapers and magazines weekly. Historically low interest rate levels combined with a level of uncertainty in the political field has had its part in raising investors' interest towards investment opportunities that offer portfolio diversification and low volatility. Real estate is a prime candidate. At the same time the whole process is often regarded as arduous and challenging, hence not the easiest form of investment to approach (Orava, Turunen 2016, 48). Still, for a relatively small amount of research and footwork, real estate offers a potential for efficient diversification and competitive risk-adjusted returns.

The demand for rental dwellings in Finland's growth centers is steadily increasing. While rental rates are following the demand growth, maintenance expenses are increasing as well. There is also potential for capital appreciation, which has been the case in Finland for the past twenty years (StatFin 1). This, however, is definitely not a given for the future. Even though capital appreciation might not stay at the same level as in the past years, investing in

to real estate does offer a level of safety due to significant depreciation being unlikely in the current market. The often long investment period also helps even out possible downswings in the market, and as history has shown, the real estate market is capable of recovering quite well from downswings (StatFin 1).

This thesis will concentrate on real estate investment by a private person that consists of buying a residential apartment and renting it out. Investing in rental dwellings offers steady and easily predictable cash flows, which are important elements for the average private investor (Orava, Turunen 2016, 5). This works as a motivator towards the execution of this study, as the resulting paper will offer its reader an insight in to the process of real estate investment, its different aspects and possibilities. The popularity of real estate investment in Finland is on the rise, but just how profitable it can be is a problem that requires some further research. What kind of returns can rental revenue form? Is capital appreciation a given or something to be worried about? What is the effect of taking a bank loan to finance a real estate investment? These questions will be answered in this thesis.

A successful investment into residential real estate is a delicate process consisting of several different elements. Before an actual investment into property or an apartment can be made, an investor must be knowledgeable about current market situations, specific features and reputations of potential locations, their price and rental levels, the possible need for renovations to name a few. In this thesis, the main stepping-stones in the whole process will be discussed. Real estate investment in general, the market situation in Finland and its specific features will be looked into. The process of purchasing an apartment, the formation of profit, cash flows and relevant risks will be discussed. The use of leverage in the form of a mortgage will also be looked into.

The quantitative part of this thesis will consist of data collection, analysis and the calculation of rental returns, capital gains and total returns from real estate investments in five sample cities in Finland during 2010-2016. The cities chosen for comparison are Helsinki, Tampere, Turku, Jyväskylä and Oulu. The objective is to find out which city offers the highest returns from investments into single-room dwellings. This will be achieved by finding the rental returns and capital appreciation from each city with the use of relevant formulas. The effect of using leverage in these investments will be analyzed.

1. REAL ESTATE INVESTMENT

1.1. Overview

According to Brueggeman and Fisher "… the term real estate is used to refer to things that are not movable such as land and improvements permanently attached to the land …" (2011, 3). These permanent improvements include apartment buildings, which will be referred to as real estate in this thesis. Kiinteistötieto Oy (KTI), an independent information business in the Finnish real estate sector defines property ownership as follows: "In juridical terms, owning property in Finland means owning the land and the buildings on it. This is the basic form of direct property ownership. It is also possible to own only the building and have a long-term lease agreement with the land owner, typically the municipality." (KTI report) In Finland, dwellings in a block of flats form a housing (shareholding) company. The owner of a dwelling owns shares, which give the owner title to the apartment. In this thesis real estate investment is focused on this type of ownership. Commercial buildings, detached houses and the like fall in to the same category, but will not be discussed in this context.

The basic idea behind real estate investment is the process of buying real estate with the purpose of renting it out for rental income. In a successful investment the rental income offers a steady and predictable cash flow that covers all expenses and more on a monthly basis. Another source for possible profits is capital appreciation, which has been the case in the Finnish real estate market for several decades. (Vuokraturva) This, however, is a factor that should not be taken as a given when investing. It does mean that buying a home for your own use can also turn out to be a profitable investment, but in this thesis we will concentrate on the buying-to-rent strategy. Another form of real estate investment is called *flipping*, in which an investor buys properties with the sole purpose of reselling them for a profit. This can be done either short-term or long-term, where profits are formed from short-term value

increase in the former, and from increasing value through renovations in the latter. (INVESTOPEDIA)

Investment in to real estate usually requires more starting capital than for example investment in to stocks. This is one of the reasons why real estate investment is often thought of as a possibility for only the wealthy. To some extent this is true, though with the proper use of leverage through a mortgage the capital needed for an investment is achievable to a broader population. Due to the steady cash flows and a reasonably stable market banks are usually quite generous in granting loans for the purpose of investing in to real estate. Getting a second mortgage for a real estate investment is much easier than receiving the equivalent for other investment purposes. (Orava, Turunen 2016, 18) This, of course, is in the case that the investor proves to the bank that proper research in to the investment has been done and calculations are realistic. Naturally, using leverage comes with interest and loan payments, but a reasonably priced rent covers all these expenses. In effect the tenant pays for the investor's mortgage through rent. Usually the piece of real estate bought acts as collateral for the loan. If the financial requirements of the investment exceed the collateral value of the piece of real estate, an investor can use their own home to cover the exceeding amount (Aktia).

Real estate is generally considered as a long-term investment. This is partly due to its stable nature: fluctuations in property values are mainly small and calm. Even more significant depreciation does not have an immediate impact in an investment as long as the investor holds on to the property. Capital appreciation or depreciation becomes a reality only once the piece of real estate is sold, so in the case of depreciation an investor can just enjoy the cash flows from rental income, sit tight and wait for the market to recover. Of course in case of a bubble the market will probably not recover to its previous state, but this is an unlikely scenario and will not be discussed in detail in this thesis. Another reason supporting its long-term character is the fact that real estate is a very illiquid form of investment. In this context, liquidity measures how easily an asset can be converted into cash (CreditSuisse). Unlike stocks, which can be traded online with little effort, buying and selling real estate is a long process where one significantly valuable physical item changes ownership. Finding a buyer for your piece of real estate can take a long time, especially if it is located in an area of decreased demand at the time. These features sit well in to the average Finnish investor's mindset, where excess risks are avoided and steady cash flows are appreciated.

1.2. The Finnish real estate market

According to research by Pellervon Taloustutkimus (PTT), a Finnish economic research organization, the long lasting economic melancholy has increased demand in the Finnish rental real estate markets during the past years. Uncertainty of employment has increased the popularity of rental housing, and rental rates continued to increase in 2016 as they did in the previous year. The organization expects rental rates to increase at an average rate of 2,4% in 2017, with rates varying between different regions. This is expected to continue even with the slowly recovering economic growth and decreased uncertainty factors. (Kekäläinen et al 2017)

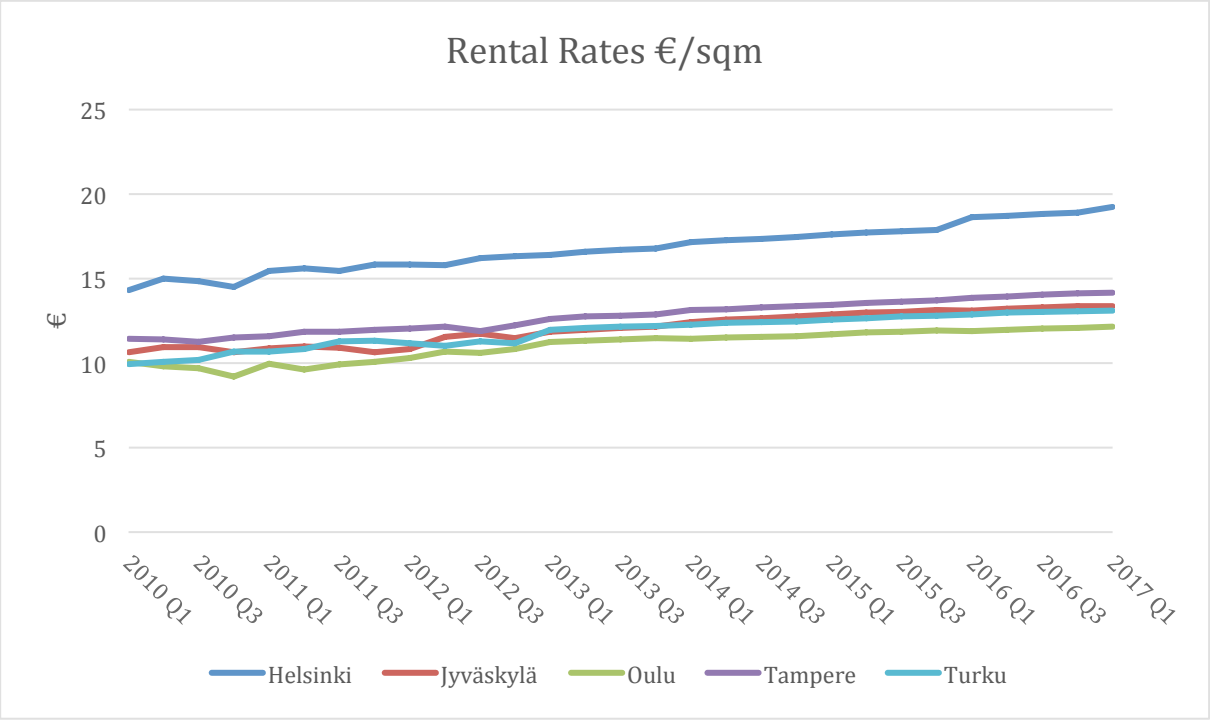

Figure 1. Quarterly rental rates per square meter – non-subsidized dwellings 2010-2017
Source: http://www.stat.fi/til/asvu/tau.html

Figure 1 presents the evolution of rental rates from 2010 to 2017 in five major Finnish cities. The increase in rental rates has been quite constant in all of the five cities, though rates in Jyväskylä have more turbulence compared to others. Helsinki stands out with by far the highest average rental rate throughout the time period. The difference to the other cities has grown even further during the time period. Of the other four cities, Jyväskylä, Oulu, Tampere and Turku, the differences are smaller, Oulu having the lowest and Tampere the highest average rental rates after Helsinki.

The popularity of rental housing is increasing especially in Finland's growth centers. Consumers are appealed by the flexibility, easy nature and the predictability of expenses that living on rent has to offer. (Vuokranantajat 1) Hypo, a Finnish credit institution that specializes in housing, reports in their Q1 real estate market overview that the main theme in the Finnish real estate market in 2017 is the ongoing construction boom. Compact dwellings will control the direction of the market due to urbanization, smaller apartments being in the sights of consumers buying their first homes and real estate investors alike. (Brotherus 2017)

Finnish consumers consider real estate as a safe investment and a steady source of profit. Long-term investment is considered as the gateway to wealth. The average Finnish landlord is an over 60 year-old investor that owns one or two pieces of real estate. Now, a new breed of under 40 year-old investors are entering the market even with relatively small savings, with their goals set on high profits. According to the Finnish Landlord Association's questionnaire, the average gross rental income for the younger group of investors is usually 5-7%, whereas for the older group between 3 to 5%. (Vuokranantajat 2)

The average size of apartments has been decreasing at the same time as the demand for one and two bedroom apartments has grown. Behind this trend is the decrease in the average size of household-dwelling units, urbanization and consumers' attempt to lower living costs. In 1985 there were around 500 000 one-person households, whereas in 2015 there were already over 1,1 million. The amount of two-person households also grew from 500 000 to almost 900 000 in the same time period. (Orava, Turunen 2016, 336) These facts support the popularity of single-room apartments amongst real estate investors.

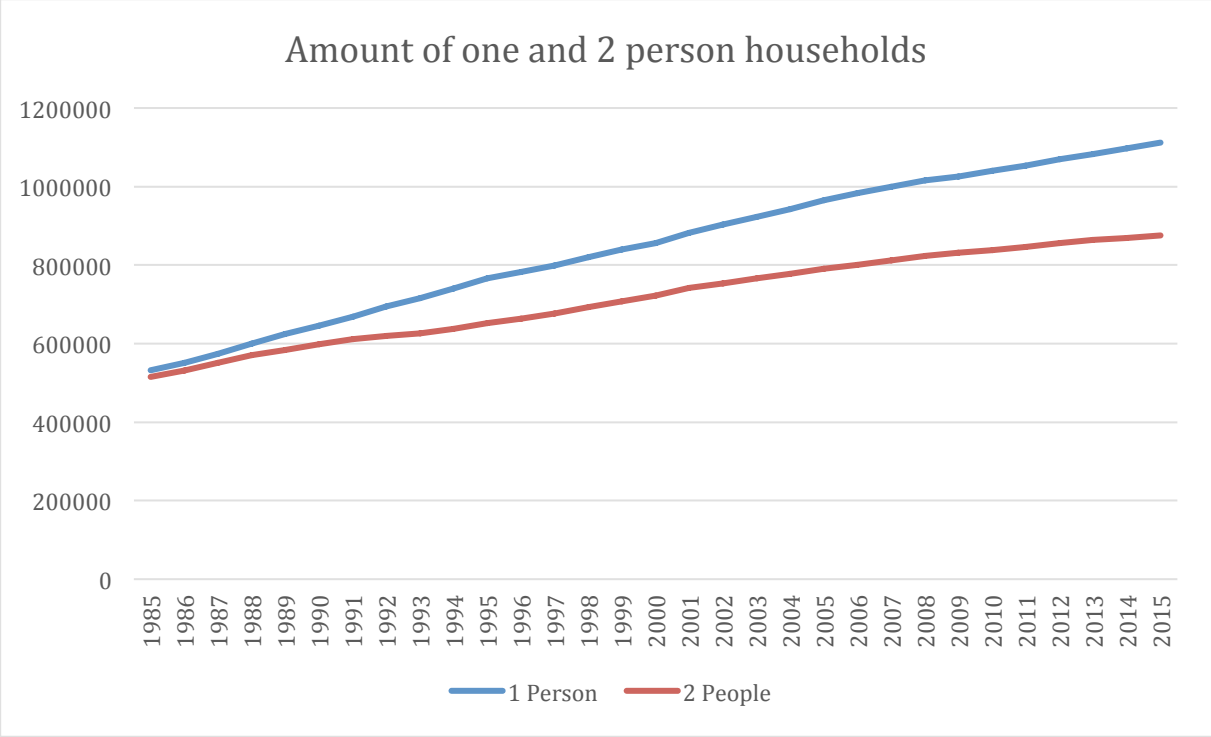

Figure 2. Amount of one and two person households in Finland 1985-2015
Source: http://www.stat.fi/til/asas/2015/asas_2015_2016-05-24_tau_001_fi.html

Figure 2 presents the evolution in the amount of one and two person households in Finland from 1985 to 2015. The more rapid increase in one person households compared to two person households is clearly visible. In 1985 the amounts were close to each other, but since around 1989 the growth rate of two person households clearly slowed down and the difference started to increase. The amounts of both one and two person households have increased quite constantly during the time period.

Timo Metsola, the chairman of Vuokraturva, a Finnish rental property agency, believes that there has been a shift from a landlord's market to a tenant's market especially in mid-sized and larger dwellings. Metsola states that the market is tougher than before, and a mediocre investor will not necessarily be saved by capital appreciation anymore. He also believes that even though the real estate market is currently blooming, tougher times are ahead even though it might not seem so. (Orava, Turunen 2016, 343) This sets even more emphasis on the importance of proper research and preparation when preparing investment in to the real estate market.

According to the Finnish Property Market 2017 report, urbanization is a growing phenomenon in Finland. In 2015 around 69% of the population lived in the 14 biggest city regions, and by 2040 the number is expected to increase to at least 75%. The fastest growth is expected to be in the Helsinki region, which also represents the highest percentage of Finland's population, GDP and jobs. The report suggests a likely scenario forecasted by the VTT Technical Research Centre of Finland, where migration to the 14 main city regions is expected to increase by 625 000 inhabitants by 2040. This definitely raises the already high appeal of investing in to the nation's growth centers. The report also emphasizes the increase in demand for small, centrally located apartments in the rental as well as owner-occupied markets. (KTI report)

There are about 2,6 million dwellings in Finland, of which 840 000 are rental apartments. Of these 840 000 rental dwellings, around 375 000 are publicly subsidized and 464 000 non-subsidized. This means that 32% of Finnish households live in rental dwellings, which is close to the EU average of 30,6% (19,7% market price rent, 10,9% reduced-rent or free accommodation) in 2015. (KTI report p.54 & Eurostat) On the extremes are Romania, where 96,5% of the population lived in owner-occupied dwellings, and Switzerland, where 55,5% of the population were tenants according to 2015 statistics (Eurostat). In recent years, both Finnish households and other private investors have increased their investments in rental dwellings, owning around 300 000 of the non-subsidized portion of the market. VVO and SATO own the largest share of the 164 000 non-subsidized rental dwellings owned by professional investors. (KTI. report p.55)

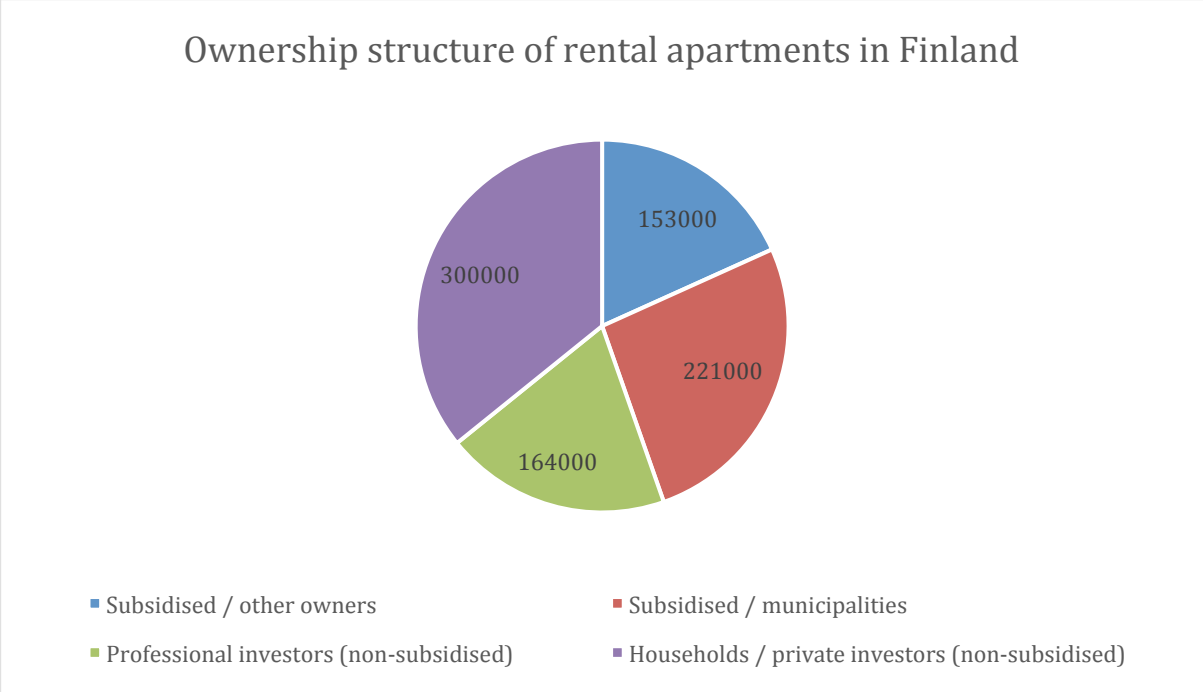

Figure 3. Ownership structure of rental apartments in Finland 2017
Source: https://kti.fi/wp-content/uploads/page/The-Finnish-Property-Market-2017.pdf

Figure 3 presents how Finland's 840 000 rental apartments are divided between four different owner types. A majority of rental apartments, around 36%, are owned by Finnish households and other private investors. Around a quarter of the total amount is owned by municipalities in the form of subsidized rental apartments. The remaining amount is split quite evenly between professional investors and other owners.

Rental levels in Finland have been steadily increasing for decades. This is natural due to increased demand and increased expenses. The average increase has beaten inflation, which is definitely a positive aspect for investors. As the demand for rental dwellings is the highest in the Helsinki region, this is also where we have seen the highest increase in rental levels. Non-subsidized rental dwellings saw a 2,6% increase in rental levels in 2016. In the Helsinki region there was a rise of 3,4%, whereas the increase was a more moderate 2,0% in the rest of the country. (StatFin 3) These numbers are flattering towards the Helsinki area, but we have to keep in mind that the numbers from the rest of the country do not give the right picture of the potential of specific cities. This is due to the fact that the 2,0% increase is an average that contains also regions which have decreased in population during the past years.

The real prices of dwellings in old blocks of flats has been rising for the past two decades. Before this, there was a steep drop in prices during the times of the early 1990s recession in Finland.

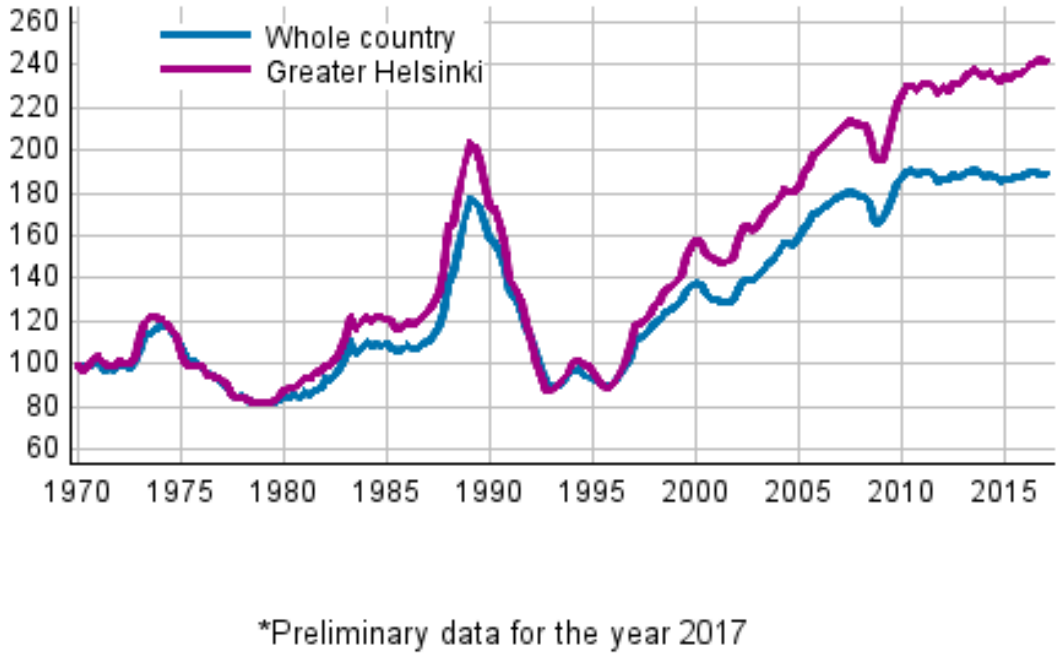

Figure 4. Real price index of dwellings in old blocks of flats 1970=100
Source:http://www.stat.fi/til/ashi/2017/03/ashi_2017_03_2017-05-02_kuv_005_en.html

Figure 4 presents the evolution of real prices of dwellings in old blocks of flats since 1970 in the Greater Helsinki area and the whole of Finland. The effect of the early 1990s recession can be clearly seen in the middle of the figure. Prices dropped to under half of the pre-recession levels in a time period of only around three years. The price levels settled for a couple of years before starting to recover and have since reached record high levels.

The appreciation has been significantly higher in the Greater Helsinki area compared to the whole country. (StatFin 4) In February 2017, average prices per square meter rose by 0,9% in the whole country, the yearly change being 2,0%. Looking closer the Greater Helsinki area was the driving force behind this increase, it's growth being 4,2%, while prices actually fell 0,5% in the rest of the country (whole country – Greater Helsinki) during the past year. (StatFin 5) When looking at single-room apartments, prices rose by 3,7% in the whole country, and by 4,7% in the Greater Helsinki area in 2016. This once again highlights the potential of small apartments in the eyes of investors. (StatFin 6)

1.3. Purchasing an apartment

There are different types of real estate ownership types in the Finnish housing market. The most typical is the ownership of shares in a housing company. There is a difference between buying a new apartment and an old one. The main difference being that there are more regulations related to buying a new apartment. When buying an apartment, the owner will own shares, which give title to the said apartment. This means that the owner does not own e.g. the walls, doors, floor or other parts of the dwelling that are considered as fixed. On the other hand, the owner does own and is responsible for e.g. the refrigerator, stove, freezer and lamps. Concerning repairs and maintenance, the housing company is responsible for the fixed items, piping, toilets, sinks and other fixed appliances. Before closing the deal the buyer should familiarize carefully with the house manager's certificate, which is provided by the house manager. This certificate contains information about the housing company's possible bank loans and other relevant data. The loan information especially is important, since the owner of the apartment is responsible for a share of the housing company's loan based on the ratio of the apartment's surface area to the whole housing company's surface area. Typically the owner pays his share of the housing company loan plus a maintenance fee on a monthly basis. The second ownership type is property ownership, where a certain land area and fixed buildings on it are owned. In this case the proprietor is registered as the owner in the land register. (Rakli 2012, 44) This thesis focuses on real estate investment through buying shares in a housing company, so property ownership will not be discussed in further detail.

The process of buying an apartment as a private person is quite simple. When the buyer has arranged proper financing, the seller and buyer agree on the terms of the deal in writing. Aspects such as the price, payment terms, what is included in the deal, when the apartment will be free, are all included in the contract. In most cases the owner's shares are kept in a bank as collateral since typically they have a mortgage. This leads to most apartment deals being closed at bank premises, where at the same time the buyer transfers the down payment or whole value of the deal to the seller's bank account. Bank officials act as a mediator – seller gets necessary support during the process.

Applying for a mortgage in Finland is rather easy in case the applicant has a permanent job and can provide a trustful calculation on all relevant income and expenses. The value of the apartment can be financed in practice of up to 80% with a bank loan, depending on the negotiations with the bank. There are of course differences between banks as well. Loan interest rates in Finland are record low currently, in fact very close to zero. Often interest rates are tied with 1, 3 or 12 month Euribor rates. 'Euribor' comes from Euro Interbank Offered Rate, and is published by the European Money Market Institute.(EMMI) Accordingly the effective interest rate changes periodically depending on the chosen Euribor. There are also fully fixed interest rate products as well, for durations such as 5 and 10 years. When taking a mortgage, the lender has to pay the bank a margin on top of the interest rate. The margin is dependent on the customer's relationship with the bank and on the competition between different banks. In 2017 actual margins were 0,83% on average in Helsinki (Lassila 2017). A part of the interest rate is tax deductible if you live in the bought apartment. After transfer of ownership the buyer has to pay a transfer tax to the Finnish government, which is 2% of the transaction value in case of apartments and 4% in case of property such as a house (VERO).

1.4. Important aspects in real estate investment

1.4.1. Risks

Investment in to real estate is a long and complex process demanding thorough research from the investor in order to be successful. Just as in all forms of investment, an important aspect that must be considered early on in the process is risk evaluation. In this context, risk can be said to be related to the uncertainty of expected future returns. In investment, the most commonly used measure of risk is the standard deviation of returns. (Kaiser, Clayton 2008, 288) This is a useful method for analyzing the risk in a real estate investment as well, but it is the components affecting the returns that lay the foundation. As each real estate investment is unique, the related risks are also dependent on the details that form the entirety of the investment. According to Curcio et al., managing risk involves three steps: analysis, identification and quantification of the risks regarding their effect on the investment. After this, an investor must either accept the circumstances, or proceed with

appropriate measures to eliminate or reduce the risks depending on the investment strategy and goals. (Curcio, Anderson & Guirguis 2014, 64)

According to Orava and Turunen, amongst risks that can decrease profitability or disturb the investment process are (Orava, Turunen 2016, 245):

- Price risk – significant decrease in real estate prices
- Interest rate risk – a significant rise in the interest rates of loans
- Empty months risk – the lack of a tenant for some period of time
- Tenant risk – bad tenant: doesn't pay the rent or damages the apartment
- Rental level risk – a significant decrease in rental levels
- Maintenance charge risk – the expense level of the condominium rises significantly
- Renovation risk – there is a longer and more expensive renovation to the condominium than expected
- Political risk – significant rise in taxes, a cut in the student benefits, regional decisions concerning study facilities, etc.

An investor using the "flipping" strategy needs to be extremely wary of the price risk, since short-term price fluctuations will have a large effect on the profitability of the investment. On the other end of the spectrum is the buy-to-rent investor with a long investment period, who relies mainly on the cash flows from rental income and does not need to worry about price fluctuations as long as the plan is to hold on to the property. This shows that the effect of capital depreciation can vary depending on the chosen investment strategy. In a short-term investment even small price fluctuations can have a large effect on profitability. Even though real estate prices often go through long periods of growth, the possibility of a market correction or even a crash always exists (Curcio, Anderson & Guirguis 2014, 64). As an investor uses an increasing amount of leverage to finance an investment, the importance of the interest rate risk increases. If interest rates rise significantly during the investment period, the size of periodic interest payments increase, thus eating away from the cash flows coming from rental income.

Another risk that can potentially turn a profitable investment in to a losing one is the risk of empty months, or having no rent paying tenant. The expenses and interest payments related to a property keep on running even if it is unused, so from the investor's perspective it

is crucial to have a tenant year-round providing rental revenue to cover these expenses. Investing in a single-room apartment is a good way of minimizing this risk, since most Finnish households are one-person households and demand for them is the highest (StatFin 7). It is also important to choose the tenant carefully, since any problems that the tenant causes by for example damaging the apartment or not paying rent could cause a decrease in profits. This requires some effort from the investor, but by doing a credit check, requiring a deposit and by meeting the tenant candidates personally the risk can be significantly lowered.

As can be seen in Figure 5 below, average rental levels in Finland have been rising since 1975 (StatFin 8). This means that a significant drop in rental levels is quite unlikely, especially when investing in to areas with high demand. There still lies a less direct risk in rental levels. If an investor sets an over-the-market rent to a property, the risk of empty months due to lack of or decreased demand is inevitable. This too can be avoided with proper research about the area's rental levels and studying rents of apartments similar to the investor's.

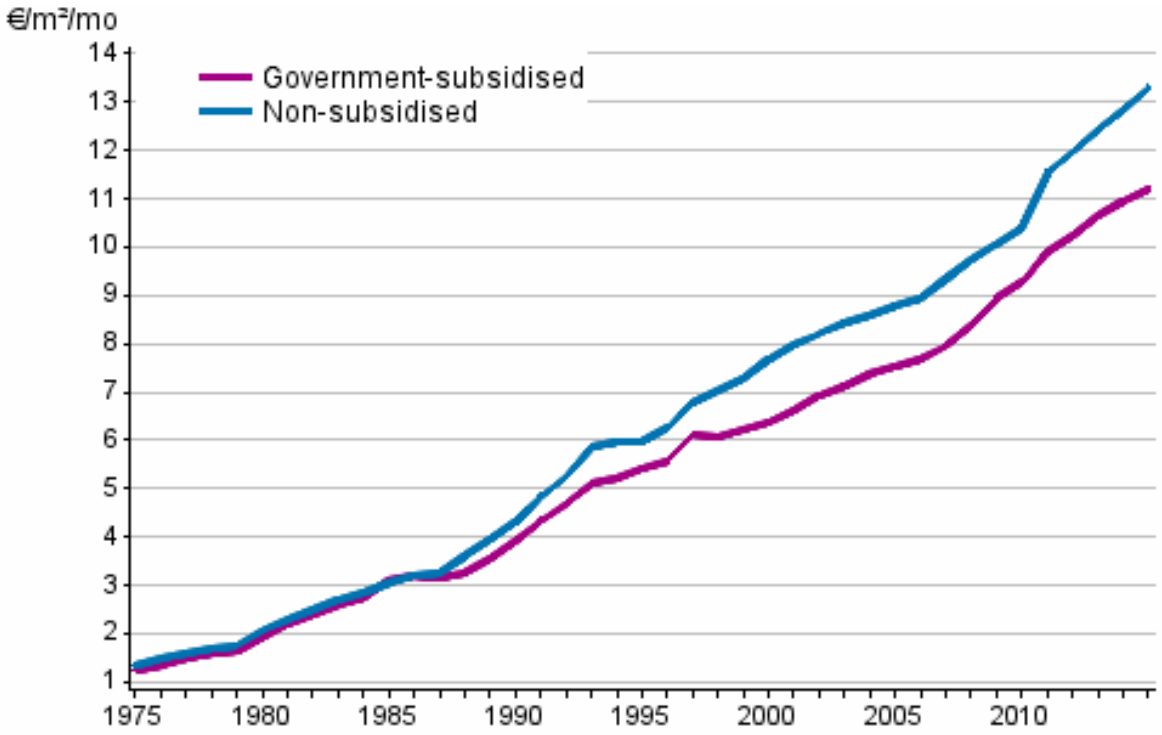

Figure 5. Development of average rents per square meter in the whole country 1975-2015
Source: http://tilastokeskus.fi/til/asvu/2015/asvu_2015_2016-03-07_tie_001_en.html

Figure 5 presents the evolution of average rents per square meter in Finland from 1975 to 2015. Average rents have seen a quite constant increase during the whole time period, the growth rate even increasing during the last five years. Non-subsidized dwellings have experienced a larger increase in average rents than government subsidized dwellings. This is normal since the whole point of subsidized dwellings is to control the rental levels.

Maintenance charge and renovation risks have to do with the physical features of the piece of real estate. A rise in the expenses of the condominium to which the investment property belongs to will have a direct negative impact on its profitability. Renovations are a factor that need to be researched carefully especially when investing in to older real estate. An example of a costly renovation is a pipe renovation, which usually causes a loss in rental revenue from two to three empty months due to the apartment not being habitable. The actual renovation itself is also costly; the repair costs are not fully reflected to the apartment's debt-free selling price. (Nikola 2011, 54-55) If an investor doesn't want to have to worry about upcoming renovations, there is always the option of investing in to newer real estate. Another option is to invest in to properties where major renovations have recently been done.

There are also political risks involved in real estate investment, which are often things that an investor cannot influence. These risks can, however, be anticipated by doing research in to the politics of the area of investment. Decisions such as the closing down of a local study facility can be extremely harmful towards a real estate investment in that area. Cuts in different benefits and tax raises impact consumer behavior as well, though in a slower schedule.

1.4.2. Why invest in real estate?

What are the motivators behind investing into real estate? In what ways does real estate differ from other investment methods? There are several positive sides to real estate which together form a competitive investment option. One of these is the imperfection of the real estate market, which comes from the heterogeneity of properties. This means that properties rarely have the same features; they differ by age, size, location, quality, etc. This, added to the fact that real estate trades are quite infrequent, make accurate price formation difficult. This leaves space for individuals to affect prices, thus making it possible for well-educated investors to make better-than-market deals for enhanced profits. (Manganelli 2015, 9)

Another reason to invest into real estate is the benefits of diversification. By investing into several different investment types rather than one, the overall risk of a portfolio can be reduced through smaller variance. (Brueggeman, Fisher 2011, 430) Real estate has been found to offer diversification in a mixed-asset portfolio containing stocks and bonds. The allocation to real estate as a percentage of the whole portfolio differs widely between different studies, but ranges of up to 66 percent have been introduced. (Seiler et al. 1999, 169) This means that the real estate market and the stock market do not always react similarly to economic events. A home to live in being one of the basic elements of life means that even if the stock market is suffering, it won't have an immediate impact on the demand for rental dwellings.

This brings us to another positive feature of real estate investments: steady cash flows. In a successful investment the monthly cash flows coming from rental revenue offer direct profits even after all expenses and mortgage payments are dealt with. It is an ongoing cash flow that doesn't vary during a short time period, and which can be set to rise yearly according to a chosen index in the rental agreement. This gives the investor an added level of protection towards inflation.

The already mentioned illiquidity of real estate investments can also be a positive aspect for some investors. Since the process of buying and selling real estate is so time consuming, an investor has no possibility for hasty feeling-based decisions that would be possible in for example the stock market.

2. PROFITABILITY OF REAL ESTATE INVESTMENT

2.1. How profit is formed

Investing in to residential real estate with the buy-to-rent strategy offers an investor steady cash flows that according to empiricism should grow steadily on a yearly basis. The predictability of cash flows coming from rental income surpasses many other investment methods. (Orava, Turunen 2016, 17) As mentioned before, the basic idea behind this strategy is that an investor buys a dwelling with the purpose of renting it out and receiving rental income. In a successful investment the monthly rental income is higher than expenses related to the investment, thus equaling a positive rental return, or profit. In addition to a positive rental return, an investment in to real estate can bring positive returns in the form of capital gains from the appreciation of the value of the investment property. (Manganelli 2015, 64) However, an investor must keep in mind that the possible profit from capital appreciation is only realized once the property is sold. It is also important to understand that appreciation is never a given, thus focusing on the positive cash flows that make the investment an income generating entity should be emphasized (Haight, Singer 2005, 100).

2.1.1. Rental return

According to Orava and Turunen, the yearly rental return of an investment property can be calculated with the following formula (2016, 71):

$$\frac{(Rent - Maintenance\ Charge) \times 12}{Free\text{-}of\text{-}Debt\ Price + Renovation\ Expense + Transfer\ Tax} \quad (1)$$

The formula consists of net rental revenue, which can be calculated by subtracting monthly maintenance charges from the monthly rent payed by the tenant. The net rental revenue is divided by the sum of the overall investment cost, which comes from the free-of-debt price (the whole price of the dwelling if no leverage is used), an estimate of renovation expenses and transfer tax. This formula contains renovation expenses in the total investment amount, which is important when comparing the returns of specific investment property candidates. The amount to allocate for renovation expenses of course varies depending on the current state of the property and scheduled renovations in the condominium.

As an example, the yearly rental return of a 100 000 euro 28m2 single room apartment with a rent of 600 euros and a maintenance charge of 4,25 euros per square meter would be calculated as follows:

$$\frac{(€600-28\times€4{,}25)\times 12}{€100000+(100000\times 0{,}02)} = 5{,}66\% \qquad (2)$$

Note that this calculation does not take in to consideration possible renovation expenses, thus over-estimating the rental return. By reserving 500 euros per square meter, or a total of 14 000 euros for renovations, the rental return would be 4,98%. As said earlier, in addition to the actual cost, some larger renovations such as a pipe renovation usually cause two to three empty months during which expenses keep on rolling but there is no rental income. This would further decrease the expected rental return. As the point of this thesis is to compare the average returns of real estate investments between different cities in Finland and not those of unique properties, the renovation expenses have been left out of the final calculations.

When making a real estate investment with leverage, the monthly interest expense of the loan is subtracted from the monthly rent payed by the tenant together with the monthly maintenance charges. The net rental revenue is again divided by the sum of the overall investment cost, which is now a sum of the investor's own capital (free-of-debt price minus loan amount), transfer tax and renovation expenses if included in the calculation.

As an example, the rental return of the same 100 000 euro 28m2 single room apartment with a rent of 600 euros and a maintenance charge of 4,25 euros per square meter, with a leverage of 70% and an interest rate of 2% would be calculated as follows:

$$\frac{\left(€600-28\times€4{,}25-\left(\frac{€70000\times0{,}02}{12}\right)\right)\times12}{€30000+€100000\times0{,}02}=13{,}66\% \qquad (3)$$

The significantly positive effect of using leverage in a real estate investment can be seen from these examples: rental returns from the same property rose from 5,66% without leverage to 13,66% with a leverage of 70%.

2.1.2. Capital appreciation

To calculate the total return from a real estate investment, the possible capital gains or losses from the change in value of the investment property must be calculated. This, however, can be done only once the investment property is sold. Once the property is sold, the capital gain (or loss) % can be calculated with a simple formula (Brueggeman, Fisher 2011, 193):

$$\frac{Sales\ Price-Acquisition\ Price}{Acquisition\ Price} \qquad (4)$$

Note that this formula doesn't include possible broker fees and taxes. For the purpose of this thesis they are irrelevant, so they will be left out for the calculations.

The capital gain (or loss) % for a leveraged real estate investment can be calculated with the following formula (Brueggeman, Fisher 2011, 193):

$$\frac{Sales\ Price - Acquisition\ Price}{Acquisition\ Price \times (1 - \frac{L}{V})} \qquad (5)$$

Where L/V is the loan-to-value ratio, or the amount of loan divided by the total free-of-debt price.

2.1.3. Total return

This gives us the following formula to calculate the total return from a real estate investment:

$$Rental\ Return \pm Capital\ Gain/Loss = Total\ Return$$

2.1.4. The internal rate of return

Another indicator of profitability commonly used in the real estate business is the internal rate of return (IRR). IRR differs from the previous formulas because it takes into consideration the time value of money. According to RealtyMogul.com, IRR can be thought of as the projected growth rate an investment can potentially generate. (RealtyMogul) In other words, the IRR can be said to measure the return on invested capital in a real estate investment (Manganelli 2015, 124). These features make IRR a good tool for comparing the profitability of different investment options. In this thesis the IRR() formula in Microsoft Excel will be used to calculate the IRR.

3. METHODOLOGY AND DATA

3.1. Methodology

The objective of the methodological part of this thesis is to find out how profitable investing in to real estate is on average in five different cities in Finland. The comparison is done by calculating average rental returns and capital appreciation of each city using historical data from 2010 to the end of 2016 with certain restraints. The relatively short sample time period is a result of necessary statistics being available only from the year 2010. The data needed for the calculations are the following from each city: average rent per square meter, average price per square meter, and average maintenance charge per square meter. In addition to the city-dependent data, loan interest rates and transfer tax are used. Calculations are done using the formulas of rental return and capital appreciation introduced earlier in chapter 3.1.

The cities chosen for comparison in this thesis are Helsinki, Tampere, Turku, Jyväskylä and Oulu. More specifically the areas in question are as noted by Statistics Finland: Helsinki 2, Tampere 1, Turku 1, Jyväskylä 1 and Oulu 1. As the core center of Helsinki represents an extremely expensive area compared to the other cities, the Helsinki 2 area was chosen to represent the city in this thesis. This lowers the difference of capital needed for investment between the cities in question, even though the Helsinki 2 area still represents by far the highest prices per square meter. The statistics used from the other four cities represent numbers from centrally located real estate. The reason behind choosing these five cities for comparison is that they represent the five largest cities in Finland if Espoo and Vantaa are left out. Espoo and Vantaa were left out since they belong to the Greater Helsinki area and would most likely yield similar results to Helsinki. This gives us a less homogenous and more geographically spread sample.

As stated in the thesis so far, single-room apartments have the strongest potential for high profitability. Therefore it is natural that the calculations and comparison in this thesis have been done using data from single-room apartments. The sample dwelling for all calculations is a 30 square meter single-room apartment. The results and calculations do not take in to consideration possible broker fees and taxes that would affect returns in a real life scenario. This is normal when comparing returns of different investments.

3.2. Rental data

The rental data for the calculations was collected from Statistics Finland databases. The data used represents the average rents per square meter for non-subsidized single-room dwellings in each five areas separately. Yearly data from 2010 until 2016 was used. Looking at the data we can see that between this time period the Helsinki 2 area has seen by far the highest growth in average rental levels. The total increase was 31,9% meaning a yearly growth rate of 4,6%. Tampere, Turku and Oulu were closer together, with yearly growth rates of 3,6%, 3,5% and 3,4% respectively. Jyväskylä had by far the lowest growth rate in average rental levels during the sample time period, totaling 11,9% or a yearly rate of 1,7%. Helsinki also had the highest rental level of 23,76e per square meter, whereas the cheapest rents were paid in Oulu with an average of 15,52e per square meter.

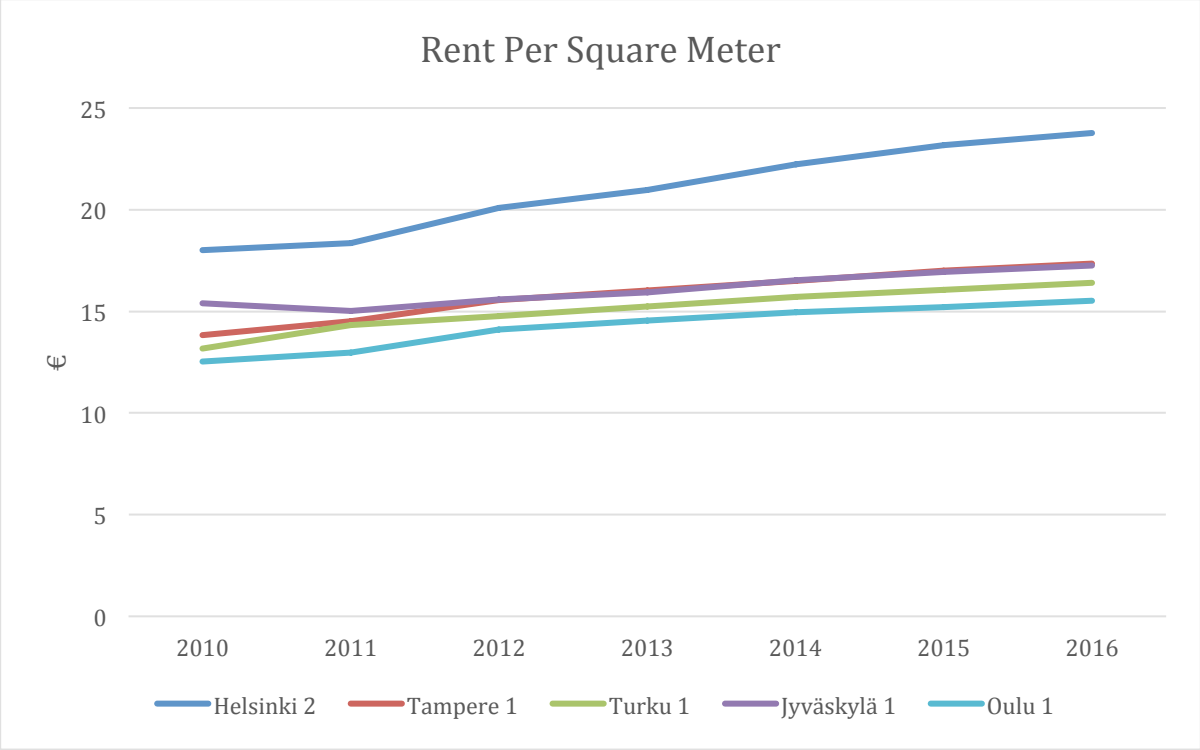

Figure 6. Rent per square meter – non-subsidized single-room dwellings 2010-2016
Source: http://www.stat.fi/til/asvu/tau.html

Figure 6 presents the evolution of average rents per square meter in non-subsidized single-room dwellings from 2010 to 2016 in five sample cities. Helsinki's rental level and the increase in it during the time period is by far the highest. The other four sample cities are quite close to each other, the Tampere 1 area experiencing the largest increase in rental levels during the time period.

3.3. Price data

The price data was also collected from Statistics Finland databases. The data used represents average prices per square meter of old single-room dwellings. Statistics Finland provides quarterly data in this case, but only average prices of Q1 2010 and Q4 2016 were used for the calculations. This is due to price appreciation only being realized once a property is sold, so price fluctuations during our sample period used for the calculations is irrelevant in our case. Only the "acquisition price" of Q1 2010 and the "sales price" of Q4 2016 are

relevant. It is, however, interesting to take a look at the evolution of average prices in our five locations in general.

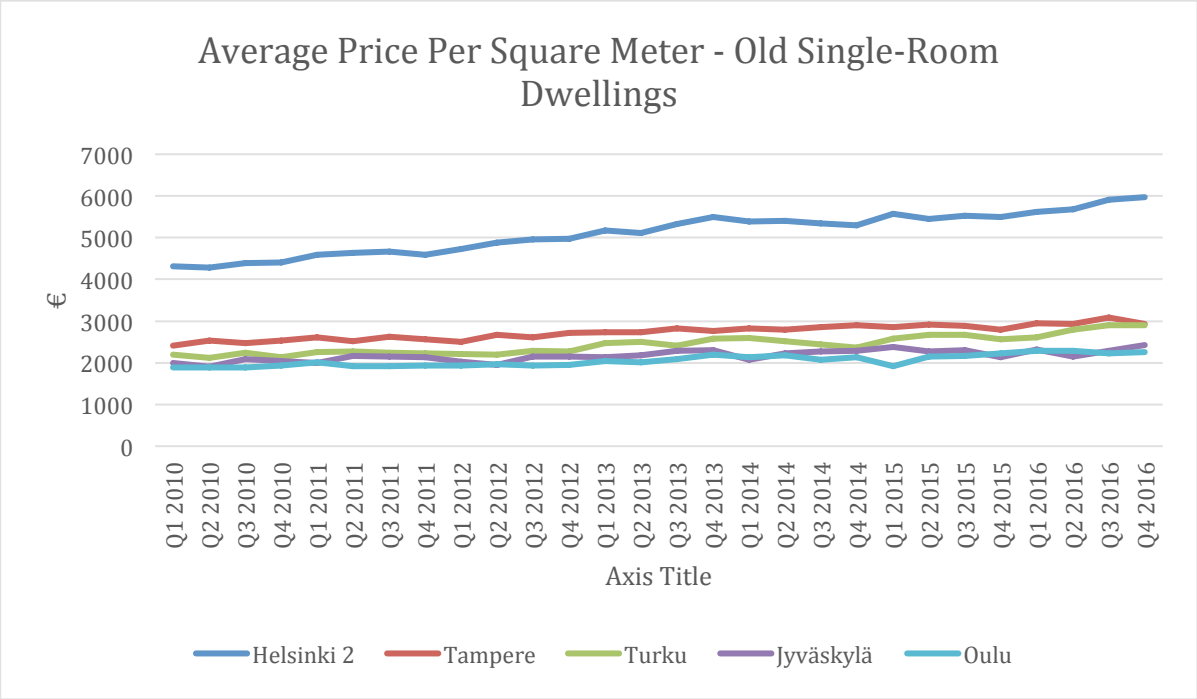

Figure 7. Average price per square meter – old single-room dwellings 2010-2016
Source: http://www.stat.fi/til/ashi/tau.html

Figure 7 presents the average price per square meter of old single-room dwellings from 2010 to 2016 in five sample cities. The Helsinki 2 area stands out with an approximately two times higher price level compared to the other sample cities. As was the case with rents per square meter, Oulu represents also the lowest average price per square meter of the sample group.

Helsinki represents by far the highest average prices per square meter of our five cities. It is also the standout winner when comparing the percentage increases during our sample period. In 2010 old single-room dwellings in Helsinki 2 area cost 4316e per square meter. By the end of 2016 prices had risen to 5964e, which equals a yearly increase of 5,5%, or a total increase of 38%. Average prices in Turku (2905e/sqm in 2016) were the second largest riser with an average yearly increase of 4,7%. Tampere (2929e/sqm in 2016) and Jyväskylä (2419e/sqm in 2016) both saw a rise of 3,1% in prices during our sample period.

Prices in Oulu, which represents the cheapest area of our sample with average prices of 2262e/sqm in 2016, appreciated the slowest with a yearly increase of 2,0%.

3.4. Other data

The maintenance charge data was also mostly collected from Statistics Finland. The only exception was the data for 2016, which was not yet available in the database. Instead it was calculated based on a forecast by PTT, where it was stated that maintenance charges per square meter in apartment buildings are expected to rise by 5% in 2016 (Pellervon Taloustutkimus). This change can be said to be in line with the average increase during 2010-2015, where maintenance charges saw an average yearly increase of 4%. Unfortunately there was no data available for single-room dwellings in particular and no city-specific data either. Instead, numbers representing average maintenance charges per square meter in the whole country were used. This, however, should not have a significant impact on our results since this is done for each calculation, and because a possible small error in the maintenance charges does not have a large effect on the results.

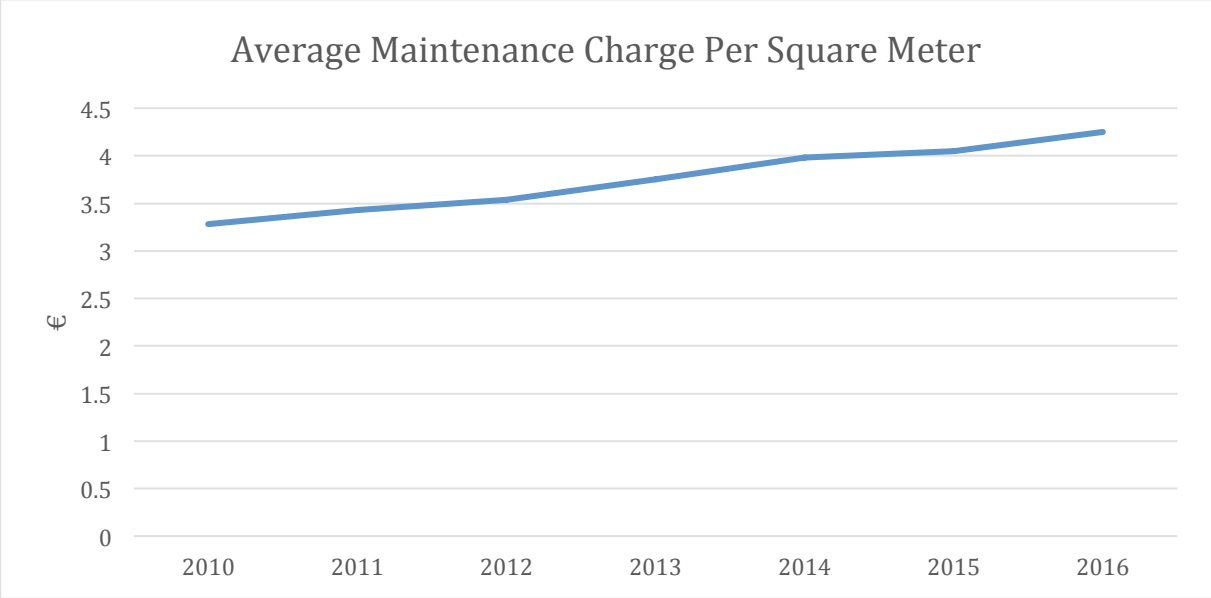

Figure 8. Average maintenance charge per square meter 2010-2016
Source: http://www.stat.fi/til/asyta/tau.html & http://www.kiinteistoliitt-o.fi/attachements/2016-08-16T16-37-1934828.pdf

Figure 8 presents the average maintenance charge per square meter in Finland from 2010 to 2016. The increase has been quite constant, maintenance charges rising from 3,22 euros to 4,25 euros during the time period.

The transfer tax percentage used in the calculations was acquired from the Finnish Tax Administration's website. When buying shares in a housing company, or a dwelling in an apartment building, a transfer tax of 2% of the debt-free selling price must be paid (Vero). The loan interest rate used for the calculations is 2%. Historical Euribor rates were found from the Bank of Finland's website. At the time of writing the 12 month Euribor rate was -0,126%, but it was decided that a fixed interest rate of 2% would leave some room for increase as well (Bank of Finland). In any case the interest rate does not have a significant impact on our calculations since it does not affect the comparison of profitability between cities.

4. RESULTS

In this chapter the results from the methodological part of this thesis will be presented. The rental returns and capital appreciation from each five cities will be presented and comparison between the cities will be conducted. The effect of using leverage and changes in interest rates to returns will be assessed.

4.1. Rental returns

The average rental returns from real estate investments in the five cities during the sample period were calculated using the formula for rental returns presented in chapter 2. Yearly returns were calculated by using data for each year in question. In other words, e.g. the rental return for 2011 in Helsinki was calculated with the average rent per square meter in Helsinki in 2011, and the average maintenance charge per square meter in 2011. The rental return for 2012 was calculated with 2012 statistics, and so on. The results are presented in Table 1 on the following page.

Table 1. Rental returns from real estate investments into five cities 2010-2016 (percent)
Source: Created by the author

Year	Helsinki 2	Tampere 1	Turku 1	Jyväskylä 1	Oulu 1
2010	4,02 %	5,15 %	5,32 %	7,17 %	5,75 %
2011	4,07 %	5,42 %	5,86 %	6,86 %	5,93 %
2012	4,51 %	5,86 %	6,04 %	7,14 %	6,57 %
2013	4,70 %	5,99 %	6,18 %	7,21 %	6,71 %
2014	4,98 %	6,11 %	6,31 %	7,43 %	6,82 %
2015	5,21 %	6,31 %	6,45 %	7,62 %	6,94 %
2016	5,32 %	6,40 %	6,54 %	7,69 %	7,01 %
TOTAL return	32,80 %	41,24 %	42,70 %	51,12 %	45,72 %
Yearly return	4,69 %	5,89 %	6,10 %	7,30 %	6,53 %
Standard dev.	0,52 %	0,46 %	0,42 %	0,29 %	0,50 %

The results from the rental returns calculations are somewhat expected. As predicted, Helsinki offered the lowest average yearly returns of 4,69%. This comes from the fact that dwelling prices are on an extremely high level compared to the other cities, whereas rental levels are not quite as high in relation. The highest return during our sample period was from Jyväskylä, which was the only city to reach yearly returns of over 7%. Oulu, with average yearly returns of 6,5% offered the second highest returns, Turku (3rd) and Tampere (4th) being around the 6% mark.

The standard deviation of the returns measures the level of risk in each investment. Interestingly Jyväskylä 1, with the highest average yearly returns, had the lowest standard deviation, or risk. Helsinki 2 was the riskiest area to invest in, which is also surprising since it has the lowest returns. We must, however, keep in mind that the sample size of seven years is so short that these kinds of results are possible even if they are not true in the long run.

Average rental returns from our sample were also calculated from investments made with 70% leverage. If we look at the formula for rental returns, this means that the free-of-debt price is now 30% of the total price of each dwelling. The monthly interest expense of the loan is subtracted from the monthly rent payed by the tenant together with the monthly maintenance charges. The effect of leverage is eminent: the average yearly returns have more than doubled in each of the five areas during the sample investment period. The higher the unleveraged return was, the higher the increase was when using leverage. Returns in Jyväskylä 1 area increased by 168% with a leverage of 70% to an average yearly return of

19,55%. The order between the sample areas remained the same, Helsinki 2 offering the lowest returns and Jyväskylä 1 the highest.

Table 2. Rental returns from 70% leveraged real estate investments into five sample cities 2010-2016 (percent)
Source: Created by the author

Year	Helsinki 2	Tampere 1	Turku 1	Jyväskylä 1	Oulu 1
2010	8,51 %	12,12 %	12,66 %	18,57 %	14,02 %
2011	8,87 %	13,15 %	14,55 %	17,75 %	14,78 %
2012	10,45 %	14,74 %	15,34 %	18,82 %	17,02 %
2013	11,23 %	15,36 %	15,97 %	19,26 %	17,65 %
2014	12,32 %	15,94 %	16,56 %	20,13 %	18,20 %
2015	13,26 %	16,78 %	17,22 %	20,95 %	18,77 %
2016	13,80 %	17,24 %	17,71 %	21,35 %	19,18 %
TOTAL return	78,44 %	105,33 %	110,00 %	136,82 %	119,62 %
Yearly return	11,21 %	15,05 %	15,71 %	19,55 %	17,09 %
Standard dev.	2,06 %	1,87 %	1,72 %	1,31 %	1,98 %

4.2. Capital appreciation

The capital gains (or losses) from real estate investments in the five cities during the sample period were calculated using the formula for capital gain (or loss) presented in chapter 2. The capital gains were calculated for the whole sample investment period starting from Q1 2010 and ending in Q4 2016. The acquisition price of Q1 2010 was calculated by multiplying the average price per square meter by the size of the sample dwelling, 30 square meters. A transfer tax of 2,0% was added to the acquisition price. The sales price of Q4 2016 was calculated by multiplying the average price per square meter in Q4 2016 by the size of the sample dwelling. To find the yearly capital appreciation or depreciation percentage the result of the formula was divided by the duration of the investment, seven years.

Table 3. Capital gains from real estate investments into five sample cities Q1 2010 - Q4 2016 (percent)
Source: Created by the author

	Helsinki 2	Tampere 1	Turku 1	Jyväskylä 1	Oulu 1
Acquisition price	132 069,60 €	73 776,60 €	66 952,80 €	60 832,80 €	57 895,20 €
Sales price	178 920,00 €	87 870,00 €	87 150,00 €	72 570,00 €	67 860,00 €
Change	35,47 %	19,10 %	30,17 %	19,29 %	17,21 %
Yearly appreciation	5,07 %	2,73 %	4,31 %	2,76 %	2,46 %

The results from the capital appreciation calculations are also somewhat expected. The Helsinki 2 area saw the highest average yearly appreciation of 5,07%. This can be said to be expected, since Helsinki, the capital of Finland has a large demand for apartments. As the housing prices in Helsinki are high, demand for single-room dwellings is constantly growing. Capital appreciation of dwelling prices is a normal result of this increased demand. Closest to Helsinki came Jyväskylä, which saw an average yearly capital appreciation of 4,31%. Housing prices in Tampere, Turku and Oulu saw a more moderate increase of around 2,5% per year during the sample period.

Table 4. Capital gains from real estate investments with 70% leverage into five sample cities Q1 2010 - Q4 2016 (percent)
Source: Created by the author

	Helsinki 2	Tampere 1	Turku 1	Jyväskylä 1	Oulu 1
Acquisition price	132 069,60 €	73 776,60 €	66 952,80 €	60 832,80 €	57 895,20 €
Sales price	178 920,00 €	87 870,00 €	87 150,00 €	72 570,00 €	67 860,00 €
Change	118,25 %	63,68 %	100,55 %	64,31 %	57,37 %
Yearly appreciation	16,89 %	9,10 %	14,36 %	9,19 %	8,20 %

Capital gains for the 70% leveraged real estate investments were calculated with the formula for capital gains (or losses) for leveraged real estate investments presented in chapter 2. In this case the 70% leverage means that the loan-to-value ratio used in the calculations was 0,7. As can be expected, the order of the highest appreciation to the lowest remained the same when compared to the unleveraged investments. The effect of using 70% leverage, or

30% equity means that the effect of appreciation is 3,33 times larger than without the use of leverage.

4.3. Total return

Table 5. The total return from real estate investments into five sample cities Q1 2010 – Q4 2016 (percent)
Source: Created by the author

	Helsinki 2	Tampere 1	Turku 1	Jyväskylä 1	Oulu 1
Yearly rental return	4,69 %	5,89 %	6,10 %	7,30 %	6,53 %
Yearly appreciation	5,07 %	2,73 %	4,31 %	2,76 %	2,46 %
Total yearly return	9,75 %	8,62 %	10,41 %	10,06 %	8,99 %

The total return from the sample real estate investments were calculated with the formula for total return presented in chapter 2. The total yearly return is the sum of the average yearly rental return and the average yearly appreciation. From the table we can see that the Turku 1 area offered the highest total return during our sample time period of the five selected cities with an average yearly return of 10,41%. Interestingly Turku did not have the highest rental return or the highest capital appreciation, but placed second and third in the categories of the group. The Jyväskylä 1 area, which offered the highest rental return gave average total returns of 10,06% to earn a second place overall. The highest average appreciation meant that the Helsinki 2 area offered the third highest total returns of 9,75%. The Oulu 1 area, with total returns of 8,99% was fourth, and the Tampere 1 area with 8,62% returns fifth out of the group.

Table 6. Distribution of returns between rental returns and capital appreciation from real estate investments into five sample cities Q1 2010 – Q4 2016 (percent)
Source: Created by the author

	Helsinki 2	Tampere 1	Turku 1	Jyväskylä 1	Oulu 1
Rent	48,04 %	68,34 %	58,60 %	72,60 %	72,65 %
Appreciation	51,96 %	31,66 %	41,40 %	27,40 %	27,35 %
Total	100,00 %	100,00 %	100,00 %	100,00 %	100,00 %

From Table 6 above we can see that the Helsinki 2 area was the most balanced when it comes to the distribution of profits between the two sources. Jyväskylä and Oulu are most likely to be areas with the lowest risk, since over 72% of total returns come from cash flows in the form of rental returns.

4.4. Internal rate of return

The internal rate of return of the five sample investments was calculated using the IRR() formula in Microsoft Excel.

Table 7. The internal rate of return from real estate investments into five sample cities Q1 2010 – Q4 2016 (percent)
Source: Created by the author

	Helsinki 2	Tampere 1	Turku 1	Jyväskylä 1	Oulu 1
2010	- 126 766,80 €	- 69 978,60 €	- 63 392,40 €	- 56 469,60 €	- 54 568,80 €
2011	5 378,40 €	3 996,00 €	3 920,40 €	4 172,40 €	3 430,80 €
2012	5 958,00 €	4 320,00 €	4 046,40 €	4 341,60 €	3 805,20 €
2013	6 202,80 €	4 420,80 €	4 140,00 €	4 388,40 €	3 884,40 €
2014	6 573,60 €	4 510,80 €	4 222,80 €	4 518,00 €	3 949,20 €
2015	6 879,60 €	4 658,40 €	4 320,00 €	4 636,80 €	4 017,60 €
2016	185 942,70 €	92 588,70 €	91 530,30 €	77 245,50 €	71 916,30 €
IRR	10,23 %	9,63 %	11,24 %	11,40 %	10,16 %

The 2010 numbers consist of the sum of the total purchase cost and rental return. 2011 to 2015 numbers represent yearly rental returns. The 2016 numbers consist of the sum of the selling price and rental return. The IRRs of each sample investment are quite close to the results of the total returns calculations. Interestingly the order between the five sample cities has changed: the Jyväskylä 1 area offers the highest IRR of 11,40%. The Turku 1 area is a close second with an IRR of 11,24%. Jyväskylä's highest IRR comes most likely from the time value of money: cash flows are most evenly balanced from the group whereas others' are more weighted to the end of the investment period.

CONCLUSIONS

Among different investment alternatives such as buying shares, bonds and making bank deposits is real estate investment, which is widely understood to be a competitive option for steady returns. Bank interest rates are currently at zero level, which has moved capital to the stock market and real estate. For the average risk-averse Finnish person investing into the stock market can feel discomforting – chances to win or lose are rather large. Real estate offers perhaps less opportunities for a jackpot, but done correctly it can be a valid source of profits through steady cash flows and capital appreciation. Therefore it was chosen to study the profitability of real estate investment in the Finnish housing market from a private person's perspective.

The objective of this thesis was to study the profitability of real estate investment in Finland. More specifically, the study focused on the profitability of rental residential real estate investment in five Finnish cities between the years 2010 and 2016. The cities chosen for analysis were Helsinki, Tampere, Turku, Jyväskylä and Oulu, which represent major Finnish cities and give a geographically spread sample. The aim was to find the profitability of said real estate investment in Finland and compare results between these five cities. As the number of one person households has doubled during the last thirty years and demand is constantly increasing, it was decided that the focus would be on single-room dwellings. A significant part of the Finnish population live in rental dwellings, and average rental rates have been steadily increasing for several decades. The demand for single-room rental dwellings in Finnish growth centers is high, thus meeting the criteria for a great investment opportunity.

The profitability of real estate investment in the five chosen cities was analyzed with data from the years 2010-2016. The data used included average rents per square meter for non-subsidized single-room dwellings, average prices per square meter of old single-room dwellings and average maintenance charges per square meter in apartment buildings. In addition, transfer tax and loan interest rates including bank margin were part of the cost

components used. Profitability was analyzed through calculating rental returns and capital appreciation, which together give the total return for real estate investments.

The total yearly returns from real estate investments into the five sample cities ranged from 8,62% in Tampere to 10,41% in Turku. The difference between the highest and lowest returns was significant. The highest total return in Turku came from steady performance in both rental returns and capital appreciation. Tampere offered competitive rental returns, but lacked in capital appreciation. Jyväskylä was the standout winner when looking for a source of high rental returns, which could prove vital when an investor is searching for an investment location. Interestingly, the risk measured with the standard deviation of rental returns was also the lowest in Jyväskylä. Helsinki, the capital of Finland, offered a total return of 9,75%, equaling third place in the comparison. With relatively low rents compared to prices per square meter, Helsinki offered the lowest rental return out of the sample group. In this case total returns consisted mainly of capital appreciation, though as a target for real estate investment relying on capital appreciation is not ideal. Profitability measured with the internal rate of return offered similar results, though Jyväskylä surpassed Turku to offer the highest return. This came from the fact that yearly rental returns in Jyväskylä were quite balanced, whereas in Turku they were more weighted to the end of the investment period.

Based on the results a conclusion can be drawn that for an investor preferring steady cash flows, Jyväskylä is the prime location for a real estate investment. An investor using the flipping strategy in hope of short-term capital gains the best location for an investment is Helsinki. As Turku offers the highest returns through competitive rental returns and solid capital gains, it suits the criteria for a successful overall investment target best out of the sample group.

The results from this thesis have certain restraints. The sample time period of seven years can be said to be rather short, raising the probability of distorted results. Should access to identical data from a longer time period be available, recalculating the returns would be in place. As the data used for the calculations represent averages of the five cities, the results can be said to represent averages as well. The results are more suited to be used as a guideline when researching investment locations than as the ultimate answer for what kind of returns a unique real estate investment will yield. This means that comparing real life examples of single real estate investment targets found in the cities could offer different results to what were found in this thesis.

An interesting continuation to the research performed in this thesis would be to compare the process and profitability of real estate investment to other forms of investment, such as the stock market. The study could aim to find out which form of investment is the most profitable for a Finnish private person today.

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