

CHALMERS



An Investment Strategy Framework for Rental Real Estate
An Analysis of Potential Yields and Strategic Options in Western Sweden
*Master of Science Thesis in the Master Degree Programme,
Management and Economics of Innovation*

FREDRIK HÄRENSTAM
JOHAN THUNGREN LUNDH
JAKOB UNFORS

Department of Technology Management and Economics
Division of Innovation Engineering and Management
CHALMERS UNIVERSITY OF TECHNOLOGY
Göteborg, Sweden, 2012
Report No. E 2012:086

MASTER'S THESIS E 2012:086

An Investment Strategy Framework for Rental Real Estate
An Analysis of Potential Yields and Strategic Options in
Western Sweden

FREDRIK HÄRENSTAM
JOHAN THUNGREN LUNDH
JAKOB UNFORS

Tutor, Chalmers: Jonas Hjerpe
Tutor, company: Fredrik Svensson

Department of Technology Management and Economics
Division of Innovation Engineering and Management
CHALMERS UNIVERSITY OF TECHNOLOGY
Göteborg, Sweden 2012

An Investment Strategy Framework for Rental Real Estate
An Analysis of Potential Yields and Strategic Options in Western Sweden
Fredrik Härenstam, Johan Thungren Lundh, and Jakob Unfors

© Fredrik Härenstam, Johan Thungren Lundh, Jakob Unfors, 2012

Master's Thesis E 2012:086

Department of Technology Management and Economics
Division of Innovation Engineering and Management
Chalmers University of Technology
SE-412 96 Göteborg, Sweden
Telephone: + 46 (0)31-772 1000

Chalmers Reproservice
Göteborg, Sweden 2012

Preface

We would like to thank both Fredrik Svensson and Jonas Hjerpe in providing insightful guidance throughout the course of this project. Their support helped structure and push the work forward. They were also instrumental in gathering expert opinion to create a forum of real estate investment insight in which our work could be vented and tested along the way. We would also like to thank all respondents for their participation.

Without these contributions, this thesis would never have become reality.

Abstract

Investments in real estate have historically offered high and stable returns, but little information is available concerning the Swedish market, its rental property stock, especially in areas beyond major urban regions. This report aims to develop an investment strategy framework focused on long-term profitability from rental real estate in Western Sweden. The type of investor considered is one beginning on a relatively small-scale but with a long-term time perspective, with an initial investment sum around 30 MSEK. The geographical scope, denoted as Western Sweden, roughly translates into the area within a two hour journey from Gothenburg. The work and report was carried out and structured in five sub-studies, which were then combined and tested in a sixth, case-oriented sub-study. The five preceding sub-studies covered overall investment strategies in rental real estate, systems for rental accommodation, an overview of properties' technical features and their impact on an investment, tenants' preferences and tenant satisfaction impact on investment, and an analysis of relative attractiveness of the different municipalities in Western Sweden. Findings indicate that on average over the last decade, rental real estate investments have generated long-term, unleveraged, total yield of 9.9% and 4.8% income yield. Yields have declined in the past years, however, and income yield last year (2011) was only 2.8%. Rent levels are presently determined through comparison with apartments with similar utility values. However, there are shifts towards more market oriented structures as well as indications of increased capacity for tenants to absorb rent increases. Much of the existing housing stock in Sweden is in need of large renovations. Such properties can represent an opportunity for investors in terms of potentially discounted prices, especially in areas with current low demand and owners lacking the competence or financial strength to carry through these renovations. Satisfied tenants could both contribute to long-term reductions of costs and enabling rent increases. Improving apartment standards and tenants' perception of safety/security presents the greatest potential for increasing tenants' satisfaction. There seems to be a discrepancy between the attractiveness of living in a region, its economic strength and the price level for rental housing there, due to prices being somewhat sticky and not fully reflecting strong positive developments. This presents an opportunity where an investor can potentially be able to find properties at a regionally discounted rate, enabling both high income yield and total yield through capital value appreciation. When applying these findings on case examples, one finds that apart from initial price and rent increases, investments reducing energy consumption have the largest effect on yield on initial investment. An investor can apply the findings via different strategic approaches. Properties can be identified through a top-down or a bottom-up approach, and ownership style can be either active or passive. Each combination makes use of the findings to evaluate and assess potential investment targets.

Keywords: *Investments in rental real estate, Strategy framework, Western Sweden, Real estate yields, Development of rent levels, Renovation need in existing real estate, Tenant satisfaction, Municipality analysis*

Glossary

Condominium: A housing structure in which tenants have individual ownership rights over their respective apartments and share rights to common facilities. “Bostadsrätt” in Swedish.

NOI: Net Operational Income, i.e. gross income (rent) less costs for operations, maintenance and property tax (see a chapter 4.1 Investments in Rental Properties for a further description of the term). “Driftnetto” in Swedish.

Property/Real estate: Terms used to indicate the investment object, encompassing the plot and its associated buildings. “Fastighet” in Swedish.

Senior home: A form of accommodation in Sweden that is intended for individuals of age 70 and above whom are in need for of some degree of care. It is granted with certain subsidies if a set of criteria is fulfilled, e.g. personnel that can contribute to some assistance and availability of common areas for dining and recreation. “Trygghetsboende” in Swedish.

Utility value: An evaluation of an apartment’s value based on its features, used in determining reasonable rent levels for apartments in Sweden (see chapter 5.2 Systems for Rental Accommodations for a description of the term and its usage). “Bruksvärde” in Swedish.

Value year: A fictitious year that is used for e.g. calculating taxation value. The value year is updated to refurbishing year if the property has been rebuilt/remodeled to a cost of at least 70% of the estimated cost for construction of a similar property. Rebuilding/remodeling costs between 20% and 70% increases value year proportionally, based on the estimated costs for new construction. If the cost is less than 20%, the value year is kept unchanged. “Värdeår” in Swedish.

Table of Contents

Preface	5
Abstract.....	6
Glossary.....	7
Table of Contents.....	I
Table of Figures	IV
1. Introduction	1
1.1 Background	1
1.2 Research Aim and Approach	1
1.3 Key Results	2
1.4 Report Disposition	3
2. Literature Review	5
2.1 Overview of Investment Strategies	5
2.2 Overview of the Sub-studies	6
2.2.1 Investments in Rental Properties	6
2.2.2 Systems for Rental Accommodation.....	6
2.2.3 Technical Features	7
2.2.4 Tenants' Preferences and Satisfaction	8
2.2.5 Identifying Attractive Municipalities.....	8
3. Method.....	9
3.1 Research Design	9
3.2 Quality of the Study.....	10
3.3 Sub-studies.....	11
3.3.1 Investments in Rental Properties	11
3.3.2 Systems for Rental Accommodation.....	12
3.3.3 Technical Features	14
3.3.4 Tenants' Preferences and Satisfaction	15
3.3.5 Identifying Attractive Municipalities.....	17
3.3.6 Applying the Findings: Case Examples	19
4. Theoretical Framework	23
4.1 Investments in Rental Properties	23

4.1.1	Complicating Issues in the Valuation Process	24
4.1.2	Determinants of Total Yield from Real Estate Investments	25
4.2	Systems for Rental Accommodation	26
4.3	Technical Features	27
4.4	Tenants' Preferences and Satisfaction	28
4.5	Identifying Attractive Municipalities	29
5.	Empirical Findings and Analysis	30
5.1	Investments in Rental Properties	30
5.1.1	Approaches and Methods in Valuation: Usage among Interviewees	30
5.1.2	Historic Development of Financial Returns	31
5.1.1	Summary of Sub-study Results	37
5.2	Systems for Rental Accommodations	37
5.2.1	Overview of Private and Public Housing Companies	38
5.2.2	Regulations and Processes for Rent Negotiations	40
5.2.3	Historic Development of Rent Levels	43
5.2.1	Summary of Sub-study Results	44
5.3	Technical Features: Characteristics from the Swedish Housing Stock	45
5.3.1	Characteristics from the Swedish Housing Stock	45
5.3.2	History of Construction Techniques and Technical Factors for Different Building Types... ..	45
5.3.3	Technical Features' Influence on Costs and Ability for Rent Increases	51
5.3.4	Possibilities for Energy Improvements in Current Property Stock	56
5.3.5	Considerations for Larger Investments	59
5.3.6	Considerations for New Development	61
5.3.7	Summary of Sub-study Results	63
5.4	Tenants' Preferences and Satisfaction: Characteristics in Sweden	64
5.4.1	Tenants' Preferences of Housing Attributes	64
5.4.2	Tenants' Degree of Satisfaction from their Housing Situations	67
5.4.3	Summary of Sub-study Results	69
5.5	Identifying Attractive Municipalities	70
5.5.1	Constructing a Municipality Assessment Framework	70
5.5.2	Identifying Regions Enabling High Net Operational Income	70
5.5.3	Identifying the General Price Level in a Municipality	74

5.5.4	Determining the Attractive Balance between Potential for High NOI and Cost of Acquisition	74
5.5.5	Transportation and Accessibility Infrastructural Improvements.....	75
5.5.6	Summary of Sub-study Results	77
5.6	Applying the Findings: Case Examples.....	78
5.6.1	Potential Investment Region One: Habo.....	79
5.6.2	Potential Investment Region Two: Bollebygd	83
5.6.3	Potential Investment Region Three: Ale	86
5.6.4	Summary of Sub-study Results	91
6.	Discussion	92
6.1	Summary of Major Findings	92
6.2	Relation to Theoretical Framework.....	95
6.3	Reflection on the Methodology and a Brief Criticism of the Results	96
6.4	Applicability of Results: Limitations and Generalizability	96
6.5	Suggestions for Further Research	97
7.	Conclusions.....	99
8.	References	101
8.1	Scientific Articles	101
8.2	Published Books	103
8.3	Data Sources	104
8.4	Online Sources.....	107
8.5	Magazines	109
8.6	Other Reports.....	109
8.7	List of Swedish Organizations' Names in Swedish and English	113
9.	Appendix.....	114

Table of Figures

FIGURE 1 – INDICATORY DATASETS FOR EACH FACTOR IN THE TOTAL YIELD BREAKDOWN. THE APPLIED SOURCES WERE AS FOLLOWING: 1. (STATISTISKA CENTRALBYRÅN, 2000-2011B), 2. (STATISTISKA CENTRALBYRÅN, 1997-2011), 3. (STATISTISKA CENTRALBYRÅN, 1996-2011), 4. (STATISTISKA CENTRALBYRÅN, 2000-2010B), 5. (THE CONFEDERATION OF SWEDISH ENTERPRISE, 2007-2012), 6. (STATISTISKA CENTRALBYRÅN, 1998-2011)	18
FIGURE 2 – MARKET VALUE ESTIMATION THROUGH ADJUSTED AVERAGE TRANSACTION PRICES	22
FIGURE 3 – LIFESPAN PLOTTED WITH FUNCTIONALITY OVER TIME (BERG S. A., 2007)	27
FIGURE 4 – TOBIN’S Q EQUATION	28
FIGURE 5 – TOTAL RETURN FROM IPD’S INDEX OF SWEDISH RESIDENTIAL RENTAL PROPERTIES (EXCLUDING STOCKHOLM, GOTHENBURG AND MALMÖ) COMPARED TO A BROAD STOCK INDEX, AFGX AND OMX. NOTE THAT THE FIGURE IS PRESENTED IN LOG SCALE AND THAT BOTH INDEXES HAVE BEEN SET TO 100 AT 1984. SOURCES: COMPILED FROM IPD (2011); FASTIGHETSSVERIGE.SE (2012); AFFÄRSVÄRLDEN.SE (2012); AND YAHOO.FIANCE.COM (2012)	31
FIGURE 6 – INCOME YIELD, VALUE DEVELOPMENT AND TOTAL YIELD FOR RENTAL PROPERTIES IN SWEDEN (EXCLUDING STOCKHOLM, GOTHENBURG AND MALMÖ) FROM THE TIME PERIOD BETWEEN 1984 AND 2011. SOURCES: COMPILED BASED ON IPD (2011) AND FASTIGHETSSVERIGE.SE (2012)	32
FIGURE 7 – INCOME YIELD AFTER INTEREST PAYMENT, BASED ON A 70% DEBT TO VALUE RATIO. SOURCE: COMPILED BASED ON IPD (2011); FASTIGHETSSVERIGE.SE (2012); & SWEDBANK (2012)	33
FIGURE 8 – ACCUMULATED TOTAL RETURNS FROM AVERAGE INVESTMENTS IN RESIDENTIAL PROPERTIES IN SWEDEN (EXCLUDING STOCKHOLM, GOTHENBURG AND MALMÖ), FOR THE TIME PERIOD BETWEEN 1984 AND 2011. NOTE THAT THE SCALE IS LOGARITHMIC. SOURCES: COMPILED BASED ON IPD (2011); FASTIGHETSSVERIGE.SE (2012) AND SWEDBANK (2012)	34
FIGURE 9 – NET OPERATING INCOME PER SQUARE METER OF RESIDENTIAL PROPERTIES IN SWEDEN (EXCLUDING STOCKHOLM, GOTHENBURG AND MALMÖ) AND YEARLY DEVELOPMENT OF NOI. SOURCES: COMPILED BASED ON IPD (2011); STATISTICS SWEDEN (2012); AND SWEDBANK (2012)	35
FIGURE 10 – REAL CAPITAL VALUE DEVELOPMENT, PRESENTED AS ACCUMULATED APPRECIATION/DEPRECIATION ON LEFT AXIS AND ANNUAL APPRECIATION/DEPRECIATION ON THE RIGHT AXIS. SOURCES: COMPILED BASED ON IPD (2011) AND FASTIGHETSSVERIGE.SE (2012)	36
FIGURE 11 – INFLATION AND RENT DURING THE PREVIOUS 14 YEARS ON THE RIGHT LEFT; AND AVERAGE LENDING INTEREST RATES FOR PRIVATE HOUSES ON THE RIGHT AXIS. SOURCES: THE SWEDISH UNION OF TENANTS: ANNUAL REPORT 2010 (2011); STATISTICS SWEDEN (2012); AND SWEDBANK (2012)	43
FIGURE 12 – NUMBER OF APARTMENTS CONSTRUCTED DURING DIFFERENT TIME PERIODS. SOURCES: SÅ BYGGDES HUSEN 1880-2000 (2002)	45
FIGURE 13 – DISTRIBUTION OF THE SWEDISH PROPERTY STOCK OF MULTIFAMILY HOUSES PER BUILDING TYPE. SOURCE: BOVERKET (2010)	46
FIGURE 14 – PAST DISTRIBUTIONS (RANGING FROM 1981 TO 2010) BETWEEN TYPES OF HEATING SOURCES IN THE SWEDISH PROPERTY STOCK. SOURCES: SWEDISH NATIONAL BOARD OF HOUSING, BUILDING AND PLANNING (2010)	49
FIGURE 15 – DISTRIBUTION BETWEEN TYPES OF BUILDING IN THE SWEDISH PROPERTY STOCK. SOURCES: BOVERKET (2010)	51
FIGURE 16 – COST CONNECTED TO OPERATIONS OF A MULTIFAMILY BUILDING. SOURCES: NILS HOLGERSSON-GRUPPEN (2011)	52
FIGURE 17 – AVERAGE INDOOR TEMPERATURE FOR SINGLE HOUSING UNITS COMPARED TO MULTIFAMILY UNITS. SOURCE: BOVERKET (2010)	58
FIGURE 18 – THREE-YEAR AVERAGE TRANSACTION PRICES PAID PER RESIDENTIAL M ² IN COMMUTER MUNICIPALITIES IN WESTERN SWEDEN, COUNTING ONLY PROPERTIES WITH NO COMMERCIAL SPACE, A TRANSACTION PRICE OVER 300KSEK, RESIDENTIAL SPACE OVER 200 M ² , AND NO GROUP TRANSACTIONS. DATA SOURCE: THE SWEDISH MAPPING, CADASTRAL AND LAND REGISTRATION AUTHORITY (2012), (SWEDISH NATIONAL BOARD OF HOUSING, BUILDING AND PLANNING, 2010)	61
FIGURE 19 – TOBIN’S Q ON A NATIONAL LEVEL OVER TIME. SOURCE: COMPILED FROM STATISTICS SWEDEN (2012); STATISTICS SWEDEN (2001-2012) AND THE SWEDISH MAPPING, CADASTRAL AND LAND REGISTRATION AUTHORITY (2012)	62

FIGURE 20 – TOBIN’S Q FOR GOTHENBURG, THE COUNITIES VÄSTRA GÖTALAND, HALLAND, JÖNKÖPING AND KRONBERG. SOURCES: COMPILED FROM STATISTICS SWEDEN (2001-2012) AND THE SWEDISH MAPPING, CADASTRAL AND LAND REGISTRATION AUTHORITY (2012)	63
FIGURE 21 – AVERAGE RANKING OF TENANTS’ SATISFACTIONS FOR PUBLIC AND PRIVATE HOUSING COMPANIES IN VÄSTRA GÖTALAND. THE BARS REPRESENT AVERAGE RANKINGS OF EACH CATEGORY, WHILE THE HORIZONTAL MARKERS ILLUSTRATE THE MAXIMUM AND MINIMUM RANKINGS FROM ALL PRIVATE HOUSING COMPANIES (REPRESENTED BY LIGHT GRAY MARKERS WITH THREE SQUARES) AND PUBLIC HOUSING COMPANIES (REPRESENTED BY DARK-GRAY MARKERS WITH DIAGONAL LINES). SOURCE: COMPILED FROM OLOFSSON & ARNENG (2009)	69
FIGURE 22 – BREAKDOWN OF MUNICIPAL-SPECIFIC INFLUENCERS ON TOTAL YIELD	71
FIGURE 23 – PEOPLE PER APARTMENT (GOTHENBURG). DATA SOURCE: STATISTICS SWEDEN (1975-2011)	71
FIGURE 24 – INDICATORY DATASETS FOR EACH FACTOR IN THE INCOME YIELD BREAKDOWN. DATA SOURCES: 1. NILS HOLGERSSON GROUP, 2006-2011, 2. STATISTICS SWEDEN, 2000-2011B, 3. STATISTICS SWEDEN, 1997-2011, 4. STATISTICS SWEDEN, 1996-2011, 5. STATISTICS SWEDEN, 2000-2010B, 6. THE CONFEDERATION OF SWEDISH ENTERPRISE, 2007-2012, 7. STATISTICS SWEDEN, 1998-2011, 8. THE SWEDISH MAPPING, CADASTRAL AND LAND REGISTRATION AUTHORITY, 2012, 9. NEWSEC ADVICE, 2012	72
FIGURE 25 – TOP 20 MUNICIPALITIES IN WESTERN SWEDEN ENABLING HIGH NOI. DATA SOURCES: STATISTICS SWEDEN, 2000-2011B, STATISTICS SWEDEN, 1997-2011, STATISTICS SWEDEN, 1996-2011, STATISTICS SWEDEN, 2000-2010B, THE CONFEDERATION OF SWEDISH ENTERPRISE, 2007-2012, STATISTICS SWEDEN, 1998-2011	73
FIGURE 26: NOI SCORE (GRAY) AND IMPLICIT MARKET PRICE IN SEK/M ² (BLACK). DATA SOURCES: STATISTICS SWEDEN, 2000-2011B, STATISTICS SWEDEN, 1997-2011, STATISTICS SWEDEN, 1996-2011, STATISTICS SWEDEN, 2000-2010B, THE CONFEDERATION OF SWEDISH ENTERPRISE, 2007-2012, STATISTICS SWEDEN, 1998-2011, NEWSEC ADVICE 2012, AVGIFTSUNDERSÖKNINGEN NILS HOLGERSON, 2006-2011	74
FIGURE 27 – ENABLING HIGH NOI AT A LOW PRICE POINT, WITHIN A SUFFICIENTLY LARGE, EXISTING MARKET. DATA SOURCES: STATISTICS SWEDEN, 2000-2011B, STATISTICS SWEDEN, 1997-2011, STATISTICS SWEDEN, 1996-2011, STATISTICS SWEDEN, 2000-2010B, THE CONFEDERATION OF SWEDISH ENTERPRISE, 2007-2012, STATISTICS SWEDEN, 1998-2011, NEWSEC ADVICE 2012, AVGIFTSUNDERSÖKNINGEN NILS HOLGERSSON, 2006-2011, THE SWEDISH MAPPING, CADASTRAL AND LAND REGISTRATION AUTHORITY, 2012	75
FIGURE 28 – THREE-YEAR AVERAGES OF TRANSACTION PRICES FOR RENTAL HOUSING PROPERTIES. DATA SOURCE: THE SWEDISH MAPPING, CADASTRAL AND LAND REGISTRATION AUTHORITY (2012)	77
FIGURE 29 – APARTMENTS DISTRIBUTION AMONG HABO PROPERTY OWNERS. DATA SOURCE: THE SWEDISH MAPPING, CADASTRAL AND LAND REGISTRATION AUTHORITY, 2012	80
FIGURE 30 – APARTMENTS DISTRIBUTION AMONG BOLLEBYGD PROPERTY OWNERS. DATA SOURCE: THE SWEDISH MAPPING, CADASTRAL AND LAND REGISTRATION AUTHORITY, 2012	84
FIGURE 31 – ALE MUNICIPALITY AND THE RENEWED ROAD AND TRAIN NETWORK. SOURCE: THE SWEDISH TRANSPORT ADMINISTRATION (2012B)	86
FIGURE 32 – PRICE (SEK, THOUSANDS) PER M ² FOR TYPE 320 AND 321 BUILDINGS. DATA SOURCE: THE SWEDISH MAPPING, CADASTRAL AND LAND REGISTRATION AUTHORITY (2012)	86
FIGURE 33 – SOLD SINGLE UNIT INDICES DIVIDED BY NATIONAL AVERAGE INDICES. DATA SOURCE: STATISTICS SWEDEN (1985-2012)	86
FIGURE 34 – AVERAGE RANKING OF TENANTS’ SATISFACTIONS FOR PUBLIC AND PRIVATE HOUSING COMPANIES IN VÄSTRA GÖTALAND. THE BARS REPRESENT AVERAGE RANKINGS OF EACH CATEGORY, WHILE THE HORIZONTAL MARKERS ILLUSTRATE THE MAXIMUM AND MINIMUM RANKINGS FROM ALL PRIVATE HOUSING COMPANIES (REPRESENTED BY LIGHT GRAY MARKERS WITH THREE SQUARES) AND PUBLIC HOUSING COMPANIES (REPRESENTED BY DARK-GRAY MARKERS WITH DIAGONAL LINES). SOURCE: COMPILED FROM OLOFSSON & ARNENG (2009)	87
FIGURE 35 – APARTMENTS DISTRIBUTION AMONG ALE PROPERTY OWNERS. DATA SOURCE: THE SWEDISH MAPPING, CADASTRAL AND LAND REGISTRATION AUTHORITY, 2012	88

1. Introduction

The introduction intends to give a background to why investments in rental real estate might be an attractive option to consider, as well as an overview of the situation for rental accommodation in Sweden. An identified need for further research specific to Western Sweden is then presented combined with the research aim and its corresponding research approach.

1.1 Background

Investments in residential real estate provide potential for high yields with relatively low risks (Haight & Singer, 2005, p. 97). This is empirically supported for the previous 28 years through a comparative analysis of the development of IPD's Swedish Property index and a general stock index, whereas the former resulted in a higher total return through a much more stable development¹. Further, Newsec (2012, pp. 8-15), one of the major actors in the Nordic transaction market for the real estate, argues that investments in residential real estate generate especially attractive potential in times when other capital markets are insecure.

The relatively strong position, as well as the positive attitude towards rental accommodation as a desirable housing alternative in Sweden, was first emphasized by Keremy (1981, in Elsinga & Hoekstra, 2005). Based on e.g. current tenants' relatively high satisfaction of their housing situation (Olofsson & Arneng, 2009) and the government's general housing policy, which states that accommodation should be available to everyone, irrespectively of income (Boverkett, 2007), its importance is also likely to hold. Nevertheless, an increasing need of significant renovations and standard improvements exists among a large part of Sweden's current housing stock (Swedish National Board of Housing, Building and Planning, 2005). This situation demands that real estate investors are able to anticipate the characteristics of different properties in order to fully evaluate potential investment cases. However, current real estate owners might be unable or unwilling to pursue the required investments, due to e.g. extensive costs associated with the investments.

Despite the strong presence of rental real estate in Sweden and its historic strong financial returns, little research has been conducted as to how to invest in it, and more specifically, what affects the long-term profitability of such investments.

1.2 Research Aim and Approach

In accordance with the identified need for further research, the aim of this thesis was to:

*Develop an investment strategy framework focused on long-term profitability
from rental real estate in Western Sweden*

The aim was limited to focus primarily on acquiring existing property, but whenever deemed relevant, comparisons was drawn to construction and new developments. The type of investor considered considers is one beginning on a relatively small-scale but with a long-term time perspective, with an

¹ See figure 5 for an illustration of historic residential returns from residential real estate investments

initial investment sum around 30 MSEK. The long-term time perspective emphasizes the importance of income yield. Hence, divestment considerations were not handled in this report. The geographical limitation, denoted as Western Sweden, includes the counties Västra Götaland, Halland, Jönköping and Kronoberg. This was chosen due to proximity to Gothenburg, where the research was primarily conducted.

To fulfill the stated aim, research was conducted in a series of six sub-studies. The first five sought to develop understanding on what factors affects the investment and what tools are available to an investor, whereas the final sixth sub-study was used as a way to illustrate applications of identified findings. The sub-studies were composed to investigate the following research questions:

- RQ 1: What financial return can a real estate investor expect from investments in rental properties?
- RQ 2: How are rent levels determined and how can landlords influence them?
- RQ 3: Based on their respective effects on total yield, how can technical features guide an investor in selecting properties, both in terms of their initial condition and potential for improvement?
- RQ 4: What determines tenant satisfaction and how does it relate to rent developments and landlords' costs?
- RQ 5: How can a real estate investor choose regions to invest in based on their respective potential for enabling high total yield?
- RQ 6: How can the findings from the sub-studies 1-5 be used to identify potential acquisition targets and estimate their respective potential in terms of income yield on initial investment?

A combination of 31 semi-structured interviews with different industry actors, literature review, a broad array of different data analyses, and site visits were used to generate empirical support in the sub-studies.

1.3 Key Results

- RQ 1: On average over the last decade, rental real estate investments have generated long-term, unleveraged, total yield of 9.9% and 4.8% income yield. Yields have declined in the past years, however, and income yield last year (2011) was only 2.8%.
- RQ 2: Rent levels are presently determined through comparison with apartments with similar utility values. The rent changes are primarily determined on a yearly basis or following from changes in the apartments' utility values. Thus, landlords can impact the rent through the yearly negotiations or through improving the utility value of their apartments. However, there are shifts towards more market oriented structures as well as indications of increased capacity for tenants to absorb rent increases. This would implicate that landlords will, to a greater extent, be able to base the rent levels on their tenants' preferences and satisfaction degrees.
- RQ 3: A property's technical features have a large impact on its operational and maintenance costs, although they vary significantly between properties. The single largest operational cost is

heating. By installing ventilation with heat exchanger, energy cost can be decreased significantly. Much of the existing housing stock in Sweden is in need of large renovations. Such properties can represent an opportunity for investors in terms of potentially discounted price, especially in areas where the current demand is low and with owners lacking the competence or financial strength to carry through these renovations.

- RQ 4: The literature study suggests that a satisfied tenant population could both contribute to long-term reductions of costs, through e.g. decreased turnover ratio and administrative costs, and enabling rent increases. The findings suggest that the greatest potentials for increasing tenants' satisfaction are through improving apartment's standard and improving tenants' perception of safety/security.
- RQ 5: There seems to be a discrepancy between the attractiveness of living in a region, its economic strength and the price level for rental housing there, due to prices being somewhat sticky and not fully reflecting strong positive developments. This presents an opportunity where an investor can potentially be able to find properties at a regionally discounted rate, enabling both high income yield and total yield through capital value appreciation.
- RQ 6: When applying findings on case examples, one finds that apart from initial price and rent increases, investments reducing energy consumption (e.g. more efficient ventilation) have the largest effect on yield on initial investment. An investor can apply the findings via different strategic approaches. Properties can be identified through a top-down or a bottom-up approach, and ownership style can be either active or passive. Each combination makes use of the findings to evaluate and assess potential investment targets.

1.4 Report Disposition

Chapter 1: The introduction intended to give a background to why investments in rental real estate might be an attractive option to consider, as well as an overview of the situation for rental accommodation in Sweden. An identified need for further research specific to Western Sweden is then presented combined with the research aim and its corresponding research approach. More specifically, the research will be presented as six separate studies, which combined constitute to the foundation for a subsequent investment strategy framework for rental real estate. The first five sub-studies strive to develop an understanding on what factors affect investments and what tools are available to an investor, whereas the final sixth sub-study was used as a way to illustrate applications of identified findings. Lastly, an overview of the study's key findings and disposition of the report are presented.

Chapter 2: The literature review intends to present previous research in the field and describe the broader academic context of the study. The chapter begins by presenting a brief literature review covering strategy and investment strategy. Similarly, previous research relating to the respective sub-studies is also presented. Further, the literature that has guided the research will be explained in more detail in chapter 4, the theoretical framework.

Chapter 3: The method chapter provides a description of how the study was conducted. It starts with a description of the overall research design, where the relation between the subsequent six sub-studies briefly is presented. The study's overall quality, followed by a presentation of the chosen methodology for each sub-study, is thereafter given. More specifically, each sub-study has been divided into different

phases, which subsequently have been researched through both quantitative and qualitative research approaches.

Chapter 4: This chapter introduces the theoretical framework that has guided the empirical research process. The framework is thereon intended to provide a toolbox for the reader to interpret and better understand the subsequently presented empirical findings and analysis. Each sub-study will be presented separately.

Chapter 5: This chapter presents the empirical findings and analysis from each sub-study. Each sub-study will thereafter be followed by a summary of major findings, which also will be used in chapter 6.

Chapter 6: This chapter intends to discuss the empirical findings and analysis from several perspectives. Firstly, in order to recapture what has been stated in the previous chapter, a summary of major findings will be presented for each sub-study. The findings will then be related to the theoretical framework, followed by a reflection of the chosen methodology how it has affected the findings. The study's extent of applicability to real situations is then presented. This also includes the actual investment strategy framework for rental real estate is introduced. Lastly, suggestions for further research are given.

Chapter 7: This chapter presents the major conclusions from each sub-study. Thereafter follows a presentation of the investment strategy framework developed, as in response to the specified aim.

2. Literature Review

The literature review intends to present previous research in the field and describe the broader academic context of the study. The chapter begins by presenting a brief literature review covering strategy and investment strategy. Similarly, previous research relating to the respective sub-studies is also presented. Further, the literature that has guided the research will be explained in more detail in chapter 4, the theoretical framework.

2.1 Overview of Investment Strategies

Strategy, with more than 140,000 listed books on the subject on Amazon.com (2012), is indeed a well-covered topic. Albeit the huge supply of research and opinion, Kiechel (2010) claims that books alone will never be sufficient for a complete understanding of the concept. Van de Steen (2012) defines strategy relatively simply as the “smallest set of – intended or actual – choices and decisions sufficient to guide all other choices and decisions”. This is in line with much of management literature, e.g. Mintzberg’s et al. (1988, pp. 1-13) explanation of strategy as a plan or as a pattern; whereas the latter acknowledge a difference between intended strategies, which results in both deliberate and unrealized actions, and emergent strategies. Furthermore, Mintzberg et al. also recognizes strategy as a position, ploy and perspective.

Grant (2010, pp. 5-11) identifies simple, consistent, long-term goals; profound understanding of the competitive environment; objective appraisal of resources; and effective implementation, as four common elements in successful strategies. Andrews et al. (2009) also tested the importance of how strategies are formulated, their contents, and how these aspects affect organizational performance. They found that companies were better off if their strategy formulation followed from rational planning, and that the content of the strategies should be based on prospecting and defending. On the other hand, absence of clear strategies and formulations following from logical incremental processes negatively affected organizations’ performances.

The distinction between formulating strategy, i.e. the three foremost elements from Grant (2010, pp. 5-11), and subsequent implementation of it, was first discussed in Chandler (1962, cited in Kiechel, 2010). It has thereon been an important topic in strategy literature (Kiechel, 2010). Scholes (2005) goes on to stipulate six factors important to be able to bridge the gap between strategy formation and strategy implementation. Examples of these include notions that strategy must draw from – and contribute to – management’s capabilities, strategy formulation should be an ongoing process that never should be considered as complete, and that strategy tools and language should be developed for a collective approach to strategy.

Height and Singer (2005, p.97) differentiate two fundamentally different investment strategies for residential real estate. Investors can either aim to buy at market value and reap the long-term profits, or try to buy below market value for fast turnarounds. The former category is, additionally, divided as income investments or value appreciation by Scherrer and Mathison (1995). Each of the three approaches requires attention to different aspects. For example, the type of tenants and potential for income increases is mainly important for the income investors, while hedging for inflation and potential

changes in the surroundings (that increase demand or attract a segment with higher willingness to pay) might be more important for investors striving for value appreciation.

Within the scope of this project, the investment strategy framework aimed to be developed will constitute a collection of attractive options available, within the confines defined. Having pre-determined the goals of the investment, in accordance with Grant (2010, pp. 5-11) and Andrews et al. (2009), namely to investigate opportunities in long-term, small-scale, yield-based, organically expandable portfolios, it follows that much of the analysis will concern reaping long-term profits by way of income investments as defined by Scherrer and Mathison (1995). Turnarounds also fall within the scope of the study, but with the intention to enable profitable long-term ownership rather than attractive exit opportunities. Much of this report will be aimed at developing a foundation from which these strategic options can be explored and in accordance with Andrews et al. (2009) and Scholes (2005) through the development of a strategic framework, this project also seeks to offer the knowledge required to understand the investment landscape as well as provide the groundwork required for its further exploration.

2.2 Overview of the Sub-studies

2.2.1 Investments in Rental Properties

Investing in real estate requires several industry specific competences. Valuation approaches and techniques have been presented and discussed by e.g. Nordlund (2008), Lind (2004), and Hungria-Garcia (2004). Organizations within the industry also strive for coherent and standardized definitions of the concepts used (IVSC, 2003; & IPD, 2007). There are, however, still discrepancies and complexities that complicate the valuation procedures. The complicating issues are generally associated with the unique characteristics of each property, subjective assessments of which income and expenditure streams to include, and limited availability of comparable transactions (Lind, 2004; Babawale & Omirin, 2012; Levy and Schuck, 1999; & Kinnard et al, 1997). Some of these issues might be partly resolved due to the broad availability of public information in Sweden, but they still remain problematic. Commonly occurring transactions of real estate embedded in holding companies drastically reduces the availability of comparable transactions (Herder and Wallenås, 2008).

An understanding of real estate business cyclicity and determinants of corresponding yields is further important in order to construct desirable portfolios. Based on this perspective, several studies have been conducted to investigate abilities to anticipate future movements as well as understanding the past. Examples of such studies are Krystalogianni et al. (2004) for the UK, Chen et al. (2012) for the US, as well as an MSc thesis by Blomgren and Ullmark (2008) for the Swedish market. Moreover, Wilhelmsson et al. (2011) and Berg (2006) found that smaller municipalities, rural areas and distant to city center increases actual risks of vacancy and emigration. Further, Shilling (2003) argues that ex ante expected risk premiums are too large for real estate's actual risk levels.

2.2.2 Systems for Rental Accommodation

Keremy (1981, in Elsinga & Hoekstra, 2005) was one of the first authors to elucidate differences in how rental accommodation is perceived in different cultures. Sweden is, together with some other countries,

a culture where rental accommodation has a strong position and tenants are relatively satisfied with their housing situation. Elsinga (2005) proposes that important reasons for the different acceptance and demand can be derived from differences in housing policies and social security systems. Strong social security systems, along with strong tenures, will in many cases contribute to situations with unbearably high market rents. Accordingly to this hypothesis, some kind of system for regulating rent levels is usually associated with the above cultures. Arnott (2003) categorizes the systems into three generations, where the first is considered the strictest. The second generation allows for some discretionary increases based on e.g. development of costs, while the latest generation of systems actually is deregulated between tenants.

Rational arguments, both for and against, rent controls have been proposed by several authors. For example, Ho's (2003) study of implications from rent controls indicates that it is an attractive substitute for government public housing spending, while le Blanc and Laferrère's (2001) calculations indicate a welfare loss of 3 billion franc for the French market. The latter is supported by Glaeser and Luttmer's (2003) study of the rental market in New York, wherein they reason that welfare costs for misallocation caused by rent regulations exceed the cost of the apartment undersupply alleviated by the system. Moreover, Hubert (2003) argues that the different arguments can be derived from discrepancies between theoretical perspectives of and how the systems actually are perceived when interacted with real life tenants.

2.2.3 Technical Features

When investing in real estate it is crucial to assess and understand the technical status of a building and how these technical features influence the investment prospect. The costs, income and hence the value of a property is to a large extent affected by the technical specifications and standards of a property. There are both commercial organizations (Incit, 2012) and scholars (Berg, 2007) who investigate how the costs of properties differ due to age and technical features. In addition to property-specific differences, media provision costs too, can differ between different parts of Sweden (Nils Holgersson-gruppen, 2011). Their investigations indicate that especially the total costs for heating, electricity, water and garbage disposal can differ as much as 71 percent between municipalities in Sweden.

Several studies of the need for larger investments for renovations in the current property stock have been published. Examples of such studies are; Wahlström, Blomsterberg, & Olsson (2009), Janson, Berggren, & Sundqvist (2008), Swedish National Board of Housing, Building and Planning (2005), Swedish National Board of Housing, Building and Planning (2009), Swedish National Board of Housing, Building and Planning (2010). This need for renovations can be further accelerate by poor maintenance of a property. Numerous scholars, among them Knight (1996), Clapp & Giaccotto (1998), Goodman & Thibodeau (1995) and Wilhelmsson (2008) have investigated effects of the level of maintenance on valuation of single-family properties, although these result are not directly applicable on this study, some valuable findings, mainly concerning how age effects a property, can be transferred.

As costs most often are higher for older properties, it can be interesting to use new developments as a reference point when considering investments in existing properties. The model known as Tobin's q can

be applied for this purpose. The model is commonly used to determine the economic prerequisites for new development in specific locations. (Berg & Berger, 2006)

2.2.4 Tenants' Preferences and Satisfaction

Residential satisfaction can be represented as the result of interactions between an individual's personal characteristics and the reality of his or her accommodation (Landale & Guest, 1985). It is, as such, determined to a great degree by the tenants' individual preferences. In line with this hypothesis, James (2008) suggests that elderlies are more dependent on the quality of their accommodation and its environment, but that they also are more easily satisfied with their current situations. Furthermore, Lu's (1998) study of linkages between housing satisfaction, mobility intention and actual migration, indicate that young tenants are the resident group that are most likely to move; both due to dissatisfaction but also due to unexpected reasons.

Harmon and McKenna-Harmon (1993) claim that the actual costs for dissatisfaction of tenants often are camouflaged as overhead costs or simply passed by as unrealized potential for increased income. Salleh et al. (2011) illuminates several costs that one could expect to increase along with dissatisfaction. Examples include rent arrears, more demanding administration and vandalism.

Much research, striving to understand and improve tenants' satisfaction, has been conducted during the previous decades (Pawson & Sosenko, 2009). Paris and Kangari (2005) identified several aspects that relate specifically to the services that landlords deliver to their tenants, e.g. selection policies, communication with tenants, and the staffs' willingness to cooperate and handle complaints.

2.2.5 Identifying Attractive Municipalities

Region of investment is a key determinant of returns on real estate investment, which differ significantly between regions (Hartzell, Sun, & Titman, 2009). However, little have been written about what region-specific variables affect the potential for high total yields on rental real estate investments in Sweden. Nevertheless, there have been studies of other markets. In a study covering data from different US regions, Beracha and Skiba (2011) show that rental real estate investments are in general forecastable, as both high- and low-yielding regions are likely to retain momentum. Also in the US, Downs (2007) claims that a fundamental demand for rental housing always exists, i.e. to accommodate tenants unable or unwilling to upfront the capital needed to own a home. This, in turn, suggests a link between regional population size and rental housing demand. In a study on the Chinese property market, population change is determined to be the principle determinant guiding real estate investments (Mak, Choy, & Ho, 2012).

3. Method

The method chapter provides a description of how the study was conducted. It starts with a description of the overall research design, where the relation between the subsequent six sub-studies briefly is presented. The study's overall quality, followed by a presentation of the chosen methodology for each sub-study, is thereafter given. More specifically, each sub-study has been divided into different phases, which subsequently have been researched through both quantitative and qualitative research approaches.

3.1 Research Design

To approach the overall research aim practically, the study has been conducted in a series of six sub-studies. Each of these studies has individual research questions, which are collectively intended to provide the foundation and support for the main aim. The sub-studies share a sequential mixture of qualitative and quantitative approaches. These differing strategic approaches aided and improved the ability to extract relevant output for each question studied. However, the mixture of strategies could also be potentially hindering the comparability of results (Johnson & Onwuegbuzie, 2004). Generally, the sub-studies were initiated in a wider explorative phase, followed by a more in-depth and focused analysis. At large, the aim of the first phase was descriptive – to first explore and determine what is known in the area, and then describe how things work. The second phase strived to explore possible relationships between the things uncovered and how they, directly or indirectly, may be used as input in an investment strategy.

The final sub-study sought to apply the findings from sub-study 1-5, in a series of case examples. This was done in order to test the general applicability of the findings identified in the previous sub-studies, i.e. identifying properties and how yields hypothetically could be affected. An overview of the sub-studies is presented in the table below.

The interview program is presented in the appendix, along with indications on which interview provided input for which sub-study.

Table 1: Overview of sub-study methods

Sub-study	Phase	Strategy	Design	Methods
1: Investments in Rental Properties	Phase I	Qualitative	Explorative	Semi-structured interviews, literature review
	Phase II	Quantitative	Longitudinal	Data analysis (e.g. calculations and illustration through diagrams)
2: Systems for Rental Accommodation	Phase I	Qualitative	Explorative	Semi-structured interviews, literature review
	Phase II	Quantitative	Longitudinal	Data analysis (e.g. calculations and illustration through diagrams)
3: Technical features	Part I	Qualitative	Cross sectional	Semi-structured interviews , data analysis, literature review
	Part II	Qualitative	Explorative	
	Part III	Qualitative	Explorative	
4: Tenants' Preferences and Satisfaction	Phase I	Qualitative	Explorative	Literature review
	Phase II	Quantitative	Cross sectional	Data analysis (e.g. calculations and illustration through diagrams)
5: Identifying attractive municipalities	Phase I	Quantitative	Explorative	Data analysis, empirical review, semi-structured interviews
	Phase II	Quantitative	Cross sectional	Data analysis
	Phase III	Qualitative	Explorative	Literature review
	Phase IV	Qualitative	Cross sectional	Data analysis
	Phase V	Qualitative	Explorative	Empirical review, semi-structured interviews
6: Case examples	Phase I	Qualitative	Explorative	Semi-structured interviews, site visits, data analysis
	Phase II	Quantitative	Cross sectional	Data analysis, empirical review, semi-structured interviews
	Phase III	Quantitative	Cross sectional	Data analysis

3.2 Quality of the Study

An exposure to potential bias follows from the initially explorative nature of the sub-studies, and as such the study as a whole. In relying on interviews and own research to initially guide the process, one may initially be skewed towards beliefs held by interviewees. There might additionally be a risk that information that proved easier to access outweighs information that might be more relevant, but more difficult or otherwise more time-consuming to digest. To prevent such bias, interviewees were selected so as to collectively constitute a wide and varied source of information; reducing bias through collective diversity. In processing empirical sources of information, care was taken to triangulate findings and iteratively refine source material throughout the research process.

It should also be mentioned that the inclusion of a sub-study on whether there are more attractive regions than others, and then subsequently applying these findings to the selection of case examples, inherently assumes that findings from the other sub-studies can be applied whichever the regional context. In other words, the assumption is made in the final sub-study that the application of findings from sub-studies 1-4 were not limited by the choice of regions identified in sub-study five.

3.3 Sub-studies

The following sections serve to describe each of the methods related to each individual sub-study in-depth.

3.3.1 Investments in Rental Properties

The purpose with this sub-study was to answer the research question: *What financial return can a real estate investor expect from investments in rental properties?*

Phase I: Assessment of how Professionals in the Real Estate Industry Evaluate Financial Performance

In order to answer this question, it was first divided into two phases, where the first assessed how professionals in the real estate industry evaluate financial performance. The intention with this primary phase was two folded. Firstly, the results were intended to contribute to the assessment of which factors that could be expected to affect financial returns, and thereby provide general guidelines for formulating the sequent sub-studies. Secondly, it allowed the creation of a set of methods that could replicate the valuation procedures applied by real estate professionals. This should both be useful for a potential investor that wishes to assess fair estimates of a properties worth when pursuing an actual investment but also for calculating fictitious transaction prices that have been used in order to analyze the findings from sequent sub-studies. Specifically, the latter was an important tool in the sixth sub-study for evaluating exemplifying investment cases without any explicit market prices.

The initial phase of the sub-study was essentially explorative in its nature. It was mainly researched with a qualitative approach through a literature study and semi-structured interviews with real estate investors, landlords, and other professionals that have supportive roles in transactions.

The selected sample of landlords and real estate investors were based on criteria that they should be active in the Western region of Sweden, and that they should have a long-term ownership based on sustainable profitability. However, it is likely that a diverse set of landlords and real estate investors would claim that they invest and operate accordingly to these criteria, even though the extent that they fulfill the latter criterion might differ. The selection of private housing companies, i.e. private real estate investors, was therefore conducted based on input from a negotiator at the Swedish Union of Tenants, who has a thorough experience of working with most of the real estate companies in Gothenburg. The public companies were selected simply on the basis of the municipality they are active in. The selection sample for companies that contribute to supportive functions in real estate transactions was based on criteria that they should be one of the bigger actors in their field and that they should be present in Western Sweden.

Phase II: Analysis of Historical Yields

The second phase of this sub-study was to anticipate levels of yields, which was approached through an analysis of the historical returns from investments in rental properties. The underlying data for this analysis consists of yearly data from 1984 to 2011 of total yield, income yield, capital value development, net operating income and vacancy rates from IPD Swedish Property Index. Accordingly to the figures presented by IPD (2011), total yield was calculated as $(1 + \text{income yield}) * (1 + \text{capital value development}) - 1$.

This above mentioned figures were based on a real estate portfolio, consisting of residential properties with 160,000 apartments and a total market value of 139 bn SEK, as of the end of 2010 (IPD, 2012). However, mainly segmented data, which excludes Stockholm, Gothenburg and Malmö, is presented in this report. The reason for excluding these cities was that it was deemed likely that the characteristics of Sweden's biggest cities differ from the situation in smaller municipalities, and hence skew the presentation. Additionally to the data from IPD Swedish Property Index, data series of the Swedish consumer price index, KPI, retrieved from Statistics Sweden (2012), and Swedbank's (2012) average lending interest rates for private houses were applied. The latter was compiled as an annual average of several time series of published lending rates, based on differing maturity dates that varied between freely moving rates up to ten years. As indicated by the results from calculations of fictitious debt-scenarios, the actual rent levels for real estate owners have probably been less. However, these lending rates for private individuals probably developed accordingly to similar patterns. They should, thus, probably be more useful as indicators of the market's interest rates rather real estate owners' cost for financing. The combination of these time series were subsequently used to analyze how yield levels have developed during whole time period, as well as an emphasis of the most recent years.

Reflections on Chosen Method

An alternative approach to assess likely yields could have been to focus on projections of future yield levels through qualitative interviews with real estate professionals. However, it would probably have been more disparate since it is likely that the individuals possess different perspectives based on their background and their individual perception of the future. There is also a risk that individuals blindly would extrapolate the current conditions without emphasize a longer time perspective. Yet another potential research approach could have been to conduct a cross-sectional analysis of a large set of real estate investors. This would contribute to a superior understanding of variations around average yield levels and potentially indicators for how the highest performing companies achieved their corresponding yields. However, it would emphasize each actor's current situation and was therefore deemed as inferior due to lack of long-term time perspective from, which should be imperative for a long-term investor. The chosen research approach, which focused on the historical perspective, and separately analyzed important aspects through the subsequent sub-studies, should provide the reader with objective information and a thorough foundation for further analysis and making of own subjective assessments.

3.3.2 Systems for Rental Accommodation

The purpose of this sub-study was to answer the research question: *How are rent levels determined and how can landlords influence them?*

Phase II: Analysis of the Swedish Rent System

Similarly to the previous sub-study, this research question was divided into one qualitative and one quantitative phase. The former was mainly explorative, with the intention to describe the current system of rental accommodation and how the rent levels are determined within this system. In order to understand the Swedish system in a broader extent, a literature review of different forms of housing policies and regulations was conducted. Contextualization of the system was conducted through a theoretical perspective, which both contributed to an understanding of the current situation, but also increased the ability to anticipate future changes of the system. Further, the general perspective of

rental accommodations was followed and compared by empirical research through semi-structured interviews as well as reviewing of existing literature written on the Swedish rent system.

The interviewees were initially selected based on an explorative research of which organizations that have the greatest influence on rent levels for a local actor in Western Sweden. This indicated that the Swedish Union of Tenants, the Swedish Property federation and some landlords should be interviewed. New interviewees were thereon selected based on suggestions from earlier interviewees and identified need of filling knowledge gaps throughout the research process.

The Swedish Union of Tenants has a central role in collective negotiations, which also greatly influence all residential rent levels in Sweden. Consequently, four interviews with representatives from this organization were conducted. Two of these interviews were held face-to-face with a negotiator based in Gothenburg, and two were conducted over telephone with one legal expert from Bollebygd as well as one negotiator that was involved in negotiations for apartments in Habo. Ale belongs to the same negotiation district as Gothenburg, and was therefore not handled separately. Additionally, the Swedish property federation and four landlords were interviewed to get their perspective of the rent negotiation processes. Three of five landlords were public housing companies. These public housing companies are, by far, the biggest landlords in their respective local markets, i.e. Ale, Bollebygd and Habo. Their influences on rent developments in these municipalities are therefore much greater than any private actors'. However, the perspective of being a private actor was obtained through five respectively three in-depth semi-structured interviews with Ernst Rosén and Kjellberg & Möller, which both are based in Gothenburg. Lastly, in order to grasp the potential of rent increases from common standard improvements, a standardized list with specified potential for rent increases, compiled by the Swedish Property Federation and the Swedish Union of Tenants, was analyzed.

Phase II: Analysis of Historic Rent Levels

The second phase of this sub-study was researched through a quantitative study of the actual development of rent levels. Data for average annual rent increases were retrieved from the Swedish Union of Tenants' (2012) annual report 2011. This was combined with data for inflation and average annual interest rate, which were retrieved from the same sources as described in chapter "3.1.1 Investments in Rental Properties", as well as additional data of households' proportion of incomes that are spent on accommodation. The latter were downloaded from the online databases of Statistics Sweden (2011c).

Reflections on Chosen Method

Alternatively to conducting several in-depth interviews with a limited amount of landlords, the assessment of which initiatives that are likely to contribute to rent increases could have been conducted through surveying a large number of landlords. This could efficiently have created an understanding of how landlords actually pursue certain initiatives in order to improve profitability. However, it would require usage of e.g. self-completion questionnaires, which was deemed as inferior due to the lack of control and reduced possibilities to ask follow up questions.

3.3.3 Technical Features

The purpose with this sub-study was to answer the research question: *Based on their respective effects on total yield, how can technical features guide an investor in selecting properties, both in terms of their initial condition and potential for improvement?*

As the scope of this sub-study, which include technical and construction related aspects of a buildings, was broad, it was divided into four parts. These parts were essentially separate, but they also shared some sources of information and research methods. An overview of the common characteristics from the methods will therefore be given before each part is presented further.

The study has mainly been based on semi-structured interviews and reviewing of existing literature. A total of seven interviews were conducted, which provided information to all three parts of the study. The semi-structured interviews have been conducted with professionals in the real estate field. The sample size of interviewees was based on a purposive sampling procedure combined with a snowball sampling method whereas former interviews guided the selection of sequent interviewees.

Three of the interviews were conducted with employees at two companies offering technical due diligence services for actors in the real estate sector, WSP Sweden and Development Partner. WSP, being a large actor, has employees dedicated to different parts of the due diligence process resulting in two interviews to cover the area, one with focus in installations in the building and the second with focus on building and constructions. The contribution from these individuals increased the understanding of how technical inspections are conducted and what opportunities that commonly can be found in existing properties. Development Partner, being a smaller company, it was necessary with one interview covering the whole area of technical due diligence.

Additionally, one interview was conducted with a land and development engineer from the municipality of Lerum, whom has long experience from different parts of the real estate field. Lastly, the three remaining interviews were conducted with representatives from two different property owners. Both companies, Ernst Rosén and Kjellberg & Möller, are mostly focusing on long-term property management and have high ambition for tenant satisfaction. This gave valuable insights into both the ongoing investments and aspects for potential improvements in the properties, both in terms of efficiency and rent increases.

Moreover, secondary data have been collected from primarily the Swedish National Board of Housing, Building and Planning as well as Statistics Sweden. The purposes with the secondary data were to triangulate findings from the respondents and support their arguments with quantitative data.

Part I: Current Housing Stock, Construction history and specifications

The first part of the study has been based on a literature study and analysis of secondary information. This was later complemented with information from the semi-structured interviews.

The review of properties indicated that the unique characteristics from each property would complicate a presentation comprehensive prevention of technical features on a detailed level. Hence, a decision, based on a tradeoff between generalizability and accuracy, was made to present the findings on general

level. More specifically, the initial findings suggested that no specific building type or age of property is favored on theoretical level if no transaction prices are given. Instead, it was decided that the foci for Part II and Part III would be on technical features and properties' potentials, as well as which flaws they might possess.

Part II: Technical Features' Influence on Costs and Ability for Rent Increases

The second part of the study, technical features' influence on costs and ability for rent increases, was initiated with a literature review to acquire the basic knowledge needed to fully grasp the subject. Technical and operational real estate factors have then been identified through an iterative process with semi-structured interviews and further literature review.

Part III: Possibilities for Energy Improvements in Current Property Stock

The former two parts were combined in order to assess potential improvements in the current property stock. As income from rents is hard to influence with the current rent regulations, the main focus was on how operational costs could be lowered, especially through increasing efficiency of energy usage. Through the interviews, best practices in the areas have iteratively been confirmed and complemented from literature review and analysis of secondary information.

Part IV: Considerations for Larger Investments and New Development

In this last part of the sub-study, all three former parts will be combined in order to assess how to actually deal with the potential larger investment in technical factors of a property. New development can sometimes be an alternative to investments in existing properties; hence it is used as a reference point when studying investments in existing properties. Both sections deal with some of the basic considerations focusing on the economic feasibility of the investment.

The first section, considerations for larger investments is mainly based in the semi structured interviews and later complemented with literature review. The second section, considerations for new development, is largely based on the literature review.

Reflection on chosen method

In order to achieve results applicable on the broad scope of the thesis the scope of this study had to be broad as well. Especially the current status of a property and the outcome of different investments are difficult to assess with the broad range of potential properties. Narrowing the scope could potentially give a better accuracy of the results, e.g. conducting a case study on a property could generate high accuracy, however on the expense of generalizability.

The many different areas of the study have only been briefly investigated and elaborated, as the goal only was to create a basic understanding for technical aspect of a property investment. In order to achieve a full understanding for the area further research is needed, several of the aspects investigated could constitute for a separate thesis on its own.

3.3.4 Tenants' Preferences and Satisfaction

The purpose of this sub-study was to answer the research question: *What determines tenant satisfaction and how does it relate to rent developments and landlords' costs?*

Phase I: Assessment of Implications and Linkages between Tenants' Preferences and Satisfaction

The applied investigation of Swedish tenants' preferences and degree of satisfaction was preceded by a theoretical perspective derived from a literature review. The foci therein were to understand implications of tenants who are dissatisfied, as well as how tenants reach satisfaction or dissatisfaction on an abstract level. Insights from this explorative literature study of the implications suggested that turnover ratios could be included as an indicator of dissatisfaction among tenants.

Phase II: Analysis of Tenants' Preferences and Satisfaction

In order to answer this question, the investigation focused both on which features that tenants perceive as important and the extent that they currently are satisfied with them. The underlying data for this investigation have been obtained from a survey by Olofsson and Arneng (2009) of 10,802 tenants in the county of Västra Götaland. The total rankings of importance and degree of satisfactions were, unfortunately, not available for the complete region that is included in this report's scope. However, due to the large amount of respondents that were included and the other counties' proximity to Västra Götaland, the study was deemed as sufficiently providing generalizability.

Further, the data set of preferences allowed for some degree of segmentation. The available sorting variables were age categories (18-25, 26-35, 46-55, and above 55), or family situation ("children living at home", "above 35 and no children living at home" and "less than 36 years and no children living at home") combined with an extra filter for either living in Gothenburg or some of the other municipalities of Västra Götaland. The preferences of accommodation from tenants who are living in the cities might potentially be misleading for smaller towns other rural areas. A presentation of differences between the municipality Gothenburg, which naturally was heavily weighted by tenants living in the city, and other municipalities of Västra Götaland was therefore included. Moreover, a similar presentation was given for a segmentation based on age groups. The reason for the latter segmentation is that the age of all individuals registered at an address relatively easy can be obtained. The findings from the complete survey can thereby be transferred to the tenants that are living in a selected property. However, generalizability from this survey was only intended to be considered as proxies, whereas the actual differences of preferences might differ greatly.

Reflections on Chosen Method

Unfortunately, based on the chosen research approach, linkages between turnover ratio and dissatisfaction could not be supported nor rejected. It could therefore be possible that different turnover ratios merely were due to different degrees of changing housing preferences, which naturally could causes tenants to move. A comparison of several housing companies, which have similar housing stock, could potentially provide some further guidance of the underlying reasons for differing turnover ratios. Similarly, the research could have been analyzed through e.g. a longitudinal or a case study.

A more thorough understanding of the characteristics, expectations and determinants for satisfaction among tenants living in Western Sweden could potentially have been obtained through in-depth interviews with a sample of tenants. However, the extensive study (including 10,802 tenants) of Olofsson and Arneng (2009) was deemed as sufficient due to its great number of included tenants. Further, an

own study of reasonable size would likely provide inferior foundation for generalizability outside the sample.

3.3.5 Identifying Attractive Municipalities

The purpose with this sub-study was to answer the research question: *How can a real estate investor choose regions to invest in based on their respective potential for enabling high total yield?*

To approach the problem of identifying municipalities' potential for offering a high total yield, the process was divided into several parts. In assessing the potential for high income yield, the two elements of the yield quotient were studied separately. First, concerning NOI, two studies were conducted. One was quantitative and one was qualitative, both largely explorative in nature.

As a first common step, a framework was constructed to present available data for a given municipality. As a first step in the quantitative study, some of this data was chosen to comprise an indicator to assess a municipality's ability to enable high NOI. As a second step, another indicator was developed to denote the general price level of rental housing buildings within the respective municipalities. Finally, the two indicators were combined to identify municipalities that offer an attractive balance between ability to enable high NOI and low cost of acquisition, in combination establishing a foundation for potential high total yield.

In the qualitative study, municipalities standing to benefit from infrastructural developments in the near future were identified and carried through to the subsequent analysis together with the other municipalities identified in the quantitative study.

In both the quantitative and qualitative study, only outstanding municipalities were considered for further analysis, e.g. the municipality with most to gain from infrastructural developments, or the municipality offering the most attractive balance between high NOI and cost of acquisition.

Phase I: Constructing a Municipality Assessment Framework

The framework was constructed iteratively and through an explorative process. The aim was to offer as complete a snapshot of a given municipality as possible, given the data available or otherwise accessible. Data was incorporated based partly on what was made available by relevant governmental and industry organizations on a municipal level, as well as what was indicated as relevant in interviews in the interview program conducted throughout the general study. Data was incorporated so as to help understand impact and drivers behind each municipality's growth, economic strength, demography, housing stock and housing market. The tool was constructed to be expandable in terms of data sources and municipalities under scrutiny.

Phase II: Identifying Regions Enabling high NOI

The aim of this phase was to identify regions providing the highest potential for sustained and/or growing NOI, regardless of the current market price. The municipal assessment framework described above was used to a large extent to explore available datasets.

A structured breakdown of the total yield equation guided the process of determining the selection of datasets to combine into one indicator. A combination of theory and interviews with industry experts

provided continuous verification of included data and the combined indicator. The following data were used to form an indicator:

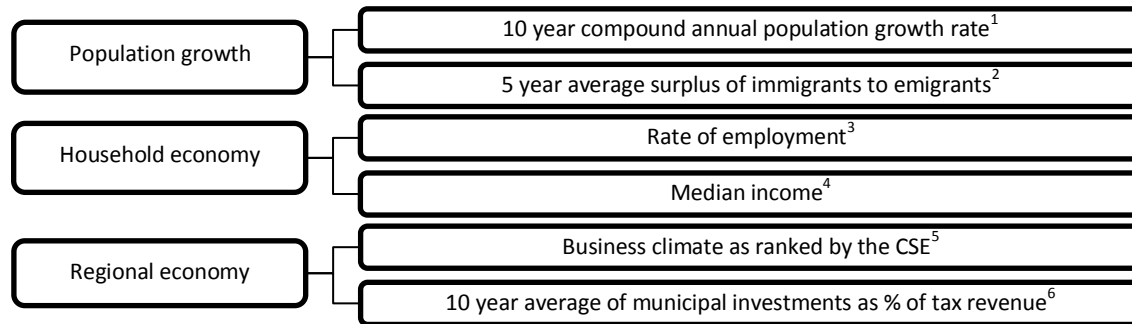


Figure 1 – Indicatory datasets for each factor in the total yield breakdown. The applied sources were as following:
 1. (Statistiska centralbyrån, 2000-2011B), 2. (Statistiska centralbyrån, 1997-2011), 3. (Statistiska centralbyrån, 1996-2011), 4. (Statistiska centralbyrån, 2000-2010B), 5. (The Confederation of Swedish Enterprise, 2007-2012), 6. (Statistiska centralbyrån, 1998-2011)

Phase III: Identifying the General Price Level in a Municipality

The initial ambition was to use historic transaction data to determine the average price level in all the municipalities of Western Sweden. Having obtained said data, however, it became apparent that due to a lack of underlying data in smaller regions, no comparative data could be calculated for each municipality. An alternative, method, denoted direct capitalization method, was therefore employed. In short, one begins with an average income yield figure for each municipality (Newsec Advice, 2012). Based on a NOI estimate, an implicit market value was calculated by inverting the yield equation (see chapter “4.1 Investments in Rental Properties”, for a further overview of the valuation approach). Actual average rent levels were used in this calculation, but only costs specific to the specific municipality (e.g. water, electricity) were subtracted. The intention was to attain a price indication independent from NOI. However, as both NOI and market value contribute to producing the income yield figure, the potential difference between the NOI estimate used and the one used by Newsec Advice may constitute a source of error. This implicit method also introduces a dependence on the estimation methods used by Newsec Advice, and its associated errors. To limit any effects of these potential errors, price levels were only used to compare groups of price ranges in the final analysis.

Phase IV: Determining the Attractive Balance between Potential for high NOI and Cost of Acquisition

Having analyzed the two elements in the income yield quotient, the question is to determine how to combine the two measures into one that indicates enabling of high income yield. Instinctively, high NOI and low market value produces high income yield. To determine which municipalities that offer this, municipalities were ranked according to potential for high NOI, and thereafter according to implicit market value. Selection was made according to the principle highest possible NOI within the lowest price group.

Phase V: Transportation and Accessibility Infrastructural Improvements

The fifth phase was conducted in two parts. The first strived to identify regions affected by planned infrastructural developments across Western Sweden by the counties themselves or nationally through

the Swedish Transport Administration. This was conducted through explorative research of information made publicly available by the aforementioned governmental bodies, coupled with interviews with county and municipal representatives.

To increase certainty of actual project execution and finalization, only projects that were initiated or otherwise secured funding and political support were considered. As such, this study will not speculate as to the potential of proposed or otherwise future developments under political debate, but only focuses on developments that are highly likely to come to be.

The second part of this study seeks to determine whether the planned development could be expected to affect the region positively, and if so, whether this anticipated effect already have reflected on local price levels of rental housing units. That is to say, the study seek to identify municipalities that would benefit from planned and ongoing infrastructure projects, and the positive affect has yet to influence general price levels of housing.

Reflections on Chosen Method

The chosen method and sub-study phase division allowed for independent analysis of each of the variables associated with income yield of potential investments. Given the geographical scope of the overall aim, this approach provided a structured process in which specific municipalities could be identified, through a series of separate and independently supported steps. Being wholly supported by data graces the process with an objectivity which might otherwise have been difficult to attain. The main drawback of the method is without doubt its inability to look beyond municipal divisions, due to the lack of data covering intra-municipal regions.

3.3.6 Applying the Findings: Case Examples

The purpose with this sub-study was to answer the research question: *How can the findings from sub-studies 1-5 be used to identify potential acquisition targets and estimate their respective potential in terms of yield on initial investment?*

Phase I: Key Information and Selection of Properties

Most fundamental information regarding the properties was sourced from the Swedish mapping, cadastral and land registration authority's property registers, via the online tools Boreda (2012) and Datscha (2012) in conjunction. Only properties of taxation type 320 (mostly residential space), 321 (mixed residential and commercial space) and to some degree 325 (mostly commercial space) were included, all of which are rental housing properties (Skatteverket, 2012). This information was then coordinated with a database covering publicly transacted properties, accessed through the same services and with The Swedish mapping, cadastral and land registration authority as original source.

The list of properties available within the municipalities was then filtered down using the following criteria. The last criterion was given priority were it was made clear through interviews that property was directly available for purchase:

- Centrally located
- Relevant size (taxation value 5-35MSEK)

- Avoiding buildings with too many single room apartments (>45m²), associated with higher tenant turnover
- Deemed available for purchase

For the selected properties drawings, building permits and technical descriptions (when such were available) were collected from the respective municipality offices. Finally, a list of all tenants in the properties was compiled by backtracking individuals registered on the addresses associated with the properties. These were then coordinated with data on total income, income from employment, record of non-payment, and business involvement for all individuals obtained from Ratlibris' taxation catalogues (Ratsit, 2012). Information of current tenants was presented in aggregate form. Individuals were filtered so as to only include those responsible for the apartment itself, i.e. young adults still registered on their parents address were not included, but stay-at-home spouses were. However, this method does not reveal how many individuals live in the apartment or what the actual disposable income is for those responsible to pay the rent. It does, however, provide an understanding for the general tenant population in the property. Each selected property was further accompanied by some key characteristics obtained from site visits, owners' annual reviews and a discussion of the properties with a valuation and development expert².

Phase II: Estimating Operational Costs and Improvement Potential

To determine a property's operational cost structure and cost for planned maintenance, a model was developed and implemented based on the REPAB catalogues for housing (Årskostnader Bostäder, 2012) and offices (Årskostnader Kontor, 2012), respectively.

The catalogues offer average operational costs divided into administration, tax, insurance, media (i.e. water, heating, electricity), and property maintenance. Each category is associated with a series of variables determining whether a property ends up in a high, normal or low cost bracket for the given category. In this study, all of these variables (39 in total) were mapped out for each selected property; however seven of these were input in the same fashion for all properties. Namely:

- The administrative service level (normal)
- Location (smaller town)
- Insurance deductible (50% of base)
- Indoor temperature (21C)
- Apartment electricity use (not included in rent)
- Service level (2hr/apartment/year)
- Cleaning frequency of common areas (once a week)

The three cost categories provided by the REPAB catalogues were linearly interpolated to eleven categories numbered 0 through 11, where 1=low, 5=normal, and 9=high. This allowed for a closer analysis of the effects of each input variable as each had a direct effect in the overall outcome, rather than simply shifting a property within a wide, uniform bracket.

² *Manager at a real estate development firm*

The REPAB catalogues only provide two sources for heating: District or Oil. In the model, all (e.g. electricity) sources of energy except oil were classified as District heating. If not stated otherwise in building permits or information made publicly available by the present owners, e.g. through environmental reports or annual reviews, the assumption was made that the installations have remained unchanged. It should however be noted that a change in heating supply from oil can have gone unnoticed in the documentation available, and all cases where Oil is noted down as the method of heating were therefore accompanied by income yield estimates associated with a shift to district heating.

The costs for commercial spaces were estimated through adjusting those cost categories noted as relevant in REPAB with average correlation factors between residential and commercial spaces.

Phase III: Estimating Yield Potentials

The income yield potentials were calculated based on a series of different base values, presented in turn directly below. Income yield is here used to represent yield on the initial investment, equivalent in this case to the respective base values, i.e. market value is in these calculations assumed to be kept unchanged. Relevant adjustments were systematically deployed in the variables governing the operational costs structure, in turn presenting the effect on yield given the respective base values. In estimating the impact of investments in the case examples, it is assumed that prices can be, and are, discounted by the equivalent costs of required maintenance, e.g. pipe replacements. For other investments, such as installation of FTX-systems, the cost of the installation is not included in the analysis. As such, it should be considered to be indicative of the return which such an investment could bring, in turn paying off whatever the property-specific cost may be. An explanation of the different base values are described below.

Tax Value Valuation

Properties' taxation value are estimated by the Swedish Tax Authority so as to represent 75% of the market value two years ago (Skatteverket, 2012). This estimate is thus converted into an estimated market value by multiplying the recorded taxation value by a factor of 1.33, and then adjusted for the average value development of rental housing units (IPD 2011). At the time of writing the latest taxation figure is from 2010. As such, the initial value is multiplied by about 1.42 to attain a market value estimate for July 2012. Income yield is then estimated using rent levels adjusted for average rent appreciation (SABO, 2012, 2010) and REPAB's (Incit, 2012) cost estimates for operational costs, based on the specific characteristics of the property.

Average Transaction Price

A property consists of both the plot of land associated with the property, as well as the buildings located on that plot of land. For all transaction within each respective municipality covering type 320 and 321 houses, the average SEK per building area and the average SEK per plot area were averaged from 01-01-2007 onwards. Each transaction data point was individually adjusted for national average value development of rental housing buildings in rural Sweden (IPD 2011). To be able to do this, the IPD reported aggregate growth, presented per year from 1984 to 2011, was in turn interpolated for monthly data points by assuming equal growth per month, totaling in the yearly growth figure provided by IPD.

This data was in addition extrapolated for 2012 data points, using the average growth throughout the data series and December 2011 as a starting point. To compensate for a relatively small resulting dataset for each municipality and diminish the impact of individual transactions, the municipal averages were in turn averaged with national averages.

To estimate a final market value for a given property, incorporating both the plot and its associated buildings, the estimates provided by the plot area and building area were averaged, as such:

$$\frac{(Building\ area) * \frac{\left(\frac{Average\ SEK\ per\ building\ area\ in\ municipality}{2}\right) + \left(\frac{Average\ SEK\ per\ building\ area\ in\ Western\ Sweden}{2}\right)}{2} + (plot\ area) * \frac{\left(\frac{Average\ SEK\ per\ plot\ area\ in\ municipality}{2}\right) + \left(\frac{Average\ SEK\ per\ plot\ area\ in\ Western\ Sweden}{2}\right)}{2}}{2}$$

Figure 2 – Market value estimation through adjusted average transaction prices

Adjusted Transaction Price

When available, the price from the last registered transaction of the property was used as a base estimate (Lantmäteriet, 2012). The quoted price was adjusted to incorporate the average value development of rental real estate for the period since when the transaction took place and July 2012 (IPD, 2011).

Gross Multiplier

The gross multiplier estimate was provided by dividing the gross income (i.e. rent) with the price paid for it. As such, only property with recorded transactions could be included in the measure. As rent levels are not provided in the transaction data, the taxed rent figure from 2010 was used, in turn adjusted to 2012 for average rent appreciation (SABO, 2012, 2010) to match a transaction price in turn adjusted to 2012 based on average value appreciation of rental housing properties in rural Sweden (IPD 2012).

Newsec Income Yield

This income yield estimate was included to establish primarily a price reference, rather than income yield estimate. The estimates indicate a price level at an expected yield, in this case the one expected by Newsec Advice (Datscha, 2012) for the given municipality and location within the municipality.

Reflections on Chosen Method

Using case examples provides a realistic testing ground in which the applicability of identified findings can be explored. By limiting the study from contacting present owners and through them acquiring more actual property data (namely, such related to operational costs), the results are correspondingly limited. Operational costs and improvement potentials are calculated using a model (although an arguably sophisticated one) dependent on data averages and is as such not exactly representative for the specific case property, but rather the property type. This approach provides an understanding for the applicability of the findings, as well as the various property types out there, while not initiating relations or otherwise publicizing information regarding any potential property sellers or specific potential investment targets.

4. Theoretical Framework

This chapter introduces the theoretical framework that has guided the empirical research process. The framework is thereon intended to provide a toolbox for the reader to interpret and better understand the subsequently presented empirical findings and analysis. Each sub-study will be presented separately.

4.1 Investments in Rental Properties

In order to understand the investment fundamentals of real estate, it is first important to reach an understanding of how properties are valued. There are several different methods and approaches that valuers can apply in order to obtain an estimate of *investment value* or *worth*. These valuations are generally estimates of the *market value*, which is defined as follows IVSC (2003, p.14):

The estimated amount for which a property should 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, prudently, and without compulsion (IVSC, 2003)

The market based valuation approaches can be categorized as *sales comparison*, *income capitalization*, or *cost based*. The former, sales comparison, strives to assess an estimate of worth or investment value, through comparing a property with data of similar or substitute properties (IVSC, 2003). Nordlund (2008) exemplifies this approach with the *area method*, *gross income multiplier (GIM)* and *net capitalization ratio*. These metrics are calculated for transactions of similar properties and thereafter applied to the property that one wishes to value. The former, i.e. the area method, is defined as a known transaction price divided by its area (e.g. SEK/m²). GIM is a ratio between transaction prices and their corresponding rental incomes. Lastly, net capitalization factor is calculated as known transaction price divided by the property's net operating income.

Net Operating Income (NOI), is defined by SFI/IPD (2007) as the annual gross income less annual expenditures for operation, maintenance and property tax. Other expenditures, such as capital costs, stamp duty and interest subsidies should not be included. A more comprehensive presentation of the appropriate cost items to include is presented in Appendix: Definition of net operating income. However, there are still some uncertainties in how to interpret it, and there are discrepancies among professionals how to calculate NOI. Lind (2004) claims that the three biggest issues usually concerns the distinction between maintenance versus investment, general overhead costs versus costs associated with a specific property, and corrections for determining what should be considered as a "normal year". The latter becomes an issue when sellers want to make their properties appear more attractive by presenting costs for a year with e.g. a mild winter. Lind further suggests that companies use different approaches due to specific tax purposes. A property's NOI should, due to these reasons, be analyzed jointly with the current owner's policy for maintenance and required level of income yield. Alternatively, Lind suggests that investors can use either standardized template costs or focusing on the gross income multiple (GIM). The reason for using the latter is that the gross income is much more difficult to manipulate and that it, in Sweden, is available as official accounting data for the property.

The second market valuation category, income capitalization, is based on the income and expenditures associated with a property. This data is input into a capitalization process in order to obtain an estimate

of the property's investment value or worth. Income yields and estimates of total yields are, consequently, compared with alternative assets. The price of an asset with similar risk level and income stream should correspond to an estimation of the property's market value (IVSC, 2003). *Direct capitalization* method and *discounted cash flows (DCF)* are two commonly used approaches that belong to this category. The former assesses a value estimate through dividing the NOI with the investor's required yield, and the latter is achieved through discounting estimated future cash flows to the current date. Lind (2004) claims that DCF, at least in theory, might be the best and most realistic method in determining the market value. However, uncertainty of future incomes and expenditures, combined with the difficulty of determining a reasonable discounting rate, can practically make it inferior to e.g. the direct capitalization method, which has an advantage in its simplicity. In fact, direct capitalization and DCF converges to an identical approach if the net operating income is set to a fixed value or allowed to increase/decrease with a fixed rate. Moreover, if all investors have the same required rate of return and with normalized NOI, the direct capitalization method should mathematically result in an identical valuation as through the net capitalization factor.

The third market valuation category, cost approach, considers the costs of producing a modern equivalent of the asset. For real estate investments, this approach considers the cost of acquiring land and constructing a similar asset. An existing property that one wishes to value is usually considered less attractive due to e.g. increased maintenance costs of older buildings and inferior ability to charge high rents. However, the relation can be reversed if acquiring land and constructing new properties are associated with risks or other inconveniences (IVSC, 2003).

4.1.1 Complicating Issues in the Valuation Process

In addition to the above mentioned issues that, Babawale and Omirin (2012) emphasize several issues that complicate the assessment of market values for real estate. The main problem is that the market for real estate constitute of heterogeneous assets that are unique in some aspects, e.g. location, tenants or technical features. This will many times require an investor to adjust for differences when comparing a real estate with others. Assessing the actual differences and determining reasonable adjustment factors might be far from straight forward. Infrequent transactions and situations when transaction details are not disclosed further complicate the issue (Babawale & Omirin, 2012).

In Sweden, title deeds specifying transaction details such as date and price need to be submitted and made publically available for all direct changes in ownership of real estate. Secrecy of deals might therefore become a somewhat smaller problem in Sweden compared to many other countries. However, Herder and Wallenås' (2008) survey of nine Swedish real estate companies indicated that approximately 90% of all real estate transactions are embedded in holding companies changing hands, rather than the actual real estate changing ownership. The requirement that the buyer pays the stamp duty, and issue the corresponding title deed, can through this procedure be avoided. It is therefore highly questionable whether public transaction data fully resembles the actual market situation.

The fact that all real estate is unique further opens up for misleading valuations. For example, Levy and Schuck (1999) observed differing degrees of unethical behavior of landlords that potentially could affect profitability. Several other authors have also presented surveys indicating that clients often put pressure

on valuers to adjust the prices in line with the clients' desires. Kinnard et al (1997) found that 41% of 500 surveyed valuers from the US revised their valuations according to their client's requests. Incentives for the revisions can be e.g. promises of more jobs, refusal to pay fees or monetary rewards. Lastly, skill, experience, judgment and the valuer's familiarity with the market potentially cause differing valuations of real estate properties (Babawale & Omirin, 2012).

4.1.2 Determinants of Total Yield from Real Estate Investments

As presented above, income yields have an essential role for valuing real estates. Assessing a reasonable requirement of income yield is therefore essential, but it is also important to bear in mind that the income yields of different real estates are influenced differently by different factors. However, the following five factors are presented as commonly influencing by Hungria-Garcia (2004); *prospects for rental growth, investment quality, development and refurbishment potential, risk, and comparative returns*. The former is obviously very important for the future cash flow, but it is also relatively constant, due to the regulations and rent laws that exist in Sweden.

Investment quality of a property is mainly based on its *location*, i.e. the extent that tenants perceive its area as attractive; the tenant *sector*, i.e. which type of residential space, commercial stores or offices that the property hosts; the *structure*, i.e. how the property is built/rebuilt, which reflects its required degree of maintenance and repairs; restrictions due to its *tenure*, which might decrease the landlords potential for development, and thus, lower its market value; and its *covenants*, which stipulates the actual income flows. It is important to assess all the mentioned aspects both from the current situation and for future outlooks. For example, investments in infrastructure can improve the attractiveness of a location greatly (Hungria-Garcia, 2004).

Although income yields normally should be calculated based on properties' current utility value, development and refurbishment potential might alter valuation assessment greatly. Transactions based on a cash flow from its intended future structure can therefore bear little relationship to its current income yield (Hungria-Garcia, 2004).

Perceived risk of a property is essentially based on the stability of the above factors. Exogenous factors, such as interest rates, can furthermore influence the associated risk for the whole real estate sector. The risk level is thus dynamic. The required income yields of properties will therefore differ through different business cycles (Hungria-Garcia, 2004).

Lastly, Hungria-Garcia (2004) suggests that rational investors should compare a property to other assets based on the associated returns and risk levels. One of the easiest assets to compare with is the returns from Treasury bonds, which generally are viewed as the risk free interest rates. Lind (2004) claims that a reasonable risk premium should be, at least, an additional two percent for real estate. He further states that the implied risk premium of actual transactions can be used to analyze the perception of future value development. For example, a small, or even absent, risk premium can indicate that the investors speculate in value development rather than holding a property for its expected cash flow. This might be a sign of a real estate bubble if no fundamental factors are lying behind. Accordingly to Wilhelmsson et al. (2011), size of municipality correlates negatively with both vacancy rates and emigration. Thus, smaller municipalities, in terms of population, are in general associated with higher risks, which should

indicate higher required rate of returns. Moreover, this is supported by Berg (2006) who similarly found that vacant space not only was higher in smaller municipalities or rural areas, but that it also varies to a greater extent. Similarly, these parameters increased along with distance to town or city center.

4.2 Systems for Rental Accommodation

The role that rental properties have in society varies greatly between countries and cultures. Keremy (1981, in Elsinga & Hoekstra, 2005) categorizes countries between “home-owning societies” and “cost-rental societies”. In the former, exemplified with the UK, US, Australia and New Zealand, two very different forms of rental accommodation exist; social housing and the private rental housing market. Social housing is strictly regulated, subsidized and the supply is limited to vulnerable, socially disadvantaged individuals. These apartments are clearly separated from the private market that has market prices and essentially no other regulations. Keremy’s latter category of countries, exemplified with continental Europe and Sweden as the most typical example, has a unitary market of rental accommodation. Moreover, they are characterized by a well-developed supply of rental apartments, rents established on the basis of actual costs and a relatively widespread acceptance as being a long term alternative.

Elsinga and Hoekstra (2005) propose that an important reason for the differences between these two categories relates to the strength of the corresponding country’s social security system. Tenants in countries with poorly developed social security system usually do not possess any significant power in their relation to their landlords. The insecure tenures therefore require individuals to own their own homes in order to obtain some degree of personal security and hedge their individual risk exposure. However, this is far from the reality in some countries with well-developed social security systems. Instead, strong tenures and well-developed social security systems can in these cases allow individuals to maintain an acceptable degree of security even if they live in a rental apartment. Moreover, Elsinga and Hoekstra claim that government housing policies, e.g. tax reliefs, subsidies and general attitude towards home ownership, further contribute to the acceptance and status of rental accommodation in a society.

One potential disadvantage with well-developed social security systems can be, according to Elsinga and Hoekstra (2005), that the market prices for rental accommodation (i.e. rents) often become unbearably expensive. This argument, combined with an additional desire to counteract segregation, consequently contribute to the fact that many countries implement some form of rent regulations.

Arnott (2003) categorizes rent regulations through three different generations. The first generation is represented by a classic textbook example of rent controls; fixed rent levels or, alternatively, allowance of some predetermined rent increase that barely covers inflation. These kinds of systems were very common in many countries during the period between the first and second world wars, and for some decades after that. Many countries revised the first generation regulations in 1970’s and 1980’s and thereby entered what Arnott defines as the second-generation control programs. The actual forms of the new regulations varied, but they were generally much more allowing than the previous. The allowance typically included predetermined annual increases and some additional possibilities. Examples of discretionary allowances included cases when costs had increased more than anticipated, cash flow issues, and conformance to profitability goals. Moreover, further allowances could also be given for

some excluded apartments, e.g. all properties that had been constructed after a given date, luxurious apartments or those that currently were vacant. Lastly, many countries have during the recent decades converged towards the third generation of rent regulations, often denoted as tenancy rent control. This system is based on regulated rents *within* a tenancy, but deregulated *between* tenancies.

4.3 Technical Features

For investing in properties, technical specification and standard of a building have large impacts on the NOI and hence the value of the property. Several scholars have investigated the effects of maintenance on the valuation of single-family properties, these results are not directly applicable on rental properties, but several valuable findings can be transferred. According to Knight (1996), cost for maintenance increases as a property ages. In addition, Goodman & Thibodeau (1995) states that differences in the technical status between comparable properties increase with increasing age.

Further, the construction year of a property can give an indication of its remaining lifespan, but more indicatory is perhaps the value year, as it is adjusted for larger renovations. To compensate for these differences between properties, either a surplus can be added or a discount can be subtracted from the valuation, based on the value year of the property (The Swedish mapping, cadastral and land registration authority & The Association of Real Estate Agents, 2005). Both The Swedish mapping, cadastral and land registration authority & The Association of Real Estate Agents (2005) and Institutet för värdering av fastigheter & Aspect (2011) states that comparing the technical status to similar properties and transaction statistics can give an indication of what a normal technical status is for similar properties and hence if a premium should be given.

The lifespan of a property indicates the remaining period until investments in replacement or renovation is needed. Lifespan can be divided into three different aspects; economic, technical and physical lifespan. Economic lifespan is the timespan during which a property shows positive economic results, i.e. when the income is larger than the costs. Technical lifespan is the timespan in which the technical aspects of the property still function properly. Lastly, physical lifespan is when the technical aspects stop functioning entirely (Berg, 2007).

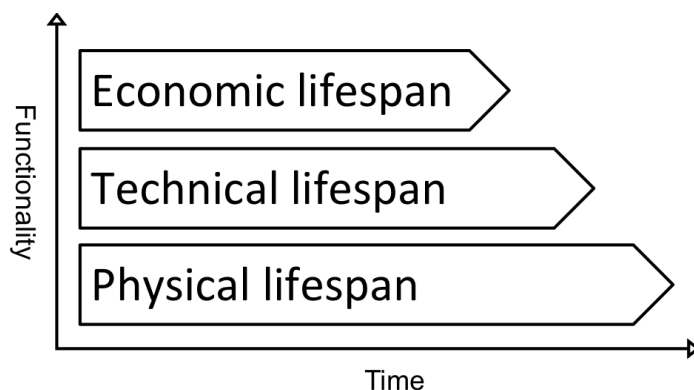


Figure 3 – Lifespan plotted with functionality over time (Berg S. A., 2007)

According to The Swedish mapping, cadastral and land registration authority & The Association of Real Estate Agents (2005), the premium given for upcoming renovations should be more or less the same as the cost for the renovations. The time frame in which the renovation needs to be conducted gives further indications on the size of the premium, increasing as the needed renovations are approaching. However, Institutet för värdering av fastigheter & Aspect (2011) states, opposite to The Swedish mapping, cadastral and land registration authority & The Association of Real Estate Agents (2005), that the costs from upcoming renovations are significantly smaller than the cost for restoring the property's need for maintenance. Further The Swedish mapping, cadastral and land registration authority & The Association of Real Estate Agents (2005) states that following recently conducted renovation efforts, the positive impact on the value of the property is higher in areas with high demand and price level than areas with low demand and price level. This would imply that the buyer in areas with low demand has a significantly better bargaining position than areas in high demand.

As an alternative to acquiring existing properties, new development can be an attractive option. By using Tobin's q it is possible to determine the economic sense for undertaking new developments in a particular location. Tobin's q is calculated by dividing the market price of existing properties with the cost of new developments. A ratio below 1 would on a market where all properties are considered equal imply that the value of existing property is lower than the cost of new development. Hence, using Tobin's q, one should compensate for differences that will distinguish the two alternatives allowing for a q ratio below one. Specifically, the extent that the NOI of new developments exceeds those of existing properties that both have stricter regulations for rent levels and higher costs for operations and maintenance should naturally result in differing premium (Berg & Berger, 2006).

$$Tobin's\ q = \frac{\text{Market price of existing properties}}{\text{Cost of new developement}}$$

Figure 4 – Tobin's q equation

4.4 Tenants' Preferences and Satisfaction

Satisfaction is the result of an interaction between personal characteristics and perceived characteristics of the accommodation. The personal characteristics are generated through norms and expectations that vary during an individual's life cycle, depending on e.g. family situation, income, and education. A normative housing deficit will then occur if a negative discrepancy exists between an actual situation and a tenant's expectations. This might lead to a propensity to move or act irresponsibly in some ways that might contribute to increased costs. However, constraining factors from the tenant can prevent this final step. Examples of such constrains include the following factors: lack of resources, commitment to local area, inertia of tenants or within the accommodation system, lack of information and inability to decide for other accommodation, household economic constrains, and job situations (Landle and Guest, 1985).

A tenant's satisfaction with his or her housing is, according to the above description, greatly determined by the individual's norms and expectations. It is, however, practical to categorize individuals' norms into larger groups. An example of a segment that often possesses several common characteristics is elderlies. In general, housing satisfaction has also been seen to positively correlate with age. Moreover, the elderly are more frequently than others bounded by inabilities or difficulties to spend time outside their

neighborhood environment. They are therefore more dependent of quality of services in the nearby surroundings as determinants for their satisfaction of their accommodation (James, 2008).

Tenant's satisfaction is important for landlords due to several reasons relating to both loss of potential income and increased costs. Loss of income can appear as e.g. reduced possibility to charge higher rents and increased vacancies. Increased costs can manifest through rent arrears, more demanding administration, vandalism, etc. (Salleh et al, 2011). However, some costs are often hidden from the landlords through a wide range of camouflaged overhead costs. For example, Harmon and McKenna-Harmon (1993) claim that the actual costs of resident turnovers are likely to surprise many landlords. Costs that generally should be included are: loss of rent during the period in-between tenants, administrative costs for handling e.g. contracts, inspection of the apartments, maintenance or renovation that might be required, and other marketing costs for obtaining a new tenant (Harmon and McKenna-Harmon, 1993; Lacotte, 2010).

As described above, understanding and improving tenant satisfaction should be a prioritized issue for all landlords. Additionally, tenant satisfaction involves different aspects than for other housing structures, e.g. home owners. Some examples of the differentiating features that affect the overall satisfaction involve personal interactions with the property managers. Paris and Kangari (2005) identified tenant selection policies, communication, and the staffs' willingness to cooperate and handle complaints, etc. as significant variables influencing tenants' satisfaction. Somewhat contrary, these services provided by the property management might also be the reason that tenants are generally more dissatisfied with their accommodation than home owners. In fact, the relation that tenants are more dissatisfied than home owners has proven to hold in the UK, Netherlands, Denmark, Greece, Italy, and Spain, even after controlling for physical differences in housing quality. However, as discussed in chapter 4.2, different housing policies and cultures influence how tenants perceive their accommodation. Moreover, physical attributes of the building and apartments are still regarded as key factors for both ownership forms (James, 2007).

4.5 Identifying Attractive Municipalities

Kitson et al. (2004) propose that any measure of a region's relative competitiveness or economic potential only holds relevance if it captures the desire for both people and companies to locate and remain in a given region. As suggested by Malecki (1997), economic growth correlates with population growth. Consecutively, high competitiveness correlates with population growth, in turn translating to demand for rental housing (Downs, 2007). While population growth correlates with economic growth but not necessarily economic development (i.e. quality of life and standard of living) (Malecki, 1997), this would suggest that population growth correlates to housing demand, while economic development correlates to housing standard.

Transportation infrastructure investments have a significant influence on local businesses, attracting firms to form and locate close to access points (de Bok, 2009). Transportation infrastructure investments also impact regions positively in terms of enabling commuting and general transport, shown to positively influence different Baltic regions following investments (Snieska & Simkunaite, 2009).

5. Empirical Findings and Analysis

This chapter presents the empirical findings and analysis from each sub-study. Each sub-study will thereafter be followed by a summary of major findings, which also will be reused in chapter 6.

5.1 Investments in Rental Properties

5.1.1 Approaches and Methods in Valuation: Usage among Interviewees

There are significant differences regarding how different real estate investors value their properties. As an example, a land and development engineer³ separates the valuation procedure into two steps; determining what the object consist of and thereafter assessing its total value. The table below presents an overview of the key activities and their intended contribution to the valuation process. An important aspect to emphasize is that the interviewee perceives a real estate's technical features as secondary to its geographical location, i.e. that the physical attributes of a specific property seldom can compensate for the overall attractiveness of its location. It is therefore imperative to invest in locations with good future outlook.

Table 2 – First phase of the valuation procedure. Source: Interview with a Land and development engineer at Lerum municipality. Interviewed 2nd of May, 2012

Activity	Intended contribution
Investigate future outlook of the real estate's location (mainly secondary analyzes from e.g. Fasighetsindikatorn.se, but also overview of investigate employment situation, demographics, compare implied willingness to pay through prices of condominiums)	Determine whether the location's demand for accommodation will increase or decrease in the future
Ocular inspection of building and its surroundings	Current condition and expected developments of its surroundings that might affect its value
Search in real estate databases, e.g. Datcha	Basic facts that can be used for a comparison with similar real estate
Search in public registers	Determine implications of potential obligations to/from the municipality (e.g. pipelines crossing the real estate)
Ask current owner for contract	Validate ownership, determine obligations and rights to third party actors (e.g. loans)

After the object that is to be valued has been defined, the next step is to assess a monetary value on the object. Interviews with private landlords and real estate investors, as well as professionals that provide supportive functions in real estate transactions indicate that professionals mainly base their valuations on discounted cash flow analysis and net capitalization ratios. The former is generally conducted with historical yield figures from transactions that have occurred relatively close to the property's location or from locations that resemble the situation. Moreover, operating income and

³ Land and development engineer at Lerum municipality

expenditures are normally assumed to develop linearly in line with their corresponding past, if no bigger anticipated changes will occur during the upcoming five years.⁴

5.1.2 Historic Development of Financial Returns

As presented in the figure below, investments in residential rental properties have without a doubt resulted in an impressive total yield during the last 28 years. In fact, the compounded annual growth rate (CAGR), calculated without leverage or cost of capital, between December 1983 and December 2011, was 12.8% based on IPD's Swedish Property's residential index. However, the development has been slightly higher in Sweden's three biggest cities; Stockholm, Gothenburg and Malmö. In order to avoid weighting these three cities too much, the data presented in this chapter will be based on a time series excluding these locations. The corresponding CAGR from this new time series is then reduced to 11.41%. This is still higher than e.g. 9.6% for IPD's broad real estate index (IPD, 2011 & Fastighetssverige.se, 2012) and 9.2% for a Swedish broad stock index, AFGX (Affärsvärlden.se, 2012 & Finance.yahoo.com, 2012). Moreover, it is also apparent that the growth rate of an investment in rental properties has been relatively stable compared to e.g. the stock market.

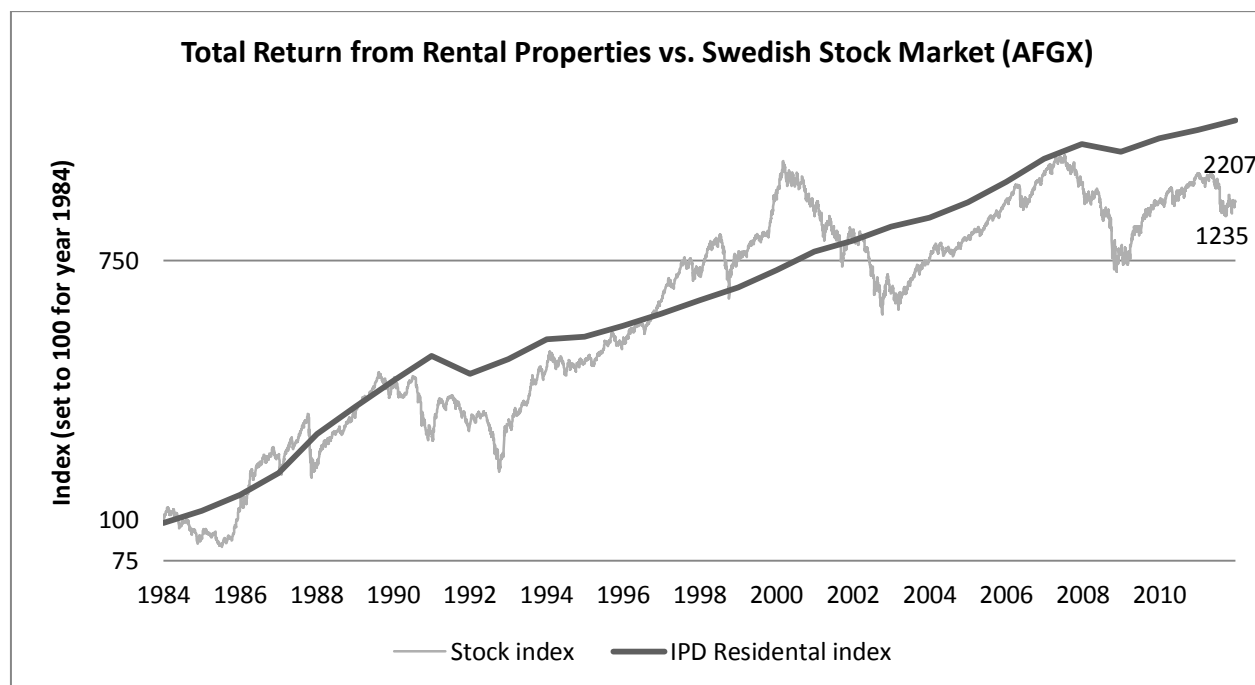


Figure 5 –Total return from IPD's index of Swedish residential rental properties (excluding Stockholm, Gothenburg and Malmö) compared to a broad stock index, AFGX and OMX. Note that the figure is presented in log scale and that both indexes have been set to 100 at 1984. Sources: Compiled from IPD (2011); Fastighetssverige.se (2012); Affärsvärlden.se (2012); and yahoo.fiance.com (2012)

The total yield, presented above, includes both an income yield from NOI and a rate of capital value development. As presented in the figure below, residential rental properties generally have much more stable income yields than the returns from value development. In fact, the NOI, and thus the income

⁴ 2 CEOs of private real estate firms, 1 manager at a private real estate firm, 1 manager of a real estate valuation firm, 1 land and development engineer at Lerum municipality, and 1 project leader for real estate transactions

yield, has been positive for all years since 1984. The value development has been negative three times during the same time period. It is also clear from the figure that the value development has much higher cyclicity. Three short depreciation periods have been apparent in 1991, 1994 and 2008, while the appreciation periods are longer, but somewhat less distinctive.

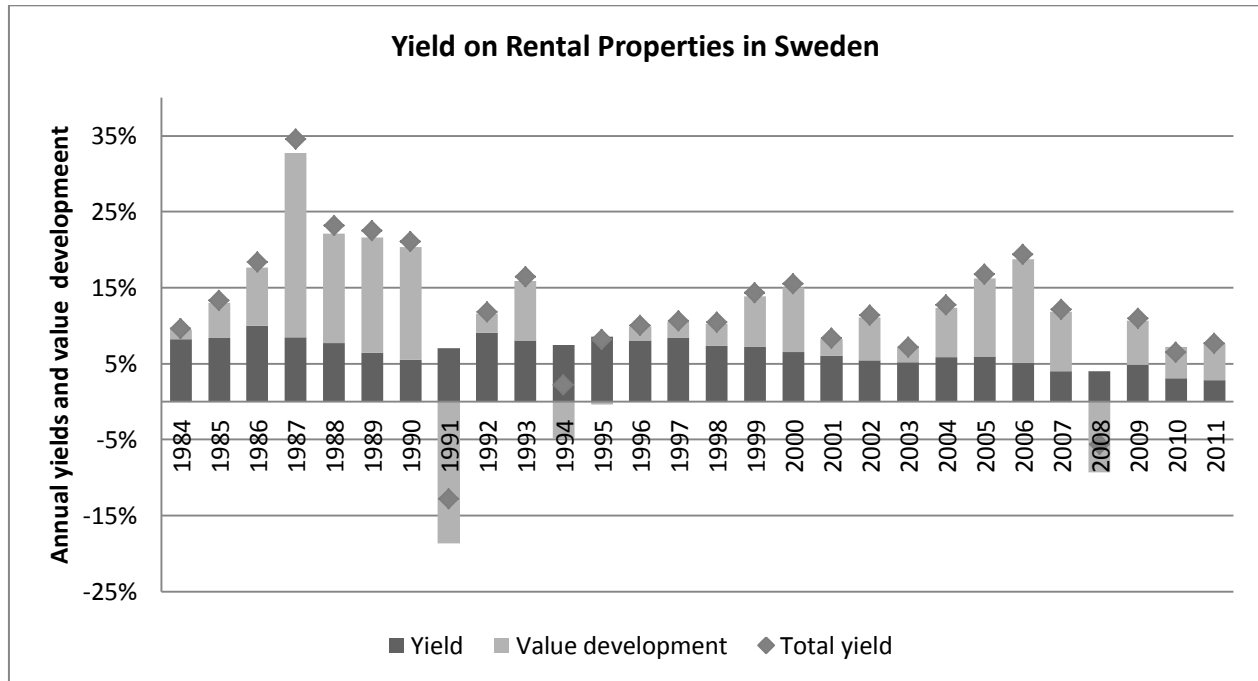


Figure 6 – Income yield, value development and total yield for rental properties in Sweden (excluding Stockholm, Gothenburg and Malmö) from the time period between 1984 and 2011. Sources: Compiled based on IPD (2011) and Fastighetssverige.se (2012)

The total yield might be the most important factor for evaluating investments in hindsight. However, current owners of real estate will probably consider the cash flow balance as important too. It is therefore essential to investigate how income yield after hypothetical interest payments have developed during the previous years. The interest payments, which are presented in the figures below, have been calculated assuming that the ratio debt-to-market value was fixed at 70%. The interest rate that has been used is average annual lending rates for private houses. It has been calculated as an average of a combination of several of Swedbank's lending rates, with time to maturity ranging from zero (i.e. moving rates) up to 10 years. Accordingly to the figure below, eight of the 27 years have resulted in negative yields if the interest payments are included accordingly to the above assumptions. Moreover, the CAGR of accumulated income yield during the period 1985 to 2011 resulted in merely 0.8%. However, assuming a constant debt ratio over 27 years would also free additional capital from increased debt and contribute to a leveraging factor for the capital value appreciation. The total yield from an annual rebalanced debt situation of 70% would therefore be 7.73%.

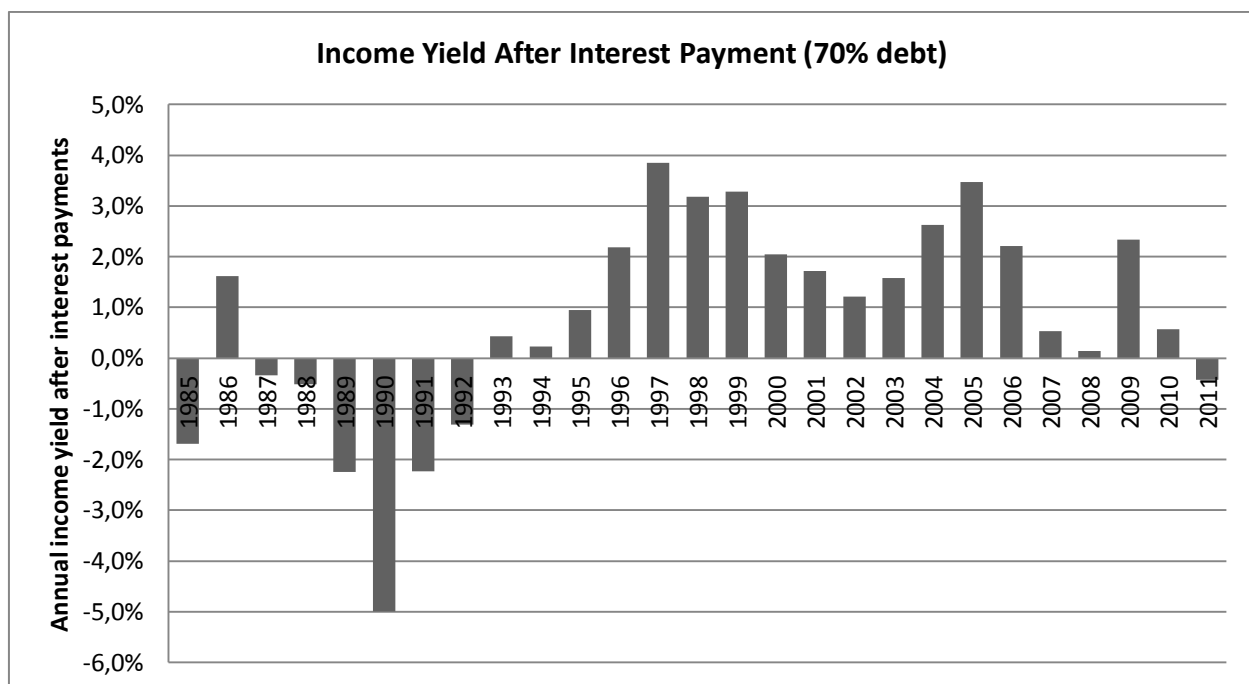


Figure 7 – Income yield after interest payment, based on a 70% debt to value ratio. Source: Compiled based on IPD (2011); Fastighetssverige.se (2012); & Swedbank (2012)

Continuing with the above hypothetical scenario with constant debt-to-market-value-ratio, it becomes interesting to see which debt ratio that would have contributed to the greatest total yield. The optimal debt ratio appears to be merely 15.2%. Somewhat surprising, this ratio is much less than the actual ratios of most real estate companies, e.g. Faberge with 57% debt (Faberge, 2012) and Kungsleden with 66.3% (Kungsleden, 2012). As seen in the figure below, the accumulated development of this time series results in a very modest excess return, compared to the non-leveraged alternative. In fact, the CAGR turns out to be 11.78%, which is only 0.37% higher than the non-leveraged total return. These calculations combined with the fact that most housing companies have much higher debt ratios, indicate that the interest rate above might be too high. For example, reducing the annual interest rates with 2% increases the optimal debt ratio to 44.6% and the total CAGR of 12.46%. Moreover, many of the larger housing companies reduce their costs for financing through interest rate swaps etc. However, this lies outside the scope of this report.

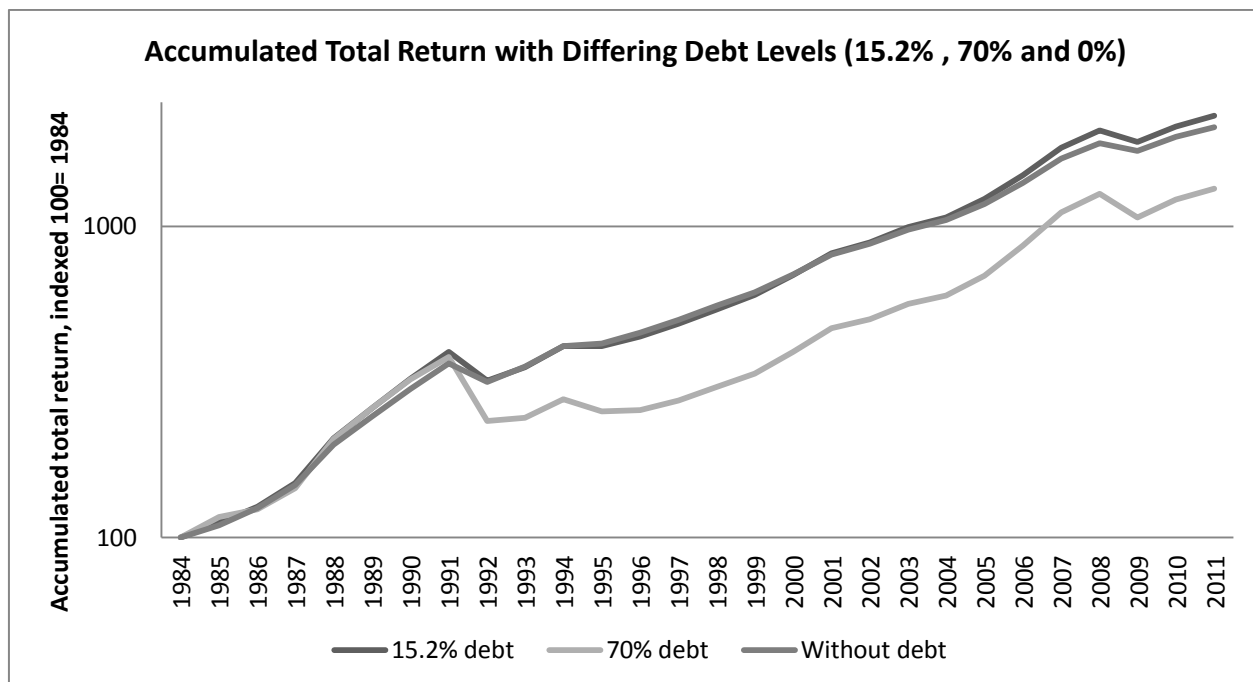


Figure 8 – Accumulated total returns from average investments in residential properties in Sweden (excluding Stockholm, Gothenburg and Malmö), for the time period between 1984 and 2011. Note that the scale is logarithmic. Sources: Compiled based on IPD (2011); Fastighetssverige.se (2012) and Swedbank (2012)

Income yields are indeed based on underlying properties' market values. However, this value might be irrelevant on an annual basis for investors that do not have any intentions to rebalance the debt situation or divest. The actual development of NOI might in therefore be interesting to analyze separately from the value development. As presented in the figure and table below, the net operating income has increased with a CAGR of 4.94% in nominal terms. However, the annual development of NOI seems to fluctuate quite irregularly even though it clearly is more on the positive side than the negative. Moreover, during the same time period, the inflation drove the general price level, measured as the consumer price index, KPI, with a CAGR of 1.37%.

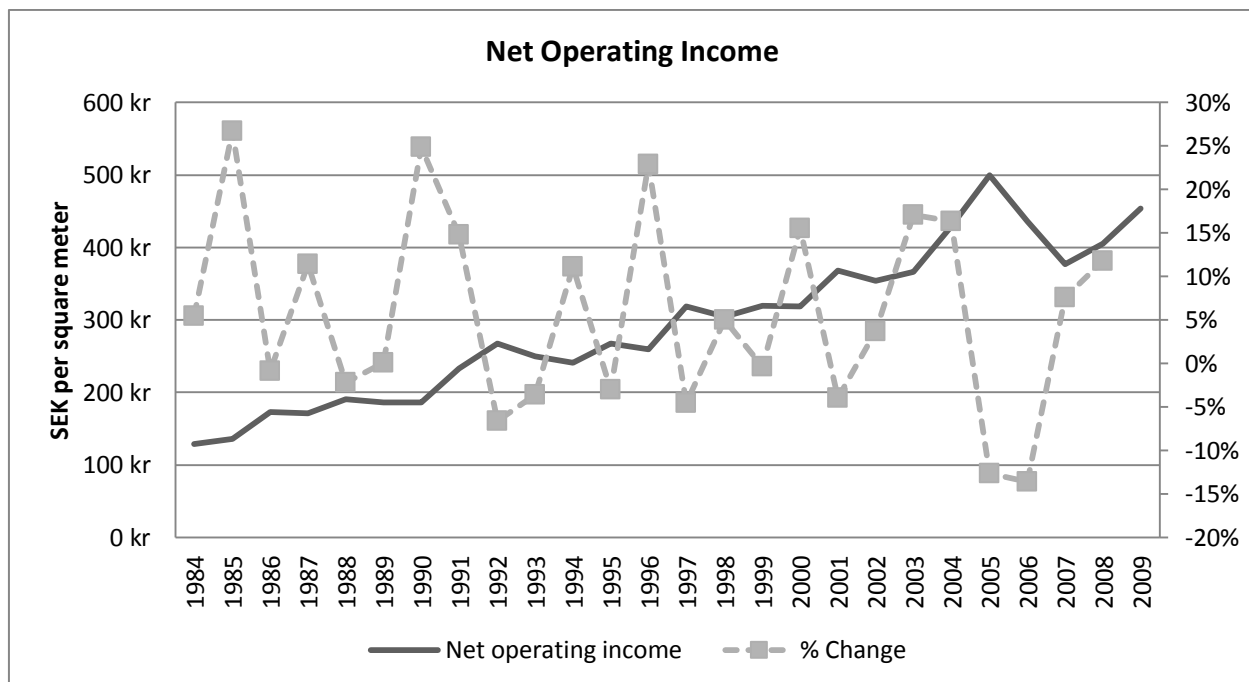


Figure 9 – Net operating income per square meter of residential properties in Sweden (excluding Stockholm, Gothenburg and Malmö) and yearly development of NOI. Sources: Compiled based on IPD (2011); Statistics Sweden (2012); and Swedbank (2012)

The inflation might be even more interesting to observe in relation to the capital value appreciation, as presented in the figure below. Comparing this figure with figure 6 (“Income yield, value development and total yield for rental properties in Sweden...”), it is clear that the real capital value depreciations were twice as frequent, and much less over the total time period between 1984 and 2011. In fact, the CAGR of real capital value was merely 1.44%, compared to 4.84% for the nominal.

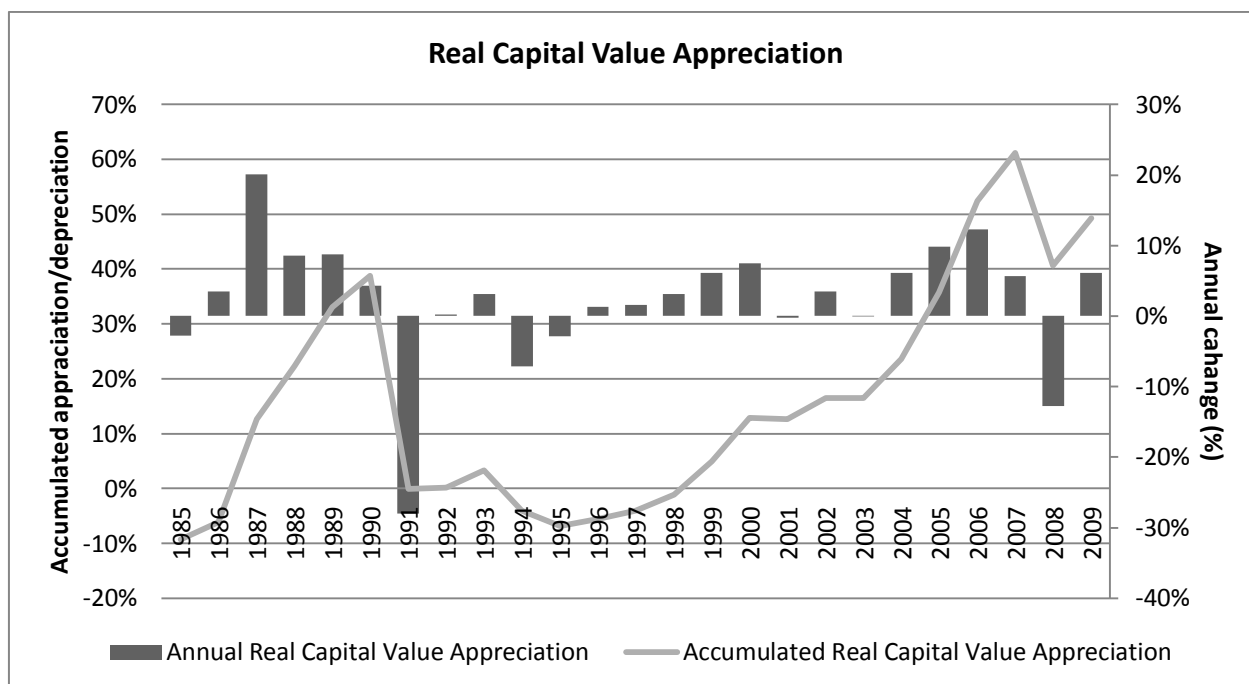


Figure 10 – Real capital value development, presented as accumulated appreciation/depreciation on left axis and annual appreciation/depreciation on the right axis. Sources: Compiled based on IPD (2011) and Fastighetssverige.se (2012)

A summary of the above presented financial indicators, for the time period between 1984 and 2011, is presented in the table below. To summarize, one can see that the most profitable years for an investor with little debt were in 1986-1987, while most indicators show that the least profitable years were in 1990-1991. On the other hand, an investor with much debt (70%, according to our calculations) had maximum income yield after interest payments in 1997, and minimum in 1990. Lastly, the lowest income yield of 2.8% was experienced in 2011, i.e. the most recent full-year that was included in this analysis.

Table 3 –Summary of yields from IPD’s index of Swedish residential rental properties (excluding Stockholm, Gothenburg and Malmö). Source: Compiled based on IPD (2011) and Fastighetssverige.se (2012)

	CAGR	Total	Max	Min
Total yield	11.68%	2,207%	34.56% (1987)	-12.83% (1991)
Income yield	6.59%	597%	10.03% (1986)	2.80% (2011)
Income yield, less interest payments	0.80%	23.9%	3.84% (1997)	-4.99% (1990)
Nominal capital value development	4.84%	375%	24.25% (1987)	-18.68% (1991)
Real capital value development	1.44%	49.3%	20.05% (1987)	-27.98% (1991)
Nominal NOI development	4.94%	251%	27.73% (1986)	-13.61% (2007)

During the above presented time periods, Sweden has experienced a real estate bubble that drove the market prices upwards in the late 1980’s and burst in the early 1990’s. This was, according to Nyberg (2003), primarily a consequence of significant structural changes and deregulations in the property market. It might therefore be misleading to base future projections on this time period. For example, the income yield has decreased in 6 of the 19 years since 1992. Therefore, the average annual income yield

was only 4.8% during the ten previous years (2002-2011). The same time period resulted in 5.1% average annual capital value appreciation and 9.9% total yield. The previous ten years were therefore not as profitable in nominal terms, but it was more stable, with only one negative year. However, a more realistic projection of future development should consider current market climate and strive to anticipate future development. A presentation and analysis of the Swedish system for rental accommodation will therefore be given below.

5.1.1 Summary of Sub-study Results

Awareness of the characteristics from historical returns can potentially guide investors to choose a suitable investment strategy and assign appropriate valuation techniques when evaluating a property. Real estate valuation is mainly conducted through a discounted cash flow analysis – with a representative income yield set as the discounting factor – or, alternatively, through a net capitalization ratio, based on a property's income yield. Thus income yields hold a central role in real estate valuation. Albeit a steady negative trend of income yields, with annual rates going from 9.1% in 1992 to 2.8% in 2008, the total yield has been more stable. Based on the historic returns, the findings thereby indicate that investments in rental real estate in Sweden would have a long-term total yields in the range of 10% per annum. Nevertheless, structural changes and further changes of the system for how rents are determined would likely impact the returns significantly. This aspect, as well as other ways that an investor potentially could increase the total yield through selecting or altering properties will be presented in sub-studies 2-5.

5.2 Systems for Rental Accommodations

One of the main pillars of the Swedish government's housing policy states that accommodations should be available for everyone, irrespective of income (Swedish Board of Housing, Building and Planning, 2007). The means to achieve this aim is through adopting regulations impeding landlords from charging unreasonable rents, secure tenures for the tenants, introduce possibilities for subsidies (e.g. tax reductions and direct subsidies to tenants), and in some degree how municipality-owned housing companies should operate (Ministry of Health and Social Affairs, 2012). Albeit the intended benefits with the Swedish system for rental accommodation, some obvious disadvantages can be observed. For example, the Swedish Board of Housing, Building and Planning's report (2011:53) indicates that 41 out of the 49 municipalities of the county Västra Götaland have a shortfall of rental apartments. A further description of some important attributes for the Swedish market and system of rental accommodation follows below.

Accordingly to Hedenmo (2008), the current rent system is intended to have some flexibility and possibility for continuous rent increases, while still providing security for the tenants. It was initially formed in 1969 with the purpose to open up the market from the previously strict regulated rents that had been implemented in 1942. The new possibilities for rent increases are enabled via a process of rent acceptations, based on that the resulting rent could not be considered as unreasonably high compared to the rent for other apartments of the same utility value. This process acceptance of rent increases were opened up by not limiting the set of comparable apartments to those with average rents levels, but was, on the other hand, limited by not including single apartments with outstandingly high rents as rent norming. Originally, apartments from the public housing companies were the only apartments that

enjoyed a rent norming role (Hedenmo, 2008). However, the system was judged as contradictory to EU regulations for governmental support, as well as subject to unfair competition since it only considered the municipally-owned companies. New regulations were therefore implemented in January 2011, which, among other changes, made both public and private housing companies' apartments rent norming (Swedish Board of Housing, Building and Planning, 2012).

Tenants are generally assured renewal of their leases even if their landlord wants to terminate the contract. This right can prevent landlords from carrying out improvements that could contribute to rent increases. Writing off the secured tenure normally requires approval from the rent tribunal, which also is the court that determines disputes regarding the tenure (The Rent Tribunal, 2012C).

5.2.1 Overview of Private and Public Housing Companies

As of July 12, 2012, there are more than 100,000 companies listed in Sweden as having businesses belonging to the classifications "real estate management on behalf", "real estate management through condominium associations" or "letting and management of real estate" (Alla Bolag, 2012). However, the offerings from these companies differ in actual products or services, as well as the way they are delivered. An overview of public, respectively private, housing companies is given below.

Public Housing Companies

The municipally-owned public housing companies have had a very strong position in the Swedish market for rental accommodation. Precursors to the current companies were initially formed as initiatives for creating accommodation without interest of making profits during mid-19th century, but it was not until the Second World War that public housing got its strong foothold in the market. A housing shortage had at this time emerged due to increased costs for constructing and high interest rates. This led to beneficial, subsidized loans for the construction of new accommodation (Hedenmo, 2008).

The time period after the Second World War was influenced by improved economic situations among households, urbanization, and increased demand for accommodation from e.g. baby boomers born during the war that now were on the edge of entering the housing market for the first time. The pace of new construction was, with 64,000 newly built apartments, already comparably high in 1964. But an investigation into the need of additional accommodation during the same year stated that Sweden was in need of more than one million additional apartments. This led to a decision to initiate the "million-program", which meant that one million apartments were to be built during the time period between 1965 and 1974. The decision was supported by the government through making capital and labor widely available, as well as providing the contract companies with permissions. Although the support was not given exclusively to municipally-owned housing companies, they were the ones that led the development. This era, subsequently, led to a situation where they became the dominant landlords of rental accommodation in Sweden (Hedenmo, 2008).

The real estate that was built within the commenced million-program was usually large scale productions that soon attracted criticism for their deteriorating technical standards, as well as their monotonous designs. This was accompanied with a transition from the previous housing shortage to a saturated market in the 1970's. The combination of a saturated market and especially low demand for the million-program houses led to increasing vacancies within said properties. The situation was further worsened

due to extremely high degrees of loans. A transition of the management approach was required. “Kind-hearted” public housing approaches that strived to provide accommodation for everyone therefore began to become exchanged in favor of more businesslike approaches, which could handle the situation better during the 1990’s (Hedenmo, 2008). However, the extent that the municipally-owned housing companies operated along with market conditions was still not considered sufficiently before 2011. This led to new regulations requiring and specifying the business practices that municipal-owned housing companies must follow. The new regulations require that the municipalities, i.e. the owners of the public housing companies, demand income yields on their investments. The required income yield should be based on the existing market situation, locations of the housing stock, age and maintenance requirements, as well as desired risk level. Furthermore, the owners’ requirements should be targeting long-term, organization-wide results, as opposed to individual investments (SABO, 2011).

An aspect that could, often wrongfully, be considered as contrary to the requirements mentioned above, is the maintained requisite of social responsibility. However, corporate social responsibility can many times be justified in both long- and short-term profits. It can, as such, be considered to be in line with requirements to operate according to market conditions. Nevertheless, investments that result in big economic shortfalls cannot be motivated by improved image or other requirements set by the owning municipality. The political responsibility concerning accommodation is deemed to be an issue for the government or the state, not for the public housing companies (SABO, 2011).

One aspect of the new requirements that is important to emphasize, is the proposed change in attitude towards acquisitions and divestments of property. However, SABO (2011), the Swedish Association of Public Housing Companies, as well as Lind and Lundström (2011), suggest that public housing companies can continue to manage properties purely as rental accommodation without continuously evaluating the option to divest. For example, Lind and Lundström justify their recommendation with a comparison to other family owned housing companies. Some of these continue to own properties even though it should be clear that future expectations of cash flows cannot justify their continued ownership. Still, these companies are considered to operate along with market conditions. The explicit or implicit reason might be that they do not want to divert from their business model. Similar conditions should therefore be accepted for public housing companies. However, it is essential that decisions of divestment or investment in new properties are in line with market oriented practices, but they can also be *guided* by directives from the municipality. Examples of directives are that politicians of a municipality wishes to change the balance of types of accommodation or that they wish to create more efficient organizations (SABO, 2011). This continued adherence to non-profit maximizing practices in a market environment where divestments are now viable, can potentially introduce a new type of investment opportunity for outsiders. For these types of owners, divestments can further enable the advancement of their guiding directives. Hypothetically, if a public housing form is guided by municipal directives to improve the balance between accommodation types, divesting property would enable them to engage in new developments, in turn enabling the directive to be reached more efficiently on the whole.

Private Housing Companies

Private landlords owned approximately 812,000 rental apartments in year 2010, which constitute about 51% of the total stock of rental apartments. Furthermore, 24% of the private apartments were owned

directly by physical persons, while the rest were owned by some type of company structure (Statistics Sweden, 2010).

Löchen and Petersson (2010) investigated and compared differences in strategies of housing firms traded on the Swedish stock exchange and those that had a private ownership structure. The former generally had shorter time perspectives and less focus on corporate social responsibility than those that were not listed on stock exchanges. One can further assume that the strategies differ significantly among smaller private housing companies.

5.2.2 Regulations and Processes for Rent Negotiations

The Swedish system for negotiating rents is regulated by both the Rent law⁵ and the Rent negotiation law⁶. The former is a mandatory law that defines legal obligations and rights governing the relation between tenants and landlords. The latter stipulates regulations for the relation between landlords and the Swedish association of tenants. The rent negotiation law is binding through both a negotiation clause, which is generally admitted in the rent agreement between landlords and their tenants, and a negotiation procedure that is binding for all tenancies in a specific property (SABO, 2012). However, the rent negotiation law can be avoided through omission of a rent negotiation clause. Landlords can in the case of new tenants where no clause exist, demand whichever rent they see fit and not violate any laws. Important to note though, is that for leases without predetermined maturities, the tenants can have the rent tested in the rent tribunal. Unreasonable rents will then be tried according to general praxis (The Rent Tribunal, 2012A). For cases where existing tenants and their landlord have signed a waiver that removes the rent clause, landlords freely negotiate rents directly with their tenants. The negotiation procedures will in these cases vary, but all aforementioned regulations, rights and obligations are still in force (The Swedish Property Federation, 2012A).

The rents are normally renegotiated both annually to reflect anticipated increased costs, as well as in connection with improvements of apartments' utility value. In both cases, negotiations can either be individual or collective. Collective negotiations are carried out between the *Swedish union of tenants* on one side, and representatives from *SABO*, the *Swedish Property Federation* or directly with some landlords on the other. Presentations of these respective organizations follow below.

The Swedish Union of Tenants is a membership organization with a stated intent to promote "the right to a good living at a reasonable price". It lacks any political connection and it is democratically governed by trustees elected by members from more than 500,000 households. The organization is structurally organized into nine regions that, in turn, manage smaller divisions on municipal levels. Some of the larger municipalities have several divisions, while some of divisions span several municipalities. It is through these divisions that the rent negotiations are handled. Thus, different procedures can apply between different municipalities, even though they have to comply with the same general guidelines (The Swedish Union of Tenants, 2012).

⁵ 12 kap. Hyra, Jordabalken (1970:994)

⁶ Hyresförhandlingslag (1978:304)

The Swedish Property Federation represents private housing companies and act as a counterpart in the collective negotiations to the Swedish Union of tenants⁷. It strives to work for a “sustainable society with well-functioning property markets, where real estate owners can meet the demand for accommodations and facilities, along with market conditions and responsibility”. The organization represents some 17,000 private property owners (Swedish Property Federation, 2012A).

SABO, the Swedish Association of Public Housing Companies, is the public housing companies’ equivalent to the Swedish Property Federation. SABO represent approximately 300 public housing firms that collectively own 729,000 apartments (Sabo, 2012). The organization does not directly affect the private housing companies in negotiations for e.g. rent levels, but a real estate consultant at the Swedish Union of Tenants claims⁸ that they still play an important role for all rental apartments. When determining rent reasonability, utility values are compared with all similar apartments, regardless whether they are owned by a private or public company.

As mentioned above, the collective rent negotiation procedures can differ between different municipalities. Nevertheless, a general trend and desire among many of the Swedish Union of Tenant’s divisions is to standardize the judgment of utility value and make the process more comprehensive. An example of such a development is a standard list with suggested rent increases for improvements that contribute to increased utility values. There is concern however, that such a list does not sufficiently differentiate between differences in quality of the standard improvements made. As such, it could incentivize landlords to sub-optimize apartment standards, after list requirements rather than e.g. technical lifespan⁹. However, it should also be noted that high quality choices (referring to other aspects than the installation’s technical life span) can contribute to additional rent increases from the annual revisions¹⁰.

An example of an initiative developed jointly by the Swedish Union of Tenants and the Swedish Property federation which strives to make rent negotiations both more efficient and comprehensive is a standardized procedure at the time of writing implemented in Gothenburg known as *quality rents*. In it, each apartment is given an overall assessment composed to 20% on the landlord’s delivered administrative quality, 40% on the apartment’s standard, and 40% on location. The first aspect is mainly determined through surveys of tenants’ degree of satisfaction, while the latter two components are assessed through investigations from the Swedish Union of Tenants and the Swedish Property federation. For example, most actors in Gothenburg negotiate their rents collectively¹¹.

Freely, individually, negotiated rents may most resemble market rents; however, all tenants possess the same right to plead unreasonable rents to the Rent Tribunal. The actual comparison is made either with directly comparable apartments or a general assessment of its reasonableness. The former is preferred in all cases when comparable apartments exist, i.e. apartments with similar levels of utility and currently

⁷ Real estate consultant at the Swedish Property Federation

⁸ Ibid.

⁹ Negotiation strategist at the Swedish Union of Tenants

¹⁰ CEO of a private real estate firm

¹¹ Negotiation strategist at the Swedish Union of Tenants

reasonable rent levels exist. A heuristic is that the assessed apartment's rent is considered as reasonable if it does not exceed a comparable apartment's rent with more than 4-5%. When no comparable apartments exist, an assessment is made based on the general rent level in the apartment's vicinity. It is important to note that both these methods disregard any of the landlords' actual costs. Nor does the principle of utility value specifically consider tenants' actual preferences. For example, an apartment will be deemed to have the exact same worth whether the tenant is a 70 years old single man or a family with small children (The Rent Tribunal, 2012A). Juridical testing of whether an apartment has a reasonable rent level is according to a rent negotiation strategist at the Swedish Union of Tenants¹² a rather time consuming process and is therefore usually avoided by both parties. However, the Rent Tribunal (2012C) states that approximately a total of 25,000 to 30,000 cases are being reported to the tribunal every year. The majority of these concern rent levels.

Even though rent increases are generally negotiated annually, changes in lease agreements (e.g. increases of rent levels) are legally binding for a minimum of six months. Therefore it is legally possible for landlords to renegotiate rent levels twice every year. Based on the heuristic of permitting rent levels that are 4-5% above apartments of similar utility value, Koch (2008) presents a hypothetical scenario where private housing companies collectively can drive market rents upwards. According to this example, which is theoretically legally possible, concerning the legal frameworks specific to rent negotiation, two (sufficiently large) actors could cooperate and successively, and iteratively, increase rents by 5% above the other actor's current level. This would effectively result in a total of four consecutive increases potentially raising an apartment's rent by 21.55% ($1.05^4=1.2155$) in a single year. Hence, Koch (2008) claims that rent levels could potentially progress towards equivalencies of implicit market levels, and that this in turn could weaken the currently strong tenancies.

Newly produced apartments, including major upgrades of existing properties, are exempt from juridical rent reasonability assessments. The purpose is to stimulate both construction and developments of the existing housing stock. The exemption holds for ten years and grants landlords the ability to negotiate rents higher than the utility value of comparable apartments (The Rent Tribunal, 2012A).

Another exception applies whenever a landlord wishes to increase rents by more than about 10%, following e.g. a significant increase in apartment utility value through renovations. Tenants can then appeal to the Rent Tribunal for a step-wise implementation of the rent increase. There are exceptions to this rule and 10% is only a guideline. Each appeal is considered individually. Furthermore, if tenants have previously agreed to or themselves initiated the improvements justifying the rent increase, no such appeal can be made (The Rent Tribunal, 2012B).

In Arnott's (2003) terminology, the Swedish regulations for residential rental properties should probably be categorized as a developed form of the second generation of rent regulation systems. The potential for landlords to freely determine rent levels for new tenants that enter a lease with predetermined maturity of less than one year clearly relates to the third generation of rent regulations. However, the present system can also be viewed as a deregulated system. This latter point of view emphasizes the

¹² *Negotiation strategist at the Swedish Union of Tenants*

negotiation process, while the former considers the rent from apartments of similar utility value as an exogenous variable.

5.2.3 Historic Development of Rent Levels

Having explained the workings of the rent system in the previous section, this section will present an overview of rent levels' historical development as a next step towards understanding the current rent levels, and possibly anticipating future developments. As presented in the figure below, the average rent increases exceeded inflation, measured as the consumer price index (KPI), during six of the previous 14 years. During this period, there has been an overall rent increase of 24%, while the consumer price index only went up by 21%. The corresponding average growth rates (CAGRs) were 1.51% and 1.37%.

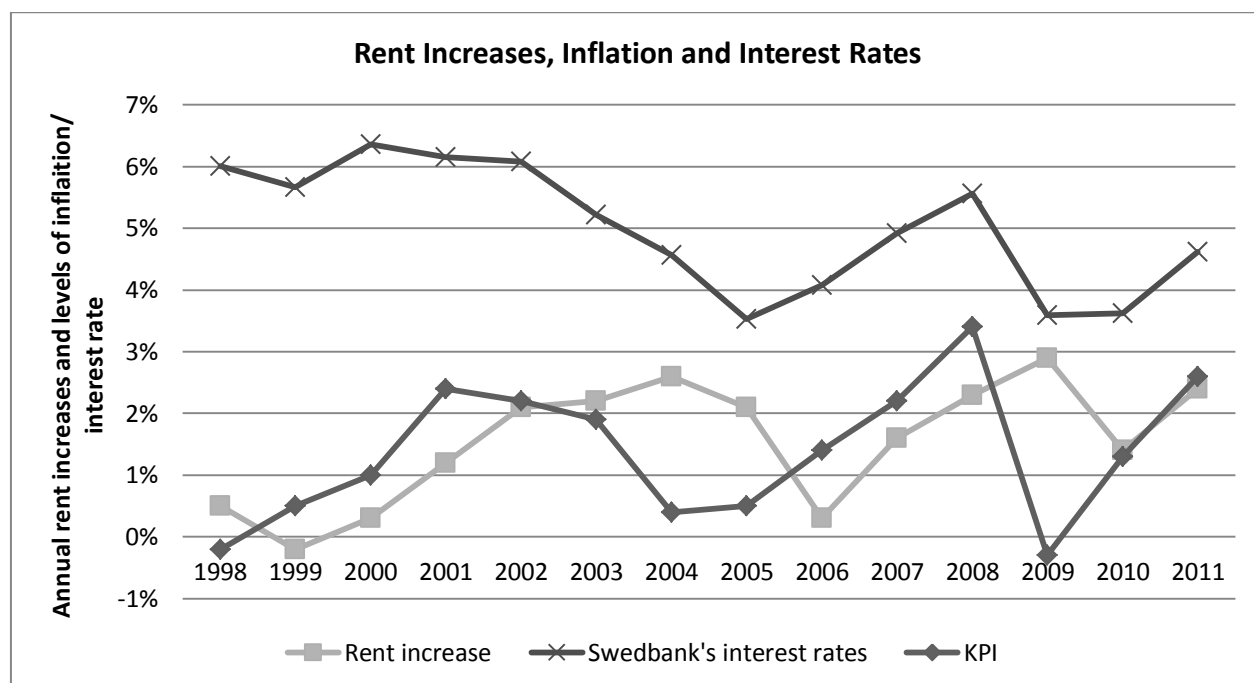


Figure 11 – Inflation and rent during the previous 14 years on the right left; and average lending interest rates for private houses on the right axis. Sources: the Swedish Union of Tenants: Annual Report 2010 (2011); Statistics Sweden (2012); and Swedbank (2012)

The Swedish Union of Tenants' long term goal in rent negotiations is to keep rent increases from exceeding the rate of inflation and that rent constitute a smaller portion of tenants' disposable income. As shown in the figure above, the former goal was met in only 6 of the 14 years, and consequently not for the presented period as a whole (the Swedish Union of Tenants Annual Report 20012). During the time period between 2004 and 2010, the average proportion of the disposable income that tenants spent on rent decreased from 29.1% to 28.8%. However, rent increases have during this period of time exceeded inflation. The underlying reason for the decreased income spent on rent must therefore be due to other reasons than lower rent levels, for examples tax reliefs. Changes between different cohorts are also significant. As seen in the table below, the average shares of spending on accommodation among tenants range from 18.6% to 43.8% (Statistics Sweden, 2010).

Table 4. Tenants' average spending on rental accommodation, including rent and own costs for maintenance, during 2010.
Source: Statistics Sweden (2010)

	<i>Share of disposable income</i>	<i>kSEK</i>
Living alone	34.7%	56.1
<65 years	30.8%	54.4
Female	32.3%	54.8
Male	28.9%	54.0
>65 years	42.2%	60.3
Female	43.8%	61.1
Male	34.1%	58.4
Cohabitation without children	20.9%	72.0
< 65 years	18.6%	70.4
> 65 years	26.3%	74.8
Single parent with children	29.8%	70.6
Cohabitation with children	21.4%	81.5

5.2.1 Summary of Sub-study Results

The Swedish market for rental accommodation is heavily influenced by strong tenures, protection from “unreasonable rent levels” and a well-developed social security system. The former two aspects also give rise to several restrictions that limit landlords’ abilities to alter characteristics of their properties and leases. More specifically, the current regulation of rent levels is based on a principle that rents are not allowed to be deemed as unreasonable higher when compared with apartments of the same utility value. The rent tribunal is the authority that can demand that landlords to repay excess rents. It is therefore essential to understand which aspects that determine the utility value and in which ways the negotiations are conducted. However, only some regions, e.g. the Gothenburg area, have standardized procedures for determining the extent to which some specified aspects should affect an apartment’s utility value. The costs and potential benefits from increasing utility values are presented in sub-study 3.

In addition to the result of an increased utility value, the rent levels are generally increased on an annual basis to compensate for increased costs. However, all rent increases should either be preceded by collective negotiations with the Swedish Union of Tenants or through individual negotiations directly between tenants and their landlords.

The Swedish system has resulted in a relatively modest rent increase corresponding to 1.55% compounded annual growth (CAGR) rate for the time period between 1998 and 2011. Even though this was slightly higher than the inflation, which increased with a CAGR of 1.37%, tenants’ average proportion of income that is spent on accommodation has decreased from 29.1% to 28.8%. The outlook for future rent increases may be further increased due to the apparent housing shortage in many regions (e.g. 41 of 49 municipalities in the county Västra Götaland) as well as from new regulations for public housing companies, which now requires them to operate along with market conditions and removed their role as exclusively being rent norming for utility values. Therefore, the current situation could indicate an acceptance for increased pace of rent increases and/or further deregulations. This would suggest that landlords both could benefit from increased momentum and that they, in order to allow for higher than average rent increases, should strive to offer as attractive offers as possible – both relating to the apartments’ standard and the overall quality of services. Aspects that influence the extent that tenants are deem apartments as attractive are further presented in sub-study 4.

5.3 Technical Features: Characteristics from the Swedish Housing Stock

5.3.1 Characteristics from the Swedish Housing Stock

As of 2012, a total of 2,521,157 apartments in multifamily buildings existed in Sweden. 1,342,000 of these were structured as rental apartments (SCB 2012). Over 95 percent of the country's apartment buildings are constructed after 1930, with a peak during a period between the sixties and mid-1970's (Björk, Kallstenius, & Reppen, 2002).

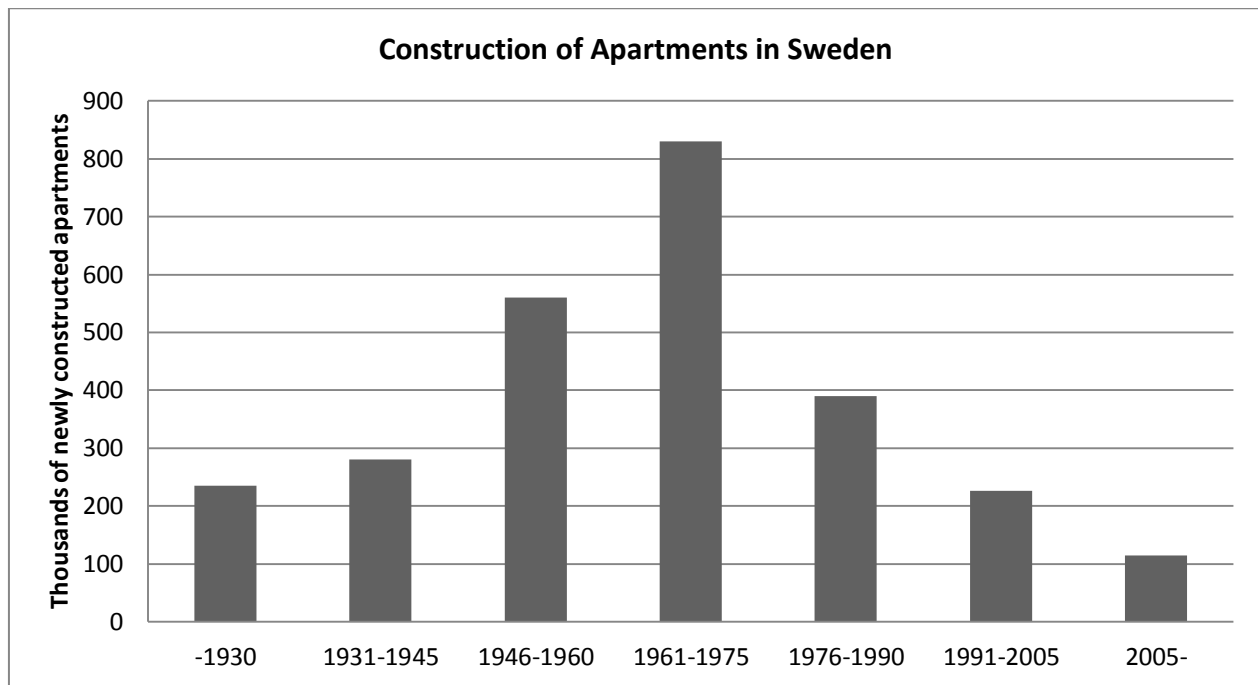


Figure 12 – Number of apartments constructed during different time periods. Sources: Så byggdes husen 1880-2000 (2002)

5.3.2 History of Construction Techniques and Technical Factors for Different Building Types

The construction techniques, as well as the layout of the apartments and buildings, have indeed differed during the previous century. Changing needs, trends in construction approaches and differing building patterns over time, have resulted in several different characteristic types of buildings, where the category “lamellhus” by far was the most common. (Björk, Kallstenius, & Reppen, 2002). An illustration of the distribution between the most common building types is presented in the figure below.

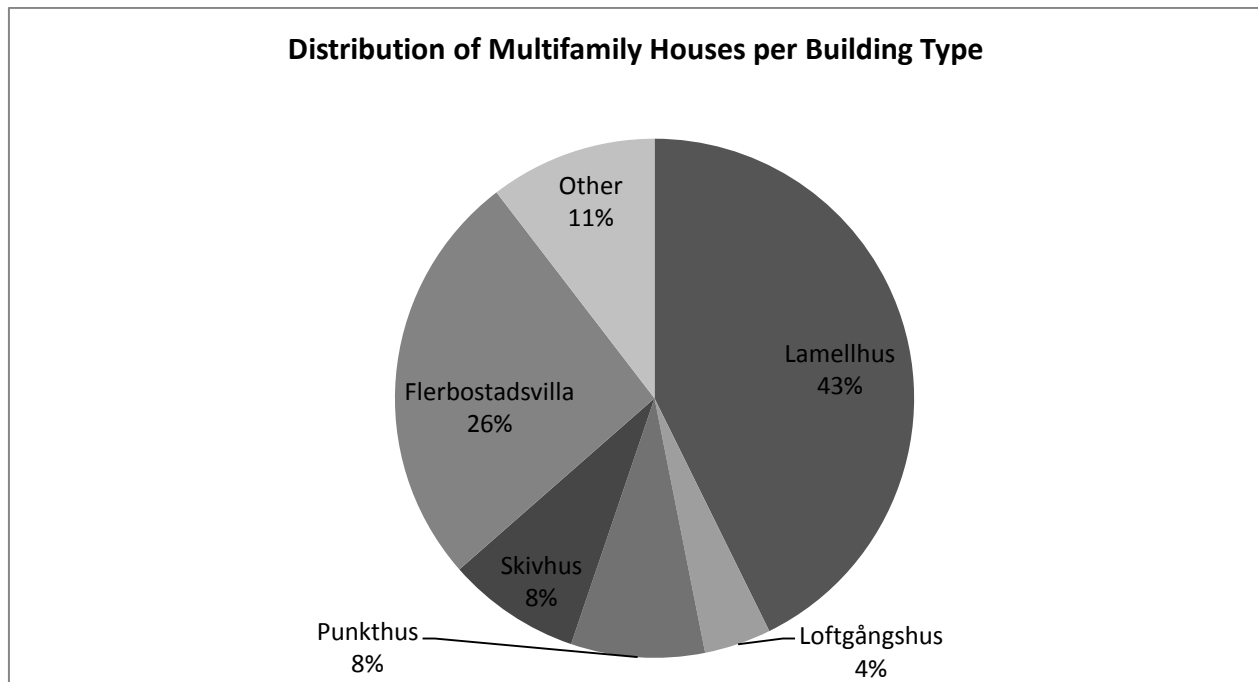


Figure 13 – Distribution of the Swedish property stock of multifamily houses per building type. Source: Boverket (2010)

Following is a descriptive overview of each type of building relevant for the overall study, if not otherwise stated summarized from the literature by Björk, Kallstenius, & Reppen (2002).

- *Lamellhus*: The definition of a lamellhus is a building with two or more floors above ground and at least two separate stairwells (Swedish National Board of Housing, Building and Planning, 2010). The big breakthrough for the lamellhus was in the 1930's, and it has ever since been the most common building type in Sweden.
- *Skivhus*: During the 1960's, when the construction pace increased, skivhus, a higher version of lamellhus was introduced. These buildings are five floors or higher and have much in common with lamellhus from the same time period. For example, similar materials and construction methods were used.
- *Loftgångshus*: Often similar to lamellhus, but characterized by the external accessible balconies alongside the building, which enables an elevator to service several parallel apartments, and thereby minimizing the construction and maintenance costs. The building type became popular during the million-program.
- *Punkthus*: Buildings with at least three floors where the apartments are located around one stairwell, centralized in the building. Introduced during the 1930's, but construction taking off in the 1940's. Ever since then, punkthus have been common in new development. After the concrete frame was introduced in the early 1950's, these buildings were often between eight and eleven floors high.
- *Flerbostadsvilla*: Smaller multifamily houses with between four and six apartments and one or two floors, sometimes with a furnished attic. This building type has been relatively common in rural areas, since 1930 until present time.

Before 1930, the most common multifamily buildings were stone houses in closed blocks. Most of these buildings were also built in central locations. From 1930, the closed blocks were mostly been replaced with detached buildings. In the 1930's and 1940's, the new replacements were mostly lamellhus and punkthus, which most often were built in groups. During the these two decades, lamellhus were built either parallel or perpendicular to each other, while they, during the 1950's, often formed e.g. star-like patterns or larger open courts. In the 1960's and until the end of the million-program in 1975, there were a mix of lamellhus, skivhus, punkthus and loftgångshus. During this time, the focus was on efficient production. As mentioned earlier, residential areas from this period are therefore often grey and characterized by monotone esthetics. In the end of the 1970's, the construction pace decreased rapidly and there were a significant surplus of apartments in several cities. During the 1980's and 1990's, the closed blocks returned, although with a more open structure than before. Increased attention, once again, was given to create more compelling and varying esthetics. During the 1990's, the new development were focused to areas already exploited, often close the city centers. Many industrial areas were accordingly transformed into residential areas (Björk, Kallstenius, & Reppen, 2002).

During the 1980's, the construction pace rapidly decreased and much of the efforts were instead focused on restoration and replacement of buildings in central locations. Hence, no distinguishing building types were constructed (Björk, Kallstenius, & Reppen, 2002). However, the oil crisis in the seventies set new demands on isolation and energy efficiency¹³, which lead to an emphasis on energy efficiency during the 1980's was. This focus was later decreased during the 1990's. Buildings from the record years are often equivalent to buildings from the 1990's in energy efficiency. However, they were still not good enough for the demands in the 2000's. Similarly, in buildings from the 1960's and earlier, insulation, relating to both walls and roofs, is insufficient for 2000's demands (Swedish National Board of Housing, Building and Planning, 2005).

Frame and Foundation

Even though most of these building types have been more or less common during the time period since the thirties, they have differed in construction, appearance and size depending on the location and construction dates. The most significant progress in construction techniques from the 1900's was when the emergence of concrete frames the beginning of 1950. Concrete frames nearly replaced brickwork frames as the standard for new construction, enabling taller buildings, increased construction pace and lower costs for construction. This was a necessity at the time when the demand for homes increased and the million-program was initiated. Instead of the bearing outer walls and lengthwise partition walls, the concrete frames have transverse bearing walls enabling the usage of prefabricated elements. These new building techniques and larger buildings also put new requirements on the houses' immediate surroundings. In the 1960's and 1970's, construction cranes became common. Large flat areas at the construction sites were demanded in order to accommodate these cranes and facilitate the transportation of materials. As a result, the environment had to be cleared and leveled, which lead to that most of the surrounding vegetation was planted after the construction was finished. Earlier, in the 1930's and 1940's, buildings were more often built and adapted into the existing environment (Björk, Kallstenius, & Reppen, 2002).

¹³ *Project leader within division for Installations real estate firm*

Cladding

During the 1930's and 1940's, outer walls on lamellhus and punkthus were either plastered or built up from bricks, while plastering, solely, was most common in the 1950's. During the 1960's, when building rate increased rapidly prefabricated concrete elements were commonly used, further sand-lime as well as bricks and plastered cladding were used. In the end of the 1970's the use of prefabricated elements stopped in an effort to create a more diversified landscape, cladding was one again either plastered or built up from bricks, however with influences from the beginning of the 1900's. (Björk, Kallstenius, & Reppen, 2002)

Roofs

Saddleback roofs were common on lamellhus and punkthus up until the end of the 1950's could have other forms like lean to roofs; all of them were most often coated with tiles. Roofs were, during the period 1960-1975, only slightly slanted and lacked eaves, sometimes leaning inwards with downpipes through the house construction, which often was covered with roofing felt. Towards the end of the 1970's, the saddleback roofs returned accompanied with a greater emphasis the buildings' aesthetics. (Björk, Kallstenius, & Reppen, 2002)

Water and Sewage

As of the time this report is being written, a large part of the Swedish property stock is facing a need for large investments. Even though most of the houses from the period 1946-1960 were well constructed, a majority of them are currently outdated and in need of a renovation (Swedish National Board of Housing, Building and Planning, 2005). The most common denominator for larger investments in a building is the replacement of the water and sewage pipes¹⁴. The technical lifespan of these installations are commonly around 40 years, much depending on material and time of construction (The Swedish Association of Plumbing and HVAC Contractors, 2009). In 2010, approximately 58 percent of all buildings that had been constructed before 1960 still had original water and sewage pipes. This, together with outdated waterproofing of bathrooms, has resulted in moisture damage being the most common problem with houses built during this period. The proportion of the Swedish housing stock that was built between 1961 and 1975, which has replaced water and sewage pipes, is 12%. (Swedish National Board of Housing, Building and Planning, 2010)

During the 1960's to mid-1970, the focuses in construction were speed and cost minimization. Consequently, the utilized materials from this period were often poor. A common problem for this period is moisture damage from water leakage, which, in 60 percent of the cases, was caused by leakages in the water supply. Until 1970, there were no regulations on where and how joints between water pipes should be placed. As a result, many of them are enclosed in walls or floors, making them difficult and expensive to repair. (Swedish National Board of Housing, Building and Planning, 2010)

Occurrence of Hazardous Building Materials

A problem is that materials that occur in these buildings often are harmful to both the environment and humans. The use of autoclaved aerated concrete from the late 1920's to 1975 has resulted in high levels of radon. Between 1956-1973 PCB was commonly used in construction (Swedish National Board of

¹⁴ Project leader for environmental due diligence

Housing, Building and Planning, 2005), as well as asbestos up until 1976 and CFCs until 2001 (Swedish National Board of Housing, Building and Planning, 2010).

Heating

Heating refers to, if nothing else is stated, both heating of the actual building and heating of tap water as the same system most often is used. District heating is the most common source of heating in multifamily buildings. In 2010, 85% of the total living surface in Sweden utilized district heating. However, there are several sources of heating available, the five most common are district heating, oil burners, electric heating, heat pumps and burner for e.g. pellets (Statistics Sweden, 2012). The most common heat pumps are geothermal heating and air/water heat pumps. The former utilizes energy in the soil, while air/water heat pumps utilizes energy in the air¹⁵.

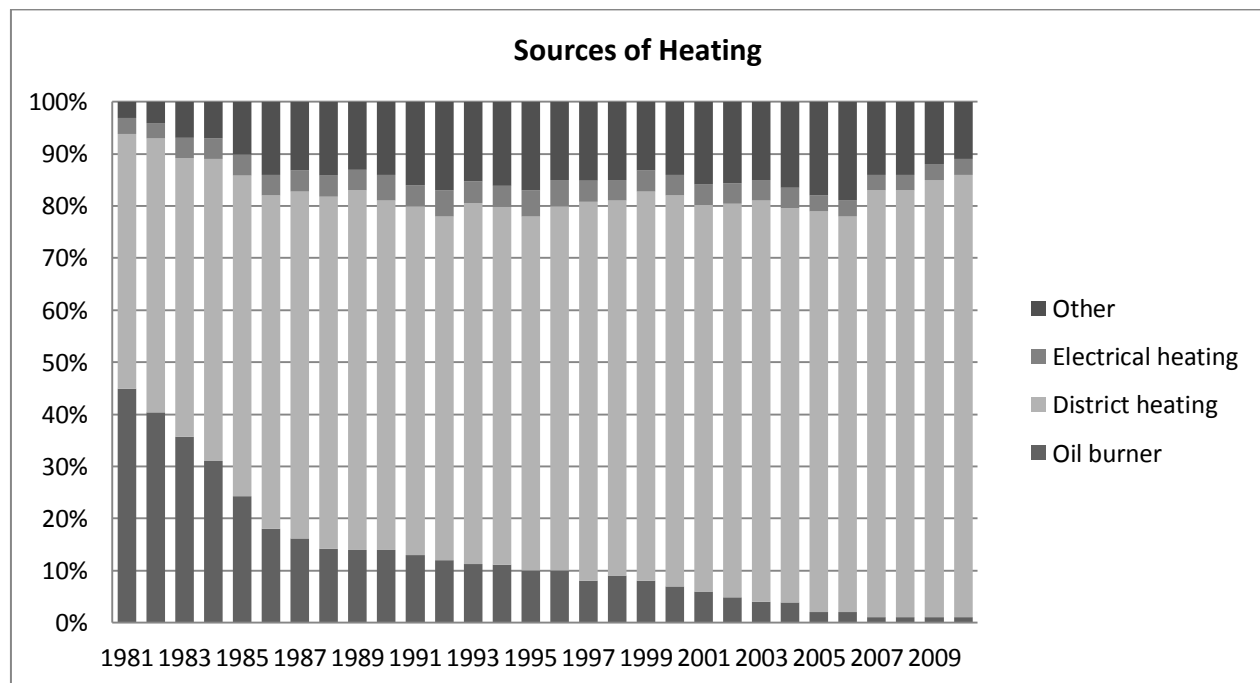


Figure 14 – Past Distributions (ranging from 1981 to 2010) between types of heating sources in the Swedish property stock. Sources: Swedish National Board of Housing, Building and Planning (2010)

As shown in the figure above the usage of oil burner decreased rapidly during the 1980's, probably a reaction to the rapidly increasing prices resulting from the oil crisis in the 1970's. The usage of district heating has since the beginning of the 1980's increased by about 35%, being the most common substitute when switching from oil burners. Distribution of heat to the apartments is, with most heating sources, done through a central heating system in the building. Electrical heating and individual air heat pumps can also be place separately in apartments. Further, the choice of energy source is dependent on local conditions, e.g. district heating is not always available and drilling for geothermal heating can be prohibited¹⁶.

¹⁵ Project leader within division Installations at a real estate firm

¹⁶ Ibid.

Ventilation

There are clear regulations on ventilation and air supply in multifamily buildings in Sweden. In line with these regulations, property owner is obligated to regularly perform ventilation control, OVK (abbreviation for Sv. "obligatorisk ventilations kontroll"), every three to six years depending on type of ventilation. These controls ensure functionality and measure flow rates of air (Swedish National Board of Housing, Building and Planning, 2009). Five main types are ventilation systems are in use today (Swedish National Board of Housing, Building and Planning, 2009);

Table 5 - Overview of different types of ventilations. Source: Boverket (2009)

Type	Description	Inspection Interval
S – ventilation	Natural ventilation	6 years
F – ventilation	Mechanical ventilation extracting air	6 years
FT – ventilation	Mechanical ventilation supplying and extracting air	3 years
FTX – ventilation	Mechanical ventilation supplying and extracting air with heat recovery	3 years
FVP – ventilation	Heat pump extracting air	-

Over time demands on ventilation and energy efficiency have increased and hence technical solutions have evolved. After the oil crisis in the seventies when heating cost increased rapidly ventilation systems with heat exchangers, utilizing the energy in the hot air otherwise escaping out, became increasingly common¹⁷. As seen in the table above there is two different types of ventilation systems with heat exchangers; FTX and FVP. Utilizing the energy in the hot air, these systems can either heat up incoming cold air (FTX), radiator water or tap water. (Swedish Property Federation Stockholm, 2007)

¹⁷ *Ibid.*

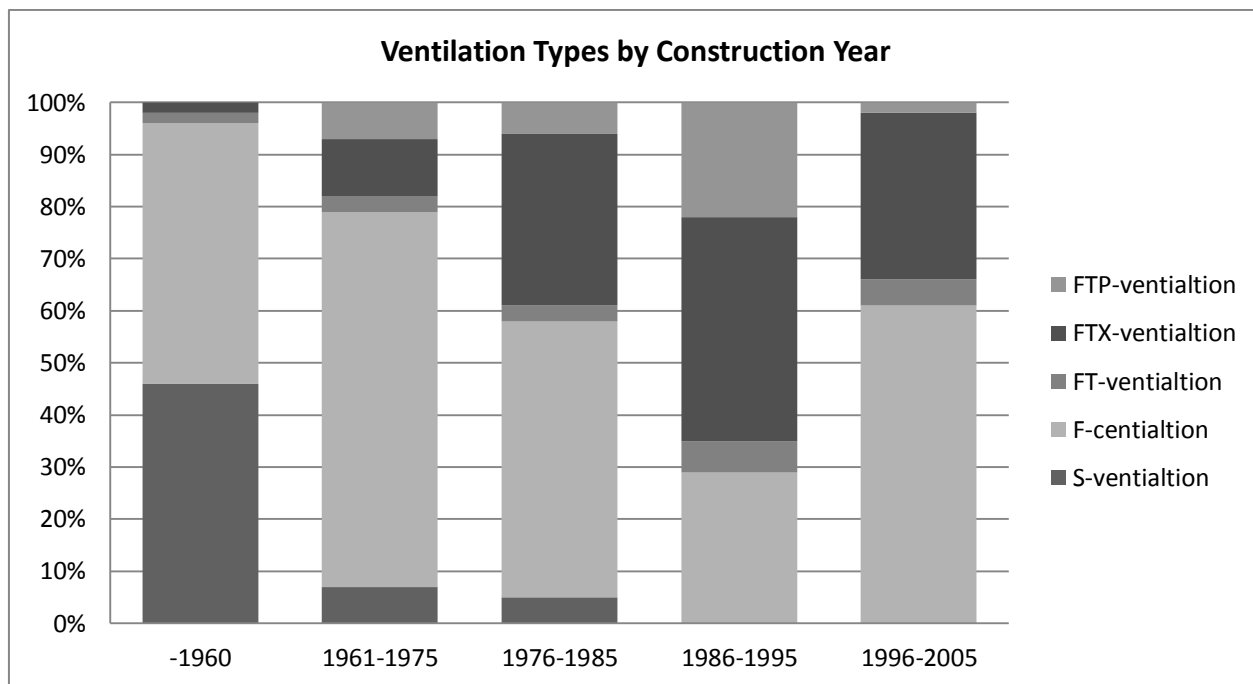


Figure 15 – Distribution between types of building in the Swedish property stock. Sources: Boverket (2010)

5.3.3 Technical Features' Influence on Costs and Ability for Rent Increases

With an average of 33.8% for district heating (Incit, 2012; Nils Holgersson-gruppen, 2011), heating is usually the single largest cost for operations of rental properties. Further, the largest costs for operations, excluding the property management, are *electricity, water and sewage*. However, much of the costs for electricity affect only the tenants as this most often is measured separately for every apartment, something that will be discussed further for heating as well as water and sewage later in this chapter. Nevertheless, over the last five years, these costs have increased with about 20 percent depending on source of heating (Nils Holgersson-gruppen, 2011).

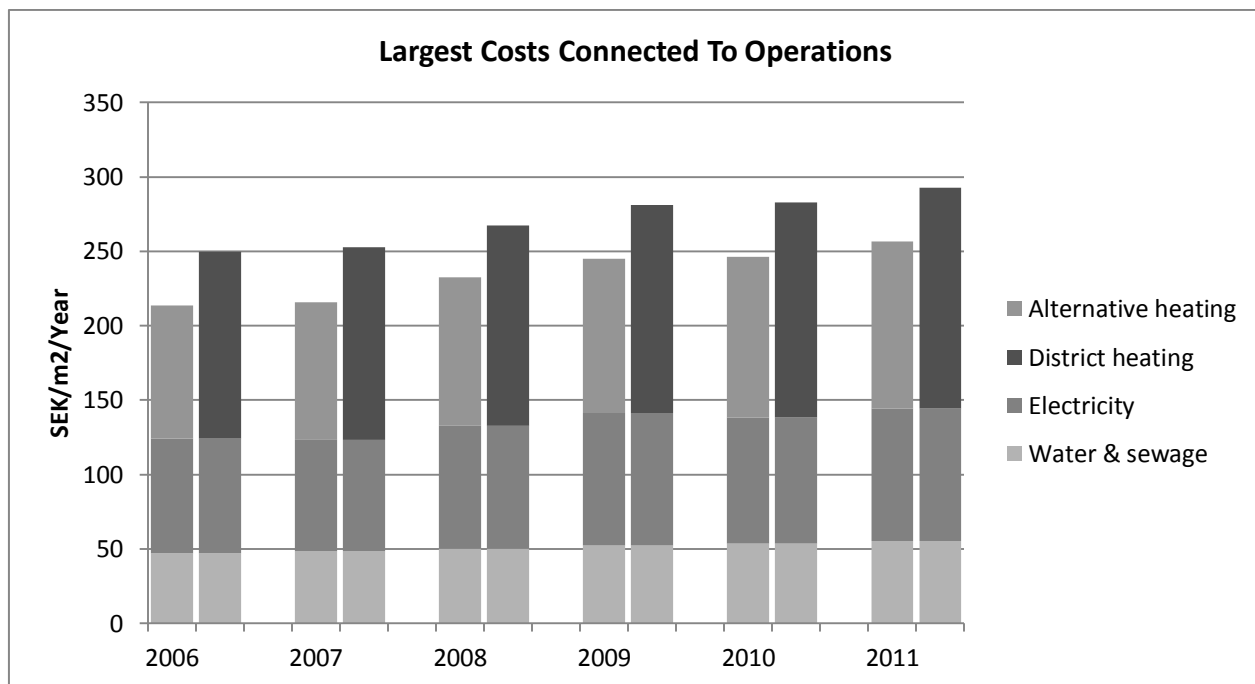


Figure 16 – Cost connected to operations of a multifamily building. Sources: Nils Holgersson-gruppen (2011)

Some informal indicators that one could use to determine a property's condition were given by several interviewees. For example, a land and development engineer at Lerum municipality¹⁸ states that it is important to check the actual energy consumption of the building and that both ventilation and elevator has been inspected, as well as to check for moisture damages. Further, a manager at a real estate development firm argues that all good buildings have proper eaves and roof drainage, as moisture damage often originates here. A green area on the facade with algae indicates that the roof drainage does not work properly or is insufficient.¹⁹

When investing in a property, it is common to conduct a technical due diligence in order to determine the property's technical status of. According to installations specialist²⁰, there are two main disciplines in the technical evaluation of a property; assessment of the building envelope and structure, and assessment of the installations. Common is also to include an investigation as to whether there are material harmful to health and environment, e.g. PCB and Asbestos. Further, a manager at a real estate development firm²¹, a manager for environmental due diligence projects²² and an installations specialist²³ state that it is common to include assessment of possible potential improvements in the property, both possibilities relating to cost reduction and increase of income. The proposed measures are most often divided after urgency and the probable time-span until investment. Lastly, costs of the

¹⁸ Land and development engineer at Lerum municipality

¹⁹ Manager at a real estate development firm

²⁰ Project leader within division Installations at a real estate firm

²¹ Manager at a real estate development firm

²² Manager for environmental due diligence projects at a private real estate development firm

²³ Project leader within division for Installations at real estate firm

investments and subsequent potential returns, through decreased costs or possibilities for increased rent level, are included.

Contracting WSP, one of the large actors on technical due diligence in Sweden, to conduct a technical due diligence on a rental property of 2,000 square meters would²⁴, cost about 60,000 SEK, corresponding to three persons work for approximately two days. Extensive experience among people involved gives an accuracy of between 20-30 percent on the cost estimates given in the report. Several important factors to assess in a technical due diligence report will be described below. However, this section does not intent to work as substitute for the technical expertise of a professional property inspector; the aim is rather to create an understanding for the factors assessed in this type of technical due diligence reports.

Technical Due Diligence Part I: Exterior Elements of a Building

Frame and Foundation

The type of foundation for a building is greatly determined by the environment that surrounds the building. In looser terrain, it can be necessary to use piles to support the building. Until the 1950's, wood was the most common material of structure in smaller multifamily houses. Larger buildings were, during this time period, most commonly constructed with a brick structure until the 1950's, when the concrete structure nearly replaced the wood and brick structures (Björk, Kallstenius, & Reppen, 2002).

Common problems; foundations on loose grounds can be in need reinforcement²⁵. Concrete slab foundations isolated from above are in risk of moisture damage²⁶, just as well as wood joists molded into the concrete structure can create moisture damage resulting in organic growth²⁷.

Cladding

Depending on the year of construction, different materials have been used in the cladding of the buildings. The most common materials used for cladding in the current property stock today are wood, bricks, plastered facades, prefabricated elements and metal sheets (Björk, Kallstenius, & Reppen, 2002).

Common problems; in plastered, prefabricated sections or claddings built from bricks, cracks occur where water can penetrate the building and cause damages. For cladding from prefabricated sections it is common that the seams become dry and crack, which can cause leakage²⁸. Further, the seams can work as thermal bridges resulting in unnecessary heating costs (Swedish National Board of Housing, Building and Planning, 2005).

Roof

The two most common types of roof coatings are roofing felt, roofing tiles and metal (Swedish National Board of Housing, Building and Planning, 2010). The cost and lifespan are the largest differences between the materials, roofing tiles having a technical lifespan of between 40-50 years while roofing felt

²⁴ *Project leader within division for Installations at real estate firm*

²⁵ *Land and development engineer at Lerum municipality*

²⁶ *Manager for environmental due diligence projects at a private real estate development firm*

²⁷ *Project leader within division for Installations at real estate firm*

²⁸ *Manager at a real estate development firm*

has a technical lifespan of 20-25 years²⁹.

Common problems; water penetrating the roof structure, resulting in moisture damages³⁰.

Windows

Windows have evolved over time both regarding insulation and technical lifespan. In older buildings, it is common with wooden framed double-glazing windows. Instead of replacing old windows, it is possible to renovate existing windows and place a new aluminum frame over the old wooden frame³¹. Newer windows have aluminum frames and triple glazing increasing both technical lifespan and insulating capacity (Swedish National Board of Housing, Building and Planning, 2005). The average technical lifespan of older, wooden, windows can be from 20 years and up. Newer windows, with aluminum frames, can have technical lifespans of up to 50 years.

Common problems; decomposed wooden frames³² and bad insulating capacity in older windows (Swedish National Board of Housing, Building and Planning, 2005).

Balconies

Balconies have been built with different constructions over the years, whereas the most common constructions are pervading steel beams, which pervade reinforced concrete or prefabricated concrete elements. Steel beams and reinforced concrete creates thermal bridges, resulting in unnecessary heating costs. However, this makes it possible to place the balconies outside of the façades, opposed to the prefabricated concrete elements that need some kind of load bearing structure on the sides (Björk, Kallstenius, & Reppen, 2002).

Common problems; reinforced concrete disintegrating and the concrete steel corrode, and deficient water drainage creates problem with moist damages³³.

Technical due Diligence Part II: Installations

Heating

Lifespan and need for maintenance differ significantly different types of heating systems as well as for systems from different time periods. For the most common source of heating, district heating, the average technical lifespan of the installations is 30-40 years and for the heat distribution system and radiators over 80 years (The Swedish Association of Plumbing and HVAC Contractors, 2009). Although the lifespan for radiators and distribution system is long the systems are often outdated in older buildings, which results in large heat losses in the distribution system to apartments. Older radiators may lack thermostat, which results in uneven heat distribution and unnecessarily high temperatures in some areas.³⁴

²⁹ *Manager for environmental due diligence projects at a private real estate development firm*

³⁰ *Manager at a real estate development firm*

³¹ *Ibid.*

³² *Ibid.*

³³ *Ibid.*

³⁴ *Manager at a private real estate company*

Common problems; existing central heating systems are often poorly balanced with uneven heat distribution leading to significant waste through involuntary temperature differences within a building³⁵.

Water and Sewage

The most common cause for larger investments in a property is replacement of sewage pipes³⁶. The cost for specifically replacing the pipes is relatively small, but accessing the pipes is often very difficult and costly. Usually the bathroom and kitchen need to be dismantled or torn down. As a result, tiles, much of the interior and waterproofing need to be replaced or redone. There is also an issue of managing the tenants during the renovation. Most often, tenants stay in their apartments during the work, whereas the landlord must provide temporary solutions for toilets, and showers etc. According to Per-Anders Bengtsson, if possible, it can sometimes be favorable to build a new module on the outside of the house with new bathrooms and pipes. This would not only give an easier process for the tenants, but also increase the floor surface, and hence allow for higher rents.

As much of the interior is not possible to refit, it is common to replace all installations and interior in the bathroom in order to achieve higher standard. This increases the utility value, which is the basis for higher rent levels. Further, opportunities for rent increases stemming from bathroom renovations are limited in comparison to the large investment cost³⁷. However, including additional improvements of the apartments, along with the renovation, could allow for significantly higher rent levels. More specifically, kitchen renovation was presented as potentially being profitable investment cases.

The technical lifespan of a sewage pipes is very hard to determine as different material has been used over the years. However, for cast iron pipes, between 40-50 years is common, in some cases it can be as much as 60-70 years. Alternative to replacement of the original pipes is sliplining, meaning that a new pipe is placed inside the old pipe. This can be done either by molding a new pipe on the inside the old pipe or by simply placing a new pipe inside the old. Compared to replacing the old pipes this is a considerably easier and cheaper solution, however, as the solution only has been on the market for a limited time period the technical lifespan is hard to measure. Other problems with the method are that the diameter of the pipe is reduced creating greater risk for problems with stops and the sooner or later the pipes will have to be replaced regardless, it is only a temporary solution. According to Per-Anders Bengtsson sliplining is only an alternative when it is extremely difficult to gain access the pipes or to maximize the technical lifespan of bathrooms or other wet areas.

Common problems; moisture damage from leaking pipes is common as the technical lifespan approaches (Swedish National Board of Housing, Building and Planning, 2010).

Ventilation

Depending on type of ventilation system the lifespan and demands on maintenance differ. Natural ventilation systems can have unlimited lifespan if properly maintained. FT and FTX systems have a technical lifespan of 30-40 years, fans however need to be replaced every 15-25. Further, FVP heat pumps have a technical lifespan of about 20 years. (The Swedish Association of Plumbing and HVAC

³⁵ *Ibid.*

³⁶ *Manager for environmental due diligence projects at a private real estate development firm*

³⁷ *Manager at a private real estate company*

Contractors, 2009) To maintain the required air flow it is crucial to clean ventilation channels, proper air flow is moreover important to prevent moisture damage.

Common problems; poor maintenance can result in clogged or leaking ventilation system. Fans in older mechanical ventilation systems can create noise, disturbing tenants. (The Swedish Association of Plumbing and HVAC Contractors, 2009)

5.3.4 Possibilities for Energy Improvements in Current Property Stock

In 2009, the European commission decided on goals for reducing energy consumption and reducing emissions of fossil fuels. In Sweden, the current goals are to lower the energy consumption by 20 percent in 2020 and by 50 percent in 2050 for all housing and office spaces compared to 1995 years level. Further all housing and office spaces should, in 2020, be independent of fossil fuels (Swedish Energy Agency, 2012). To reach these goals, investments in both the current property stock and improvements in the efficiency of new development is necessary. Much emphasis is naturally targeted on heating, as it is the largest consumer of energy (Wahlström, Blomsterberg, & Olsson, 2009). However, there are many potential means to reduce the overall energy consumption. In the table below is a summary of some of the technical aspects discussed and their potential impact on costs. An overview of each aspect will then be presented separately in the text that follows.

Table 6 – Summary of potential ways for decreasing energy consumption, presented with their respective estimated impacts

Ways of reducing energy consumption	Summary of impact
Weather forecasting systems anticipate weather forecast in order make use of radiation heat and outside temperature	5-20% reduction of costs for heating
Balancing of heating system Reduces unnecessary imbalances between apartments/rooms	1-5% reduction of total energy consumption
FTX system Mechanically supplying and extracting air with heat recovery	On average 5 years pay-back on initial investment depending on prior condition
Insufficient isolation Walls, windows and doors stand for 80% of a property's energy loss	Dependent of prior condition
Individual metering Tenants pay for their own household consumption	Incentives for tenants to economize their consumption while moving the risk of increased cost from the landlord
Lowering the indoor temperature	Up to 5% lowered heating costs per degree
Replacing older belt-driven ventilation fans for direct-driven	Up to 75% reduction of consumption of electricity
Replacing older light bulbs for LED lights	Up to 80% reduction of consumption of electricity
Installation of low-flushing taps Replacing taps and showers	Up to 40% reduction of hot water usage

Heating

The cost for heating of a property is influenced by a number of factors. The source of heating is the main determinant, but ventilation, isolation, and control of heating also have large impact on heating costs. As

mentioned earlier, district heating is the most common source of heating in Sweden. However, accordingly to Nils Holgersson-gruppen (2011), 40 percent of the municipalities providing district heating could potentially reduce the cost if other alternative energy sources would be used. Further, district heating is more expensive in smaller municipalities, where the systems have been built no later than 10-15 years ago (Nils Holgersson-gruppen, 2011). The most efficient heating option available today is geothermal heating³⁸.

Another alternative for reducing energy consumption is systems for climate forecasting, which constantly alter the heating system's target temperature based on weather forecasts. Forecasting systems have potential of lowering costs for heating between 5 and 20 percent (Swedish Property Federation Stockholm, 2007).

As mentioned earlier it has since the 1980's, been common to utilize heat exchangers in ventilation systems. Installing such a system is today most often the single most efficient way of reducing energy consumption for heating. However it can, depending on current ventilation system, be an expensive investment. Hence, the current conditions in the building determine the economic feasibility. Investments in an FTX system normally have a payback period of five years³⁹.

Isolation of the building envelope has large impacts on the costs for heating, but adding extra insulation risks changing the building's character. The areas of a building that leak most heat are the walls, windows and doors, which combined stands for approximately 80 percent of the total energy loss. Moreover, adding extra isolation around windows and door is inexpensive and can save as much as five percent of the total heating costs (Swedish Property Federation Stockholm, 2007).

Individual metering of heating could be an alternative creating incentives for tenants to economize their energy consumption. A common argument against this technique is that apartment's location within a building affects the thermal transmission through walls. Thus, it is complex to measure it fairly and the input is needed for each apartment, which can be done through their main methods; *flow metering* – metering of flow and temperature of water circulating in the system, *radiator metering* – metering of heat emitted from radiators, and *temperature metering* – metering of temperature in different rooms of the apartment. Unfortunately, all these methods have pros and cons. In particular, temperature metering is easy to manipulate, and flow metering as well as radiator metering does not consider thermal transmission between apartments (Swedish National Board of Housing, Building and Planning, 2008).

³⁸ Project leader within division for Installations at real estate firm

³⁹ *Ibid.*

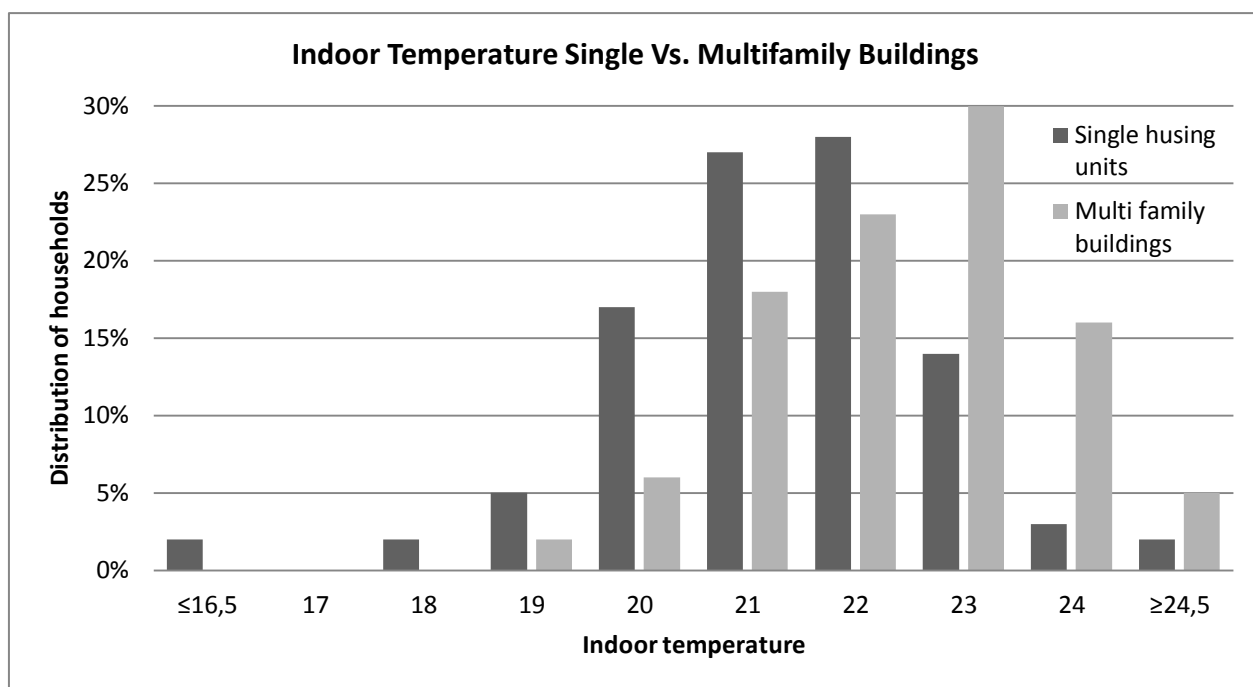


Figure 17 – Average indoor temperature for single housing units compared to multifamily units. Source: Boverket (2010)

As illustrated in the figure above, on average, multifamily houses have significantly higher indoor temperatures than single houses. Naturally, the high temperatures in multifamily buildings contribute to large costs for the property owner. For example, lowering the indoor temperature one degree could potentially lower heating costs as much as five percent (Swedish Energy Agency, 2008). Potential reasons for this difference are that single unit houses generally are owned by its inhabitants, which allocate the incentives for cost reduction directly to the user, and thermal transition within multifamily houses. The former suggests that individual measuring could lead to increased economizing of resources

Electricity

As household's cost for electricity most often is allocated to the tenants, landlords mostly stand to benefit from installations in common areas. Replacing older light bulbs for CFDs can lower electricity consumption by as much as 80%, further the lifespan is ten times longer reducing maintenance costs.

Other installations, such as ventilation, washing machines etc., also have large energy impacts. Hence, it is important to consider not only the initial cost, but also the cost for operations during the whole lifespan. For example, replacing older belt-driven fans for direct-driven fans can reduce the electricity consumption by up to 75 percent (Swedish Property Federation Stockholm, 2007).

Water and Sewage

A simple way to decrease water consumption is installing to install low-flushing taps. Replacing older taps with new, efficient, ones could potentially decrease hot water consumption with up to 40 percent (Swedish Energy Agency, 2003). Individual metering is another way of reducing water consumption. This is achieved through distributing costs from the property owner to the tenants, which creates incentives

for tenants to economize their consumption, while eliminating unfair cost distribution (Swedish National Board of Housing, Building and Planning, 2008). Moving the cost from landlord to tenants reduces the landlord's risk of increased costs that can be difficult to cover through increased rent level.

Replacement of the water and sewage pipes is often one of the most renovation requirements for property owners⁴⁰. Further, these investments do not contribute to increased utility values, and are therefore seldom pursued before the technical lifespan, of commonly 40-50 years, have expired. As these investments demands large efforts in the building, it is often advantageous to look over other installations in the building, e.g. ventilation and electrical wiring are often located close together.

The single largest investment is renovation of bathrooms⁴¹. However, in comparison to the corresponding cost, the potential for increased rent levels is relatively low. Renovations of kitchens can, on the other hand, allow a much profitable relation between costs and income. Hence, it is favorable for the property owner to convince tenants to agree to a larger investment in the apartment of e.g. both bathrooms and kitchens⁴².

5.3.5 Considerations for Larger Investments

Pursuing larger investments in existing properties can sometimes contribute to significant potential for both increased income and reduced costs. Even though costs for conducting these investments are relatively equivalent for different parts of the country, the potential for higher rent levels is often considerably lower in rural areas⁴³.

There have recently been several cases where tenants have protested against significantly increased rents, e.g. Pennygången in Gothenburg (Heyman, 2012). This is an important issue to consider since it is necessary to get approval from the current tenants or the rent tribunal before pursuing investments that will contribute to larger rent increases (The Swedish Union of Tenants, 2012B). However, in cases where technical lifespan has been reached, previous rulings in the rent tribunal have been in favor of the property owners. Important to consider when undertaking larger renovations is potential evacuation of tenants or costs for provisional facilities in connection to the properties. It is also likely that income from rents will be reduced during the duration of the renovation as a consequence of the reduced utility for the tenants (The Swedish Union of Tenants, 2012C).

Contrary to the strategy of increasing rents through improving utility values, some investors strive to minimize costs. These investors have usually a relatively short time perspective with an aim to postpone maintenance and reap high NOI during some years, which naturally can result in an acceptance for higher acquisition price. The price for well-maintained properties and poorly maintained properties is often very similar as there always are some actors doing short-term investments and maximizing NOI setting aside minimal amounts for maintenance⁴⁴. This is to some extent confirmed by Institutet för värdering av fastigheter & Aspect (2011), stating that the premium received in the valuation should be

⁴⁰ *Manager for environmental due diligence projects at a private real estate development firm*

⁴¹ *Manager at a private real estate company*

⁴² *Ibid.*

⁴³ *Ibid.*

⁴⁴ *Ibid.*

lower than the cost of restoring the property. Hence, it could in some cases be more profitable for short-term property owner to, instead of depositing money for maintenance, maximize current NOI. This would also explain the high valuations done by short-term investors evening out the price differences between well and poorly maintained properties.

Further, a short-term investment strategy can be profitable as long as the properties are sold before the need of maintenance becomes too apparent to ignore⁴⁵. Therefore, the feasibility of a short-term investment strategy becomes smaller as the technical lifespan of a property is approaching. Moreover, The Swedish mapping, cadastral and land registration authority & The Association of Real Estate Agents (2005) claim that costs for conducting larger renovations, generally, exceed the impact on properties' corresponding market values. Hence, potential discounts on transaction prices should mainly be apparent when there is a relatively urgent need for renovations or in an initial phase when the market price does not fully anticipate the lowered need of maintenance.

These arguments can be represented graphically in the form of the hypothetical price curve in the graph below. As the technical life of the installation ages, which in essence should bring down market value accordingly, short-term investors keep the price at a level incoherent with the technical quality, pinned only to current NOI. The straight line, dubbed the rational market value, represents how market value would develop if one linearly incorporated anticipated renovation costs in the value of the property. The diagram relates these models to the three-year averages of historic transaction prices between 1996 and 2012 in all commuter municipalities of Western Sweden, 350 transactions in total (The Swedish mapping, cadastral and land registration authority, 2012). Technical lifespan refers to the lifespan of the piping in the property, typically varying between 40-50 years (Swedish National Board of Housing, Building and Planning, 2010). Lifespan is calculated by taking the difference between transaction date and the value year of the property at the time of transaction. However, important to remember is that value year may be affected by other investments that did not have any impact on the building's technical lifespan.

⁴⁵ *Manager at a private real estate company*

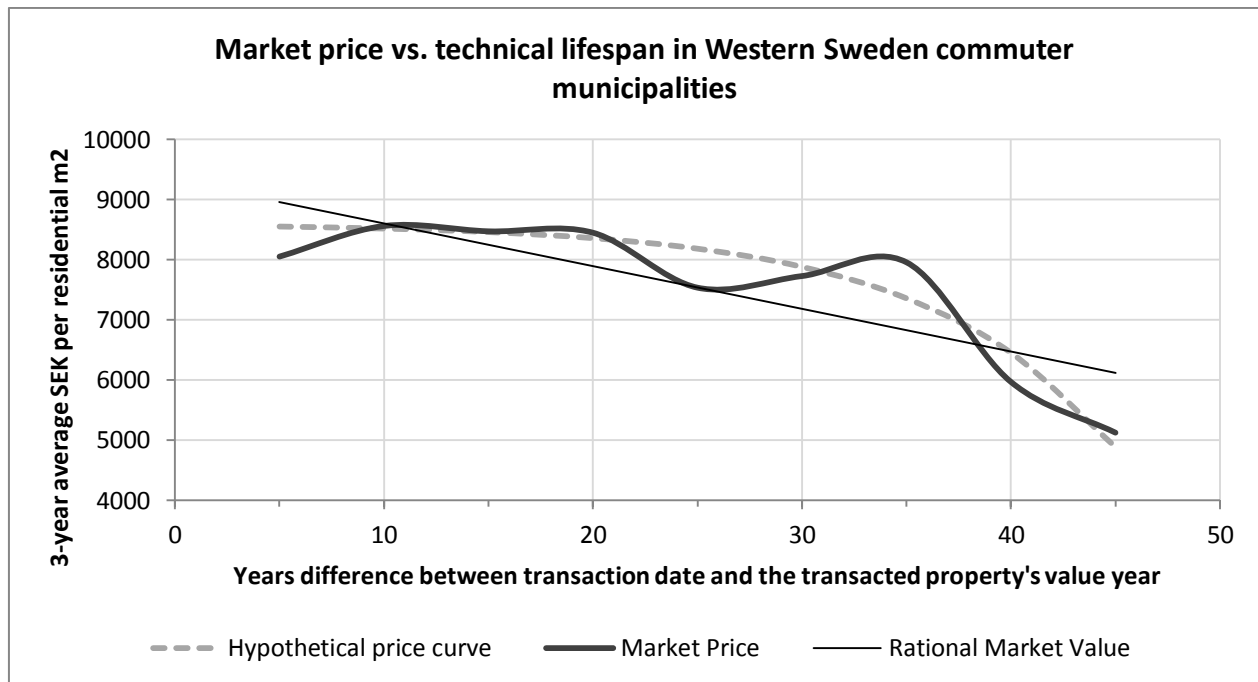


Figure 18 – Three-year average transaction prices paid per residential m² in commuter municipalities in Western Sweden, counting only properties with no commercial space, a transaction price over 300KSEK, residential space over 200 m², and no group transactions. Data source: The Swedish mapping, cadastral and land registration authority (2012), (Swedish National Board of Housing, Building and Planning, 2010)

As indicated by the diagram, actual prices do not follow a linear development in accordance with the aging of the property's installations, but rather is held fairly constant for some time. The costs anticipated for pipe changes are only reflected on pricing once age hits 40 and replacements are imminent. The diagram serves to illustrate the two discount opportunities mentioned earlier; at the beginning of the technical lifespan, and at its very end (The Swedish mapping, cadastral and land registration authority & The Association of Real Estate Agents, 2005). Firstly, as costs for the pipe changes have not been internalized into the property's value over a longer time, these costs reflects greatly on price when re-installations are due. Property can therefore potentially be bought at a price below its rational market value. Secondly, at the beginning of the property's technical lifespan, for the same reason of short-sighted focus on current NOI, the value of a recent installation is not rationally valued either. Price is therefore unlikely to reflect the rational value or the money invested in the recent installations made.

5.3.6 Considerations for New Development

When demand for apartments is high and supply is limited, new development can often be an interesting option. Newly developed apartments benefit from both a less regulated rent situation and lower cost for maintenance, i.e. overall; a higher NOI. Further, stemming from both differences in cost of land and construction of the building, the total cost of producing new rental properties vary between different parts of the country. Additionally, one should take into account costs for pre-studies, procurement of

suppliers, and capital costs during the period from acquisition of land to the time when a property starts generating income⁴⁶.

Over the period 2000-2010, the Q ratio has been fluctuating around a national average of 0.3, while the construction rate were 7,500-20,000 apartments per year. Accordingly to the theoretical framework, a small Q ratio indicates that the economic viability for construction of new buildings is limited. However, one should analyze the ratio jointly with level of rents, corresponding costs and the properties' overall ability to generate NOI.

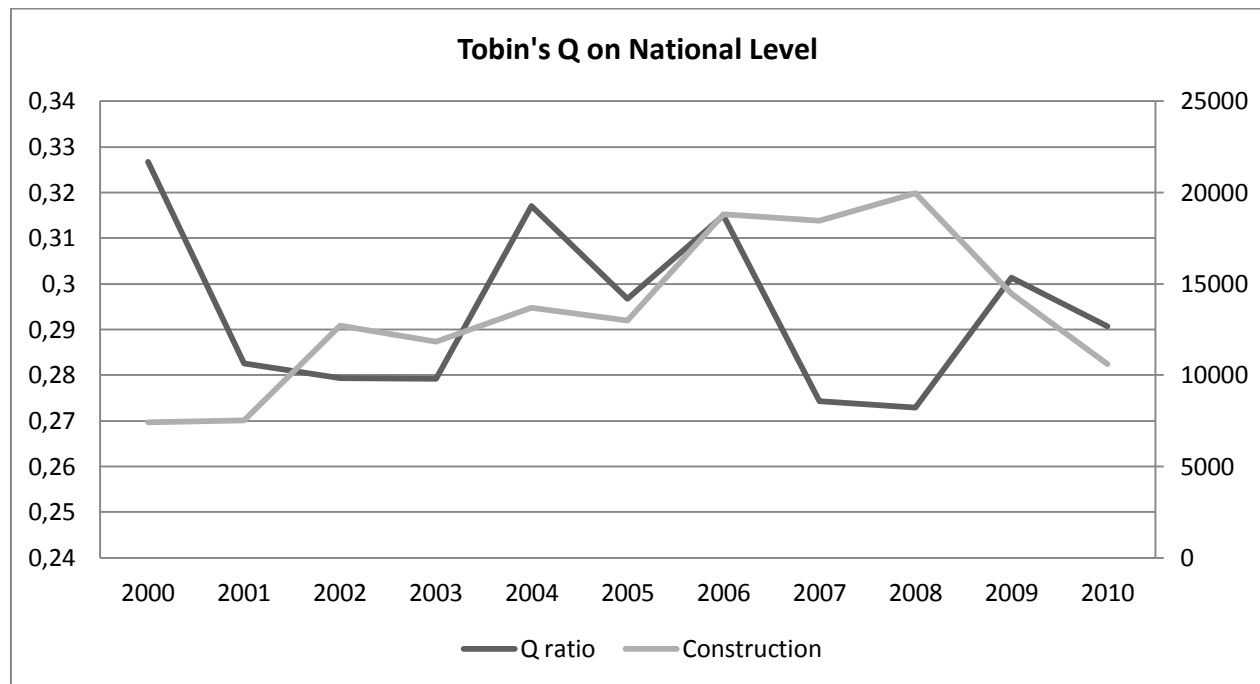


Figure 19 – Tobin's q on a national level over time. Source: Compiled from Statistics Sweden (2012); Statistics Sweden (2001-2012) and The Swedish mapping, cadastral and land registration authority (2012)

As presented in the figure below, the q ratios is higher than the national average in Gothenburg, but lower for the smaller municipalities in the counties of Västra Götaland, Halland, Jönköping and Kronobergs. This would indicate that the economic viability of new development is lower in the rural areas than in the urban areas around larger cities. Hence, this would suggest that owners of existing properties in municipalities with increasing population (i.e. increasing demand of rental accommodation) and low Q ratios (i.e. low incentives for increasing the supply via new development), should enjoy high demand for their apartments. Lastly, this suggests low risk for vacancies and possibilities of increasing both total yield and income yield.

⁴⁶ CEO of a private real estate company

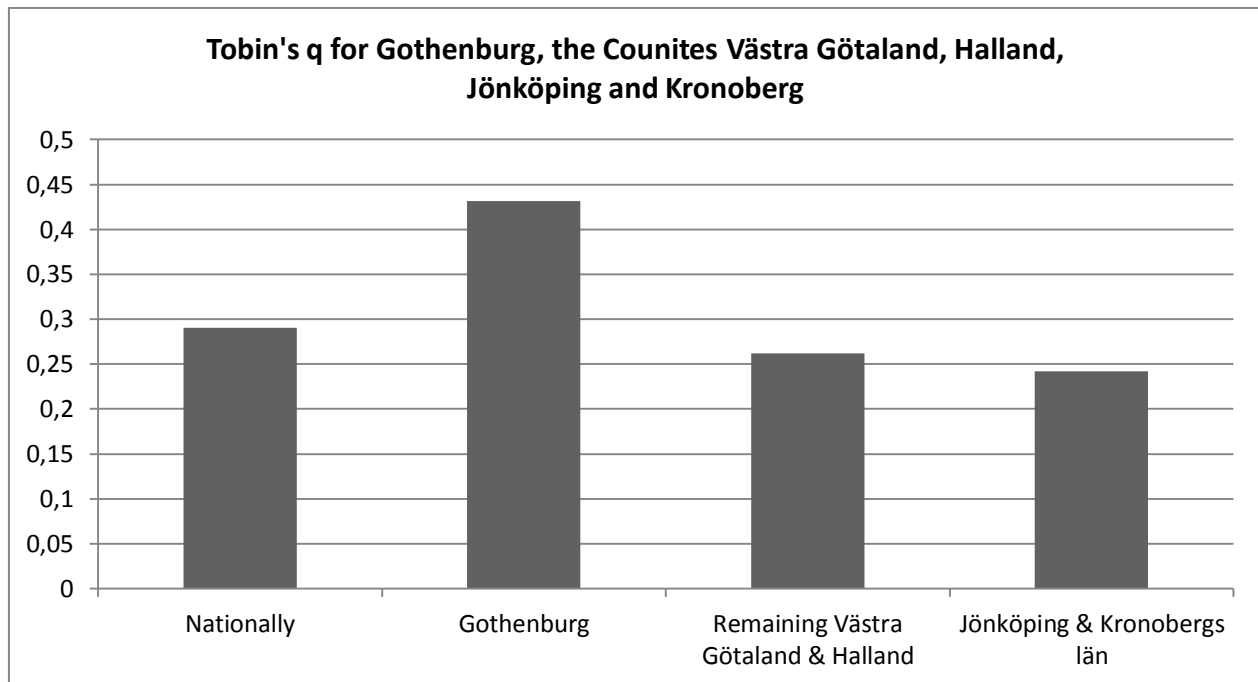


Figure 20 – Tobin's q for Gothenburg, the Counities Västra Götaland, Halland, Jönköping and Kronoberg. Sources: Compiled from Statistics Sweden (2001-2012) and The Swedish mapping, cadastral and land registration authority (2012)

5.3.7 Summary of Sub-study Results

The technical lifespan of a property is the most common denominator for larger renovations, and hence large investments in a property. A large part of the properties built during the record years in the 1960's and 1970's are today in need of larger renovations. Indications from respondents have been that the premium for investing in such properties has been small, largely due the existence of actors investing short-term without intention of pursuing the required need for maintenance. In areas with low demand and limited property stock, this strategy is difficult to realize and prices are reflected accordingly. Achieving economic feasibility in construction of new rental properties is difficult, especially in smaller municipalities, as the excess costs in comparison to acquiring existing properties is difficult to cover with current rent levels.

As demands on energy efficiency have differed significantly over time, there is a large potential and need for improvements in many older properties. The largest operational cost for rental properties is most often heating with an average of 33.8% (for district heating) of the total operational costs. There are several factors that affect heating of a property and also several measures that can lower heating costs, some of which have a relatively short payback period. Investing in improvements in a property can further increase the rent level.

The construction techniques as well as construction locations and layout of apartments have evolved over the years, most often to suit current conditions and demands. However, it is difficult to deem a specific type of property or construction period superior since the price should reflect the rent level and costs connected to the property through the methods explained in sub-study 1 and potential for rent

increases accordingly to sub-study 2. Hence, most properties can be profitable acquisition targets through a suitably adjusted price level.

5.4 Tenants' Preferences and Satisfaction: Characteristics in Sweden

The results of tenants' preferences and extent of satisfaction, which is presented in this chapter, is mainly based on a survey conducted by Olofsson and Arneng (2009). The survey was conducted in 2004, 2006 and 2009, including 10,802 tenants in the county of Västra Götaland (VG).

5.4.1 Tenants' Preferences of Housing Attributes

The average rankings of different attributes' importance when deciding on new accommodations are presented in the table below. The list is a direct translation of each feature that the tenants ranked in Olofsson and Arneng's (2009) survey. It is clear that all 15 features have results in essentially identical rankings through the three periods. This implies that the preferences have been stable over time, which indicate that the same conditions apply at the time of this report is being written.

Table 7 – Tenants average ranking of importance of accommodation features when deciding for a new apartment. Source: Olofsson & Arneng (2009)

Attribute	Ranking [1-10]		
	2004:	2006:	2009:
Cost of living	8.9	8.9	8.8
Safety/security	8.9	8.9	8.8
Possibilities for communications	8.8	8.7	8.7
Apartment's standard and cleanness	8.7	8.7	8.6
Surrounding areas of the building	8.6	8.6	8.5
The building's standard and cleanness	8.5	8.6	8.5
Closeness to commercial services (e.g. convenience stores)	8.5	8.4	8.3
The residential area's attractiveness	8.2	8.3	8.1
Size of apartment	8.1	8.1	8.1
Closeness to cultural/social services (e.g. schools, healthcare, culture and sport activities)	7.7	7.6	7.6
Availability of parking space close to living	7.2	7.2	7.1
Closeness to work place	6.9	6.9	6.7
Location: central, in city	6.5	6.5	6.5
Closeness to family and friends	6.4	6.3	6.3
Location: outside the city	4.3	4.2	4.1

Important to elucidate is that the survey was conducted through a self-completion questionnaire. Consequently, the actual meaning of an attribute might therefore be different based on each individual's perspective of the attributes. For example, the perception of an apartment's standard can be highly subjective. It is therefore important to interpret each tenant's underlying meaning of each attribute in order to satisfy said attributes successfully.

Another aspect to illuminate from the table above is that six (safety/security, possibilities for communications, surrounding areas of the building, closeness to commercial services, residential area's attractiveness, and closeness to cultural/social services) of the fifteen attributes concerns mainly the external context in which a real estate exists. These factors are probably often considered as completely exogenous to landlords. However, the high rankings given to many of these features indicate that landlords have much gain from improving them. For example, landlords could strive to increase perceived *safety/security* through e.g. improving outdoor lighting or initiating projects for shared neighborhood responsibilities, or lobby with municipalities to increase *possibilities for communications*.

It is reasonable to assume that preferences potentially could vary based on different segmentation variables, but a complete list of rankings, like the one presented above, can unfortunately not be presented for a segmented sample of tenants. However, the tables below present differences in frequency of high rankings (8-10), between some of the possible sorting variables. The available sorting variables were *age categories* (18-25, 26-35, 36-45, 46-55, and above 55) and *family situation* ("Children living at home", "Above 35 and no children living at home" and "Less than 36 years and no children living at home"). Additionally, the latter sorting variable was combined with an extra filter based on whether the tenants live in Gothenburg or any of the other municipalities of Västra Götaland.

The table below presents differences of average rankings between tenants living in the latter geographical category compared to tenants living in Gothenburg. These numbers are also accompanied with the corresponding actual proportions of high rankings for tenants living in other municipalities. Thus, one can see that the largest difference in rankings of importance, relating to the two geographical segmentation variables, was apparent for the category *availability of parking space close to accommodation*, for tenants of the cohort *less than 36 years and no children living at home*. An underlying reason for this specific feature might be that fewer individuals of this cohort own cars if they live in a city.

Table 8 – Differences of average rankings of preferences between tenants living in Västra Götaland (excluding the municipality Gothenburg) and municipality Gothenburg. The figures in parentheses represent average rankings, on a scale from 0-100, of tenants living in any of the other municipalities than Gothenburg in Västra Götaland. Source: Compiled from Olofsson & Arneng (2009)

	Proportion of high rankings, i.e. percentage of 8, 9 and 10 on a scale from 1-10		
	Less than 36 years and no children living at home	Above 35 and no children living at home	Children living at home
Location: central, in city	-15 (36)	3 (47)	-9 (29)
Possibilities for communications	-12 (76)	-1 (76)	0 (75)
Closeness to cultural/social services (e.g. schools, healthcare, culture and sport activities)	-6 (46)	1 (57)	1 (70)
The residential area's attractiveness	-5 (61)	4 (71)	5 (71)
Surroundings	-5 (69)	6 (82)	6 (82)
Closeness to commercial services (e.g. convenience stores)	-3 (71)	1 (74)	1 (70)
Cost of living	4 (83)	7 (85)	13 (87)
The building's standard and cleanness	6 (74)	8 (83)	8 (81)
Apartment's standard and cleanness	6 (83)	6 (83)	6 (82)
Safety/security	6 (84)	6 (84)	3 (84)
Size of apartment	6 (71)	6 (66)	2 (76)
Closeness to work place	6 (49)	-1 (39)	2 (52)
Closeness to family and friends	11 (43)	6 (40)	1 (37)
Location: outside the city	14 (23)	15 (30)	18 (33)
Availability of parking space close to living	27 (71)	14 (66)	15 (78)

Based on the segmentation variable *age categories*, the two groups with largest differences was “Above 55 years” and “18-25 years”. A summary of the differences between these two groups, regarding the frequency of high rankings, is presented in the table below. As seen in the table, the three biggest differences are *closeness to cultural/social services (e.g. schools, healthcare, culture and sport activities)*, *the building's standard and cleanness* and *availability of parking space close to living*, which all were 11% more frequent within the older age group.

Table 9 – Differences between average rankings of preferences between tenants belonging to the age group “older than 55 years” compared to those in the age group “18-25 years”. The figures in parentheses represent average rankings, on a scale from 0-100, of tenants that are older than 55 years. Source: Compiled from Olofsson & Arneng (2009)

	Difference of high rankings (tenants > 55 years)
Closeness to cultural/social services (e.g. schools, healthcare, culture and sport activities)	11 (58)
The building's standard and cleanness	11 (78)
Availability of parking space close to living	11 (55)
Location: outside the city	10 (21)
The residential area's attractiveness	9 (68)
The building's surrounding areas	9 (77)
Closeness to family and friends	5 (38)
Closeness to commercial services (e.g. convenience stores)	2 (75)
Apartment's standard and cleanness	1 (79)
Safety/security	0 (80)
Location: central, in city	-1 (46)
Size of apartment	-1 (62)
Cost of living	-2 (80)
Closeness to work place	-9 (33)
Possibilities for communications	-10 (78)

5.4.2 Tenants' Degree of Satisfaction from their Housing Situations

Several respondents shared the belief that tenant satisfaction is an increasingly important aspect. An example of this attitude is, according to Håkan Tengelin, the increasing trend of landlords conducting own surveys of their tenants' satisfaction. Moreover, both Ulf Gärdhagen and Andreas Eriksson explicitly stated that soft attributes are increasingly important, partly due to the developments in the rent system considering the facility management as a factor. Aspects that belong to this category, which they consider important, are e.g. personal contact and always being contactable whenever the tenants have problems with their apartments. Gärdhagen have also tried experimenting with bonus-systems for tenants that have lived in their apartments for longer time periods. However, the overall expected benefits through increased tenant satisfaction were decreased through jealousy among other tenants that did not reach the required levels.

The extents that tenants in Västra Götaland, generally, are satisfied with the ten factors that are presented in the list below were also measured in Olofsson and Arneng's (2009) survey.

- *Cleanliness of the property,*
- *Shared/common areas,*
- *Laundry room,*
- *Standards of apartments,*
- *Apartment's repairs and maintenance,*
- *Service/availability,*
- *Outdoor environment,*
- *Service and maintenance of the building, and*
- *Safety/security.*

The figure below illustrates the extent, on a scale 0-100, that tenants were satisfied with each of the above features. The bars in the graph illustrate average ratings, segmented based on public or private housing companies. The horizontal markers present highest respectively lowest values for public and private housing companies. It is, thus, evident that there exist huge differences between the extents that different housing companies satisfy their tenants. For example, the overall satisfaction among private housing companies was 53, while the difference between the private companies that have the highest, respectively the lowest rating, was 48. Moreover, tenants from both public and private housing companies perceived that they, on average, were most satisfied with their *laundry rooms* and least satisfied with *apartment's repairs and maintenance*. Accordingly to tenants' rankings of importance of different attributes when choosing accommodation, which was presented in table #, *Safety/security* was considered as being the most important feature. However, the extent that tenants are satisfied with this aspect varies heavily and the averages for both public and private housing companies are only slightly higher than the overall average level of satisfaction. Further, *apartment's standard and cleanness* was considered as the fourth most important feature, with an average ranking of 8.6 out of 10, but the extent that tenants were satisfied with *apartment's standard* was significantly lower than the average extent of satisfaction. Thus, this analysis suggests that landlords have great potential of increasing tenants' satisfactions through improving *satisfaction with apartment's standard* and *safety/security*.

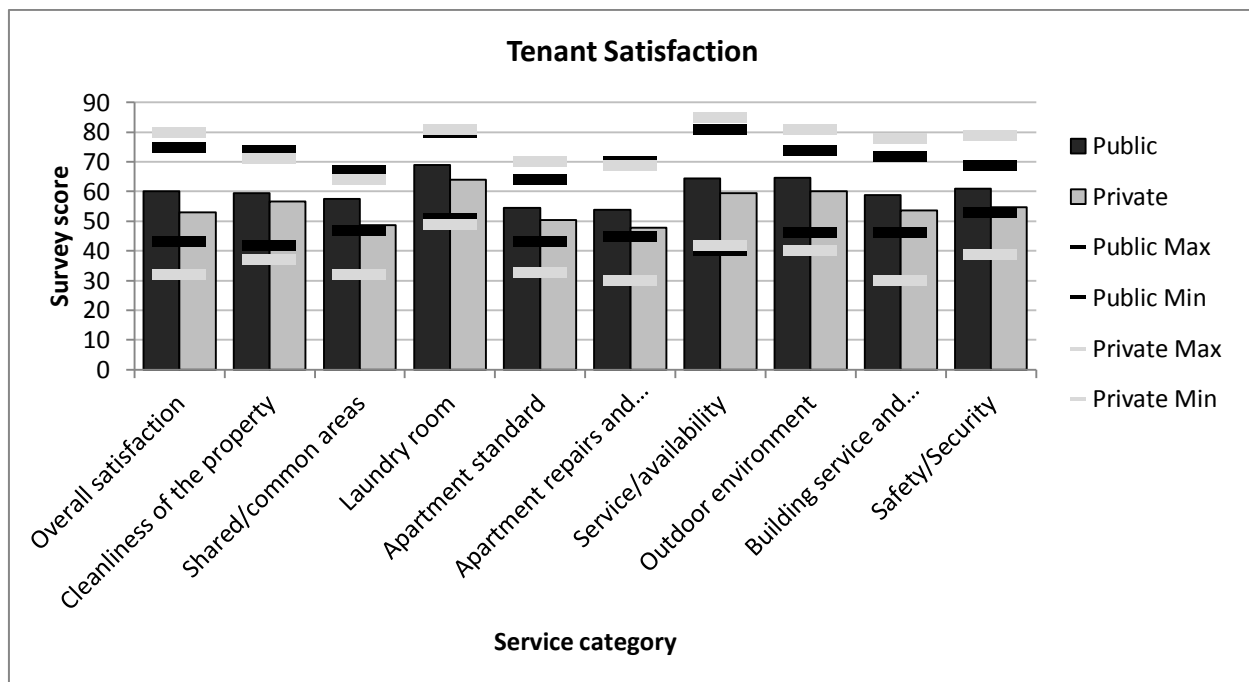


Figure 21 – Average ranking of tenants’ satisfactions for public and private housing companies in Västra Götaland. The bars represent average rankings of each category, while the horizontal markers illustrate the maximum and minimum rankings from all private housing companies (represented by light gray markers with three squares) and public housing companies (represented by dark-gray markers with diagonal lines). Source: Compiled from Olofsson & Arneng (2009)

Accordingly to the definition of residential satisfaction being the result of interactions between an individual’s personal characteristics and the reality of his or her accommodation (Landale & Guest, 1985), it is important for landlords to approach tenants’ satisfaction based on the actual tenants that are living in his/her properties. Hence, the above presentation of averages for preferences and extents of satisfaction could be used as general guidelines or in order to anticipate needs and expectations of future tenants. However, due to individual differences, the general guidelines should preferably be accompanied with discussions with the actual tenants.

In the theoretical framework presented earlier in this report, it is stated that turnover ratios can generally be assumed to increase as a consequence of dissatisfaction among the tenants. This ratio has therefore been used as a proxy for assessing tenants’ satisfaction. Turnover ratios could theoretically be a representative numbers for the whole housing stock of the respective municipalities, but it might also be consequences of potentially poorly managed housing companies. The former indicates relatively high costs for management, while the latter indicate potential for a comparative advantage for well managed housing companies. The average cost for exchanging a tenant in Sweden is 30,000-40,000 SEK accordingly to Lacotte (2010).

5.4.3 Summary of Sub-study Results

The findings suggest that tenants rank *cost of living* and *safety/ security* as their highest preferences when evaluating apartments. However, the rankings differ significantly between different groups of tenants. For example, the most extreme difference between groups was found in importance of parking availability, whereas tenants living in the municipality of Gothenburg rank it lower than those living in

any of the other municipalities in Västra Götaland. In terms of satisfaction, the survey indicated that housing companies fulfill their tenants' needs and expectations to a varying extent. It is therefore important to investigate individual needs and satisfactions for each involved tenant. However, the analysis of preferences and satisfactions suggests that landlords have greatest potential for increasing tenants' satisfactions through improving the *apartment's standard* or surrounding *safety/security*.

Tenants' dissatisfaction are likely to contribute to increased turnover ratios, which are associated with several direct and indirect costs that landlords often underestimate, as well as increased ongoing costs for administration and maintenance. It was therefore indicated that landlords would be able to achieve higher long-term yields through both increased income and decreased costs if their tenants are satisfied with their accommodation. Further, as suggested in sub-study 2, increased acceptance of higher rent levels and movements towards more market oriented housing conditions will likely increase the possibilities for long term total yields, especially for real estate with highly satisfied tenants that preferably have high disposable incomes.

5.5 Identifying Attractive Municipalities

5.5.1 Constructing a Municipality Assessment Framework

The framework presents relevant data for any selected municipality in Western Sweden, covering:

- A demographic overview concerning age distribution, student and welfare distribution
- Historic population growth, including migration
- Unemployment history including job support
- History of municipal self-sufficiency and municipal investments
- History of the local business climate
- Income distribution, and income and average assets per age group
- Average municipal-specific operational housing costs
- Average rent and income yield distributions
- Housing stock type distribution and people per housing unit, historical
- Vacancy rates
- Average single unit transaction price history
- Tax value developments
- Apartment construction history, including average constructed apartment size
- Average transaction price history for rental housing
- Rental housing stock size
- Age, education and date of birth distributions per housing type

Were relevant, municipal datasets are presented together with county, municipal type or national data sets for comparative purposes. See Appendix for examples of municipal assessment framework outputs as well as dataset source lists.

5.5.2 Identifying Regions Enabling High Net Operational Income

To identify the external factors influencing total yield, one can begin by breaking up the total yield equation into its individual components to determine which factors are specific to and/or influenced by the choice of municipality (see figure below). The assessment framework described previously serves as

an explorative device to determine which data differs between municipalities. The operational cost covers a range of elements, but only a few differ between municipalities. These are determined by local service supply and municipal taxation schemes and concern water services, electricity, garbage collection, sewage and heating. Yearly studies conducted by Nils Holgersson Gruppen (2006-2011), will be used to compare municipal average levels for these costs.

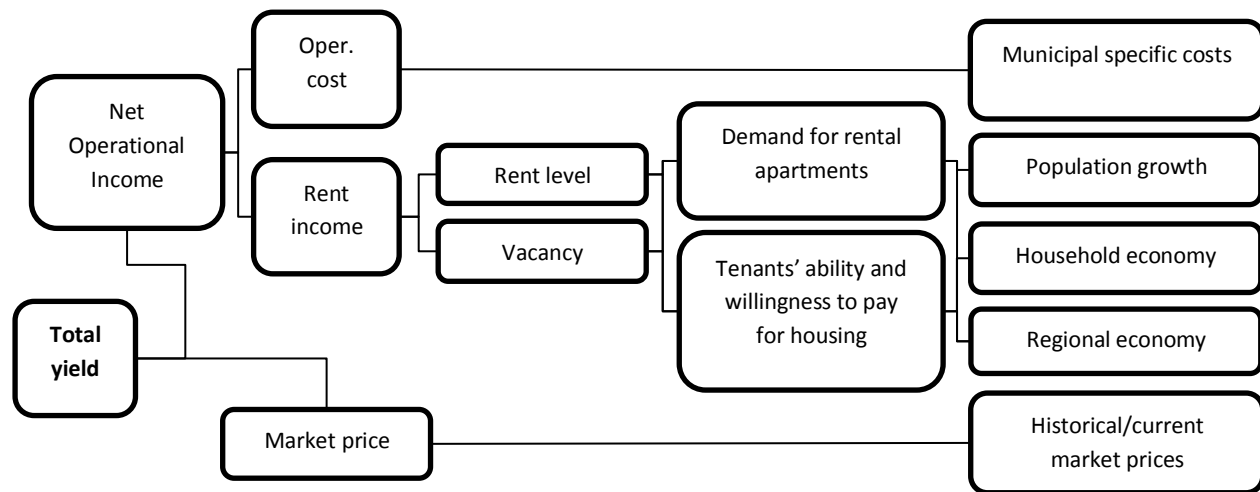
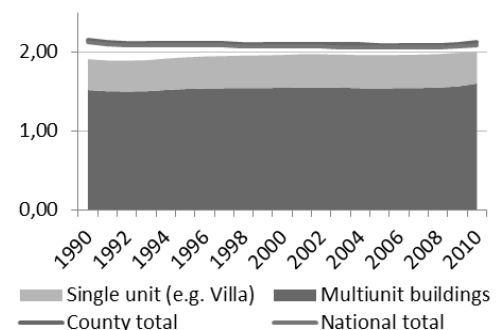


Figure 22 – Breakdown of municipal-specific influencers on total yield

The positive element in the NOI factor, the rent income, is affected by the average rent level in a municipality as well as the average level of vacancy in rental apartments in the municipality. These, in turn, it is here assumed, are mainly affected by the demand for rental apartments as well as potential tenant's ability and willingness to pay for housing. That is to say, the share of their disposable income which they deem acceptable to spend on housing. Rental housing serves a fundamental need in the municipal societies covered in the study, providing housing convenient in the short term and available without upfront capital expenditure⁴⁷. It is assumed that the demand for rental apartments follow demand for housing in general, in accordance with Downs (2007). Even though many of the municipalities are primarily villa communities, there will always be demand for rental units at some level⁴⁸. As the municipal assessment framework indicate long term stability in the number of people per apartment unit for a given municipality (see Figure 23), population growth will be used as an indicator for the demand for housing, and in turn, rental apartments. Two data sets will be used to indicate population growth. Firstly, the long term organic growth in the number of



**Figure 23 – People per apartment (Gothenburg).
Data source: Statistics Sweden (1975-2011)**

⁴⁷ CEO of a public real estate company

⁴⁸ Associate director real estate transactions

individuals in the municipality, and secondly the ability to attract people to the municipality in terms of the ratio of municipal immigrants to emigrants.

Tenants' ability and willingness to pay for housing, i.e. disposable income available to cover housing costs, will be assumed to be determined by the household economy and the regional economy as a whole. These in turn will be indicated by four data sets; the unemployment rate, median income, the local business climate as ranked by the Confederation of Swedish Enterprise (2012), and the long term level of investments made by the municipality, to indicate the financial strength of the municipality as well as the municipality's intentions to keep improving.

The main denominator in the total yield equation, market value, is ideally illustrated by historic transaction data. However, due to great differences in the number of transaction across the municipalities studied, an estimated implicit market value was used in substitution. Newsec Advice, a real estate broker, analyst, and manager in the northern European markets, determines average income yields for given municipalities and sub-regions within municipalities, based on a combination of historical transaction data and expert judgment (Newsec Advice, 2012). Through a direct capitalization method, these can be used to obtain an implicit market value. These findings will be explored further in the succeeding section.

A list of the data sets used as indicators for each factor is presented in the figure below:

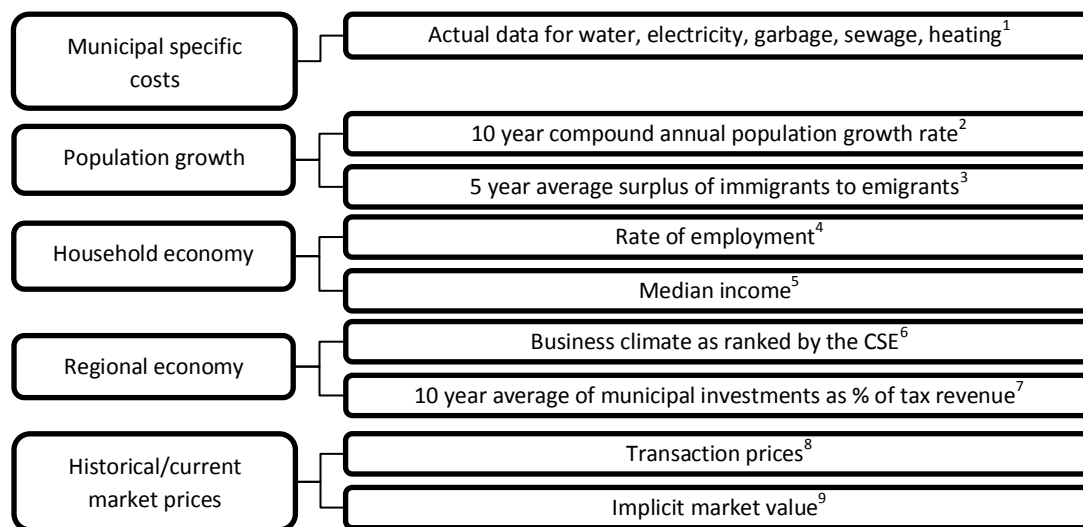


Figure 24 – Indicatory datasets for each factor in the income yield breakdown. Data sources:

1. Nils Holgersson Group, 2006-2011, 2. Statistics Sweden, 2000-2011B, 3. Statistics Sweden, 1997-2011, 4. Statistics Sweden, 1996-2011, 5. Statistics Sweden, 2000-2010B, 6. The Confederation of Swedish Enterprise, 2007-2012, 7. Statistics Sweden, 1998-2011, 8. The Swedish mapping, cadastral and land registration authority, 2012, 9. Newsec Advice, 2012

To produce a comparable indicator, these data sets, in turn, were individually ranked (e.g. highest median income to the lowest). This ranking was then inverted to produce a corresponding score, which of all were then summed to produce a total score. This resulting indicator was aired for feedback

iteratively to several industry players and industry experts⁴⁹ and was deemed satisfactorily indicative for a municipality's ability to enable high NOI in the long term. As datasets for migratory patterns, population growth and business climate are directly included, the indicator itself incorporates whether citizens and businesses chose to locate and remain in the region, reflecting positive regional competitiveness (Kitson, Martin, & Tyler, 2004), in turn reflecting economic growth (Malecki, 1997) and housing demand (Downs, 2007). The inclusion of economic data on median income, employment and municipal investments reflect economic development in the municipality, in turn indicating the standard of living and demanded housing standard (Malecki, 1997). The results of these rankings are illustrated in the figure below.

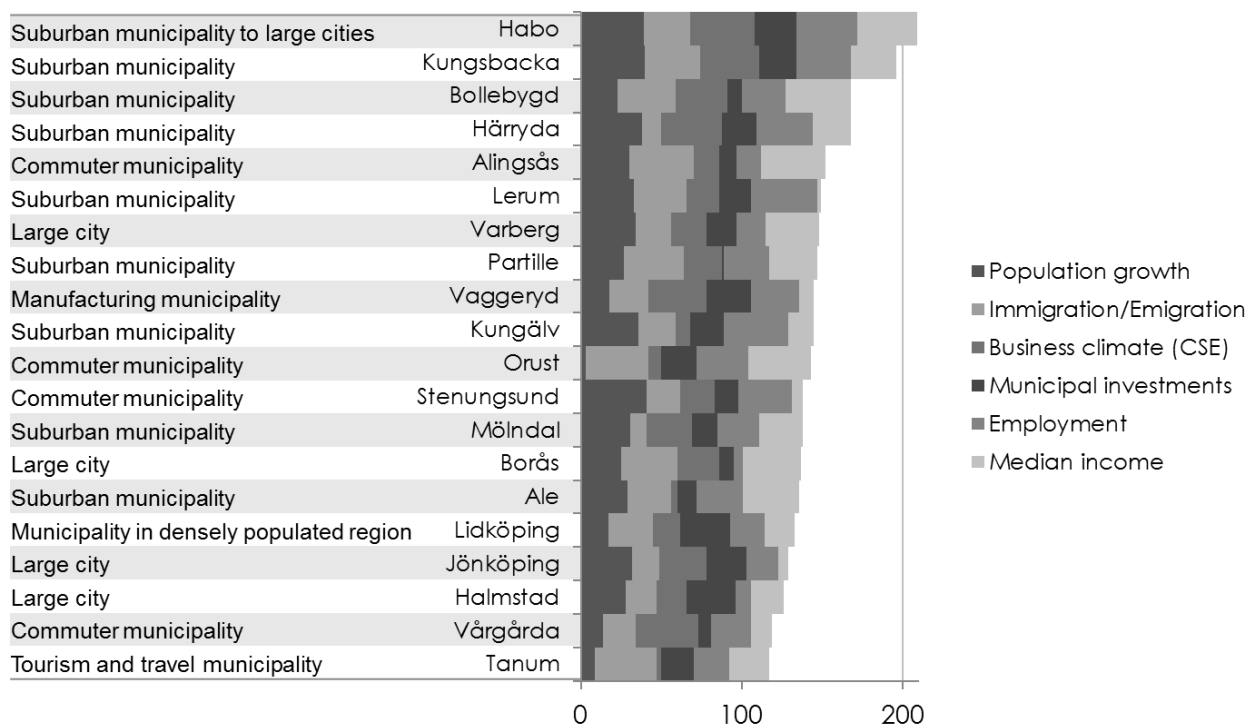


Figure 25 – Top 20 municipalities in Western Sweden enabling high NOI. Data sources: Statistics Sweden, 2000-2011B, Statistics Sweden, 1997-2011, Statistics Sweden, 1996-2011, Statistics Sweden, 2000-2010B, The Confederation of Swedish Enterprise, 2007-2012, Statistics Sweden, 1998-2011

The figure also presents the municipal types of the top ranking municipalities, demonstrating that the selection seems to favor smaller suburban and commuter municipalities. It should here be noted that in a primarily commuting municipality, the strength of the local business climate is not necessarily linked to the prosperity of the citizens, i.e. the demand for housing. Hypothetically, a given region could have a prosperous citizenship with high demand for housing, benefiting from the strength of another business region via commute. Vice versa, local business could prosper without the value generated benefiting local citizens.

⁴⁹ 1 CEO of a real estate company, 1 advisor for real estate transactions, 1 manager at a real estate development firm, and 1 associate director within real estate transactions

5.5.3 Identifying the General Price Level in a Municipality

Having identified municipalities attractive due to their ability to enable high income yield in terms of high NOI, the income yield fraction's whole, the next step is to investigate the income yield's denominator: the market price. After rummaging through historical transaction data from The Swedish mapping, cadastral and land registration authority (2012) of rental real estate, one must conclude that the dataset includes a discouraging shortage of information on transactions in the aforementioned smaller, suburban communities. As an example, the registry on Habo only lists nine transactions of properties with more than 200m² residential space and a transaction value of more than 500,000SEK for the last 15 years. It would be fairly safe to assume that this lack of recorded transactions is caused either by a lack of actual transactions or that the transactions taking place are shielded from public view, in the form of e.g. holding companies shifting hands rather than the real estate directly. Taking this into account, to move forward, data on the size of the local housing market was included to make sure there is a sufficient stock of rental real estate in the municipality to be able to enter the market. Additionally, instead of basing the municipal comparison on historical transaction data and exclude municipalities with insufficient data, data on average income yield in municipalities will be used. The assumption made is that the income yield data provider, Newsec Advice (2012), have the ability to incorporate hidden transactions (e.g. embedded in holding companies) as well as expert judgment to cover the lack of public transaction data. Using the direct capitalization method, and incorporating the municipal specific costs into the NOI, the resulting implicit price levels can be estimated, and are presented in figure 26.

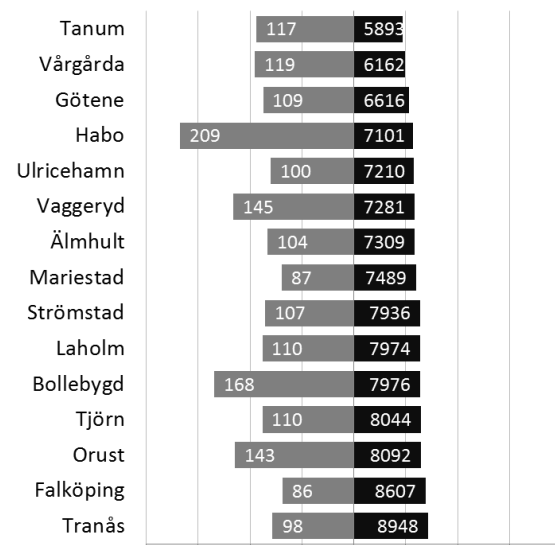


Figure 26: NOI score (gray) and implicit market price in SEK/m² (black). Data sources: Statistics Sweden, 2000-2011B, Statistics Sweden, 1997-2011, Statistics Sweden, 1996-2011, Statistics Sweden, 2000-2010B, The Confederation of Swedish Enterprise, 2007-2012, Statistics Sweden, 1998-2011, Newsec Advice 2012, Avgiftsundersökningen Nils Holgerson, 2006-2011

Noticeable is that while sorting municipalities after implicit market price, most of the top-ranking regions score quite low in terms of enabling high NOI, in other words, they are cheap for a reason.

5.5.4 Determining the Attractive Balance between Potential for High NOI and Cost of Acquisition

By sorting municipalities after their long-term attractiveness, i.e. ability to enable high NOI, one can evaluate for which regions prices do not correspond to this ability. In other words, one can identify municipalities which offer as low a price level as possible, at a given level of ability for enabling high NOI. Presented below are the top 15 municipalities in terms of enabling high NOI, paired with their respective implicit average market prices, as well as data on the housing stock (Statistics Sweden, 2012), corresponding Newsec income yield (Newsec Advice, 2012), and transaction data (The Swedish mapping, cadastral and land registration authority, 2012).

Municipality	Long term attractiveness	Implicit SEK/m2 (NOI/Yield)	Rental housing units	Apart-ments	Yield	Trans/ year	Average (5yr) transactions/year as % of units
Habo	209	7101	59	928	7,3	1	2%
Kungsbacka	196	16549	300	7076	4,8	10	3%
Bollebygd	168	7976	47	890	7,0	4	8%
Härbyda	168	14142	120	3261	5,9	4	3%
Alingsås	152	12949	484	7471	5,7	27	5%
Lerum	149	13674	131	3200	5,6	10	7%
Varberg	148	11696	570	11217	5,8	35	6%
Partille	147	20032	172	7115	4,2	6	3%
Vaggeryd	145	7281	149	1767	7,3	13	9%
Kungälv	145	13873	252	6938	5,7	8	3%
Orust	143	8092	123	1191	7,3	5	4%
Stenungsund	138	15557	84	3372	5,4	4	4%
Mölnådal	138	18990	306	14129	4,4	18	6%
Borås	137	13637	1553	29848	5,5	78	5%
Ale	136	15129	158	4317	6,2	5	3%

Figure 27 – Enabling high NOI at a low price point, within a sufficiently large, existing market. Data sources: Statistics Sweden, 2000-2011B, Statistics Sweden, 1997-2011, Statistics Sweden, 1996-2011, Statistics Sweden, 2000-2010B, The Confederation of Swedish Enterprise, 2007-2012, Statistics Sweden, 1998-2011, Newsec Advice 2012, Avgiftsundersökningen Nils Holgersson, 2006-2011, The Swedish mapping, cadastral and land registration authority, 2012

As the ability for high NOI is not quantified in the same measure as the implicit market value, the method of combining the two becomes involuntarily a qualitative one. High NOI and low implicit market value combines to high income yield, given their relation. Having chosen to prioritize high NOI, as presented in the diagram above, one can discern a group of four municipalities in a significantly lower price range than the other municipalities. Based on the initial selection criteria (that only outstanding municipalities are to be further analyzed), Habo is the evident choice; excelling both in terms of enabling high NOI and at a low price. Bollebygd will also be carried through to further analysis to offer a wider selection of case examples. Both municipalities are outstanding in the two selection indicators, and although the housing stock is relatively small (59 and 47 rental real estate, respectively), it is deemed sufficient to find potential acquisition objects.

5.5.5 Transportation and Accessibility Infrastructural Improvements

To identify municipalities that have potential for future positive developments as a consequence of transportation infrastructure developments (de Bok, 2009; Snieska & Simkunaite, 2009), projects nearing completion or planned to be completed within the near future were considered and are summarized in the table below.

Table 10: Overview of planned and ongoing of infrastructure projects in Western Sweden. Sources: The Swedish Transport Administration, 2012A, 2012B, 2012C

	2012	2013	2014
VG	Alependeln		
	Increased capacity in commuter stations across the region Increased train traffic to Kungsbacka and Alingsås		
Halland		Åsa station	
			New tracks and station in Varberg

Three significant projects are ongoing or planned for the near future in three separate regions: Ale, Åsa (Kungsbacka municipality), and Varberg. Worth to note is also the high speed rail project Götalandsbanan from Gothenburg to Stockholm, a major project that would benefit Bollebygd among other municipalities, but is excluded here as the project is currently put on hold (The Swedish Transport Administration, 2012D). The three projects identified, however, are all significant projects in that they are projected to improve commuting and accessibility significantly in the respective regions (The Swedish Transport Administration, 2012A, 2012B, 2012C).

Beginning with Varberg, the plan is to add another railway track and rebuild the local travel center, improving accessibility and effectively doubling the railroad capacity. The project is currently set to begin sometime in 2014, but completion is at the time of writing unclear (The Swedish Transport Administration, 2012C). Secondly, in Åsa, a small coastal town just south of Gothenburg, a new train station is planned to be completed in 2013 cutting commuting time to Gothenburg from one full hour to a single half hour (The Swedish Transport Administration, 2012C). However, being a small town, the housing stock is deemed insufficient to support investors looking to buy into existing properties (Boreda, 2012). Thirdly, the ongoing project Alependeln benefiting the municipality of Ale, including both road and railroad improvements, is currently ongoing and is at the time of writing planned for completion before 2013 (The Swedish Transport Administration, 2012B). For a map of the current progress, see Appendix: Map of infrastructural projects in the Ale municipality.

Looking at historical transaction data presented in the figure below, one can discern the price development for rental housing properties in the three municipalities identified; Varberg, Åsa (i.e. Kungsbacka) and Ale.

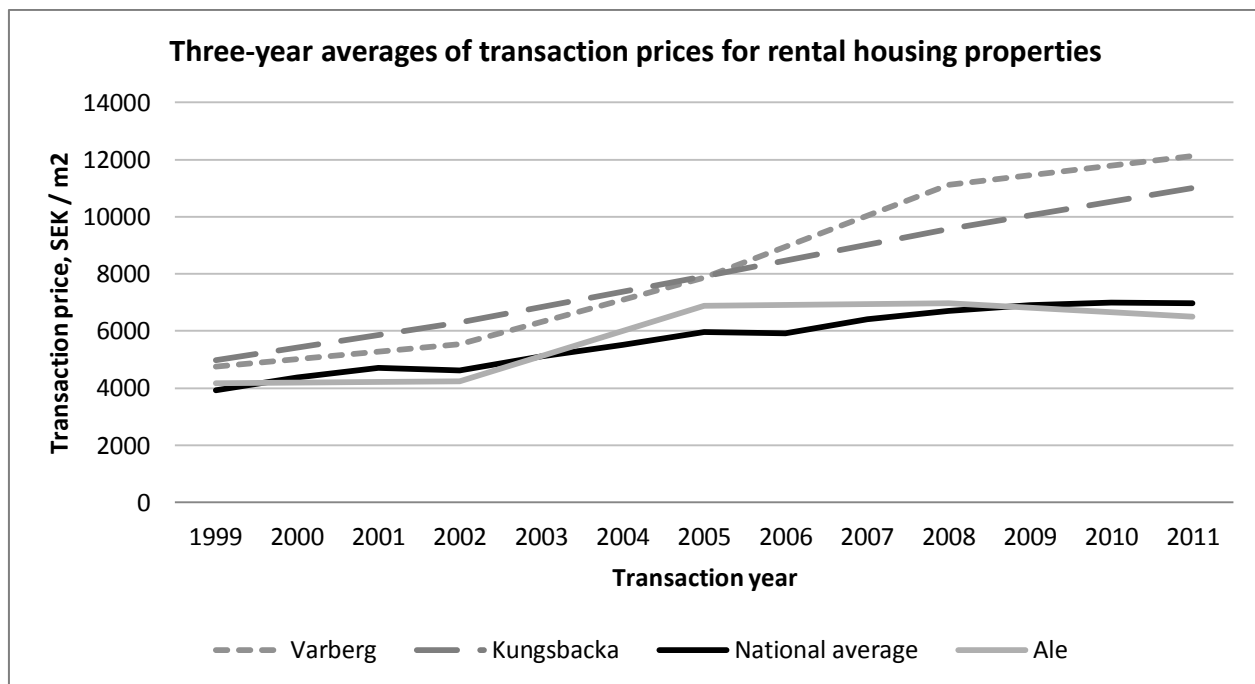


Figure 28 – Three-year averages of transaction prices for rental housing properties. Data source: The Swedish mapping, cadastral and land registration authority (2012)

Ale is the only municipality with an average transaction price below the national average, indicating that even though the infrastructural projects are near completion this has yet to reflect on prices.

Due to project completion uncertainties and the high price level, Varberg will be excluded from further analysis. Nor will Åsa be carried through for further investigation as there is no rental real estate in the local housing stock that presents any opportunity for investment (Datscha, 2012). The one outstanding municipality in terms of infrastructural developments is Ale, and will as such be further investigated.

5.5.6 Summary of Sub-study Results

Findings suggest that rental real estate prices do not always reflect the underlying actual and potential income generating ability of the property considered. The study has identified two regions, Habo municipality and Bollebygd municipality, which seem to be undervalued with respect to the local demand for housing, attractiveness and economic strength of the region, as well as the financial strength of average residents. A potential investor can therefore stand a decent opportunity of finding property at attractive prices and expect a positive development driven by a positive regional development, as well as being able to undertake yield improving investments, given the tenants' beneficial financial situations and the overall attractiveness of the region and property.

In a similar vein, another municipality identified as potentially undervalued is Ale which is currently carrying out significant infrastructural developments set to potentially improve the attractiveness in the region substantially, which has yet to reflect on property prices. The region presents an opportunity to buy rental property at a present discounted price and benefit from an expected positive development ahead.

5.6 Applying the Findings: Case Examples

The transaction price has a slightly greater effect than any other variables (rent, operational cost, maintenance cost) in determining the income yield on initial investment (see Appendix: Yield on Initial Investment: Sensitivity Analysis). Changes in price also affect income yield from day one, as it is not associated with either investment implementations or rent negotiation procedures. It is based on transaction negotiations alone, before any investments are made. As such, when reviewing the following cases, one should bear in mind the significant impact price negotiations can have on the resulting income yield on the initial investment. Further, it should be noted that although rent increases have a greater principal effect on the income yield on the initial investment than individual cost decreases have, their level of bottom-line impact may be reduced by real estate taxation, in part calculated from reported rents (The Swedish Tax Agency, 2012). Also important to bear in mind when transacting rental property is that if the current tenants have formed a housing cooperative they should always be offered the opportunity to acquire the property and transform the rental apartments into condominiums (Institutet för värdering av fastigheter och ASPECT, 2011), however this can be bypassed if the company owning the property is transferred rather than the property itself⁵⁰.

Since the three regions chosen to provide case examples have been done so partly based on their current low price level, one would perhaps not be surprised that Tobin's q for the three municipalities are low, and does indeed favor acquisition rather than construction. Please refer to the table presented below, indicating Tobin's q based on both average transaction prices in the region (average SEK/residential m² for all transactions since 2007, for properties with no commercial space and all adjusted for historical rural property value development), and price estimates based on the average taxation value (average taxation value per residential m² of the current rental housing stock, 2010 figure adjusted by 1.33 [taxation value being an estimate of 75% of market value] and average rural value development since 2010).

Table 11: Tobin's q for the three municipalities selected to provide case examples. Data sources: Swedish Board of Housing, Building and Planning, 2012; The Swedish mapping, cadastral and land registration authority, 2012; Datscha, 2012

Valuation method	Municipalities		
	Ale	Bollebygd	Habo
Average transaction price	0,18	0,20	0,19
Taxation value as 75% of market value	0,28	0,28	0,23

The conducted interviews with public landlords indicated that the investment evaluation is conducted with a somewhat different approach than the private actors'. Respondents from Alebyggen and Habo Bostäder⁵¹ presented income yields of 2-3% respectively 3.22%, which were several percent lower than the corresponding figures presented by Newsec. This clearly indicated that the financial returns were not seen as imperative. Moreover, Bollebo presented an income yield of 7.6% based on calculations of their

⁵⁰ CEO of a private real estate company

⁵¹ 1 CEO of a public real estate company, and 1 CFO of a public real estate company

properties' book value⁵². Alebyggen's financial requirement from their owners was to reach 5% income yield, while both Habo Bostäder and Bollebo lacked explicit financial objective to reach a certain income yield.

5.6.1 Potential Investment Region One: Habo

Habo is a commuter municipality neighboring the larger city of Jönköping, wherein close to half of all Habo residents work (Statistics Sweden, 2010C). The relative affordability of housing and closeness to nature has attracted people from Jönköping towards the surrounding towns like Habo. What sets Habo apart from the other commuting towns, is its closeness to the shores of Lake Vättern, as well as its full local availability of services⁵³. Habo is primarily a villa community which develops in an inland direction, although there is a recent development down by the lake shore, including a condominium apartment complex. This is the first such area close to Habo town, however new areas close to Lake Vättern are discussed for future development⁵⁴. For a more detailed overview of Habo, please refer to Municipal analysis: Habo in the appendix to view output from the municipal assessment framework.

By analyzing a compilation of all rental housing property in Habo municipality one can assess the availability and state of the housing stock in the municipality. The only sub-region of Habo municipality to hold any rental housing stock of significance is Habo town itself. The average value year for the rental housing stock in Habo is 1979 and holds an average of 16 apartments (Boreda, 2012; Datscha, 2012). The average rent for residential space is 780SEK/m², well below the national average of 960SEK/m² (SABO 2012). At the time of writing, all but one of the private landlords in Habo negotiates the rent directly with their tenants⁵⁵.

Practically, all of the housing stock is owned by the municipal housing firm Habo Bostäder AB, which owns 519 out of the total 595 apartments. This can be compared to the largest private owner in Habo, which has 36 apartments. The remaining 40 is owned by other small private actors.

⁵² *CEO of a public real estate company*

⁵³ *Head of division for planning and construction in Habo municipality*

⁵⁴ *Ibid.*

⁵⁵ *Rent negotiator at the Swedish Union of Tenants*

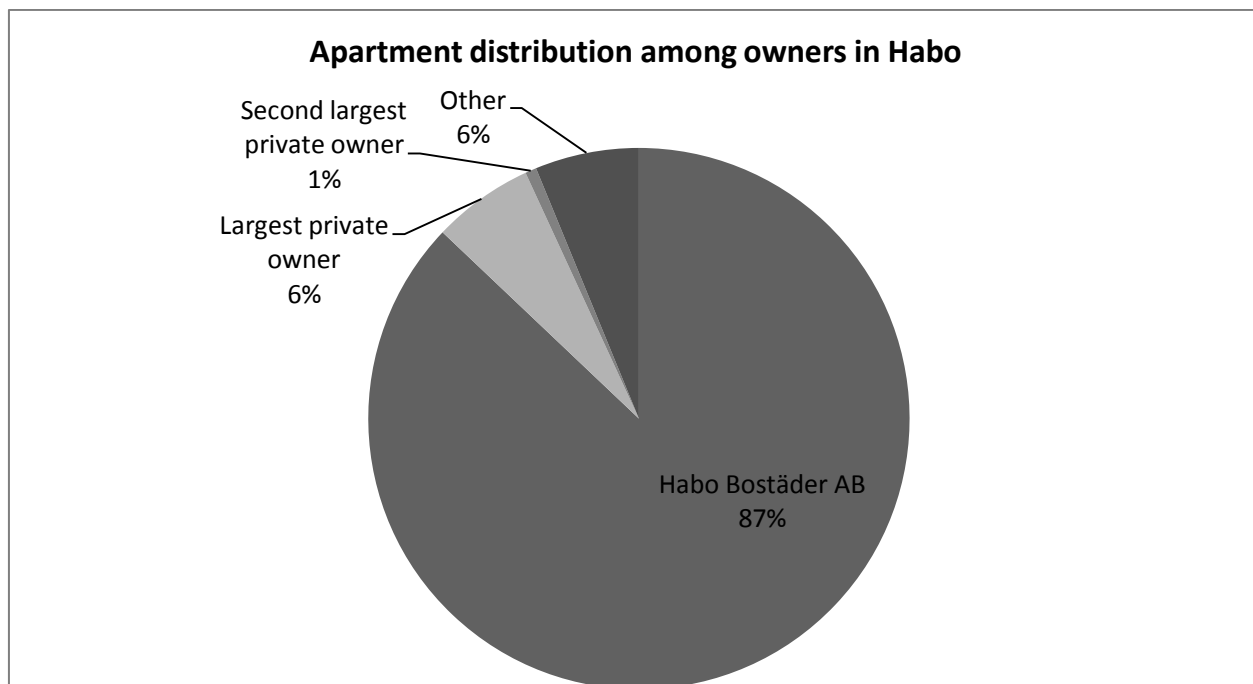


Figure 29 – Apartments distribution among Habo property owners. Data source: The Swedish mapping, cadastral and land registration authority, 2012

Habo Bostäder AB has expressed an ambition for long term ownership with no explicit intention to divest property⁵⁶. However, the recent changes governing municipal housing firms and Habo Bostäder's current (and ongoing) need to reduce loans to enable upcoming maintenance and renovations (Habo Bostäder AB, 2011), potentially opens up the possibility for divestments. Looking at the value years of the buildings and the reported financials, the largest private owner might be facing a similar need for capital to enable future maintenance and renovations (Datscha, 2012). Further, there are indications that one of the smaller private owners, having moved from Habo, is looking to retire and sell off his properties⁵⁷.

Habo Bostäder reports an average tenant turnover of 19.4% 2011 and 19.7% 2010 (Habo Bostäder AB, 2012). Being a relatively high turnover rate⁵⁸, this might serve as an indication for potential that a changed management could bring, if able to increase tenants' satisfaction, decrease the high costs associated with exchanging tenants.

Based on indications of possible willingness to divest, the properties of both the largest and the second largest private property owner were included as case examples. Of Habo Bostäder's properties, three case examples were compiled. First a property was included due to its expressed future potential as senior homes (Sv. "Trygghetsboende")⁵⁹. Second, a property was included due to Habo Bostäder describing it as a potential divestment property⁶⁰. Third, a property was included on the grounds of it

⁵⁶ CEO of a public real estate company

⁵⁷ Head of Real estate, technical division in Habo municipality

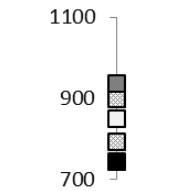
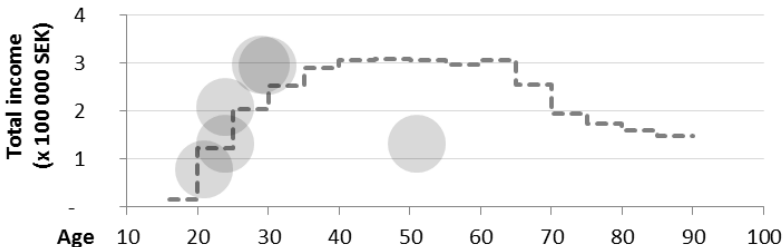
⁵⁸ Head of real estate at public real estate company

⁵⁹ Head of Real estate, technical division in Habo municipality

⁶⁰ CEO of a public real estate company

being located some distance away from the rest of the stock and divestment may as such be valuable to refine the stock and streamline property management.

One case presenting a high income yield potential is presented on the next page. This particular case presents a relatively small property, with a large portion of commercial space. Being located by the town square, this distribution is deemed representative for several of the case examples reviewed. Based on the value year (1958), one might assume that the building's piping is nearing the end of its technical lifespan. As the current rent level is well below average, one can assume that the standard of the apartments are currently quite low as well. Given the central location of the property, close to all services offered within the municipality, and the current low rent level, the property is well situated to tolerate rent increases following standard improvements accompanying a possible needed change of piping and hence renovation of bathrooms. A case is presented on how a 60 SEK rent increase (which corresponds to an 8% increase on current rent level of 745 SEK/m²) affects total yield on initial investment. As discussed earlier, it is here assumed that the cost of the pipe change, renovation of bathrooms and required maintenance can be deducted from the transaction price in the form of a discount when shifting the responsibility to perform this required maintenance to the next owner, as this is something that the previous owner should have saved up capital to be able to perform. The building currently houses six registered tenants, most of which are young, which might aid in carrying out the standard improvements as they are likely to hold a shorter tenancy.

Municipality	Region		Property name(s)				
Habo	Habo		XXX				
Key information							
Present owner	Adress(es)						
Second largest	XXX						
Built	Value year	Refurbished					
1958	1958	-					
Apartments	Space distribution						
4	Living		222 m2				
Average size	Commercial		446 m2				
56 m2	Plot		1 180 m2				
Heating		Ventilation					
District heating		FT					
							
Characteristics							
- Located right on the central square - Houses a bakery/café and a small store - One of four properties privately owned by this owner							
Income yield potential				Corresponding improvements			
	9,9% = 10,4%			- Improve standard and raise rent by 60 SEK/m2 (rent level is presently well below average) - Base valuation			
		8,5% = 8,9%					
			7,8% = 8,2%				
6,4% = 6,7%			7,3% = 7,6%				
Tax value valuation	Transaction price aver.	Actual price (adj)	Gross multiplier	Newsec yield 7,3%			
4,8 MSEK	3,1 MSEK	3,6 MSEK	3,9 MSEK	4,2 MSEK			
Last transaction (1996-2012)							
Date	1993-09-01	Price	1,8 MSEK	K/T	-	Price (adj.)	3,6 MSEK
Tenants and rent levels							
Record of non-payment	Rent levels		Age and income of tenants compared to national average income per age group				
33%							
Business involv.	■ Newsec □ SABO ■ National ■ Rent						
17%							

5.6.2 Potential Investment Region Two: Bollebygd

Bollebygd is a suburban municipality in which one third of the residents work locally and one fourth commute to Gothenburg (Statistics Sweden, 2010C). Many of those who move into Bollebygd have previous connections to the area and are presently residing there to start a family⁶¹. The general price level is also comparatively less than those of other suburban municipalities closer to Gothenburg⁶². The town of Bollebygd is developing northwards, however depending on whether the proposed high-speed rail connection between Gothenburg and Stockholm is realized, the town might adopt a new town center south of the present one, closer to the train station⁶³. For a more detailed overview of Bollebygd, please refer to Municipal analysis: Bollebygd in the appendix to view output from the municipal assessment framework.

The municipality housing stock consists predominantly (80%) of villas (Statistics Sweden, 1990-2011B), but there is also a high demand for rental apartments; 75 people on average apply for each apartment made available⁶⁴. The only sub-region in the municipality of Bollebygd with significant rental housing stock is the town of Bollebygd, in which the average value year for the rental housing stock is 1976 and properties average 21 apartments in size (Boreda, 2012). The average rent is 896SEK/m² (Boreda, 2012), compared to the national average 960SEK/m² for residential space (SABO, 2012). The municipal housing firm Bollebo claims an internal turnover rate of 3.5% and an overall positive attitude towards increased turnover⁶⁵.

Most of the rental housing stock is owned by the municipal housing firm Bollebo, see the figure below. The largest private owner owns two properties, both relatively new and two more are under construction.

⁶¹ CEO of a public real estate company

⁶² Ibid.

⁶³ Head of community construction in Bollebygd municipality

⁶⁴ CEO of a public real estate company

⁶⁵ Ibid.

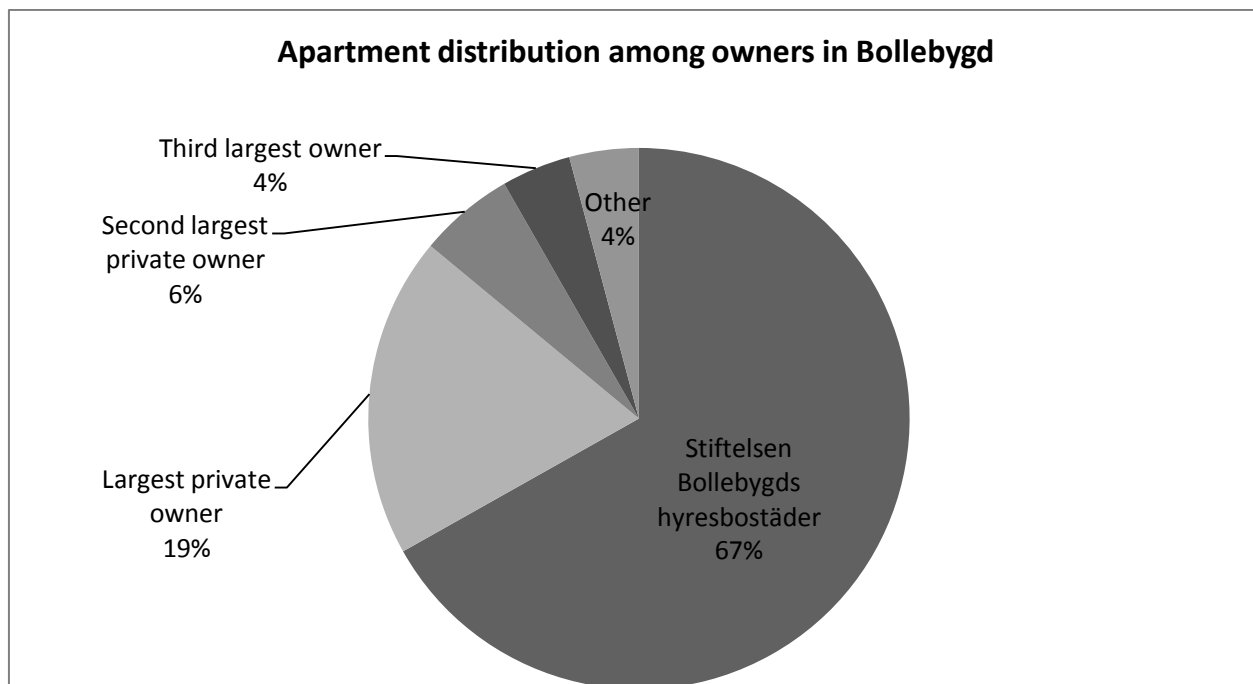


Figure 30 – Apartments distribution among Bollebygd property owners. Data source: The Swedish mapping, cadastral and land registration authority, 2012

There are no apparent indications for present owners being willing to divest. As case examples, the third and fourth largest owners' respective properties were selected, assuming that the largest owner is more unlikely to divest given their relatively newly developed properties. Two case examples were also compiled from Bollebo's stock; one being situated slightly apart from the rest of the stock, and the other as parts of the townhouses on the property have been gradually sold off, perhaps indicating a willingness to sell off the remaining apartment buildings in the block as well.

One example is presented on the following page. Due to a lack of underlying data for district heating costs in Bollebygd (used as proxy for all heating methods except oil), the average price in the Västra Götaland County was used instead: 762 SEK/MWh (Nils Holgersson-gruppen, 2011). This case illustrates an example of a residential property with low risk of immediate larger investments, suitable for a more passive management style. The property also reflects the municipal persona; a family-friendly property embedded in the surrounding villa community.

Municipality		Region		Property name(s)	
Bollebygd		Bollebygd		XXX	
Key information					
Present owner		Address(es)			
Stiftelsen Bollebygds hyresbostäder		XXX			
Built	Value year	Refurbished			
1991	1991	-			
Apartments		Space distribution			
30	Living		2 324 m2		
Average size	Commercial		152 m2		
77 m2	Plot		5 054 m2		
Heating		Ventilation			
District heating		Natural draft			
					
Characteristics					
- In a quiet area still close to the city center, near a school - Two types of units (a three story tower block and a two-story wing)					
Income yield potential					Corresponding improvements
					- Install FTX/FTP ventilation system - Base valuation

5.6.3 Potential Investment Region Three: Ale

Ale is an established commuter municipality with a probable brighter future, mainly on merit of the transport infrastructural improvements being employed along the route to Gothenburg, where almost half of the Ale inhabitants work today (Statistics Sweden, 2010C). The municipality contains a string of similarly-sized communities, of which Nödinge and Älvängen are the two housing the most services as well as experiencing most development⁶⁶. Surte is closest to Gothenburg and is also close to neighboring Kungälv. Nol is located right in between Nödinge and Älvängen.

Despite their near completion, these infrastructural investments have yet to make an impact on the price level for rental housing in the region. Figure 32 shows historical transaction prices for rental housing units in the municipality, while figure 33 shows indexed average prices for small housing units (e.g. villas), divided by the national prices to indicate development specific to the region.



Figure 31 – Ale municipality and the renewed road and train network. Source: The Swedish Transport Administration (2012B)

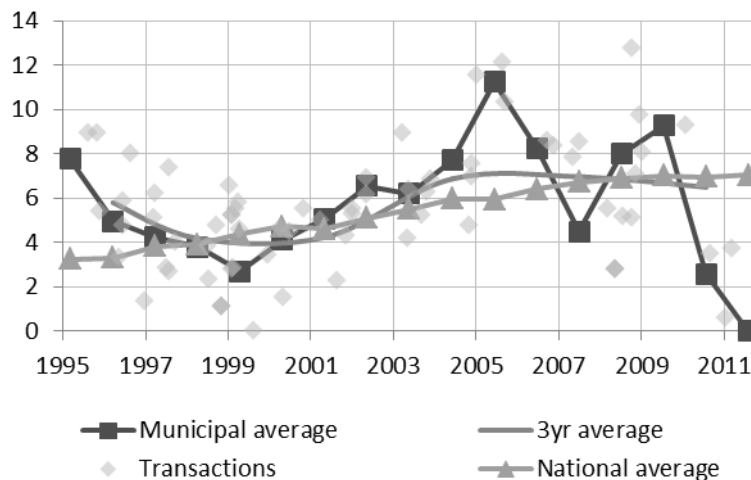


Figure 32 – Price (SEK, Thousands) per m2 for type 320 and 321 buildings. Data source: The Swedish mapping, cadastral and land registration authority (2012)

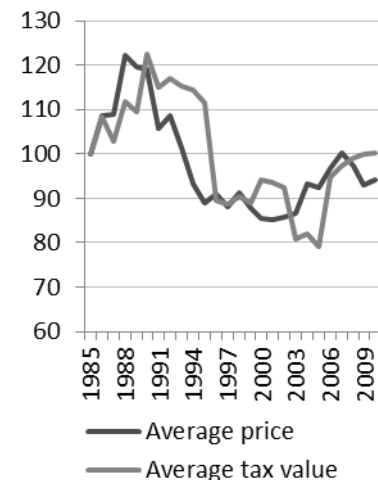


Figure 33 – Sold single unit indices divided by national average indices. Data source: Statistics Sweden (1985-2012)

When the infrastructure projects are completed, in turn enabling and easing the commute, there is a potential that prices will increase (Snieska & Simkunaite, 2009), in turn generating higher total yield. If more people move in to the municipality as a result of the improvements, one might assume that an increase in rent levels are easier to accomplish as general demand is raised.

⁶⁶ Chairman of community development in Ale municipality & broker of private real estate firm

About 40% of the housing units in Ale are apartments (Statistics Sweden, 1990-2011B). The average value year is 1979 and rental properties average 39 apartments in size (Datscha, 2012). The average rent is 913SEK/m² (Boreda, 2012), compared to the national average 960SEK/m² for residential space (SABO, 2012, 2010).

The municipal housing firm, Alebyggen, owns about 80% of all rental apartments in Ale (Boreda, 2012). Alebyggen has sold all its previous holdings in Surte, and might need to divest property in the future to fund new developments and upcoming renovations⁶⁷. Alebyggen has recently been unsuccessful in deploying new apartment units, claiming rent level cannot currently cover their building costs and have as a remedy tried owner-flat concepts, but were forced to sell the most recent such property at a loss for lack of tenants (Alebyggen, 2011). A survey on tenant satisfaction, presented in the figure below, indicates no apparent potential for improvement.

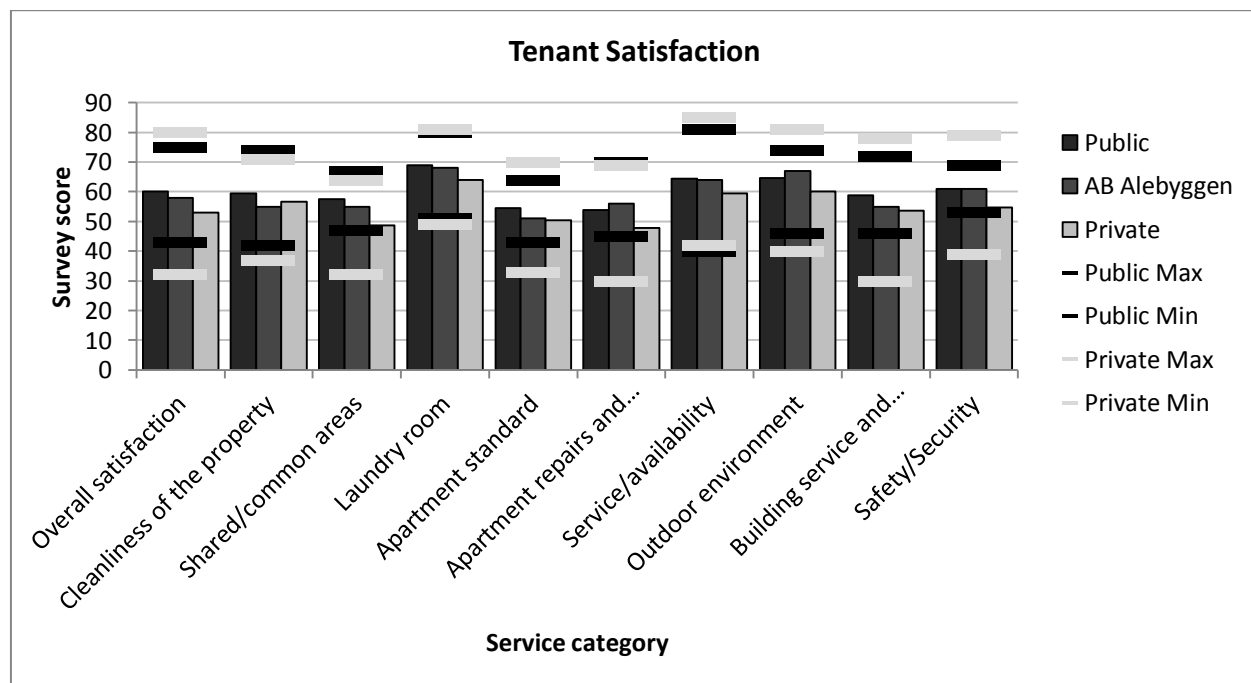


Figure 34 – Average ranking of tenants' satisfactions for public and private housing companies in Västra Götaland. The bars represent average rankings of each category, while the horizontal markers illustrate the maximum and minimum rankings from all private housing companies (represented by light gray markers with three squares) and public housing companies (represented by dark-gray markers with diagonal lines). Source: Compiled from Olofsson & Arneng (2009)

Alebyggen reports an average tenant turnover rate of 15% 2011. The corresponding number for more centrally located units is somewhat surprisingly, higher. The turnover rate is also higher in Nol, at 22%, 15-16% in Nödinge, indicating a lower turnover in Älvängen⁶⁸. Being a fairly high ratio overall, there might be potential in changing the offer to retain tenants for longer, in turn lowering the costs induced through high turnover.

⁶⁷ CFO of a public real estate company

⁶⁸ Ibid.

Given a larger housing stock (see figure below), to weed out suitable case examples, properties were filtered out after three criteria.

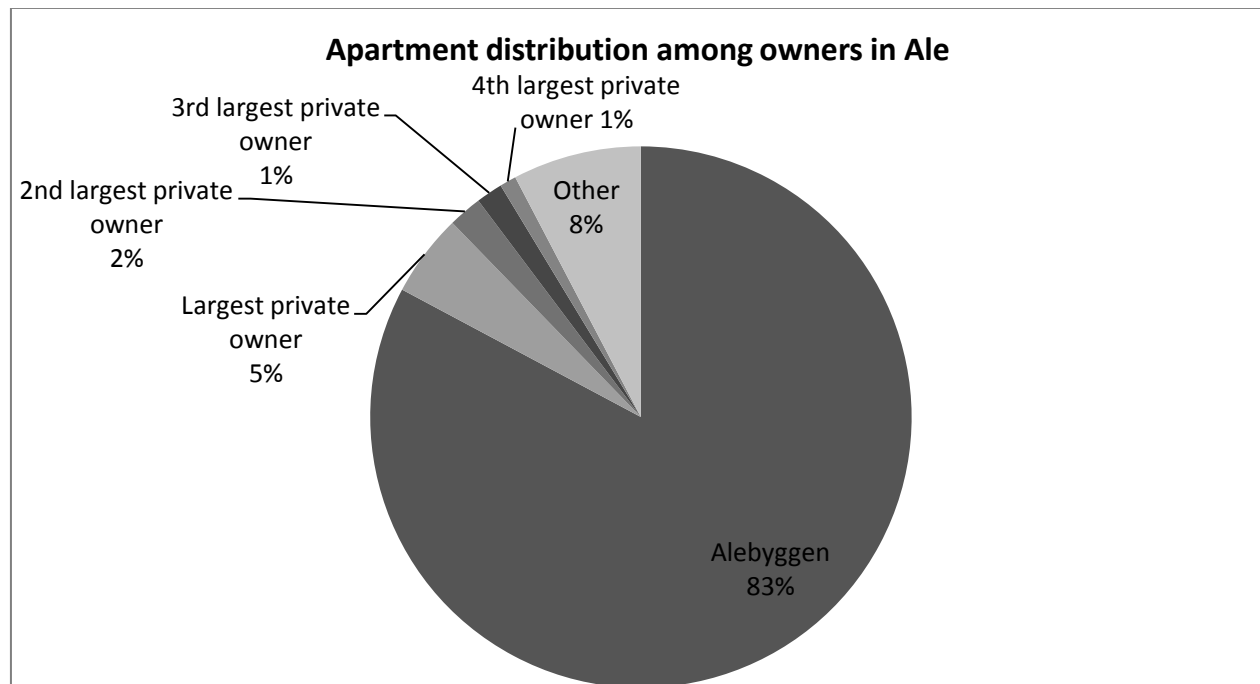


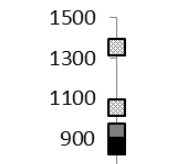
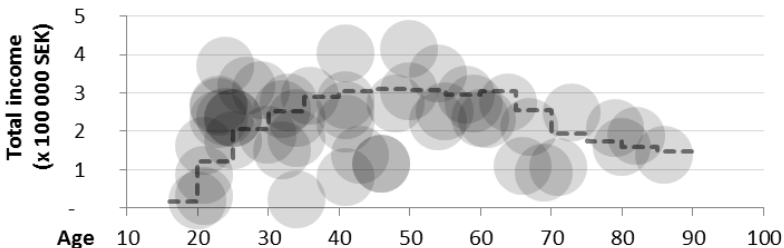
Figure 35 – Apartments distribution among Ale property owners. Data source: The Swedish mapping, cadastral and land registration authority, 2012

To accommodate the intended investment sum, only properties with a taxation value between 5 and 35MSEK were included. Secondly, to avoid buildings with only smaller apartments with higher turnover rate, only properties with an average apartment size above 45m² were considered. Finally, to minimize exposure towards single potentially hazardous tenants, only properties with more than ten apartments were included. The result was a list of 11 case examples. On the next page, a case example is presented constituting a combined case for three related properties in likely need of renovations that can be combined with income yield-improving measures.

The properties houses a diversely aged spread of tenants, a favorable mix of tenants⁶⁹, however all largely average in terms of income. The property lends itself to young family living, with all apartments having either a balcony or garden space. Both the build year and the value year are pre-oil crisis and as such, one can expect poor isolation and ill-placed pipe systems in need of replacements (Swedish National Board of Housing, Building and Planning, 2005). Rent levels are comparably low, perhaps indicative of a low apartment standard and as such leaves room for increases following improvements. Base valuations of the income yield on initial investment are calculated both in terms of district heating and the property's original oil-burner as source of heating. No public records suggest that a change between the two has taken place. Within the context of municipal housing firms' presumed need for capital to fund maintenance and development projects, there might in cases like these exist

⁶⁹ CEO of a private real estate company

opportunities for a more favorable pricing when taking over the maintenance need for one property, while enabling the municipal firm to perform maintenance on other properties using the capital freed through the transaction.

Municipality		Region		Property name(s)				
Ale		Nol		XXX				
Key information								
Present owner		Address(es)						
Alebyggen		XXX						
Built		Value year		Refurbished				
1968		1968		-				
Apartments		Space distribution						
42		Living		2 851 m2				
Average size		Commercial		264 m2				
68 m2		Plot		6 684 m2				
Heating		Ventilation						
Oil		Natural draft						
								
Characteristics								
• Three different units surrounding a well-kept green area with a playground • Garages and parking spots for each apartment • Next door to primary health care unit • Owned by the municipal real estate firm (21% solidity)								
Income yield potential					Corresponding improvements			
	7,1% —			7,4% —	• All improvements • Switch to district heating • Improve standard and raise rent by 60 SEK/m2 • Switch to FTX/FTP ventilation system • Base valuation (* Newsec case base = with district heating)			
	6,1% —			7,0% —				
				— 6,4%				
				6,0% —				
4,9% —			5,2% —					
4,2% —			4,5% —					
	3,4% — 3,4%							
2,3% — 2,3%	2,4% —		2,5% — 2,5%					
1,6% —			1,7% —					
Tax value valuation	Transaction price aver.	Actual price (adj)	Gross multiplier	Newsec yield 6,0%				
25,3 MSEK	17,3 MSEK	-	23,8 MSEK	16,6 MSEK				
Last transaction (1996-2012)								
Date	-		Price	-	K/T	-	Price (adj.)	-
Tenants and rent levels								
Record of non-payment		Rent levels		Age and income of tenants compared to national average income per age group				
13%								
Business involv.		■ Newsec □ SABO ■ National ■ Rent						
0%								

5.6.4 Summary of Sub-study Results

Findings from the case studies suggest there may exist opportunities in approaching owners in need of capital to fund upcoming required renovations, as well as wanted improvements. Municipally owned housing firms face a large renovation need throughout much of their property stock and in some cases have an ambition to develop the owned stock towards new directions. There are indications that the cash required to undertake such projects does not exist within the respective firms. These points can also apply to smaller private property owners, especially within the three case municipalities; Habo, Ale and Bollebygd. As an investor, bringing cash to the table can in such cases enable current owners to undertake required and wanted projects with the enabled cash flow from divestments of other sections of the owned stock. This can provide a would-be investor with a negotiative advantage, which can ideally yield a win-win situation for both parties, through potential for beneficial pricing for the investor for relieving owners of renovation undertakings, maintaining overall municipal stock, and granting owners improved freedom to operate.

Price, unsurprisingly, has the largest impact on potential for income yield on investment. Several examples outlined above indicate what opportunities may exist in terms of pricing. In terms of cost reducing technical activities, choice of heat source and ventilation have the greatest impact. Opportunities also exist in identifying properties in need of e.g. pipe changes, which are attractively located, and improve standards allowing for rent increases.

In addition, the sub-study suggests findings can be applied in many ways. Each previous sub-study (1-5) provides a set of findings that are individually independent, but not additive in combination or in themselves perhaps not entirely exhaustive. One can choose to explore a specific niche, in terms of focusing on a specific property type and/or cater a specific group of tenants.

6. Discussion

This chapter intends to discuss the empirical findings and analysis from several perspectives. Firstly, in order to recapture what has been stated in the previous chapter, a summary of major findings will be presented for each sub-study. The findings will then be related to the theoretical framework, followed by a reflection of the chosen methodology how it has affected the findings. The study's extent of applicability to real situations is then presented. This also includes the actual investment strategy framework for rental real estate is introduced. Lastly, suggestions for further research are given.

6.1 Summary of Major Findings

Investments in Rental Properties: What financial return can a real estate investor expect from investments in rental properties?

Real estate valuation is mainly conducted through a discounted cash flow analysis – with a representative income yield set as the discounting factor – or, alternatively, through a net capitalization ratio, based on a property's income yield. Consequently, income yields have a central position for real estate investments. Further, excluding the three biggest cities in Sweden, the previous 28 years have resulted in a total return of 11.41% CAGR. This number constitutes of accumulated reinvestments from income yield of 6.59% CAGR, and a corresponding capital value appreciation of 4.84%. Nevertheless, structural changes, deregulations, and a real estate bubble contributed to extreme volatility in late 1980's and early 1990's. Albeit a steady negative trend of income yields, which went from 9.1% in 1992 to 2.8% in 2011, the overall developments of both capital value and income have been significantly more stable during the recent ten years. This latter period resulted in a total CAGR of 9.9%.

Short term income yield for given property is relatively easy to calculate based on its current cash flows and possible acquisition price. Findings from subsequent sub-studies can thereon be used in order to calculate potential improvements. However, based on previous financial performance, the findings from this sub-study indicate that an investor could expect an average, long-term, unleveraged, total yield of approximately 10% CAGR with an income yield of approximately 3%. Nevertheless, structural changes and further changes of the system for how rents are determined would likely impact the returns significantly.

Systems for Rental Accommodation: How are rent levels determined and how can landlords influence them?

One of the main pillars of the Swedish government's housing policy states that rental accommodations should be available for everyone, irrespectively of their income. In line with this policy, strong tenures, a well-developed social security system, and protection from "unreasonable rent levels" have contributed to rental accommodation's relatively strong position in Sweden. The current regulations of rent levels is based on a principle that rents are not allowed to be deemed as unreasonable higher for apartments of the same utility value. Exceptions from this regulation are made for newly constructed apartments and new, limited, short term leases. In general, the rent tribunal can demand landlords to repay excess rents if they were deemed unreasonable.

Generally, rent levels are increased both annually and following from standard improvements that contribute to increased utility values. Moreover, rent increases are preceded either by collective negotiations with the Swedish Union of Tenants or through individual negotiations, directly between tenants and their landlords. This system has resulted in a relatively modest average compounded annual growth rate of 1.55% for the time period between 1998 and 2011. Even though this was slightly higher than the inflation, which increased with a CAGR of 1.37%, tenants' average proportion of income that is spent on accommodation has decreased from 29.1% to 28.8%, which might indicate an increasing acceptance of rent increases. Additionally, an apparent wide-spread housing shortage (e.g. 41 of 49 municipalities in the county Västra Götaland), and the facts that public housing companies recently were deemed by the court justice of EU as having had unfair market control, which now requires them to operate along with market conditions as well as removed their role as exclusively being rent norming for utility values. Therefore, the current situation could indicate an acceptance for increased pace of rent increases and/or further deregulations, which would suggest that landlords both could benefit from increased momentum and that they, in order to allow for further rent increases, should strive to offer as attractive offers as possible – both relating to the apartments' standard and the overall quality of services.

Technical Features: Based on their respective effects on total yield, how can technical attributes guide an investor in selecting properties, both in terms of their initial condition and potential for improvement?

A large part of the existing property stock in Sweden, especially from the record years in the 1960's and 1970's, is facing larger investments in renovation and updates as the technical lifespan soon is reached for many of the installations in the buildings. Indications from respondents have been that the premium for investing in these properties has been small as several actors investing short-term without intention of pursuing the required need for maintenance. However as the technical lifespan is approaching this strategy would become harder to realize. Depending on the current owners resources and desires to carry through larger renovations and the intentions of other investors the premium can potentially be favorable. Alternatively to investing in existing property stock, an investor could choose to construct new ones. However, especially in the smaller municipalities, the excess costs for building new properties might hinder the economic feasibility for these kinds of investments.

Heating is, with an average of 33.8% (for district heating) of total costs for operations, usually the largest operational costs for rental properties. As energy efficiency in older buildings often is poor, these buildings could possess large potential for investments. Several factors affect the heating of a property; most notable is the source of control of heating, ventilation system and insulation. Replacing oil burners, installing ventilation with heat exchangers and implementing forecasting systems for regulation of heating are examples of the investments with short payback period. Other common measures to increase energy efficiency and lower costs are individual metering for water and replacement of installations, everything from lighting fixtures to ventilation fans. The technical lifespan of the different elements of a property vary but the most common denominator for larger investments is replacement of water and sewage pipes. The actual replacement of pipes has no effect on the utility value; hence it is favorable to include other standard improving measures creating possibilities for increased rents.

Tenants Preferences and Satisfaction: What determines tenant satisfaction and how does it relate to rent developments and landlords' costs?

The findings suggest that tenants rank *cost of living* and *safety/ security* as their highest preferences when evaluating apartments. However, the rankings differ significantly between different groups of tenants. For example, the most extreme difference between groups was found in importance of parking availability, whereas tenants living in the municipality of Gothenburg rank it lower than those living in any of the other municipalities in Västra Götaland. In terms of satisfaction, the survey indicated that housing companies fulfill their tenants' needs and expectations to a varying extent. It is therefore important to investigate individual needs and satisfactions for each involved tenant. However, the analysis of preferences and satisfactions suggests that landlords have greatest potential for increasing tenants' satisfactions through improving the *apartment's standard* or surrounding *safety/security*.

Tenants' dissatisfaction are likely to contribute to increased turnover ratios, which are associated with several direct and indirect costs that landlords often underestimate, as well as increased ongoing costs for administration and maintenance. It was therefore indicated that landlords would be able to achieve higher long-term yields through both increased income and decreased costs if their tenants are satisfied with their accommodation. Further, as suggested in sub-study 2, increased acceptance of higher rent levels and movements towards more market oriented housing conditions will likely increase the possibilities for long term total yields, especially for real estate with highly satisfied tenants that preferably have high disposable incomes.

Identifying Attractive Municipalities: How can a real estate investor choose regions to invest in based on their respective potential for enabling high total yield?

There are regional differences in operational costs, property prices, and overall regional attractiveness in terms of economic strength and housing demand, affecting total yield primarily through impact on value development, rent development and vacancy rates. There seems to be a discrepancy between the attractiveness of living in a region, its economic strength and the price level for rental housing there. Similar implicit price levels are to be found in both economically strong regions experiencing both significant immigration and population growth, as well as in regions in economic decline with high levels of emigration. As such, an investor can potentially be able to find properties valued at a price point incorporating risks associated with possibly declining regions concerning vacancy, value depreciation and possibly problematic tenants, but at a significantly lesser actual level of risk. If a region is experiencing positive development, price, it seems, do not always follow correspondingly. Habo and Bollebygd seem to be such regions. In a similar way, regions about to experience positive developments as a result of major infrastructural improvements do not always reflect directly on prices either. Ale is identified as such a municipality where the completions of major infrastructural improvements are due, but where this has yet to reflect on property pricing.

Applying the Findings: Case Examples: How can the findings from sub-studies 1-5 be used to identify potential acquisition targets and estimate their respective potential in terms of income yield on initial investment?

Each previous sub-study identifies one set of attractive options, respectively. When combining all findings from previous sub-studies, one is left not with the sum of these options, but rather the more

narrow space in which they combine. For example, regional constrictions limit the housing stock and tenant population, which in turn limits the applicability of findings from these related sub-studies. Findings can therefore be applied in two fashions; either in combination, as attempted in this sub-study, or by focusing on a limited set of findings, exploring a niche of options, e.g. catering only for a specific group of tenants, or specializing in managing a specific type of property.

In terms of factors affecting the potential income yield on initial investment generated by a specific property investment, the single most important factor and the one under greatest immediate influence of an investor is the transaction price. Secondly, the ability to increase the rent following improvements, even though the effect is not immediate and may be reduced through e.g. taxation. Cost reducing activities do have an impact, but most changes affect only part of the cost structure, and as such, have less of an effect on the whole. The largest cost item is the cost of heating; ergo changes to more cost-effective heating sources or more efficient ventilation systems constitute the single greatest cost-reducing investments.

6.2 Relation to Theoretical Framework

The empirical findings relating to valuation approaches were essentially in line with theoretical guidelines presented by e.g. Lind (2004), SFI/IPD (2007) and Nordlund (2008). As anticipated by e.g. Lind (2004) and Babawale and Omirin (2012), problems with availability of data for comparison were indeed apparent, when findings were applied in the case examples. However, problems with external valuers or unfair presentations of costs and income were not experienced due to the internally conducted valuations and usage of template costs.

A theoretical presentation of the Swedish system for rental accommodation was not found in the literature. However, Arnott's (2003) presentation, along with the fact of unrestricted rents for limited short term tenants, might indicate that the current system will emerge towards the next generation of rent regulative system, i.e. deregulations between tenants. The indications of rental accommodation's importance and perception in Sweden were essentially in line with previously investigations, e.g. Keremy (1981, in Elsinga & Hoekstra, 2005).

The empirical findings from the study on technical features is consistent with theoretical findings (Lantmäteriet & Mäklarsamfundet, 2005; Institutet för värdering av fastigheter & Aspect 2011), implying that the economic feasibility of renovations in existing properties largely is dependent on demand and severity of the needed renovations. Regarding the feasibility for new development the low q ratio in our study would according to the literature imply that the prerequisite for new development is limited. However the study further shows that construction has been fairly low, but steady during the last ten years.

The literature on tenant satisfaction, e.g. Landale and Guest (1985), discusses satisfaction and dissatisfaction as consequences stemming from individuals' expectations and needs. However, this study has not explicitly considered the relations between these aspects, but rather investigated the perspectives separately. Further, some extent of comparative analysis of differences and potential

implications was conducted when deemed possible. Nevertheless, consistent with the literature, the findings indicate that landlords are increasingly considering tenants' satisfaction as an important issue.

In developing an indicator to measure a region's attractiveness for rental real estate investments, the indicator used was based on direct measures of economic strength and population growth. As such, it satisfies Kitson et al.'s (2004) requirements of a relevant measure and can be said to indicate both demand for housing and its standard (Downs, 2007; Malecki, 1997). The assumption was initially made that there are municipalities in which prices have not kept up with the region's positive development, enabling an investor to buy at an essentially discounted rate. Theory supports this stickiness (Beracha & Skiba, Momentum in Residential Real Estate, 2011), and the empirical results, in identifying Habo, Bollebygd, and Ale, seems to provide actual examples of such regions.

6.3 Reflection on the Methodology and a Brief Criticism of the Results

The choice made to divide the overall study into a series of sub-studies had two general implications on the nature of the findings produced. Firstly, insight into corollary effects between the subjects of each sub-study was reduced as each division was studied on its own, within its own context. The inclusion of sub-study six, on trying the findings from previous sub-studies on case examples, sought to redeem this in offering a space in the overall study in which findings could be analyzed in combination. However, by focusing specifically on case examples as the means, there might have been overall findings that were overseen as a result of the chosen case examples being unable to illuminate them. Secondly, the choice of dividing the overall study into series of sub-studies puts great importance on that the sub-studies chosen are sufficiently collectively exhaustive. The choice of sub-studies becomes paramount for what is finally included or excluded in the final results. In this study, the ambition was to incorporate the most significant aspects relevant to an investor of rental real estate. However, through what was identified in the case examples, there might have been other aspects that could have justified sub-studies of their own, for example optimization of property management or property portfolio composition (i.e. how to combine individual properties into an attractive whole).

6.4 Applicability of Results: Limitations and Generalizability

The study has been conducted with Western Sweden in mind, but much of the findings apply to Sweden as a whole, while others are specific to the small-town, commuter municipalities illustrated through the case examples. Most of the discussion on rent systems is specific to Sweden, while the study on technical features can be more broadly applied to similar building types situated in similar environmental conditions. Similarly, tenant's satisfaction, and to some extent investment in rental properties, is dependent on the overall characteristics of the Swedish rent system, while the regional study should be applicable to most region, if the corresponding inputs are available.

A more general limitation is the characteristics associated with the hypothetical investor for which the findings are intended. It is assumed throughout, for the sake of illustrating potential, that one such entity can realize value where present owners are unable to do so. Access to capital and initiative are mentioned as potential key differences, as well as having, via this study, identified opportunities of which the present owner might be unaware. In some of the case examples, it is assumed that taking over responsibility for urgent need of renovations can be translated into a discount on the transaction price.

As the transaction price is the result of negotiations between the potential investor and current owner, this assumption certainly leaves room for variation, which in turn may result in the investment case being possibly more, or less, attractive than described. The case examples illustrate the application of findings on properties and property information as they were at the time of writing, and should therefore only be viewed as illustrating examples rather than actual descriptions of the mentioned property. Other findings regarding technical features and rent levels are deemed relevant while the properties still stand and the described rent systems are still in place.

On a broader note, there are several ways in which the presented findings can be applied and used in an investment strategy, based on the preferred strategic approach. Different approaches can be summarized along two dimensions: ownership style (active versus passive) and selection approach (top-down selection of investment targets, or bottom-up). The different strategic approaches are presented in the table below.

	Active ownership style	Passive ownership style
Top-Down selection	Actively seek out property with potential for total yield improvements	Actively seek out property with high total yield and low anticipated level of required maintenance
Bottom-Up selection	Evaluate properties for sale with potential for total yield improvements	Evaluate properties for sale based on sufficient level of total yields and anticipated level of required maintenance

Table 12: Strategic approaches in applying the findings presented

In selecting properties to invest in, a Top-Down approach would mean to use the findings to hunt down a type of property identified in advance as attractive. Bottom-down selection, on the other hand, would mean using the findings to evaluate available property (through e.g. broker listings). An active ownership style refers to investing in property in order to realize potential identified with the help of the findings, through further investments such as standard improvements or changed ventilation systems. In contrast, a passive ownership style would mean using the findings to identify property that require no further investments, allowing for a more passive ownership. To illustrate the different approaches, the top left corner of the matrix would represent a strategy of e.g. searching for a property based on anticipated attractive location and need for standard improvements. Top right corner would represent e.g. searching for a property based on anticipated attractive location, but in a current satisfactory condition. Bottom-left, on the other hand, would represent using the findings to evaluate the need for and potential in standard improvements of broker-listed properties, while the bottom-right corner would represent e.g. acquiring a relatively newly developed or refurbished property already made available for sale, and using the findings that the property indeed is as advertised.

6.5 Suggestions for Further Research

There are several topics that would be interesting for further research, which could contribute to a better understanding of investment potentials for rental real estate in Western Sweden. For example, concurrency studies would be valuable to better understand how the different aspects studied here

relate and affect one another. It would also be interesting to include topics not specifically covered here, such as property management, a more thorough consideration of real estate's neighboring environments, and considerations for developing a real estate portfolio based on these findings. For greater validity in the findings, longitudinal studies could also be conducted, following investments and actions taken to record actual long-term effects. The findings could further have been made more specific to actual examples through taking it one step further and retrieving more actual data from current owners and current tenants. Lastly, cross sectional studies of current real estate investors could potentially guide the assessment of the sector's investment potential.

7. Conclusions

This chapter presents the major conclusions from each sub-study. Thereafter follows a presentation of the investment strategy framework developed, as in response to the specified aim.

The aim of this research report was to *develop an investment strategy framework focused on long-term profitability from rental real estate in Western Sweden*. Six sub-studies were carried out, investigating factors affecting investments in rental real estate and their potential for long-term profitability. These, in turn, provided substance to form the investment strategy framework. Presented directly below are the research questions that were investigated in the respective sub-studies, along with their key results. Thereafter follows a presentation of the investment strategy framework developed, as in response to the specified aim.

RQ 1: What financial return can a real estate investor expect from investments in rental properties?

On average over the last decade, rental real estate investments have generated long-term, unleveraged, total yield of 9.9% and 4.8% income yield. Yields have declined in the past years, however, and income yield last year (2011) was only 2.8%.

RQ 2: How are rent levels determined and how can landlords influence them?

Rent levels are presently determined through comparison with apartments with similar utility values. The rent changes are primarily determined on a yearly basis or following from changes in the apartments' utility values. Thus, landlords can impact the rent through the yearly negotiations or through improving the utility value of their apartments. However, there are shifts towards more market oriented structures as well as indications of increased capacity for tenants to absorb rent increases. This would implicate that landlords will, to a greater extent, be able to base the rent levels on their tenants' preferences and satisfaction degrees.

RQ3: Based on their respective effects on total yield, how can technical features guide an investor in selecting properties, both in terms of their initial condition and potential for improvement?

A property's technical features have a large impact on its operational and maintenance costs, although they vary significantly between properties. The single largest operational cost is heating. By installing ventilation with a heat exchanger, energy cost can be decreased significantly. Much of the existing housing stock in Sweden is in need of large renovations. Such properties can represent an opportunity for investors in terms of potentially discounted price, especially in areas where the current demand is low and with owners lacking the competence or financial strength to carry through these renovations.

RQ 4: What determines tenant satisfaction and how does it relate to rent developments and landlords' costs?

The literature study suggests that a satisfied tenant population could both contribute to long-term reductions of costs, through e.g. decreased turnover ratio and administrative costs, and enabling rent increases. The findings suggest that the greatest potentials for increasing tenants' satisfaction are through improving apartment's standard and improving tenants' perception of safety/security.

RQ 5: How can a real estate investor choose regions to invest in based on their respective potential for enabling high total yield?

There seems to be a discrepancy between the attractiveness of living in a region, its economic strength and the price level for rental housing there, due to prices being somewhat sticky and not fully reflecting strong positive developments. This presents an opportunity where an investor can potentially be able to find properties at a regionally discounted rate, enabling both high income yield and total yield through capital value appreciation. Habo, Bollebygd, and Ale are identified as such regions.

RQ 6: How can the findings from the sub-studies 1-5 be used to identify potential acquisition targets and estimate their respective potential in terms of income yield on initial investment? When applying findings on case examples, one finds that apart from initial price and rent increases, investments reducing energy consumption (e.g. more efficient ventilation) have the largest effect on income yield on initial investment. An investor can apply the findings via different strategic approaches. Properties can be identified through a top-down or a bottom-up approach, and ownership style can be either active or passive. Each combination makes use of the findings to evaluate and assess potential investment targets.

These sub-studies provide a collective resource of findings indicating what can affect long-term profitability of rental real estate investments in Western Sweden, and there are several ways in which these findings can be applied. The investment strategy framework presented in the matrix below, outlines the different strategic options available.

	Active ownership style	Passive ownership style
Top-Down selection	Actively seek out property with potential for yield improvements	Actively seek out property with high yield and low anticipated level of required maintenance
Bottom-Up selection	Evaluate properties for sale with potential for yield improvements	Evaluate properties for sale based on sufficient level of yields and anticipated level of required maintenance

Table 13: Strategic approaches in applying the findings presented

In short, an investor can use the resource of findings to guide the selection of investment targets in two principal ways: by actively searching for property types identified as attractive (Top-Down), or evaluating properties available for sale (Bottom-Up). In addition, an investor can also use the findings in two principal ways relating to ownership style. One can use them to evaluate potential for improvements and discount opportunities in properties (Active ownership), or evaluate and confirm levels of yield and maintenance of properties requiring little ongoing involvement (Passive ownership).

Having identified a need for research covering how to invest in the Swedish rental real estate market, and more specifically, what affects the long-term profitability of such investments, the research presented here does provide insights that may be practically useful both to small-scale, long-term investors looking to get into the market, as well as further the academic understanding in the area.

8. References

This chapter presents all references that have been used for this study. The references are separated based on a categorization between scientific articles, published books, data sources, online sources, magazines, and other reports. Lastly, a list of Swedish and English names is given for the organizations that are involved in the references and which have official translations. The interview guide is presented in the appendix, and is therefore not submitted in this chapter.

8.1 Scientific Articles

Andrews, R., Boyne, A.G., Law, J. & Walker, M.R. (2009) "Strategy Formulation, Strategy Content and Performance: An empirical analysis". *Public Management Review*. Vol. 11 Issue 1, pp. 1–22.

Babawale, G.K. & Omirin, M. (2012) "An assessment of the relative impact of factors influencing inaccuracy in valuation". *International Journal of Housing Markets and Analysis*. Vol. 5, Issue 2. pp. 145 – 160.

Beracha, E. & Skiba, H. (2011) "Momentum in Residential Real Estate". *The Journal of Real Estate Finance and Economics*. Vol. 43, No. 3, pp. 299-320.

Berg, L. & Berger, T. (2006) "The Q Theory and the Swedish Housing Market - An Empirical Test". *Journal of Real Estate Finance and Economics*, Vol. 33, No. 4.

Berg, L. (2006) "Price Indexes for Multi-Dwelling Properties in Sweden". *The Journal of Real Estate Research*. Journal of Real Estate Research, Vol. 27, No. 1, pp. 47-81.

Budd, L. & Hirmis, A. K. (2004) "Conceptual Framework for Regional Competitiveness". *Regional Studies*, Vol. 38, Issue 9, pp. 1015-1028.

Chen, N-K, Cheng, H-L, Mao, C.S. (2012) "House price, mortgage premium, and business fluctuations". *Elsevier*. Vol. 29, Issue 4, pp. 1388–1398

Clapp, J.M. & Giaccotto, C. (1998) "Residential Hedonic Models: A Rational Expectations Approach to Age Effects". *Journal of Urban Economics*. Vol. 44, Issue 3, pp. 415-437.

de Bok, M. (2009) "Estimation and validation of a microscopic model for spatial economic effects of transport infrastructure". *Transportation Research Part A: Policy and Practice*. Vol. 43, Issue 1, pp. 44-59.

Downs, A. (2007) in N. P. Retsinas & E. S. Belsky, *Revisiting Rental Housing : Policies, Programs, and Priorities*. Washington, D.C.: Brookings Institution Press.

Glaeser, E.L. & Luttmer, E.F.P (2003) "The Misallocation of Housing under Rent Control". *The American Economic Review*. Vol. 93, No 4, pp. 1027-1046, September 2003.

Goodman, A.C. & Thibodeau, T.G (1995) "Age-related heteroskedasticity in hedonic price equations". *Journal of Housing Research*. Vol. 6, Issue 1, pp. 25-42.

- Harmon, L.C. & McKenna-Harmon, K.M. (1994) "The hidden costs of resident dissatisfaction". *Journal of Property Management*. Vol. 59, No. 3.
- Hartzell, J., Sun, L. & Titman, S. (2009) "Diversification, Corporate Governance and Firm Performance in Real Estate Investment Trusts". *Working paper*.
- Ho, L.S. (1992) "Rent Control: Its Rationale and Effects". *Urban Studies*. Vol. 29, No. 7, pp. 1183-1190.
- Hubert, F. (2003) "Rent control: Academic analysis and public sentiment". *Swedish Economic Policy Review*. Vol. 10, pp. 61-81.
- James, R. (2007) "Multifamily Housing Characteristics and Tenant Satisfaction". *Journal of Performance of Constructed Facilities*. Vol. 21, Issue 6, pp. 472-480.
- James, R. (2008) "Residential Satisfaction of Elderly Tenants in Apartment Housing". *Social Indicators Research*. Vol. 89, No. 3, pp. 421-437
- Johnson, R. B. & Onwuegbuzie (2004) "Mixed Methods Research: A Research Paradigm Whose Time Has Come". *Educational Researcher*. Vol. 33, No. 7, pp. 14-26.
- Kiechel, W. (2010) "Knowledge Review: Seven Chapters of Strategic Wisdom". From *strategy+business*. Issue 58, spring 2010. Reprint no: 10109.
- Kinnard, W.N Jr, Lenk, M. & Worzala, E. (1997) "Client Pressure in the Commercial Appraisal Industry: How Prevalent is it?". *Journal of Property Valuation and Investment*. Vol. 15, Issue 3, pp. 233-244.
- Kitson, M., Martin, R. & Tyler, P. (2004) "Regional Competitiveness: An elusive yet key concept?". *Regional Studies*. Vol. 38.9 December, pp. 991-999.
- Knight, J. R. (1996) Depreciation, Maintenance & Housing prices. *Journal of housing economics*. Vol. 5, Issue 4, pp. 369-389.
- le Blanc, D. & Laferrère, A. (2001) "The Effect of Public Social Housing on Households' Consumption in France". *Journal of Housing Economics*. Vol. 10, No. 4, pp. 429 – 455.
- Levy, D. & Schuck, E. (1999) "The Influence of Clients on Valuations". *Journal of Property Investment and Finance*. Vol. 22, Issue 3, pp. 259-268.
- Lu, M. (1998) "Do People Move When They Say They Will? Inconsistencies in Individual Migration Behavior". *Population & Environment*. Vol. 20, No. 5, pp. 467-488.
- Mak, S., Choy, L. & Ho, W. (2012) Region-specific Estimates of the Determinants of Real Estate Investment in China. *Urban Studies*. Vol. 49, No. 4, pp. 741-755.
- Paris, D. (2006) "Impact of Property Management Services on Affordable Housing Residents in Atlanta. Georgia". *Journal of Performance of Constructed Facilities*. Vol. 20, Issue 3, pp. 222-228.

Salleh, A.N.A., Yusof, B N., Salleh, C.A.G. & Johari, D.N. (2011) "Tenant Satisfaction in Public Housing and its Relationship with Rent Arrears: Majlis Bandaraya Ipoh, Perak, Malaysia". *International Journal of Trade, Economics and Finance*. Vol.2, No.1, pp. 10-18.

Scherrer, P.S. & Mathison, T.J. (1995) "Strategies for investing in real estate investment trusts (REITs)". *Business Credit*. Vol. 97, Issue 10, pp. 8-38.

Scholes, J. (2005) "Steps to implementation". *European Business Forum*. Vol. Spring 2005, Issue 21, pp. 10-12.

Shilling, J.D. (2003) "Is There a Risk Premium Puzzle in Real Estate?". *Real Estate Economics*. Vol. 31, Issue 4, pp. 501-525.

Snieska, V. & Simkunaite, I. (2009) "Socio-Economic Impact of Infrastructure Investments". *Economics of Engineering Decisions*. Vol. 3, pp. 16-25.

Wilhelmsson, M. (2008) House price depreciation rates and level of maintenance. *Journal of Housing Economics*. Vol. 17, Issue 1, pp. 88–101.

Willhelmsson, M., Andersson, R. & Klingberg, K. (2011) "Rent control and vacancies in Sweden". *International Journal of Housing Markets and Analysis*. Vol. 4 No. 2. 2011. pp. 105-129.

8.2 Published Books

Berg, S. A (2007) *Drift och fastighetsunderhåll [Operation and Property Maintenance]*. Stockholm: Lärnö AB.

Björk, C., Kallstenius, P. & Reppen, L (2002) *Så byggdes husen 1880-2000 [How the Houses were built 1880-2000]*. Stockholm: Forskningsrådet Formas.

Incit (2012) *Bostäder - Nyckeltal för kostnader och förbrukningar [Accommodation – Key indicators for costs and consumption]*. Mölndal: Incit AB.

Incit (2012) *Kontor - Nyckeltal för kostnader och förbrukningar [Offices – Key indicators for costs and consumption]*. Mölndal: Incit AB.

Institutet för värdering av fastigheter & Aspect (2011) "Fastighetsekonomisk analys och fastighetsrätt". Stockholm: Fastighetsnytt Förlags AB.

The Swedish Association of Plumbing and HVAC Contractors. (2009). *Renoveringshandboken - för hus byggda 1950-75*. Stockholm: VVS Företagen.

The Swedish mapping, cadastral and land registration authority & The Association of Real Estate Agents (2005) "Fastighetsvärdering - Grundläggade teori och praktisk värdering" [Real estate valuation – foundation theory and practical valuation]. Gävle and Solna: Lantmäteriet & Mäklarsamfundet.

8.3 Data Sources

Boreda (2012) Data were extracted at several times between May to July 2012, from:
<http://www.boreda.se>

Datscha (2012) Data were extracted at several times between May to July 2012 from:
<http://www.datscha.com>

Finance.yahoo.com (2012) "OMXPI Historic Prices". Extracted data series from 28th of December, 2007 to 30th of December, 2011.

Grant, R.M. (2010) *Contemporary strategy analysis – Concepts, Techniques, Applications*. "The Concept of Strategy". London: John Wiley & Sons Ltd.

Haglund, J. & Hansson, M. (2009) *Kostnads- och miljöeffektiva uppvärmningssystem - En fallstudie av flerbostadshuset Vadden i Skövde*. Lund: Lunds universitet.

Haight, G.T. & Singer, D.D. (2005) *"Real Estate Investment Handbook"*. Wiley, Hoboken, NJ, USA.

IPD (2011) "Utdrag ur IPD Sweden Digest 2011" [Extract of IPD Sweden Digest 2011]. Stockholm :IPD Norden AB.

Janson, U., Berggren, B. & Sundqvist, H. (2008) *Energieffektivisering vid renovering av rekordåren flerbostadshus*. Lund/Malmö: Avd för Energi och ByggnadsDesign/Skanska Sverige AB.

Mintzberg, H., Ahlstrand, B. & Lampel, J. (1998) *Strategy safari: A guided tour through the wilds of strategic management*. Prentice Hall.

Newsec Advice (2012) Datscha. Retrieved May 2012 from Datscha: Marknadsanalys:
<http://www.datscha.com>

Ratsit (2012) Ratlibris "Personfakta Ale, Bollebygd, Habo" [Person facts Ale, Bollebygd, Habo]. Mölnlycke: Elanders Sverige AB.

SABO (2012, 2010, 2008, 2006) Rent levels SABO housing firms. Received via personal contact, from: Roland Semlind, SABO.

Statistics Sweden (1975-2011) "Färdigställda lägenheter och rumsenheter i nybyggda hus efter kommun och hustyp" [Constructed apartments and room units in newly constructed buildings by municipality and type of building]. Retrieved May 2012, from Statistic Sweden's Databases: <http://www.scb.se>

Statistics Sweden (1985-2011) "Försålda småhus efter kommun" [Sold single-family homes, by municipality]. Retrieved May 2012, from Sveriges Statistiska Database: <http://www.scb.se>

Statistics Sweden (1990-2011A) "Befolkningstäthet (invånare per kvadratkilometer), folkmängd och landareal efter kommun och kön" [Population density (people per square kilometer), population and

land area by municipality and gender]. Retrieved April 2012, from Statistic Sweden's Databases: <http://www.scb.se>

Statistics Sweden (1990-2011B) "Kalkylerat bostadsbestånd efter kommun och hustyp" [Calculated housing stock by municipality and house type]. Retrieved May 2012, from Statistic Sweden's Databases: <http://www.scb.se>

Statistics Sweden (1996-2011) "Statistik med inriktning mot arbetsmarknaden. Fördelning efter kommun och ålder" [Statistics with a focus on the labor market. Distribution by municipality and age]. Retrieved May 2012, from Statistic Sweden's Databases: <http://www.scb.se>

Statistics Sweden (1997-2011) "Flyttningar efter kommun, ålder och kön" [Migration by municipality, age and gender]. Retrieved May 2012, from Statistic Sweden's Databases: <http://www.scb.se>

Statistics Sweden (1998-2011) "Finansiella nyckeltal för kommuner efter kommun och finansiella nyckeltal" [Key financial figures for municipalities by municipality and financial ratios]. Retrieved June 2012, from Statistic Sweden's Databases: <http://www.scb.se>

Statistics Sweden (2000-2010A) "Antal personer med beskattningsbar förvärvsinkomst efter kommun, kön, ålder och skiktgräns" [Number of persons with taxable income by municipality, sex, age, and boundary layer]. Retrieved May 2012, from Statistic Sweden's Databases: <http://www.scb.se>

Statistics Sweden (2000-2010B) "Beskattningsbar förvärvsinkomst (antal personer, medelvärden, median och totalsumma) efter kommun, kön, ålder och inkomstklass" [Taxable income (number of persons, mean, median and total) by municipality, gender, age and income bracket]. Retrieved May 2012, from Statistic Sweden's Databases: <http://www.scb.se>

Statistics Sweden (2000-2011A) "Befolkning 16-74 år efter kommun, utbildningsnivå, ålder och kön" [Population 16-74 years by municipality, education level, age and gender]. Retrieved May 2012, from Statistic Sweden's Databases: <http://www.scb.se>

Statistics Sweden (2000-2011B) "Folkmängden efter kommun, civilstånd, ålder och kön" [Population by municipality, marital status, age and gender]. Retrieved April 2012, from Statistic Sweden's Databases: <http://www.scb.se>

Statistics Sweden (2000-2011C) "Lediga lägenheter 1 mars och 1 september i flerbostadshus, allmännyttiga, efter kommun och lägenhetstyp" [Vacant apartments 1 March and 1 September in apartment buildings, public, by municipality and type of dwelling]. Retrieved May 2012, from Statistic Sweden's Databases: <http://www.scb.se>

Statistics Sweden (2000-2011D) "Statistik med inriktning mot boende. Fördelning efter kommun och födelseregion" [Statistics with a focus on housing. Distribution by municipality and region of birth]. Retrieved June 2012, from Sveriges Statiska Databaser: <http://www.scb.se>

Statistics Sweden (2000-2011E) "Statistik med inriktning mot boende. Fördelning efter kommun och utbildningsnivå" [Statistics with a focus on housing. Distribution by community and education level]. Retrieved June 2012, from Statistic Sweden's Databases: <http://www.scb.se>

Statistics Sweden (2000-2011F) "Statistik med inriktning mot boende. Fördelning efter kommun och ålder" [Statistics with a focus on housing. Distribution by municipality and age]. Retrieved June 2012, from Statistic Sweden's Databases: <http://www.scb.se>

Statistics Sweden (2001-2012) "Prices of real estate in 2000-2010". Statistics Sweden.

Statistics Sweden (2004-2007) "Förmögenhetsstatistik för personer efter kommun, kön, ålder, tillgångar/skulder" [Wealth statistics of persons by municipality, sex, age, assets / liabilities]. Retrieved May 2012, from Statistic Sweden's Databases: <http://www.scb.se>

Statistics Sweden (2004-2010A) "Förvärvsarbete 16+ år med arbetsplats i regionen (dagbef) (RAMS) efter kommun, arbetsställets sektortillhörighet, ålder och kön" [Employed 16 + years with work in the region (daypopulation) (RAMS) by municipality, worksite sector, age and gender]. Retrieved May 2012, from Statistic Sweden's Databases: <http://www.scb.se>

Statistics Sweden (2004-2010B) "Förvärvsarbete 16+ år med bostad i regionen (nattbef) (RAMS) efter kommun, arbetsställets sektortillhörighet, ålder och kön" [Employed 16 + years with residence in the region (nightpopulation) (RAMS) by municipality, worksite sector, age and gender]. Retrieved May 2012, from Statistic Sweden's Databases: <http://www.scb.se>

Statistics Sweden (2006-2011) "Fastighetstaxering för hyreshusenheter. Taxeringsenheter, bostads- och lokalvärden efter kommun och typkod" [Property tax for rental housing units. Tax Units, housing and local values by municipality and property type]. Retrieved May 2012, from Statistic Sweden's Databases: <http://www.scb.se>

Statistics Sweden (2009) "Biståndsmottagare efter kommun och ålder" [Assistance Recipients by municipality and age]. Retrieved May 2012, from Statistic Sweden's Databases: <http://www.scb.se>

Statistics Sweden (2010A) "Befolkningens studiedeltagande efter region, ålder (15+), typ av studiedeltagande och tid" [Student distribution by region, age (15+), type of studies and time]. Retrieved May 2012, from Statistic Sweden's Databases: <http://www.scb.se>

Statistics Sweden (2010B) "Familjer med hemmaboende barn 0-21 år efter kommun, barnens ålder, familjetyp (sammanboende eller ensamstående föräldrar) och genomsnittligt antal barn i familjen" [Families with live-at-home children 0-21 years, by municipality, child's age, family type (cohabiting or single parents) and average number of children in the family]. Retrieved May 2012, from Statistic Sweden's Databases: <http://www.scb.se>

Statistics Sweden (2010C) "Förvärvsarbete 16+ år pendlare över kommungräns (RAMS) efter kommun och kön" [Employed 16 + years, commuters across municipal boundary (RAMS) by municipality and gender]. Retrieved April 2012, from Statistic Sweden's Databases: <http://www.scb.se>

Statistics Sweden (2011B) "Fastighetstaxering för småhus-, hyreshus-, industri-, täkt-, elproduktions-, och specialenheter efter kommun och typkod" [Property tax on houses, apartment buildings, industrial, quarrying, electricity generation, and special units by municipality and type code]. Retrieved May 2012, from Statistic Sweden's Databases: <http://www.scb.se>

Statistics Sweden (2011C) "Hushållens ekonomi (HEK)" [Household's economy]. Retrieved July 2012 from: http://www.scb.se/Pages/TableAndChart____147050.aspx

Statistics Sweden (2012C) "Levnadskostnadsindex/KPI (juli 1914=100), historiska tal, 1830-" [Index of costs for living/CPI (July 1914=100) historical numbers, 1830-]. Stockholm: Statistics Sweden.

Swedbank (2012) "Historiska bostadsräntor 1985-2012" [Historic housing interest rates]. Retrieved June 2012 from: <http://hypotek.swedbank.se/rantor/historiska-rantor/index.htm?ssSourceSitelId=swedbankse>

Swedish Association of Local Authorities and Regions (2012) "Kommungruppsindelning" [Municipality divisions]. Retrieved May 2012 from http://www.skl.se/kommuner_och_landsting/om_kommuner/kommungruppsindelning

The Swedish National Agency for Education (2011) "Antal kommuner med verksamhet, antal förskolor, barn per avdelning och inskrivna barn efter ålder och kön 2005–2011: Barn och grupper i förskolan" [Amount of municipalities with operations, amount of preschools, children per division and admitted children accordingly to age and sex 2005–2011: Students and groups in recreation homes]. Retrieved May 2012 from: <http://www.skolverket.se> May 2012

The Swedish National Agency for Education (2011/2012) "Skolor och elever läsåret 2011/12: Skolor och elever i grundskolan läsåret 2011/12" [Schools and students year 2011/12: Schools and students in the elementary school year 2011/12]. Retrieved May 2012 from: <http://www.skolverket.se>

8.4 Online Sources

Affärsvärlden.se (2012) "AFGX Historic Data: ". Data series from 2nd of February, 1984, to 28th of December, 2007. Retrieved June 2012 from: bors.affarsvarlden.se/

Alla Bolag (2012) "Fastighetsverksamhet" [Real estate sector]. Retrieved July 2012 from: <http://www.allabolag.se/branscher/Fastighetsverksamhet>

Amazon.com (2012) "Search enquiry of books for 'strategy'". Retrieved July 2012 from: www.amazon.com

Fastighetssverige.se (2012) "Lägst avkastning för bostäder" [Lowest yield for rental properties]. Published 3rd of March, 2012. Retrieved June 2012 from: <http://www.fastighetssverige.se/artikel/lagst-avkastning-for-bostader-9113/>

IPD (2012) "IPD in Sweden". Retrieved June 2012 from:
<http://www1.ipd.com/Pages/DNNPage.aspx?DestUrl=http%3a%2f%2fwww.ipd.com%2fsharepoint.aspx%3ftabid%3d951>

IVSC (2012) "International Valuation Glossary". Retrieved June 2012 from:
<http://www.ivsc.org/~ivscorg/glossary>

Swedish Property Federation (2012A) "Om Fastighetsägarna Sverige [About the Swedish Property Federation]". Retrieved July 2012 from: <http://www.fastighetsagarna.se/om-oss-se>

Swedish Property Federation (2012B) "Hyresförhandlingar utan HGF" [Rent negotiation without the Swedish Union of Tenants]. Retrieved June 2012 from:
<http://www.fastighetsagarna.se/stockholm/aktuellt/material-fran-vara-seminarier2/hyresforhandling-utan-hgf>

The Confederation of Swedish Enterprise (2007-2012) Business climate ranking. Retrieved June 2012 from: <http://www.foretagsklimat.se>

The Rent Tribunal (2012A) "Skälig Hyra" [Reasonable rent]. Retrieved July 2012 from:
<http://www.hyresnamnden.se/Amnesomraden/Skalig-hyra/>

The Rent Tribunal (2012B) "Besittningsskydd – Bostad" [Secured tenure - Residence]. Retrieved July 2012 from: <http://www.hyresnamnden.se/Besittningsskydd/Besittningsskydd---Bostad/>

The Rent Tribunal (2012A) "Om Hyresnämnden" [About the Rent Tribunal]. Retrieved May 2012
<http://www.hyresnamnden.se/Om-oss/>

The Swedish Tax Agency (2012) "Fastighetstaxering: Hyreshus" [Property taxation: Apartment buildings]. Retrieved July 2012 from:
<http://www.skatteverket.se/foretagorganisationer/skatter/fastighet/fastighetstaxering/hyreshus.4.2e56d4ba1202f95012080008709.html>

The Swedish Transport Administration (2012A) "Västsvenska paketet" [The West Swedish Agreement]. Retrieved June 2012 from: <http://www.trafikverket.se/Privat/I-ditt-lan/Vastra-gotaland/Vastsvenska-paketet/>

The Swedish Transport Administration (2012B) "Projekt i länet: Västra Götaland" [Projects in the county: Västra Götaland]. Retrieved June 2012 from: <http://www.trafikverket.se/Privat/I-ditt-lan/Vastra-gotaland/Projekt-i-lanet/>

The Swedish Transport Administration (2012C) "Projekt i länet: Halland" [Projects in the county: Halland]. Retrieved June 2012 from: <http://www.trafikverket.se/Privat/I-ditt-lan/Halland/>

The Swedish Transport Administration (2012D) Götalandsbanan. Retrieved June 2012 from:
<http://www.trafikverket.se/Privat/Vagar-och-jarnvagar/Sveriges->

jarnvagsnat/Gotalandsbanan/?si=2C54EE6D9F853A677DFBFF376EE0E249&rid=2013966848&sn=trafikverketse

The Swedish Union of Tenants (2012B) "Min hyresvärd ska göra ett stambyte i mitt hus. Får hon det utan att jag godkänner det? - Fråga oss – Hyresgästföreningen [My landlord will make a pipe replacement in my house. Can she do it unless I approve it? - Ask us – The Swedish Union of Tenants]". Retrieved July 2012 from: http://www.hyresgastforeningen.se/Fraga_Oss/Sidor/Min-hyresvard-ska-gora-ett-stambyte-i-mitt-hus.aspx

The Swedish Union of Tenants (2012C) "Min hyresvärd ska renovera i min lägenhet och jag kan inte använda mitt badrum under tiden. Får jag någon ersättning för att jag inte kan använda badrummet? - Fråga oss – Hyresgästföreningen [My landlord is renovating my apartment and I can not use the bathroom during that time. Do I get any compensation for that I cannot use the bathroom? - Ask us – The Swedish Union of Tenants]". Retrieved July 2012 from: http://www.hyresgastforeningen.se/Fraga_Oss/Sidor/Min-hyresvard-ska-renovera-i-min-lagenhet-Far-jag-nagon-ersattning-for-att-jag-inte-kan-anvanda-badrummet.aspx

8.5 Magazines

Heyman, E. (2012) Protester på Pennygången i kväll. Retrieved July 20, 2012, from GP.se: <http://www.gp.se/nyheter/goteborg/1.938536-protester-pa-pennygangen-i-kvall>

Lacotte, C (2010) "Varje omflyttning kostar 30 000-40 000 kronor" [Each repositioning of tenants costs 30,000-40,000 SEK]. Retrieved June 2012 from: http://www.bofast.net/1/1.0.1.0/17/1/?item=art_art-s1/947

8.6 Other Reports

Blomgren, H. & Ullmark, P. (2008) "Hur påverkas fastighetsinvesteringar av konjunkturen? –En studie på nationell och regional nivå" [How are real estate investments affected by business cycles? – A study on national and regional level]. (Master's thesis) Lund: Institution for real estate science, University of Lund.

Fabege (2012) *Annual report*. Solna: Fabege AB. Retrieved June 2012 from: http://www.fabege.se/Documents/ReportsAndPresentations/2011/%C3%85R/FAB_AR11_ENG_indexerad.pdf

Herder, E. & Wallenås, D. (2008) "Försäljning av fastighet direkt eller via aktiebolag - en jämförelse av ekonomiska konsekvenser" [Selling of real estate directly or through corporations – a comparison of economic consequences]. (Master's thesis) The Department of Real Estate Science. Lund Institute of Technology

Hungria-Garcia, R. (2004) "Property yields as tools for valuation and analysis". *Building & Real Estate Economics*. Department of Infrastructure at Royal Institute of Technology.

IPD (2012) "IPD Svenskt Fastighetsindex: Resultat för året fram till 31 december 2011" [IPD Swedish Property Index: Results for the year ranging to 31 december 2011]. Stockholm: IPD Norden.

IVSC (2003) "3.1 - The International Valuation Standards Committee". Retrieved June 2012 from: http://propertystandards.propertyinstitute-wa.com/documents/IVSC-3_000.pdf

Kungsleden (2012) "Annual report". Stockholm: Kungsleden AB. Retrieved July 2012 from: http://www.fabege.se/Documents/ReportsAndPresentations/2011/%C3%85R/FAB_AR11_ENG_indexera d.pdf

Lind, H. & Lundström, S. (2011) "Hur ett affärsmässigt bostadsföretag agerar" [How a market oriented housing company acts]. Institution for Property and Construction. Royal Institute of Technology. Stockholm. Retrieved June 2012 from: http://www.kth.se/polopoly_fs/1.206571!/Menu/general/column-content/attachment/affarsmassighet.pdf

Lind, H. (2004) "Direktavkastning och direktavkastningskrav för fastigheter - En analys av begrepp, mätproblem, påverkande faktorer och användbarhet" [Yield and required yield for real estate – An analysis of concepts, measurements issues, influencing factors and usability]. Fastighetsakademien. Stockholm.

Löchen, P. & Petersson, A. (2010) "Skillnader mellan noterade och onoterade fastighetsföretag – En undersökning om finansiell struktur och bolagsstyrning" [Differences among listed and non-listed real estate companies – an investigation of financial structure and corporate governance]. Institution for property and construction. Royal Institute of Technology.

Malecki, E. J. (1997) "Technology and Economic Development: The Dynamics of Local, Regional, and National Change". University of Illinois at Urbana-Champaign's Academy for Entrepreneurial Leadership Historical Research Reference in Entrepreneurship.

Ministry of Health and Social Affairs (2012) "Boende och byggande" [Accommodation and construction]. Retrieved June 2012 from: <http://www.regeringen.se/sb/d/1932>

Newsec (2012) "Newsec Property outlook: Spring 2012".

Nils Holgersson-gruppen (2006-2011) Fastigheten Nils Holgerssons underbara resa genom Sverige - en avgiftsstudie för 2011 [The property Nils Holgersson's Wonderful Travels through Sweden - a fee study for 2011]. Stockholm: Nils Holgersson-gruppen.

Nordlund, B. (2008) "Valuation and performance reporting in property companies according to IFRS". Printed by Tryck & Media. Universitetservice US-AB. Stockholm

Nyberg, L. (2003) "Nyberg: Utvecklingen på fastighetsmarknaden" [Nyberg: The Development of the real estate market]. Transcript of Lars Nyberg's, the Deputy Governor of Sveriges Riksbank, Speech in Malmö, 9th of February 2003. Retrieved June 2012 from: <http://www.riksbank.se/pagefolders/8046/030902.pdf>

Olofsson, J. & Arneng, M. (2009) "Hyresgästerna om fastighetsförvaltningen – Hyresgästföreningen Region Västra Sverige, Senhösten 2009" [Tenants about residence management – The Swedish Union of Tenants Region Western Sweden, late summer 2009]. Statistics Sweden, in collaboration with the Swedish Union of Tenants.

Pawson, H. & Sosenko, F. (2009) "Assessing Resident Satisfaction". Scotland: Ipsos Mori.

SABO (2011) "Hur ett affärsmässigt bostadsföretag agerar: en kommentar från SABO" [How a market oriented housing company acts: A comment from SABO]. Retrieved June 2012 from:http://www.sabo.se/aktuellt/nyheter_s/2011/apr/Documents/Hur%20ett%20aff%C3%A4rsm%C3%A4sigt%20bostadsf%C3%B6retag%20agerar%20-%20en%20kommentar%20fr%C3%A5n%20SABO.pdf

Statistics Sweden (2012) "Kalkylerat bostadsbestånd efter region och hustyp 1990-2011 [Calculated housing stock by region and house type 1990-2011]". SCB.

Statistics Sweden (2012B) "Yearbook of Housing and Building Statistics 2012". Stockholm: Statistics Sweden.

Swedish Board of Housing, Building and Planning (2011) "Bostadsmarknadsanalys – Västra Götalands län 2011" [Analysis of the accommodation market]. Report 2011:53. Available online at <http://www.lansstyrelsen.se/vastragotaland/SiteCollectionDocuments/Sv/publikationer/2011/2011-53.pdf>

Swedish Board of Housing, Building and Planning (2012) "EU och bostadspolitiken 2011 – Rättsutveckling och samarbete inom EU av betydelse för svensk bostadspolitik [EU and housing policy in 2011 - Legal Development and Cooperation in Europe relevant to the Swedish housing policy]" Report 2012:4

Swedish Board of Housing, Building and Planning (2012B) "Information om investeringsstöd till äldreboendestäder: Särskilda boendeformer för äldre Trygghetsboendestäder" [Information for subsidies to accommodation for elderlies: Specific accommodation forms for elderly, senior home]

Swedish Energy Agency (2003) "Spara energi med effektiva kranar" [Save energy through efficient faucets]. Eskilstuna: Energimyndigheten.

Swedish Energy Agency (2008) "Energideklaration – en investering du hämtar hem!" [Energy audits – an investment you download]. Eskilstuna: Energimyndigheten.

Swedish Energy Agency (2012) "Forskning och innovation för ett hållbart energisystem" [Research and innovation for a sustainable energy system]. Eskilstuna: Energimyndigheten.

Swedish Energy Agency (2012, April 26) "Energimyndigheten - Stöd till solceller" [Swedish Energy Agency – Support for solar cells]. Retrieved July 2012 from: <http://www.energimyndigheten.se/Hushall/Aktuella-bidrag-och-stod-du-kan-soka/Stod-till-solceller/>

Swedish National Board of Housing, Building and Planning (2005) "Förnyelse för hållbar utveckling i olika boendemiljöer" [Innovation for sustainable development in different living environments]. Karlskrona: Swedish National Board of Housing, Building and Planning.

Swedish National Board of Housing, Building and Planning (2007) "Bostadspolitiken – Svensk politik för boende, planering och byggande under 130 år" [Housing policy - Swedish policy on housing, planning and building for 130 years]. Karlskrona: Boverket.

Swedish National Board of Housing, Building and Planning (2008) "Individuell mätning och debitering i flerbostadshus" [Individual measuring and invoicing in apartment buildings]. Karlskrona: Swedish National Board of Housing, Building and Planning.

Swedish National Board of Housing, Building and Planning (2009) "Så mår våra hus Redovisning av regeringsuppdrag beträffande byggnaders tekniska utformning m.m." [The condition of our houses: Governmental Commission on the technical design of buildings etc.]. Karlskrona: Swedish National Board of Housing, Building and Planning.

Swedish National Board of Housing, Building and Planning (2009, September 6) "OVK - Vilka byggnader och när?" [OVK – Which buildings and when?]. Retrieved July 2012 from: <http://www.boverket.se/Bygga--forvalta/Obligatorisk-ventilationskontroll/OVK---Vilka-byggnader-och-nar/>

Swedish National Board of Housing, Building and Planning (2010) "Bostadsmarknaden 2010–2011 - Med slutsatser från bostadsmarknadsenkäten 2010" [Housing market 2010-2011 – with conclusions from the housing market survey 2010]. Karlskrona: Swedish National Board of Housing, Building and Planning.

Swedish National Board of Housing, Building and Planning (2010) "Teknisk status i den svenska bebyggelsen" [Technical status in the Swedish habitation]. Karlskrona: Swedish National Board of Housing, Building and Planning.

Swedish National Board of Housing, Building and Planning (2012) "Boverkets författningssamling - Boverkets föreskrifter om ändring av verkets föreskrifter och allmänna råd (2011:12) om hissar och vissa andra motordrivna anordningar" [Building and Planning Statutes - mandatory provisions amending the Board's regulations and guidelines (2011:12) on lifts and other powered devices]. Karlskrona: Swedish National Board of Housing, Building and Planning.

Swedish Property Federation Stockholm (2007) "Energieffektivisering i Flerbostadshus En Handbok från Fastighetsägarna" [Energy efficiency improvements in multifamily houses: A manual from property owners]. Stockholm AB. Stockholm: Fastighetsägarna Stockholm.

Swedish Tax Agency (2008) "Särskild fastighetstaxering 2008: Du deklarerar hyreshus" [Specific property taxation 2008: You declare rental property]. SKV 393, Issue 11, published in February 2008.

Svenska Bostadsfonden. 2012 "Svenska Bostadsfonden Broschyr 2012" [The Swedish Accommodation fund 2012]. Svenska Bostadsfonden Management AB. Stockholm

The Swedish mapping, cadastral and land registration authority (2012) "Fastighetsregistret: Fastighetspriser" [The Property Register: Property prices]. Gävle: Lantmäteriet.

The Swedish Union of Tenants (2011) "Årsredovisning 2010" [Annual report 2010]. Retrieved May 2012 from: http://www.hyresgastforeningen.se/Om_Oss/ladda_hem/Sidor/Verksamhetsberattelse.aspx

The Swedish Union of Tenants (2012) "Årsredovisning 2011" [Annual report 2011]. Retrieved May 2012 from: http://www.hyresgastforeningen.se/Om_Oss/ladda_hem/Sidor/Verksamhetsberattelse.aspx

Wahlström, Å., Blomsterberg, Å. & Olsson, D. (2009) "Värmeåtervinningssystem för befintliga flerbostadshus Förstudie inför teknikupphandling [Heat recovery systems for existing apartment buildings Feasibility study for the procurement of technology]". Göteborg: Energimyndighetens beställargrupp för energieffektiva flerbostadshus.

8.7 List of Swedish Organizations' Names in Swedish and English

Table 14 - List of Swedish Organizations' Names in Swedish and English. Source: Compiled from the organizations' websites

English name	Swedish Name
Swedish Board of Housing, Building and Planning	Boverket
Swedish Property Federation	Fastighetsägarna
The Swedish mapping, cadastral and land registration authority	Lantmäteriet
The Swedish Tax Agency	Skatteverket
The Swedish National Agency for Education	Skolverket
Ministry of Health and Social Affairs	Socialdepartementet
Statistics Sweden	Statistiska centralbyrån
The Swedish Transport Administration	Trafikverket

9. Appendix

This chapter presents appropriate costs and income to include for NOI; the interview schedule; a list of applied datasets and their respective sources used in the regional analysis; a map of infrastructural projects in the Ale municipality; sensitivity analyses of yield on initial investment municipal for the municipalities Habo, Bollebygd and Ale; and lastly, summarizing sheets with analysis and facts for exemplifying investment cases in Habo, Bollebygd and Ale.

Definition of Net Operating Income

Operation and Maintenance costs that should be included in calculations of Net operating income, directly cited from SFI/IDP (2006)

“Operation and Maintenance

Costs related to the operation and maintenance of the property complies with the current definitions. Company accounts are divided into the following items for the purposes of the property index. (The company’s overhead administrative costs are not included. see definition below.)

1. Maintenance etc. This item includes the overall supervision and care of the property, cleaning of common areas, monitoring operations, trash collection, snow removal, waste disposal. inspection costs, chimney sweeping, emergency repairs, insurance excess payments, security, alarms/emergency calls, and service agreements. In addition to salaries for company employees, also taken into account are vehicle costs, costs associated with the premises and purchase of supplies, as well as fees for external suppliers.
2. Technical maintenance - heating supplies
3. Technical maintenance - other supplies. This item includes refrigeration, electricity (for the property but not for the tenant’s business activities) and water.
4. Planned maintenance refers to both exterior and interior maintenance, which is carried out at intervals of greater than one year and aim at restoring the property’s individual parts to their intended level of functionality. Obligatory inspections and repairs associated with ventilation systems are also included.
5. Fitting out costs. For works in the property by agreement with tenants or in connection with a new or renegotiated lease. Refers only to that part which is reported in the company’s accounts.
6. Management and administration. This item includes property management, daily bookkeeping, financial control, leasing, communication with tenants, management of registers and contracts, technical planning and human resource management. The costs include personnel, office space and equipment, or fees to external suppliers. As these costs usually relate to all properties in a portfolio, some kind of system for distributing these costs needs to be applied. The system currently used by the respective property companies will also be used for the Property index.
7. Insurance for the property.
8. Bad debts. These are credit losses but do not constitute rental losses due to vacancies or rental discounts.
9. Non-deductible VAT.

10. Property tax

11. Ground rent and leasehold payments

The floor area figures available in the internal register of companies' comprise so-called lettable residential floor areas (BOA) and commercial floor areas (LOA). which can be used as the basis for the calculation of key ratios pertaining to operation and maintenance. In the analysis garage area should be deducted from the total area

Overhead Costs

Company overhead costs, which may be entered under portfolio management, are not included among those administrative costs that are to be taken into account when calculating the net operating income from the properties.

In accordance with the recommendations from the Swedish Society of Financial Analysts (Sveriges Finansanalytikers Förening, Finansansanalytikernas rekommendationer 2006 p. 68) overhead costs are "costs at overall company level for the Board of Directors, Managing Director and other management executives from departments such as finance, personnel and information/communication, as well as costs for maintaining the stock exchange listing, credit management, information to shareholders, general meetings, audits etc. Administrative expenses for subsidiary companies or the like should, perhaps in addition to costs for the MD as well as audits in major subsidiaries, be charged to the operating surplus. Costs of properties purchased or sold should be assigned to the operating costs if they cannot be included in the overall purchase price or settled in the transaction costs".

This definition should be adopted for the Property Index as well, with the exception of certain specifics concerning costs of properties purchased or sold as well as valuation fees. In a property index context, costs of properties purchased or sold should be assigned to the transaction, i.e. they are not to be included in the operating costs. Valuation fees in connection with the property transaction should be treated in the same manner, i.e. included in the purchase sum or settled in the transaction costs. Central costs should also include external or in-house valuation fees that occur before the year-end and reporting to the Property Index.

The distinction between administration costs and portfolio management costs linked to the property portfolio may vary slightly from one company to another depending on the structure of the organization. For major companies, suitable for participating in the Property Index, the line between administrative staff and management staff should be drawn below the strategic acquisition and sales-level but above the level at which decisions are made concerning capital expenditure in and management of the properties. In property indices internationally, portfolio management costs and valuation fees are not included in the property's costs. With the above definition, the net operating income in the SFI/IPD index is considered to be internationally."

Interviewees

Date	Duration [min]	Interviewee	Organization	Role	Real estate investments	Rent systems	Technical features	Tenant's preferences and satisfaction	Regional	Potential acquisition cases	Strategies for investing in real estate
06-27-12	30	Joel Ahonen	Hyresgästföreningen [The Swedish Union of Tenants]	Rent negotiator for region "Sydost" (located in Jönköping and negotiates for e.g. Habo)	X						
07-04-12	270	Per-Anders Bengtsson	Development Partner	Managing director and partner			X			X	
04-20-12	90	Andreas Eriksson	Ernst Rosén	Head of Business area west							
05-09-12	90	Andreas Eriksson	Ernst Rosén	Head of Business area west			X	X			
04-25-12	60	Christina Friberg	Jones Lang LaSalle	Advisor, real estate transactions	X				X		
05-02-12	90	Torgny Gunnarsson	Lerum kommun [Lerum municipality]	Land- och exploateringsingenjör [Land and development engineer]	X	X	X		X		
06-14-12	30	Bo Gustavsson	Fastighetsbyrå, Habo	Broker					X	X	
04-23-12	90	Ulf Gärdhagen	Kjellberg Möller	CEO		X		X			
05-09-12	60	Ulf Gärdhagen	Kjellberg Möller	CEO				X			
06-19-12	60	Lennart Haglund	Bollebygd kommun [Bollebygd municipality]	Head of community construction					X	X	
05-09-12	60	Birgitta Hanning	Ernst Rosén	Head of Business Support	X						
04-17-12	80	Daniel Holmén	Ernst Rosén	Head of business support: Real estates	X		X				
06-19-12	90	Ulla Jonasson	Bollebo	CEO	X	X			X		
04-27-12	90	Yngve Karlsson	Development Partner	Managing director and partner							X
06-18-12	90	Sven-Olof Ljunggren	Habo Bostäder AB [Habo housing]	Head of real estate					X	X	
05-12-12	60	Thomas Lundh	Ernst Rosén	CEO				X		X	
06-07-12	90	Therese Malm	WSP	Project leader of environmental due diligence			X			X	
04-12-12	90	Göran Moberg	Hyresgästföreningen [The Swedish Union of Tenants]	Negotiation Strategist		X		X			
05-10-12	80	Göran Moberg	Hyresgästföreningen [The Swedish Union of Tenants]	Negotiation Strategist		X		X			

06-20-12	90	Jan A. Pressfeldt	Committee of community development in Ale & Ale Fastighetsförmedling	Chairman & Broker						X	X	
04-20-12	60	Charlotta Prytz-Hedström	SEB Merchant banking	Client executive, Real estate	X					X		X
06-20-12	120	Sven-Arne Rasmussen	Alebyggen	CFO	X	X				X	X	
06-18-12	90	Roland Sandelius	Habo Bostäder AB [Habo housing]	CEO	X	X			X	X	X	
06-18-12	60	Magnus Sandell	Habo kommun [Habo municipality]	Head of Real estate, technical division						X	X	
05-07-12	90	Joachim Svedberg	Colliers Internationals	Project leader within division Transactions	X							
07-02-12	90	Ingmar Svenungsson	DTZ	Associate director	X						X	
06-18-12	60	Emma Svärd	Habo kommun [Habo municipality]	Head of division for planning and construction						X	X	
05-09-12	90	Håkan Tengelin	Fastighetsägarna [The Swedish Property Federation]	Property Consultant		X			X			
04-27-12	80	Tomas Utterhall	WSP	Project leader within division Installations					X			
07-03-12	20	Anonymous	Hyresgästföreningen [The Swedish Union of Tenants]	Legal advisory position, Bollebygd municipality		X						
06-28-12	30	Anonymous	Skatteverket	Real estate tax valuation	X					X	X	

Datasets and their respective sources used in the regional analysis

Municipal Assessment Framework:

- Municipal areas 2012 (Statistics Sweden, 1990-2011)
- Municipal populations 1990-2011 (Statistics Sweden, 1990-2011)
- Individuals per age per municipality 2011 (Statistics Sweden, 2000-2011)
- Individuals per age group per municipality 2000-2010 (Statistics Sweden, 2000-2011)
- Local workers and commuters into and out of all municipalities 2010 (Statistics Sweden, 2010)
- Local workers per industry per municipality 2000-2010 (Statistics Sweden, 2004-2010)
- Local jobs per industry per municipality 2000-2010 (Statistics Sweden, 2004-2010)
- Adults per income segment per municipality 2005-2010 (Statistics Sweden, 2000-2010)
- Average income per age segment per municipality 2005, 2010 (Statistics Sweden, 2000-2010)
- Median income per age segment per municipality 2005, 2010 (Statistics Sweden, 2000-2010)
- Total and average real, financial assets and debts per age group per municipality 2007 (Statistics Sweden, 2004-2007)
- Students per education level per age per municipality 2010 (Statistics Sweden, 2010) (Swedish National Board of Housing, Building and Planning, 2011) (Swedish National Board of Housing, Building and Planning, 2005-2011) (Swedish National Board of Housing, Building and Planning, 2011/2012)
- Percentage of population on welfare per age group per municipality 2009 (Statistics Sweden, 2009)
- Number of family units and number of children per family per family situation per municipality 2005, 2010 (Statistics Sweden, 2010)
- Number of individuals migrating into and out of a municipality, per municipality 1997-2011 (Statistics Sweden, 1997-2011)
- Number of foreign and Swedish born individuals per municipality 2002-2010 (Statistics Sweden, 2011)
- Calculated number of housing units and apartments per municipality 1990-2010 (Statistics Sweden, 1990-2011)
- Average vacancy in public rental apartment housing per municipality 2001-2011 (Statistics Sweden, 2000-2011)
- Permanent and non-permanent small house transactions (quantity, average price, average tax value) per municipality 1985-2010 (Statistics Sweden, 1985-2011)
- Taxation units and tax values for rental housing and rental commercial spaces per municipality 2006-2011 (Statistics Sweden, 2006-2011)
- Constructed small housing units and apartment buildings and the average rooms per apartment per municipality 1975-2010 (Statistics Sweden, 1975-2011)
- Real estate taxation units per type per municipality 2011 (Statistics Sweden, 2011)
- Municipal self-reliance rate per municipality 1998-2011 (Statistics Sweden, 1998-2011)
- Municipal investments as percentage of tax revenue per municipality 1998-2011 (Statistics Sweden, 1998-2011)
- Tenant age distribution per housing type per municipality 2000-2010 (Statistics Sweden, 2000-2011)
- Tenant place of birth distribution per housing type per municipality 2000-2010 (Statistics Sweden, 2000-2011)

- Tenant level of education distribution per housing type per municipality 2000-2010 (Statistics Sweden, 2000-2011)
- Adults per level of education per municipality 2000-2011 (Statistics Sweden, 2000-2011)
- Negotiation results and average rent level per public housing company 2006-2011 (SABO, 2012, 2010, 2008, 2006)
- Rental housing transactions within the counties of Västra Götaland, Halland, Jönköping and Kronoberg 1996-2012 (Lantmäteriet, 2012)
- Costs (SEK/m²) for garbage collection, water&sewage, electricity, heating per municipality 2006-2011 (Nils Holgersson Gruppen, 2006-2011)
- Municipality ranking 2012 (Datscha, 2012)
- Business climate ranking per municipality 2007-2012 (The Confederation of Swedish Enterprise, 2007-2012)
- Average rent levels per location area per municipality 2012 (Newsec Advice, 2012)
- Average vacancy levels per location area per municipality 2012 (Newsec Advice, 2012)
- Average yield levels per location area per municipality 2012 (Newsec Advice, 2012)
- Unemployed per age group per municipality 1996-2011 (Statistics Sweden, 1996-2011)
- Municipal and county divisions, municipal codes and municipal types 2012 (Swedish Association of Local Authorities and Regions, 2012)

Quantitative Study

- Municipal populations 1990-2011 (Statistics Sweden, 1990-2011)
- Median income per age segment per municipality 2005, 2010 (Statistics Sweden, 2000-2010)
- Number of individuals migrating into and out of a municipality, per municipality 1997-2011 (Statistics Sweden, 1997-2011)
- Real estate taxation units per type per municipality 2011 (Statistics Sweden, 2011)
- Municipal investments as percentage of tax revenue per municipality 1998-2011 (Statistics Sweden, 1998-2011)
- Rental housing transactions within the counties of Västra Götaland, Halland, Jönköping and Kronoberg 1996-2012 (The Swedish mapping, cadastral and land registration authority, 2012)
- Costs (SEK/m²) for garbage collection, water&sewage, electricity, heating per municipality 2006-2011 (Nils Holgersson Gruppen, 2006-2011)
- Municipality ranking 2012 (Datscha, 2012)
- Business climate ranking per municipality 2007-2012 (The Confederation of Swedish Enterprise, 2007-2012)
- Average rent levels per location area per municipality 2012 (Newsec Advice, 2012)
- Average yield levels per location area per municipality 2012 (Newsec Advice, 2012)
- Unemployed per age group per municipality 1996-2011 (Statistics Sweden, 1996-2011)
- Municipal and county divisions, municipal codes and municipal types 2012 (Swedish Association of Local Authorities and Regions, 2012)

Qualitative Study

- Västsvenska paketet (The Swedish Transport Administration, 2012A)
- Västragötaland: Projects (The Swedish Transport Administration, 2012B)
- Halland: Projects (The Swedish Transport Administration, 2012C)
- Permanent and non-permanent small house transactions (quantity, average price, average tax value) per municipality 1985-2010 (Statistics Sweden, 1985-2011)
- Real estate taxation units per type per municipality 2011 (Statistics Sweden, 2011)

Map of infrastructural projects in the Ale municipality



(The Swedish Transport Administration , 2012B)

Yield on Initial Investment: Sensitivity Analysis

In the complete list of cases, the average price per apartment space is 5500SEK, the average rent is 900SEK/m² and the average cost is 540SEK/m². The following two tables portray the yield's sensitivity to changes in any one of these variables. It should be noted that although significantly similar, price always has the greater effect. It should further be noted that increases in rent may not be fully realized due to e.g. taxation.

Table 15: Yield response to changes in Rent and Price, starting at the average case values (cost: 540SEK)

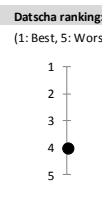
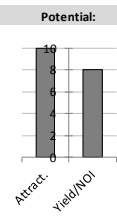
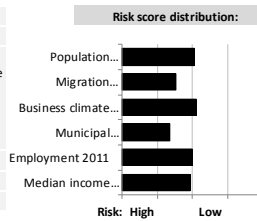
		Rent										
		-50%	-40%	-30%	-20%	-10%		+10%	+20%	+30%	+40%	+50%
Price		450	540	630	720	810	900	990	1080	1170	1260	1350
-50%	2750	-3%	0%	3%	7%	10%	13%	16%	20%	23%	26%	29%
-40%	3300	-3%	0%	3%	5%	8%	11%	14%	16%	19%	22%	25%
-30%	3850	-2%	0%	2%	5%	7%	9%	12%	14%	16%	19%	21%
-20%	4400	-2%	0%	2%	4%	6%	8%	10%	12%	14%	16%	18%
-10%	4950	-2%	0%	2%	4%	5%	7%	9%	11%	13%	15%	16%
	5500	-2%	0%	2%	3%	5%	7%	8%	10%	11%	13%	15%
+10%	6050	-1%	0%	1%	3%	4%	6%	7%	9%	10%	12%	13%
+20%	6600	-1%	0%	1%	3%	4%	5%	7%	8%	10%	11%	12%
+30%	7150	-1%	0%	1%	3%	4%	5%	6%	8%	9%	10%	11%
+40%	7700	-1%	0%	1%	2%	4%	5%	6%	7%	8%	9%	11%
+50%	8250	-1%	0%	1%	2%	3%	4%	5%	7%	8%	9%	10%

Table 16: Yield response to changes in Cost and Price, starting at the average case values (rent: 900SEK)

		Cost										
		+50%	+40%	+30%	+20%	+10%		-10%	-20%	-30%	-40%	-50%
Price		810	756	702	648	594	540	486	432	378	324	270
-50%	2750	3%	5%	7%	9%	11%	13%	15%	17%	19%	21%	23%
-40%	3300	3%	4%	6%	8%	9%	11%	13%	14%	16%	17%	19%
-30%	3850	2%	4%	5%	7%	8%	9%	11%	12%	14%	15%	16%
-20%	4400	2%	3%	5%	6%	7%	8%	9%	11%	12%	13%	14%
-10%	4950	2%	3%	4%	5%	6%	7%	8%	9%	11%	12%	13%
	5500	2%	3%	4%	5%	6%	7%	8%	9%	9%	10%	11%
+10%	6050	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	10%
+20%	6600	1%	2%	3%	4%	5%	5%	6%	7%	8%	9%	10%
+30%	7150	1%	2%	3%	4%	4%	5%	6%	7%	7%	8%	9%
+40%	7700	1%	2%	3%	3%	4%	5%	5%	6%	7%	7%	8%
+50%	8250	1%	2%	2%	3%	4%	4%	5%	6%	6%	7%	8%

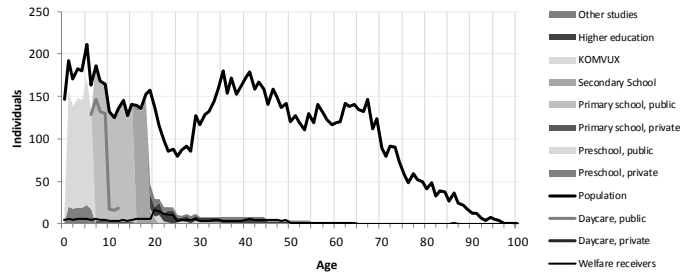
Municipal analysis: Habo

County:	Jönköpings län
Municipal type:	Suburban municipality to large cities
Municipal type description:	Municipality in which more than 50 per cent of the night population commutes to work in a large city
Population 2011:	10 828
Area (km2):	329
People per km2:	33

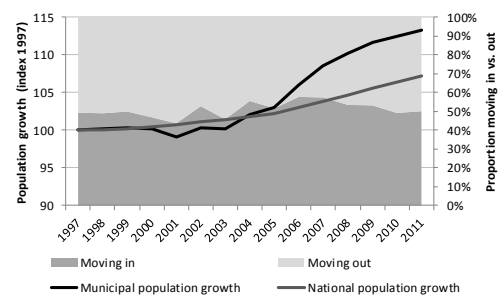


Population distribution and growth

Age distribution (2011), schooling and welfare (estimates from 2010 data)

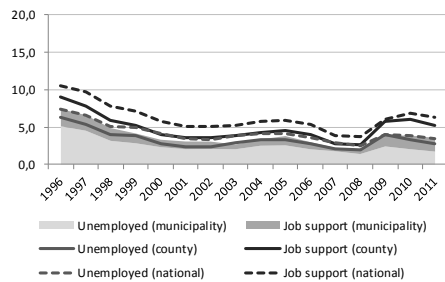


Population growth and People moving in vs. out of the municipality

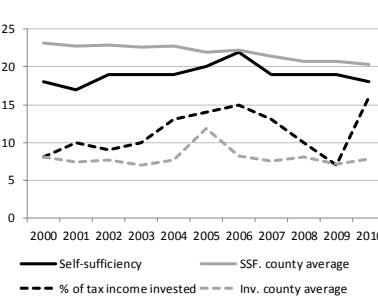


Regional economy: Job market and business climate

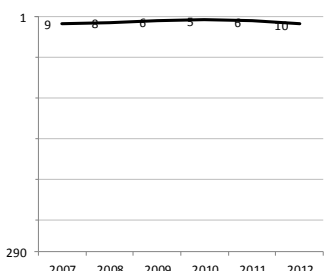
% Unemployed and in job support programs of working population



% Municipal self-sufficiency and % of tax revenue invested

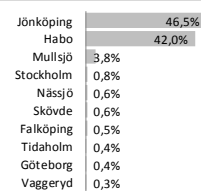


Business climate rank of all municipalities (SNR)

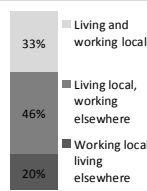


Professions, jobs, and commuting

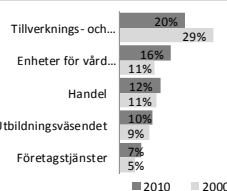
Residents work in... (2010):



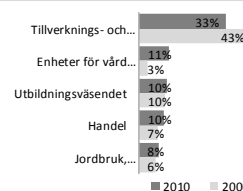
Distribution of people (2010)



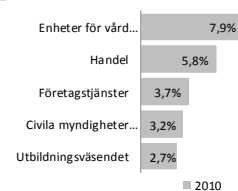
Top 5 local professions



Top 5 local jobs

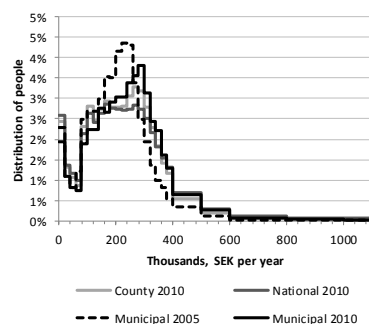


Top 5 professions commuting elsewhere as % of workforce

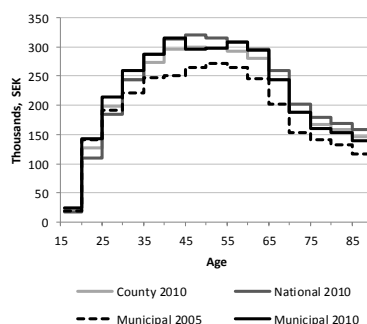


Household economy

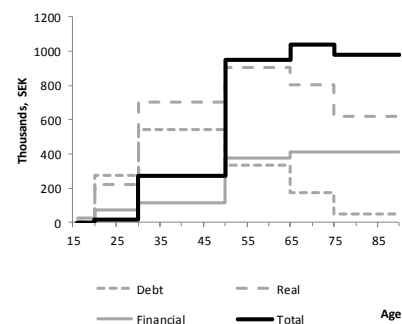
Income distribution (zero income included, but not displayed)



Average income per year for different age groups

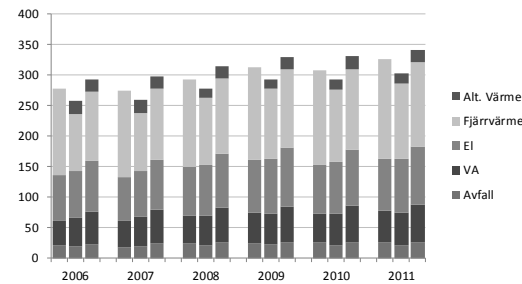


Average assets per person in age group (2007)

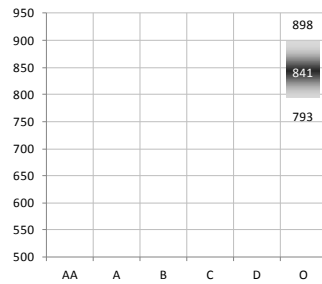


Housing and housing market

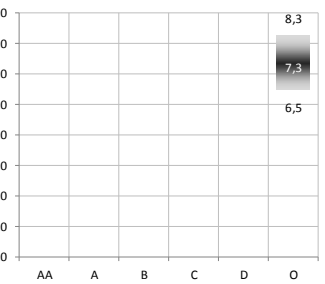
Average cost in SEK/m²/year in municipality, vs. county and nationally



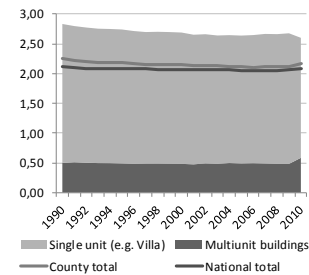
Rent distribution per m², per location



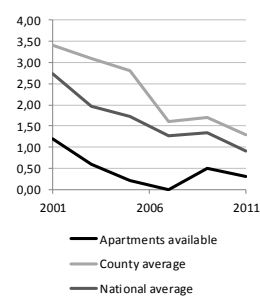
Required yield per location



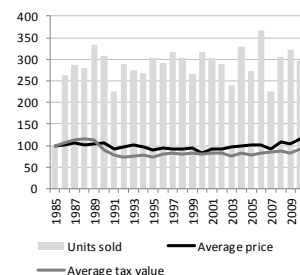
Total number of people per housing unit*



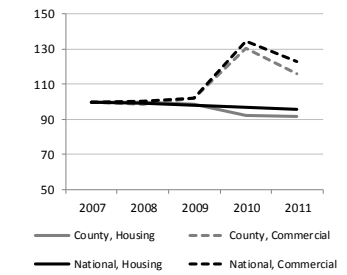
% Unrented public apartments



Sold single unit indices / national average indices



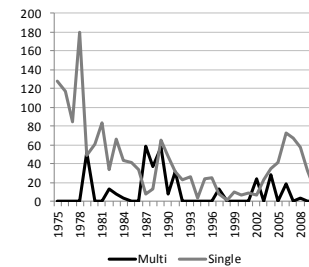
Local tax value index / supranational tax value index



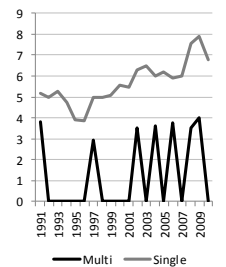
* Sub-totals for Single/Multi units are not representative, but show distribution of total only

* Estimate from 320 and 325 real estate classes
For multi unit property

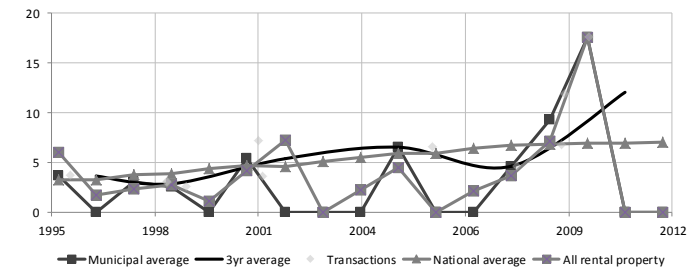
Constructed number of apartments



Rooms per constructed apartment

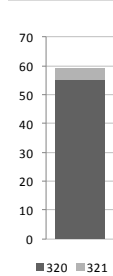


Price (SEK, Thousands) per m² for type 320 and 321 buildings

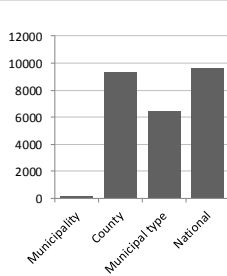


Housing (continued) and tenant population

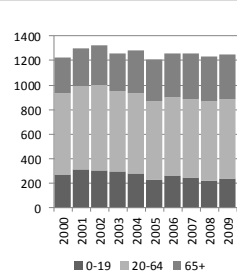
Rental housing units



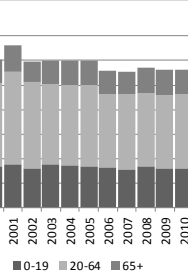
NOI/Yield (SEK/m²) averages



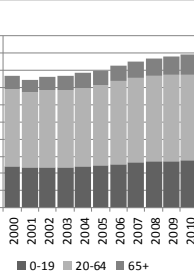
Age distribution in rental apartments...



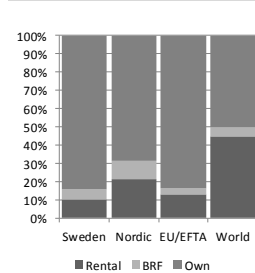
...in BRF apartments



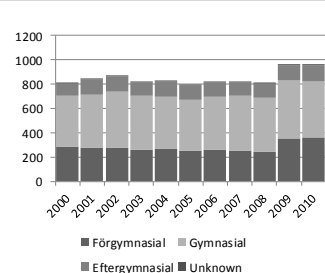
...in owned housing



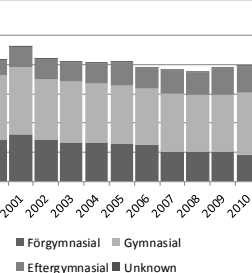
Region of birth per housing type*



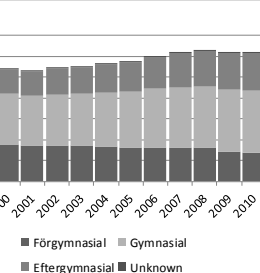
Education level of Rental apartment tenants...



...of BRF apartment tenants



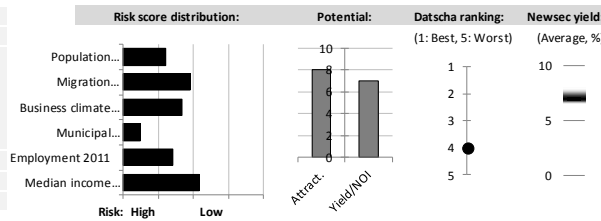
...of those who own housing



* Does NOT indicate category distribution

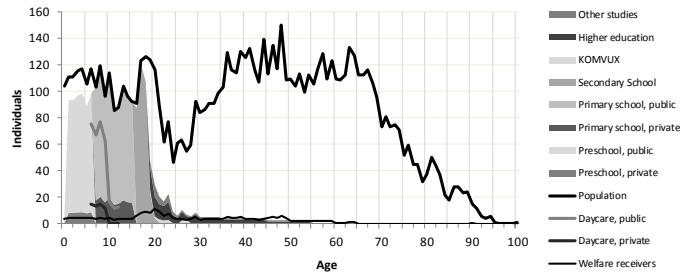
Municipal analysis: Bollebygd

County:	Västra Götalands län
Municipal type:	Suburban municipality
Municipal type description:	Municipality where more than 50 per cent of the night population commutes to work in another municipality. The most common commuting destination must be one of the metropolitan municipalities
Population 2011:	8 356
Area (km2):	263
People per km2:	32

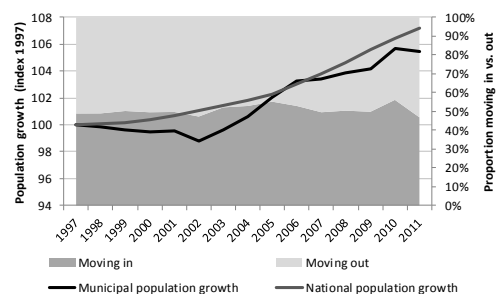


Population distribution and growth

Age distribution (2011), schooling and welfare (estimates from 2010 data)

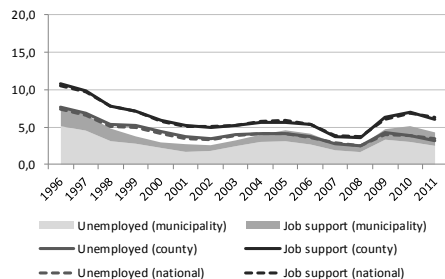


Population growth and People moving in vs. out of the municipality

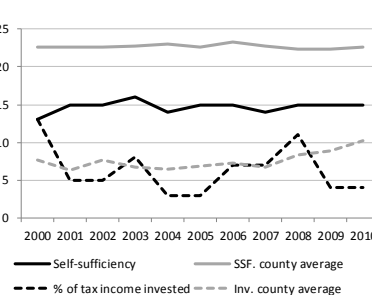


Regional economy: Job market and business climate

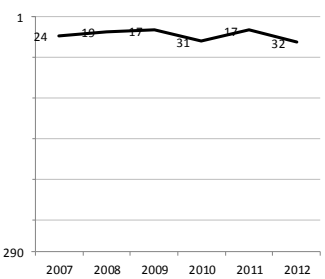
% Unemployed and in job support programs of working population



% Municipal self-sufficiency and % of tax revenue invested



Business climate rank of all municipalities (SNR)



Professions, jobs, and commuting

Residents work in... (2010):

Bollebygd	33,1%
Göteborg	23,7%
Borås	20,4%
Härnäs	9,2%
Mölnådal	4,3%
Mark	1,7%
Mark	1,7%
Partille	0,7%
Lerum	0,5%
Stockholm	0,5%

Distribution of people (2010)

Living and working local	27%
Living local, working elsewhere	54%
Working local, living elsewhere	19%

Top 5 local professions

Tillverknings- och...	15%
Handel	15%
Enheter för vård...	14%
Utbildningsväsendet	10%
Byggindustri	8%

Top 5 local jobs

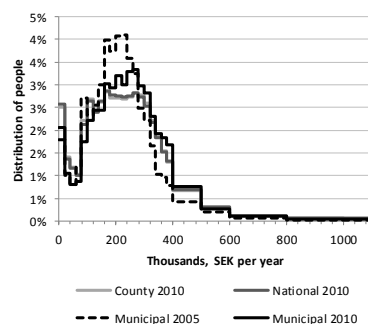
Tillverknings- och...	23%
Handel	15%
Utbildningsväsendet	13%
Enheter för vård...	11%
Byggindustri	8%

Top 5 professions commuting elsewhere as % of workforce

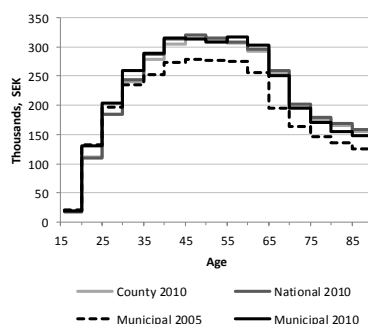
Enheter för vård...	6,8%
Handel	5,9%
Transportföretag	5,3%
Företagstjänster	5,3%
Byggindustri	3,3%

Household economy

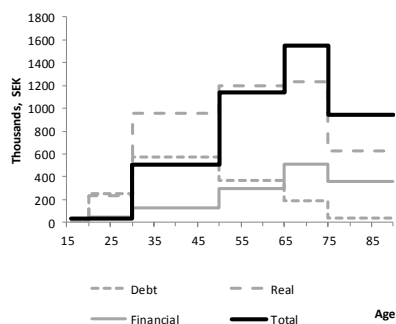
Income distribution (zero income included, but not displayed)



Average income per year for different age groups

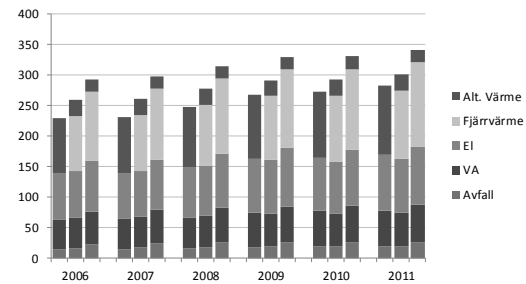


Average assets per person in age group (2007)

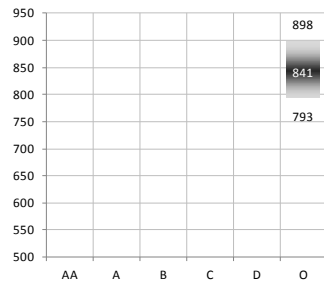


Housing and housing market

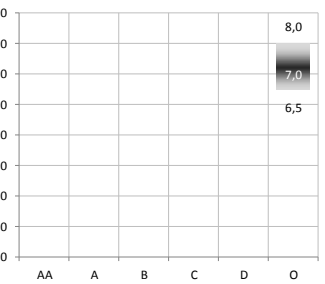
Average cost in SEK/m²/year in municipality, vs. county and nationally



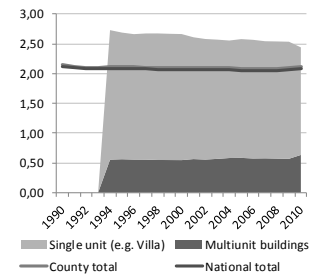
Rent distribution per m², per location



Required yield per location

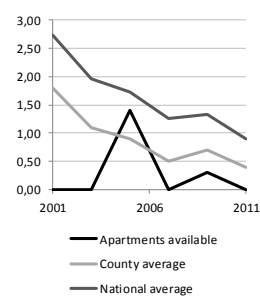


Total number of people per housing unit*

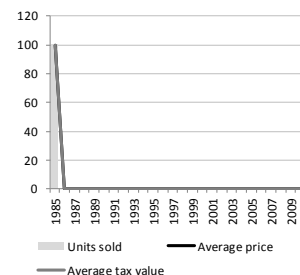


* Sub-totals for Single/Multi units are not representative, but show distribution of total only

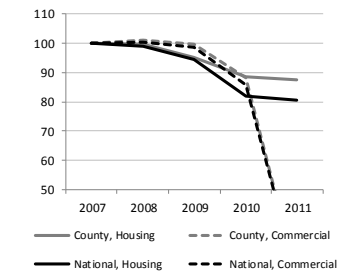
% Unrented public apartments



Sold single unit indices / national average indices

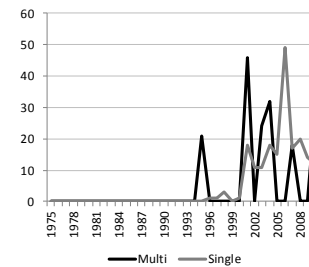


Local tax value index / suprarregional tax value index

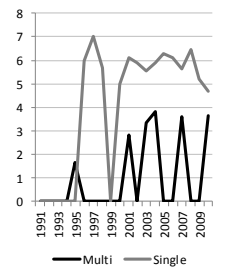


* Estimate from 320 and 325 real estate classes
For multi unit property

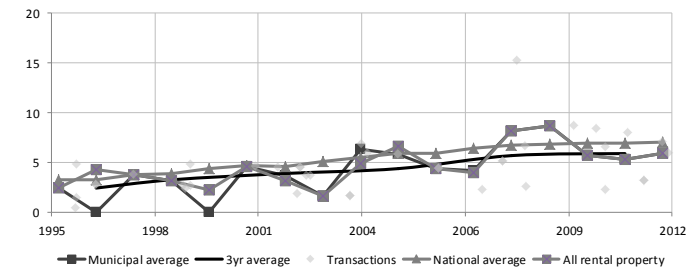
Constructed number of apartments



Rooms per constructed apartment

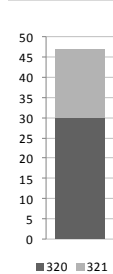


Price (SEK, Thousands) per m² for type 320 and 321 buildings

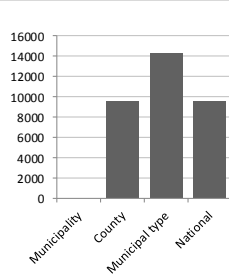


Housing (continued) and tenant population

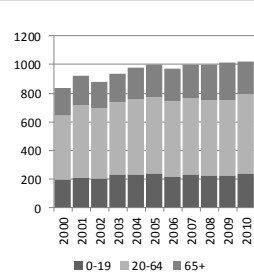
Rental housing units



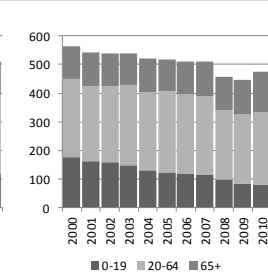
NOI/Yield (SEK/m²) averages



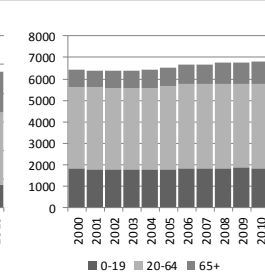
Age distribution in rental apartments...



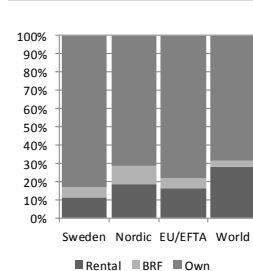
...in BRF apartments



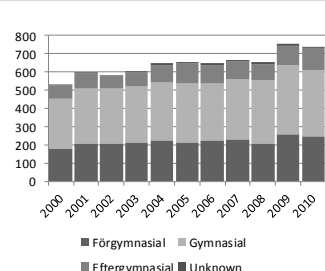
...in owned housing



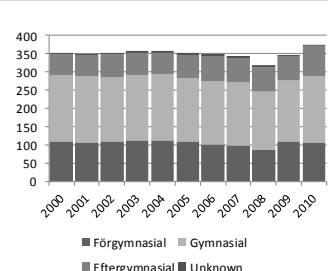
Region of birth per housing type*



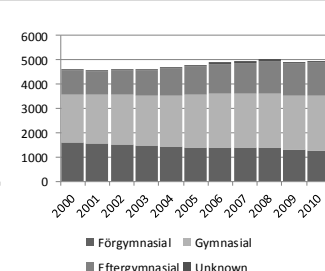
Education level of Rental apartment tenants...



...of BRF apartment tenants



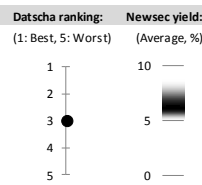
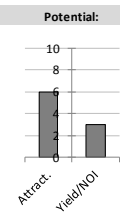
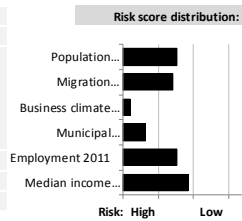
...of those who own housing



* Does NOT indicate category distribution

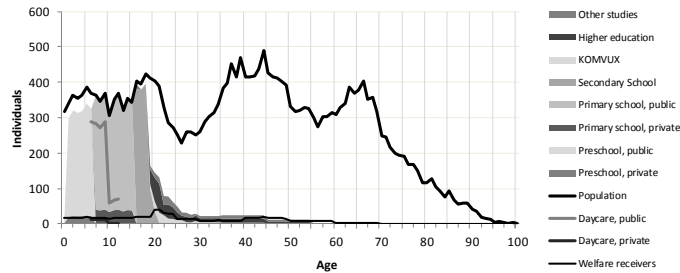
Municipal analysis: Ale

County:	Västra Götalands län
Municipal type:	Suburban municipality
Municipal type description:	Municipality where more than 50 per cent of the night population commutes to work in another municipality. The most common commuting destination must be one of the metropolitan municipalities
Population 2011:	27 577
Area (km2):	317
People per km2:	87

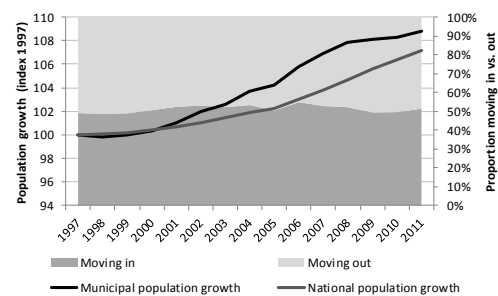


Population distribution and growth

Age distribution (2011), schooling and welfare (estimates from 2010 data)

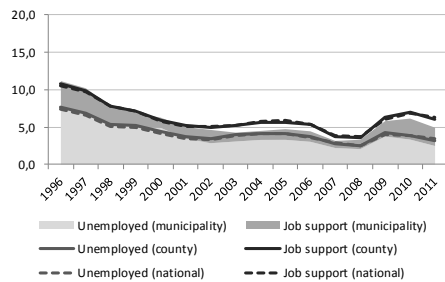


Population growth and People moving in vs. out of the municipality

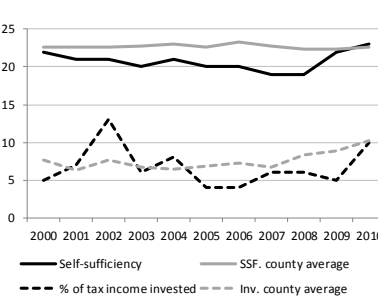


Regional economy: Job market and business climate

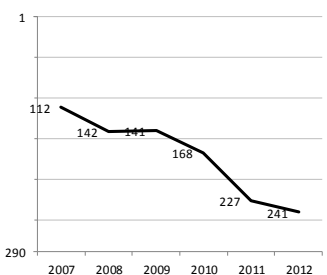
% Unemployed and in job support programs of working population



% Municipal self-sufficiency and % of tax revenue invested

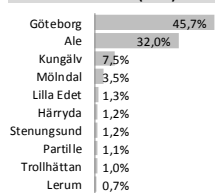


Business climate rank of all municipalities (SNR)

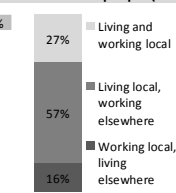


Professions, jobs, and commuting

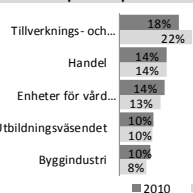
Residents work in... (2010):



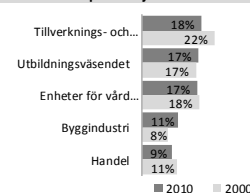
Distribution of people (2010)



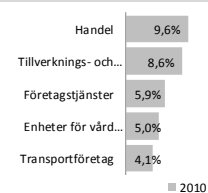
Top 5 local professions



Top 5 local jobs

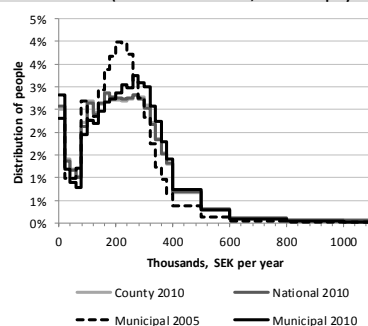


Top 5 professions commuting elsewhere as % of workforce

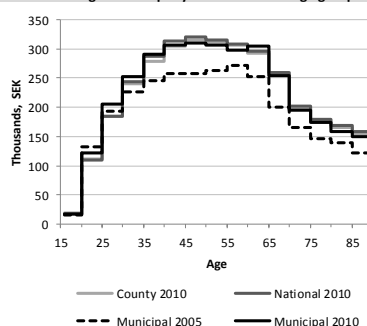


Household economy

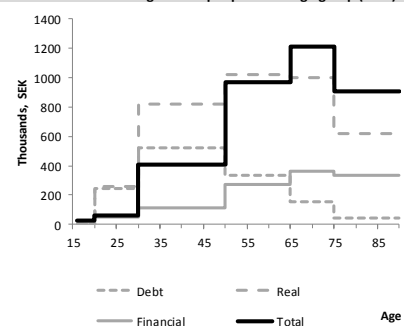
Income distribution (zero income included, but not displayed)



Average income per year for different age groups

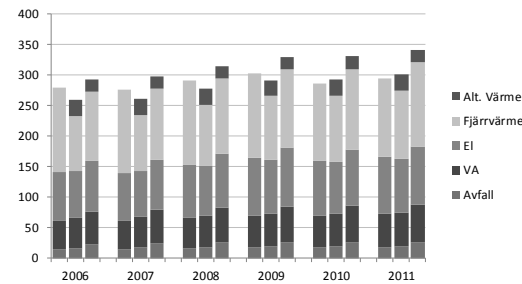


Average assets per person in age group (2007)

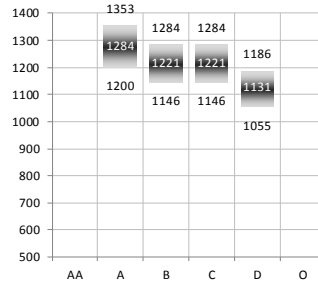


Housing and housing market

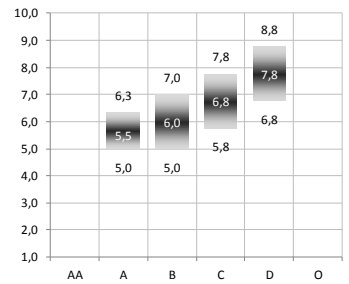
Average cost in SEK/m²/year in municipality, vs. county and nationally



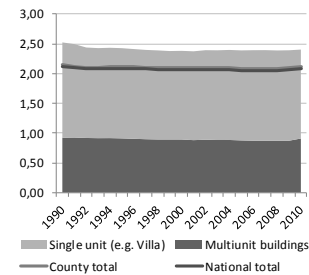
Rent distribution per m², per location



Required yield per location

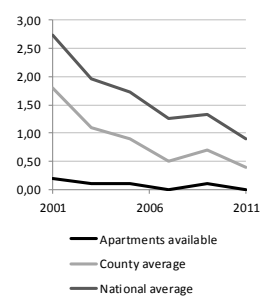


Total number of people per housing unit*

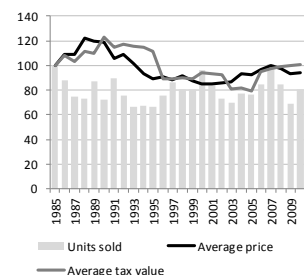


* Sub-totals for Single/Multi units are not representative, but show distribution of total only

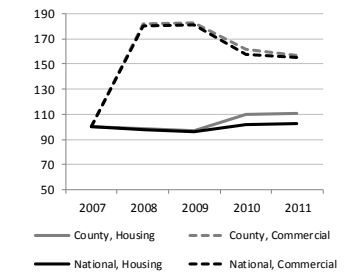
% Unrented public apartments



Sold single unit indices / national average indices

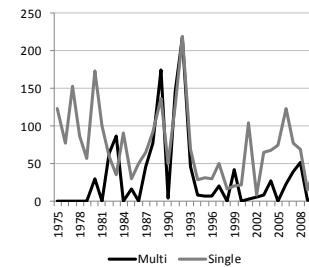


Local tax value index / supracounty tax value index

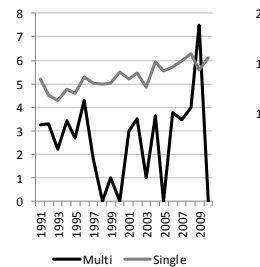


* Estimate from 320 and 325 real estate classes
For multi unit property

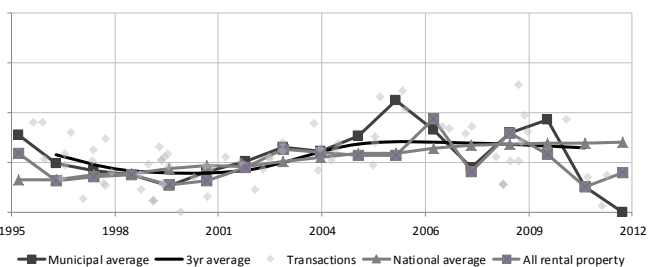
Constructed number of apartments



Rooms per constructed apartment

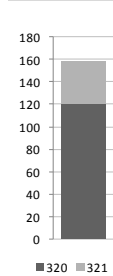


Price (SEK, Thousands) per m² for type 320 and 321 buildings

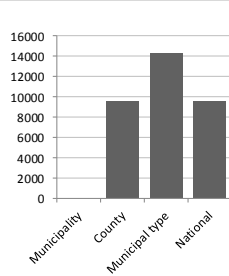


Housing (continued) and tenant population

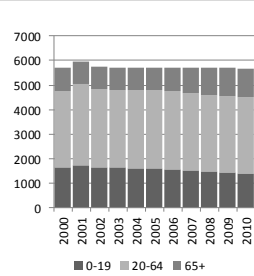
Rental housing units



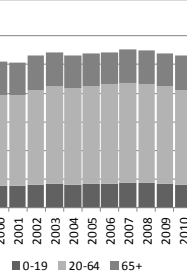
NOI/Yield (SEK/m²) averages



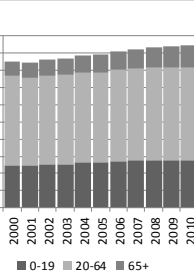
Age distribution in rental apartments...



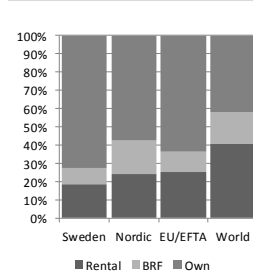
...in BRF apartments



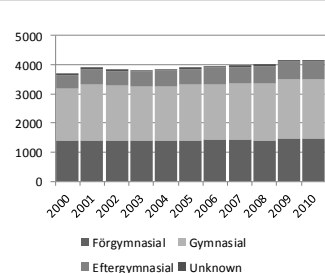
...in owned housing



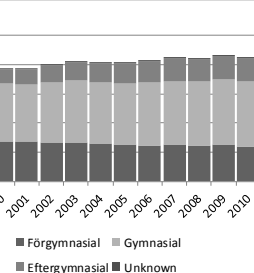
Region of birth per housing type*



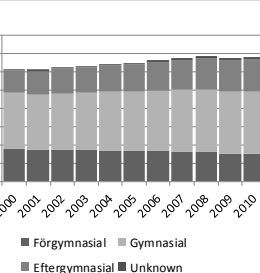
Education level of Rental apartment tenants...



...of BRF apartment tenants



...of those who own housing



* Does NOT indicate category distribution