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An Investigation of the Economic Drivers of the Finnish Housing Market

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Abstract

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The objective of this thesis is to investigate the Economic Drivers of the Finnish Housing Market. The research is developed by firstly providing a background of the Finnish housing market including a historical perspective, the housing authority in Finland and general housing trends over the years. Data has been obtained from the Official statistics of Finland as well as IMF Staff Country Reports on Finland. Previous literature is discussed leading to points of investigating such as regional development of housing supply, demand and prices.in addition to housing loans and housing debt. Stability and security both seem to play a crucial role in influencing buyers' perspective in making housing purchase decisions. Finland continues to be a popular destination for immigration from all over the world while Helsinki seems to be the most attractive city for migration resulting in an overall increase in housing demand. The demographic changes were determined by comparing European and cross-regional data. It appears that if population density continues to increase, the population growth and income growth will result in higher price reactions and decrease growth in housing stock. Additionally, real estate taxation indeed seems to play a role in housing demand and housing consumption. Time-series modelling was analysed that indicated that the comparably slow growth of house prices following the financial crisis can arguably be attributed to low demand and abundant supply in the Finnish housing market. Certainly, the increased supply significantly slowed the rise in house prices. Furthermore, low interest rates boosted both supply and demand, and are expected to continue doing so for the coming years. The time series model has assisted in separating the relative influence of supply and demand on price and investment changes in residential real estate. Interest rates in Finland are projected to continue low for the foreseeable future thereby increasing demand. Overall, this thesis concludes that factors such as demographic changes, supply and demand appear to affect the Finnish housing market to a large extent.

Keywords: Housing market, interest rate, supply demand

Contents

Glossary

GDP

Gross Domestic Product. It is the sum of all value contributed to an economy. The value added is the difference between the value of the products and services produced and the value of the goods and services needed to produce them.

Housing market

Buying and sale of homes which may either be directly to purchasers or via real estate agents.

Interest rate

The proportion of your current principal loan debt that is paid to the lender in return for borrowing money to buy a home.

Household debt

The total debt owed by all members of a home is referred to as household debt. It covers consumer debt as well as mortgage debts.

Supply and Demand

The relationship between the quantity of a commodity accessible for sale by producers and the quantity that consumers are willing to buy. Demand is determined by the cost of the product, the prices of related products, and the incomes and preferences of customers.

1 Introduction

The research at hand is an investigation of the Economic Drivers of the Finnish Housing Market. When people buy or sell houses, may be to live or be an investment, is referred to as housing market. A house is arguably one of the most valuable asset people invest in. Supply and demand factors are integral in determining the outcome of any housing market. Besides this, governmental policies such as taxation can have an effect on house prices and housing consumption. The aim is to explore the Finnish housing market through the various aspects that affect it with a focus on supply and demand factors specifically taxation and demographic changes namely migration and immigration.

The research will be conducted through numerous literature and sources including Official statistics of Finland as well as IMF Staff Country Reports on Finland, which will provide essential information to understand the Finnish housing market, specifically in terms of supply and demand, the factors affecting that as well as housing loan and household debt. The perspective taken is to highlight that the housing market in Finland plays an integral role in Finland and thereby the factors that affect it are important to explore. Additionally, the importance of housing will be further emphasized through an example of “Housing First” model initiated to eliminate homelessness as well as the consequences of Covid-19 pandemic on the housing market in Finland will be explored. There has been extensive research conducted on housing markets in general as well as supply and demand factors. The research will be built on further by being applied to the Finnish market in this thesis.

Thereby, this will be useful for those that have an interest in housing market specifically the Finnish housing market and in determining the extent to which the mentioned factors affect it. It may also be valuable for firms and investors eager to learn more about the Finnish housing market before the delve deeper. Hence, another research objective for this thesis is to provide an all-rounded picture of the Finnish housing market through the stated factors, to aid firms and investors in their decision-making process. Housing in a rather heterogenous commodity thereby majority of the literature written on housing economics outlines the heterogeneity of housing. As suggested by George Fallis; professor of Economics and Social Science at York University, commodity housing is

provided like other commodities thereby the standard framework of microeconomics may be utilized. Hence, the same will be applied in this thesis. (Fallis, 1985)

Arguably, Finland is a rather safe country to own or rent a house in. The differences in income, in Finland are substantially less than in various other countries. This also indicates in housing; differences amongst residential areas are not as considerable as in countries with great differences in income. Approximately, two-thirds of Finnish people live in owner-occupied homes. In the long run, purchasing a home is mostly cheaper than renting one. The house prices in Finland are influenced by location as well as supply-demand factors which are affected by elements namely demographic changes. In large cities for example Helsinki, housing is more expensive than the rest of Finland. However, purchasing a house in a large city is a safer investment due to lower risks of housing prices drop. In rural areas and small towns, houses are less expensive although it is more difficult to sell the house due to lower demand in such areas. (infofinland.fi, 2020.).

The housing market has the potential to exacerbate the impact of financial market disruptions on the real economy. This necessitates an examination of the extent to which various types of factors affect housing demand, supply, and prices, which this research aims to do. (Rosenberg, 2019).

2 Housing Market - Background

This section will introduce Finland's housing market through a historical perspective to provide a brief context of Finland’s economy. Since housing market trends are expected to have a substantial impact on future economic developments, it is critical to learn from the past about their significance. Finland is a fascinating country to study because it is a member of the monetary union that has experienced significant increases and decreases in house prices over time, as well as a variety of monetary policy regimes. Although it is a relatively small country, it’s GDP per capital is comparable to the UK, Japan, and Canada. (Rosenberg, 2019)

Housing policy has committed to delivering housing with respectable standards for people in Finland. The situation in terms of housing was complicated as the aftermath of

World War 2. The overall standards for housing were not at a comparable level in terms of comparison with other countries since inner migration was extensive and financial markets were backward. When considering the strenuous beginning, Finnish housing policy has arguably been relatively victorious in accomplishing its target. The housing standards in Finland currently can be a testament to that. National authorities have an impact on housing supply since they are in charge of land zoning, whereas private enterprises and cooperatives build dwellings, including social housing. Banks provide majority of the funding. Although, as in numerous nations, the state contributes significant assistance to the housing market. The state subsidizes the financing of housing production and renovations with the help of preferential loan programs. Additionally, it offers tax deductions for interest payments for owner-occupied residences and even an assistance for housing for households that have an overall low-income. (Vartia, 2006).

Despite the bursting of the housing bubble and the liberalization of the market for personal rentals in 1995, owner-occupied housing is dominant. In addition, government programs were established to promote social rental housing production. There are more than fifty percent of the rental housing owned by non-profit organizations that provide social housing. Approximately 17% of the housing stock is in this category. With more than 60% of the housing stock built after 1970, and less than 4% built before 1920, the housing stock has a relatively young average age. Compared to 1970, housing standards have improved dramatically from 15 square meters per person to 37 square meters in 2003. Although, in worldwide comparability, the average size per person remains lower, and the Nordic nations have the smallest average size per person. (Lujanen and Palmgren, 2004 as cited in Vartia, 2006). There is a lack of housing stock to meet households' needs. In a questionnaire conducted by the Ministry of Environment, approximately 76% of homes favored to live in separate or semi-detached houses, but fewer than 50% actually live in these types of dwellings (Ministry of Environment, 2004 as cited in Vartia, 2006).

As WW2 came to an end, the state took more extreme measures to help. In the 1950s, the settlement of migrants and soldiers shifted the focal point of housing policy to rural areas. The main factor helping housing development in the 1960s was a tax relief system that resulted in the preponderance of unsubsidized dwelling production. Despite the fact

that many tax exemptions had been phased out since the 1970s, the advantageous treatment that home-buying loans received from the tax authorities until the late 1980s continued to play a significant role. The 1970s were marked by widespread use of state housing loans, as mandated by housing legislation. The introduction of housing allowance took place in mid 1970s. This meant that the housing costs of low-income households were decreased by direct state subsidies. As suggested by the National Housing Board, the fundamental goal in developing housing conditions in Finland was to make housing available to all segments of the population at a fair cost, in a suitable size, that was structurally sound, and that was situated in a safe and healthy environment.

The Finnish housing authority is comprised of the Ministry of the Environment, the National Housing Board and the Provincial Councils, and relevant Municipal Boards. Their responsibilities revolve around measures affecting legislation, preparing state budget, and various other Council of State decisions which have an effect on housing and the method of fund distribution for housing. Besides this, they also plan the physical planning and controlling of building matters in addition to environmental protection which have a crucial impact on housing. Concentration of the population into the urban settlements had increased in the 80s, so much that towards the end of the year 1985, approximately 62% of the population was concentrated in the urban municipalities. Migration had been quite strong especially into Helsinki which can still arguably be held true, as will be discussed further in the upcoming sections.

As of 1988, new housing starts increased significantly to approximately 57 000 dwellings. It has been suggested that the reason for this was the increase in demand as the money market eased. It was predicted that the new housing starts would decrease by the year 2000 which thereby means that quality would once again be prioritized over quantity. This also included renovating houses that already exist. Hence, even though the quantity of new housing being produced was to be decreased substantially in the year 2000, it was the case that the total housing production was not going to change as renovations would increase. With an amendment that went into effect in 1985, state funding for renovation, which was basically a loan, was broadened to include the whole housing stock. (Andersson et al., 1989). With that being said, considering the number of housings starts indicates that starts for new blocks of flats have been increasing in the whole of Finland since 2015. (Lindblad, Sariola and Viertola, 2019). Hence, Finnish

housing market has not necessarily been as simple or straightforward as it may have been assumed.

According to The Global Property Guide, the Finnish economy increased by approximately 1% in 2019, a decline from 2018 which witnessed a growth of 1.7%. Moreover, it is the lowest growth in four years. (Delmendo, 2020). In the year 2000 after Finland's entry into EU, the Finnish government eliminated the necessity for a nonresident to acquire a permit to purchase a secondary property for residential purposes in Finland. Hence, this placed non-Finns on the same ground as Finnish residents. Thereby, now non-residents could also purchase real estate thus there was a substantial increase in the number of people who were able to buy property in Finland. Thereby, the available quantity of housing for sale increased according to increasing demand. In other words, when the demand exceeds supply, the prices tend to rise as people are willing to pay more for it in order to obtain the desired facility, product, or service. Thereby, producers are willing to sell more, hence increasing their output.

Moreover, from year 2010 to 2019 the prices for housing in Helsinki Metropolitan increased by 5.8%. However, in the rest of the country the prices declined by 8.2%. (Delmendo, 2020). The potential causes for this will be discussed in the thesis. Since the Global crisis of 2008, interest rates have been low; near zero which means borrowing money is extremely cheap. Due to this, although interest rates have been produced to stimulate investment, the biggest impact of low interest rate has been in the price of assets such as shares or real estate which are not necessarily productive parts of the economy. Hence, the economy is still struggling to grow. According to the Bank of Finland, the overall housing loans value was approximately €100.54 billion, an increase by 2.7% from the previous year. Altered housing loan interest rates in Finland were still rather small at 0.77% as of February 2020, a decrease from 0.85% in the year before and 0.93% two years ago. (Delmendo,2020). The decrease in the last few years has been quite evident.

A major change has occurred in the Finnish financial culture that had been a very conservative country with a conservative financial sector. Previously, they demanded one taking a house loan to provide a deposit of 30% of the house price which has now been changed to around 5%. Additionally, the time one has, to pay back the loan has

been extended. This has increased the demand for something which is not relatively fixed supply. More general trends regarding economical change in Finland to note are that the South is more prosperous than North and East of Finland. Therefore, there is a migration of people towards the South of Finland which will further increase the demand for accommodation. Because interest rates are low, people who have been saving money are essentially losing money since the value of their assets are decreasing over time. Thus, real estate and property becomes an even more attractive investment because that is consistently increasing in value.

3 Previous literature

The research process for this thesis started by looking at previous literature. Secondary research was conducted to facilitate the process of understanding the different perspectives and findings found in various studies which led to points of further investigation and eventually formed the basis of this thesis.

For example, an article published in the Baltic Journal of Economics in 2019. The objective of this article was to discuss conventional and unconventional monetary policies and their subsequent effects on the Finnish housing market. The Bayesian structural vector autoregressive framework is used to conduct the analysis. Zero and sign restrictions are used to identify monetary policy interest rate shocks and balance sheet shocks. According to the findings, policy interest rate shock and balance sheet shock have a favorable and transient influence on prices of houses in Finland, with the reaction to a balance sheet shock being generally lower and dissipating quicker. The height of the impact of a policy rate shock on prices of houses occurs faster in Finland than the rest of the eurozone, but the significance of the peak impact is alike. The influence of a balance sheet shock on prices of housing in Finland is similar to that of the euro region as a whole. (Rosenberg, 2019)

A report published by Pellervo Economic Research Institute written in Helsinki in 2000 investigated the regional development of housing supply, demand prices in Finland in the period of 1980s and 1990s. The focal point remained specifically on the extensive recession of the early 1990s and on the earlier boom timespan The research is based

on an economic model that permits bubble phenomena to affect prices besides demographic and economic factors. Panel data on NUTS4-level areas divided into four categories is used to generate the model. The findings indicated that financial market liberalization was a pivotal part resulting in the housing price bubble. Changes in interest rates, vacancy rates and income employment are primarily accountable for price booms and busts. (Laakso, 2000).

There is little indication of a pricing bubble. After a lengthy delay, housing development has reacted significantly to price adjustments. The huge shifts in home prices and building activity witnessed at the state level during the boom and crisis were fundamentally observed in all areas, according to regional study. Regional trends have begun to diverge throughout the recovery era, which began about 1994. The metropolitan area of Helsinki has had lower vacancy rates and higher price increases than the rest of the country. These developments have also influenced housing building. Nonetheless, regional disparities in housing consumption have begun to widen. Differences in employment growth and demographic shifts are mostly to account for current regional polarization in housing markets. (Laakso, 2000). The differences in regional developments especially in reference to demographic shifts will be discussed further in the thesis.

Additionally, a report published Bank of Finland research discission papers is explored. This source maintains its focus on how rates of housing loans are decided through data on Finnish housing loans. An issue with this is that factors like loan competition and capital regulation are difficult to identify empirically thereby further research would be needed to develop a deeper understanding of the same. Earlier empirical data on the home loan rate pass-through in Finland comes from cross-country research which primarily concentrate on the degree and speed of proceed through variation between countries. Although the time periods, criteria, and estimating techniques employed in the available research vary, in comparison to other European nations, the data show that the pass-through from money market rates to home loan rates in Finland is exceptionally significant and rapid. The factors that influence bank lending rate margins have not been properly studied using Finnish data. A conventional proceed through model implies a constant margin, but this does not appear to be the case in Finland, especially in the long run. As per Kauko (2005), the squeeze in the gap between the interest rate on new

public loans and the money market rate between 1993 and 2003 can be described by a reduction in bankruptcies, reflecting lower credit risk, and EMU membership, which lowered interest rate risk and potentially strengthened competition. (Putkuri, 2010).

Finland is an example of a eurozone country with a bank-based economy wherein most loans are provided at changeable rates. The study builds on previous interest rate pass-through research by explicitly accounting for shifting lending rate margins. A conventional lending rate model is expanded with factors predicted by a hypothetical bank interest rate setting model, which is defined as an error-correction model. The empirical findings demonstrate that, since the mid-1990s, fluctuations in money market rates have primarily driven short-run movements in housing loan rates, and that less volatile cost and credit risk variables have also influenced long-run trends. The projected pace of adjustment for new housing loans in Finland is quite fast, enhancing the efficacy of monetary policy. On the downside, quick pass-through may erode financial stability by raising housing market volatility. In worldwide comparisons, home prices in Finland have historically been very variable. However, the impact of short interest rate fixing periods has yet to be investigated. Furthermore, because Finland has a significant proportion of variable-rate loans, changes in market interest rates affect the interest rates on the majority of existing loans. This technique raises the risks incurred by borrowers by making future interest expenses unpredictable. (Putkuri, 2010).

Furthermore, an article in The Global Property Guide, essentially discusses the effect of coronavirus on the current Finnish housing market. This also supports and further emphasizes the several house prices cycles in the Finnish housing market from the 1980 to late 2000. However, this specific article also calls attention to how the history of Finnish housing market is relevant in the current covid-19 situations. This source also calls attention to the price boom in housing market in Finland in 2001-2008. The source credited this to a strong economic and wage growth and a decrease in interest rate, thereby resulting in a significant growth in house prices. (Delmendo,2020). A key common factor between these sources is that they highlight the period of underbuilding in Finland which was followed by a housing boom.

An article published in the Journal of Banking & Finance, written by Elias Oikarinen for the Department of Economics, Turku School of Economics, essentially uses time series

econometrics to demonstrate that since the financial liberalization of the late 1980s, there has been a strong two-way relationship between house prices and housing loan stock in Finland. The relationship was significantly weaker before the financial deregulation. Housing price increases have a significant positive effect on the outstanding consumer loan stock. There does not seem to be a correlation between stock prices and credit. Recognizing the two-way relationship between house prices and credit is critical since this interdependence is probable to amplify boom–bust cycles in the economy and exacerbate financial sector vulnerability. Overall, the research essentially indicate that a positive interest rate shock of 100 basis points has a minor, positive temporary impact slightly below 1% on real house prices. (Oikarinen, 2008).

An article published in the Journal of Housing economics, written by Aida Caldera and Åsa Johansson for the OECD, Economics Department suggests that the responsiveness of housing supply to changes in price has notable consequences for the development of housing costs and the pace at which housing markets respond. This source forecasts the long-run price elasticity of new housing supply in twenty-one different OECD nations, including Finland, using a stock-flow model of the housing market measured through an error correction system. It suggests that that supply elasticities in Finland along with other countries namely Denmark, Sweden, the United States, Canada, Japan are at or higher, unity indicating that due to a demand shock housing output will grow proportionally higher than the prices. (Caldera & Johansson, 2013).

A journal written for the Department of Mathematics and Statistics, University of Vaasa aimed to investigate the evidence of long-range dependence behavior in house price returns and unpredictability for fifteen Finnish major regions from 1988:Q1 to 2018:Q4. These regions were split geographically into 45 cities and sub-area based on postcode numbers. The results revealed that all three apartment types of price returns had a greater degree of predictability when the estimates of the long memory parameter were restricted in the stationary and invertible interval. This essentially indicates that the returns of the various types of dwellings studied are perpetually dependent. It examines the long memory behavior of house price returns and unpredictability, which is essential for investment, risk, and portfolio management. (Dufitinema & Pynnönen, 2019).

Lastly, another article investigates a credit channel of monetary policy, mainly a bank-lending channel, in the housing market. The significance of the credit channel, according to the researchers, is determined by the structural characteristics of the housing finance system, especially its effectiveness and institutional organization. They used a VAR model to investigate this problem in four housing markets in Finland, as well as Norway, Germany, and the United Kingdom. This model is used to depict the changing relationship between different values across a period. Their findings indicated that there was a direct link between the presence of the credit channel, the effectiveness of housing finance, and the types of organizations involved in mortgage supply across countries. Finland appears to have the features of a bank model, according to the findings. Banks supplied approximately 80% of mortgage loans in the early 1990s, whilst the State Housing Fund supplied about 15%; the balance was accounted for by small non-depository organizations (Nordic Council, 1992 as cited in Iacoviello and Minetti, 2007). The financing market is inefficient: Finnish banks depend heavily on retail sight deposits (European Mortgage Federation, 2000 as cited in Iacoviello and Minetti, 2007) and can obtain wholesale borrowing at a greater cost than their Nordic counterparts (Kosonen, 1993; Booth et al., 1994 as cited in Iacoviello and Minetti, 2007).

Similar issues apply to the effectiveness of the mortgage market: the majority of non-depository organization mortgages originate from the government. Since state funding is confined to social housing - that is rental, cooperative, and owner-occupied, and single-family house building, state mortgages can only buffer bank funding shocks to a limited extent. As a consequence, the elasticity of substitution of private-bank and alternative financing is poor, suggesting that mortgage distribution is important for home purchases by consumers.

To begin, it is firstly important to discuss why housing is so important in Finland, which is what the next section aims to do.

4 Importance of housing in Finland

With housing being such an integral part of any society, exploring the topic at hand becomes vital. Housing loans comprise a majority of Finnish households' loan debts which could arguably have various significant effects on the Finnish economy. Having

developed a keen interest in the operations of housing markets, particularly Finnish housing markets led to the sense of curiosity to research the same which would equip me as well as others with important knowledge regarding the significance of housing markets in Finland. Consequently, it would allow us to be more well-aware of the important aspects in the Finnish Housing market. The content in this report will provide all the necessary information for the future house seller, owner or anyone who would want to invest or get into the real-estate. Basic knowledge of the housing market may not be sufficient hence a better understanding of this would aid and prepare to enter a new domain. Furthermore, it will be useful for anyone conducting research regarding housing trends in Finland as well as a deeper insight into supply and demand factors related to housing market.

For Finland's economy, the housing market is critical. It fundamentally interacts with various aspects of the economy and has an important impact on the economic cycle. The housing market expectations essentially influence firm investment decisions and household consumption decisions. In Finland, home ownership is the most popular option of accommodation, elevating the housing market's role in the economy. As a result, the way the housing market functions and performs has a strong relation to the subsequent changes in wealth proportion of households. Hence, house price changes have a significant effect on household wealth and market rents, affecting households' purchasing power and private spending.

Household decisions regarding housing are significantly associated to and impacted by factors such as the macroprudential policy as well as the state of the housing market. Thereby, the housing market influences the whole financial system's stability by channelling and magnifying the economic cycle. As a result, fluctuations in the housing market cycle are reflected all across the economy, whilst developments in the aggregate economy and on financial markets also inevitably have an impact on the housing market. (Lindblad, Sariola and Viertola, 2019).

In order to understand the importance of housing in Finland, it would be crucial to also mention geographical aspects of Finland as a country. Finland, besides Iceland, is the most northerly country in the world which essentially means that it is covered in large number of forests and snow. The weather in Finland could arguably play an important

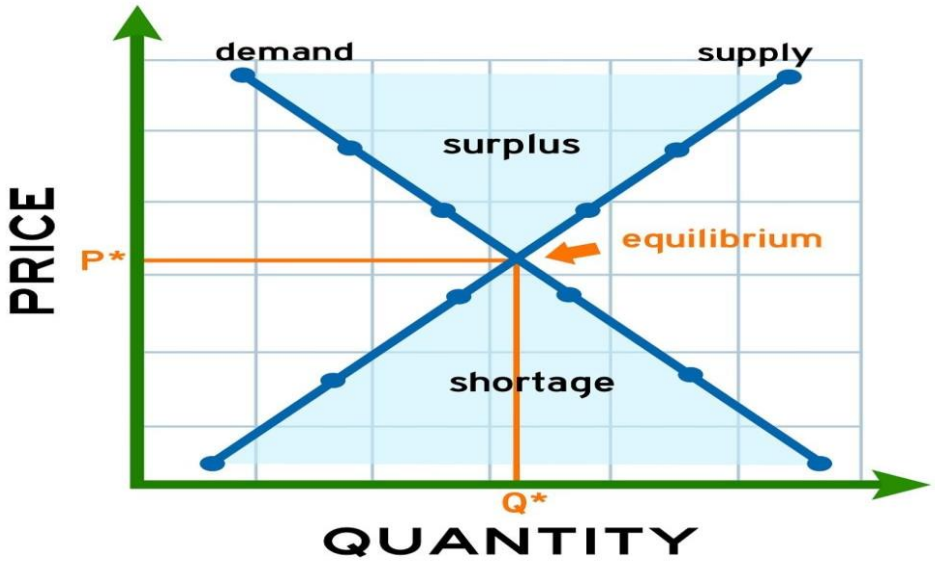
role. The weather conditions vary across the different parts of Finland depending on how much it leans towards the south or north directions. According to the national housing board, Finland's housing policy emphasizes social factors and quality rather than quantity, as of 1989. It is stated that majority of the population in the 1980's was housed well enough. The housing policy is essentially a part of the social policy therefore social factors seem to play an integral part in development of housing policy in Finland. In the 1980's, there were financial incentives for the younger population with the aim of encouraging them to save up for their first house. This was a crucial part of the housing policy in 1980s. The situation of rental dwellings was quite weak which was considered to be the main problem in relation to the younger population who needed a dwelling. (Andersson et al., 1989).

Stability and security both play a key role when it comes to buyers' perspective in making housing purchase decisions. These two factors are also the driving force behind an initiative that decreased homelessness in Finland by fulfilling the need of these two factors. This will be discussed further in the section 9.

5 Supply and Demand

This section will aim to discuss the importance of demand and supply in the housing market, and how that is consequently vital for the economy. It's critical to understand the importance of various supply and demand factors in fuelling the housing market which also has crucial consequences for macroprudential and fiscal policy. Increased demand has driven residential investment growth and housing prices in recent times. As a result of the improved supply environment, housing investment has increased while price rise has been decreased. It is essential to consider that Finland is not a single housing market. The demand for land in Helsinki is increasing consequently the prices are high. The demand is high due to the interest rates being low. In other words, it can be stated that in the past years, the Finish housing market has boosted due to the stable economic conditions and low interest rates. (Lindblad, Sariola and Viertola, 2019).

As illustrated in Figure 1 below, when the demand for housing by households meets the supply of available housing financed by investors, the housing market reaches equilibrium. Simply put, it can be viewed through the basic law of supply and demand that is - when there is a lot of interest demand for housing but a low supply or shortage, house prices tend to rise. When there is an oversupply of houses available in a market, homeowners often decrease their prices as a result of decreasing demand. It can thereby be argued that the housing market is influenced by both supply and demand, although their relative and absolute influence on market dynamics may fluctuate. House pricing and construction movements are shaped by a variety of demand and supply factors, several of which can be altered by policy interventions. (Lindblad, Sariola and Viertola, 2019). These factors may include immigration, migration, demographic changes, income, and interest rates which will be discussed further in the following sections and subsections.

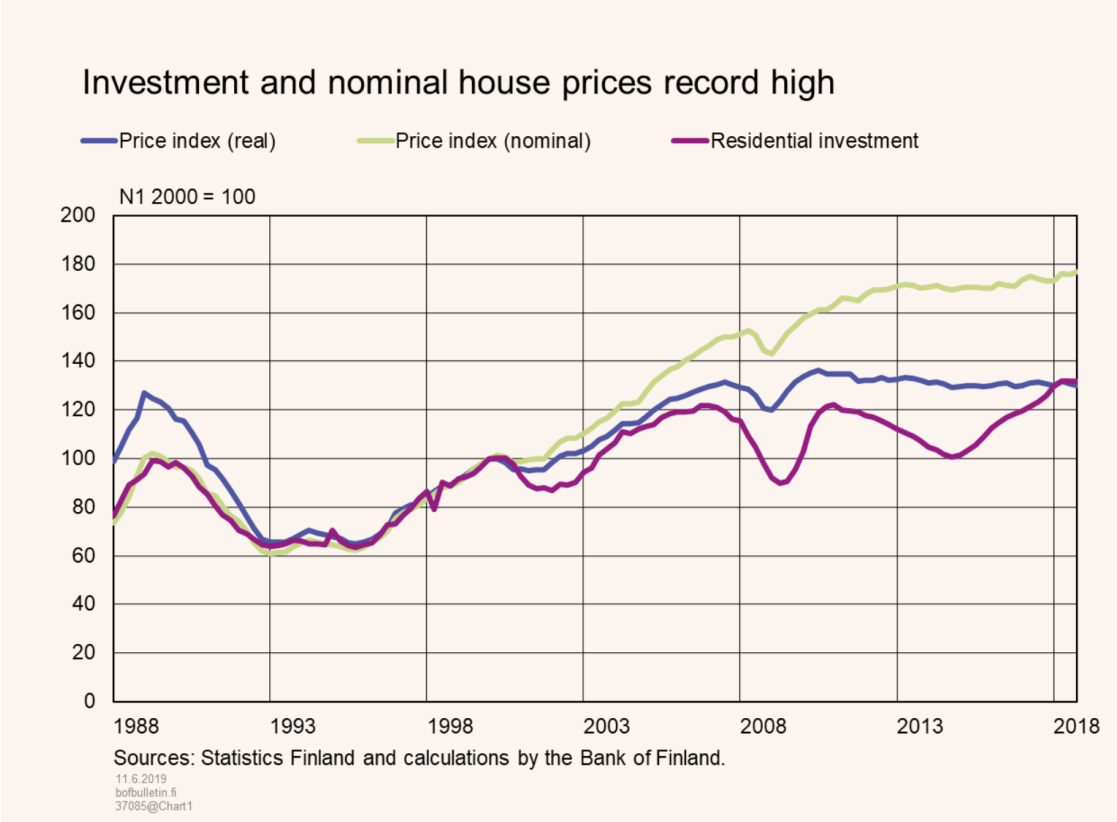


Kuvio 1. Supply-Demand graph

It is worth noting that housing supply is always changing. When people relocate, inventory may rise. For example, some may be downsizing, while others may require more space to accommodate a growing family. Similarly, new home construction and development may expand, contribute to the existing inventory. Housing inventory, on the other hand, diminishes following natural disasters namely floods and earthquakes,

and when existing houses are dismantled. Since land is a limited resource, the number of new progress is often limited as well since it is not an infinite. (Investopedia, 2020). The general economy has a high impact on housing demand. When the economy is doing well, there is a larger demand for housing. Similarly, when the economy is weak, housing demand is weaker. Therefore, it is a two-way relationship.

The Finnish housing market has been experiencing a positive trend, as seen in Figure 2. Residential investment volumes, and therefore housing starts and completions, have increased dramatically and experienced noticeable growth.



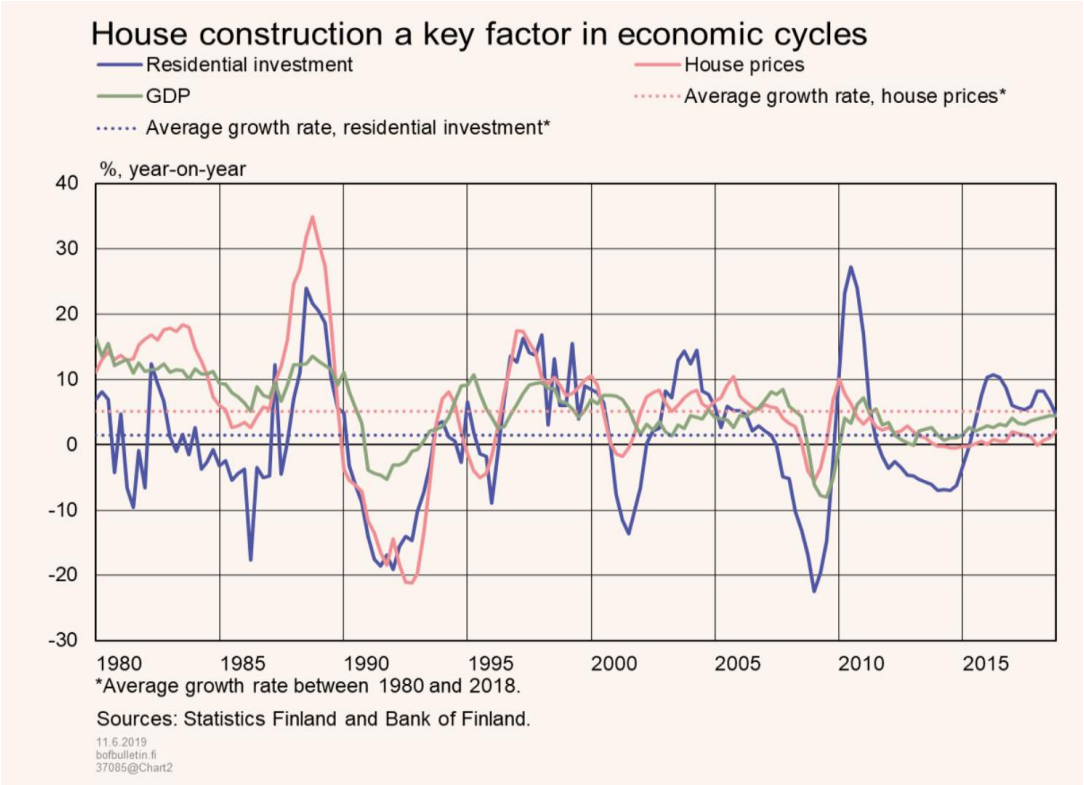
Kuvio 2. Price index (real), Price index (nominal) and Residential investment graph

However, especially outside of Helsinki, the number of housings starts has been steadily declining. Furthermore, sales of existing homes appear to have plummeted throughout the country. The construction industry's current fall has been harming employment levels, which have begun to decline which inevitably affects the Finnish economy. Recently, as seen in Figure 2, nominal prices of existing homes have continued to climb,

although at a rather slow pace. House prices, on the other hand, have been stable in real terms since 2010. A key point to emphasize here is that pricing changes have differed significantly by region.

On one hand where real housing prices in Helsinki and other growth centers have generally climbed, on the other hand, the opposite can be considered true for a huge majority of Finland. Consequently, there are significant regional variations in the housing market, that are not only apparent between the Helsinki metropolitan area or the other growth centers and the rest of Finland, but inevitably also between these areas. Arguably, the difference is apparent but is not necessarily as prominent in Finland as it is in various other countries across the globe. However, it is vital to also explore why these significant regional differences exist in order to further understand the roots of supply and demand circle in the housing market. This will thereby be explored further in the following section.

As previously stated, the construction industry's decline has had significant effects on the employment levels and consequently on the Finish economy. Thus, it is worth nothing that in the Finnish economy, the housing construction industry has frequently shown to be a key aspect of business cycles. Moreover, cyclical developments in residential construction and home prices are subject to rapid variations. Regardless, they allow for the prediction of more aggregate economic movements in the economic cycle to be done in an adequate manner, as illustrated in Figure 3.



Kuvio 3. Average growth rate between 1980-2018.

Residential investment constitutes approximately 35% of total private investment which also takes into account renovation work. Additionally, it has for GDP ratio of approximately 6%. Residential investment oscillations, on the other hand, are far larger than GDP oscillations, and their indirect effect on economic growth is enormous. Since the financial crisis, house price growth has been minimal, hovering less than its long-term average each year as suggested in Figure 3. Residential investment, on the other hand, has been growing at a rate substantially above average in past years. However, as the pace of new-build projects slows, investment growth is expected to reduce years ahead. (Lindblad, Sariola and Viertola, 2019).

6 Factors affecting supply and demand

Now that the importance of supply and demand has been discussed, the next step is to explore the various factors that affect the demand and supply of housing in Finland.

6.1 Demographic changes

Changes in the demographics plays a vital role as it affects housing demand. Population size and growth are the core underlying base variables of housing demand estimations. There are a number of demand-side factors that affect the housing market. Demographic change, particularly in the long run, determines the aggregate housing demand as well as the type of housing selection preferred. For instance, as the population ages, demand for smaller houses and apartments may increase in favor of larger buildings, especially those located further from care services. Housing demand, on the other hand, is boosted by the increase in the working-age population of 20 to 64 years old. This demographic is predicted to continue to increase in the Helsinki metropolitan area over the next years. (Lindblad, Sariola and Viertola, 2019).

Changes in household size can be due to several factors such as birth, death, divorce, separation etc. When a family decides to grow in terms of family members, or when a couple moves in together this increases the demand for a more appropriate housing for that given population. Additionally, immigration from different parts of the world to Finland as well as people moving from Finland to other countries can be viewed as an important factor affecting demand and thereby supply. Although demographic and age trends are fairly predictable, the present immigration situation has arguably created a significant band of uncertainty or error margin regarding future housing demand. (Mueller, Dinn and Miller, 2018). As Finland welcomes refugees and immigrants with open arms, the increase in population ultimately means more housing is needed to accommodate the increasing population.

A study that uses China as the research object to explore the impacts of demographics on housing consumption can be found here to further underline the significance of demographics in the housing market. Natural structure, regional structure, and social structure were all taken into account when investigating demographics. The housing consumption models were developed using Life Cycle Theory and the continues Income Hypothesis. The findings indicate that demographic structures have a crucial impact on housing consumption. Specifically, child-age dependency ratio (CDR), education level, and family size all have negative impacts on housing consumption, whereas the urbanization rate and the old-age dependency ratio (ODR) have beneficial impacts. This

study indicates that the several demographic factors can be vital in determining housing demand and consequently how housing market operates especially in relation to supply and demand, all of which are important aspects of the Finnish economy. (Zhang et al., 2020).

The same concept of demographic changes such as an increased population affecting the housing market can be further supported by a study that researched the hypothesis that substantial demographic transitions can alter housing prices. Firstly, an overlapping generation mode was created and resolved for the asset's equilibrium price analytically. According to the model, economies with a higher proportion of elderly persons in the population have cheaper house prices. Using data on housing prices and demographic characteristics from the Organization for Economic Cooperation and development, this theory was empirically investigated. According to the findings, a one-percentage-point rise in population leads to a 1.4-percentage-point increase in house prices. (Gevorgyan, 2019).

On the other hand, Clara H. Mulder argues that the relationship between population and housing is two-sided – that the demand for housing is not determined by the number of people, but rather by the number of households. While change in population results in a changed demand for housing, population growth and specifically a growth in the number of households, results in a growth in housing demand. A decline in population may result in a reduction in housing demand. However, this would only occur in the longer term, once the population as well as the number of households begins to decrease. Remote rural locations and regions with comparatively low-quality housing are the most sensitive to a decrease in population. Simultaneously, housing supply influences the potential for an increase in population by means of migration. A sufficient housing supply may encourage migrants or affect their choice of residence. This method, on the other end, is often used for migration movement- that is movement within countries and is less prominent with international migration. (Mulder, 2006).

In general, homeowners are far less probable to relocate than tenants. This is attributable to expenses of relocating being significantly higher for homeowners as compared to renters. Hence, if a country's house ownership rate is very high, the labor force's spatial flexibility may be extremely narrow. The supply of housing also could impact the decision

to leave the family home and the formation of married and unmarried relations. It may even be argued that housing availability affects the timing of fertility, or the number of babies families choose to produce. The optimum possibilities for leaving the family house and starting an own family are generally found in regions where housing quality is excellent and accessibility is convenient, or in areas where quality and costs are varied and there is an appropriate supply of cheap rental housing close to owner-occupied housing. (Mulder, 2006).

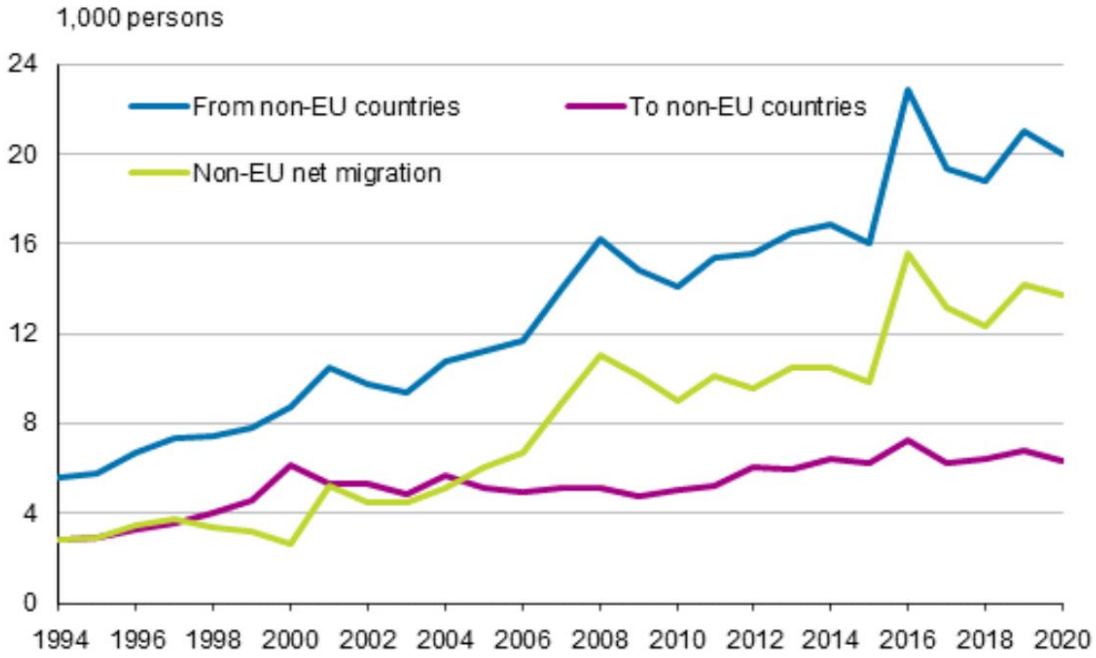
Another study aimed to scout the impact of demographics specifically population density on the housing stock as well as on house values and to examine whether those impacts make potential substitute to standard mortgage contracts more appealing for consumers. This study initiated a model of the housing market with the property that the primary factor determining of house price rises relative to incomes is the growth of population density. According to the model, if population density continues to climb, the increase in population and incomes will result in higher price reactions and decreasing increases in housing stock. This further supports the results of the previous studies discussed. Furthermore, it suggests that high and growing housing costs are inevitable as population density rises, making alternatives to traditional debt financing of home ownership more appealing.

Through the discussion of these studies, it becomes apparent that demographic changes especially in terms of population changes are vital in that they affect supply and demand, and thereby house prices as well. The next step is to look more specifically at the effects of migration and immigration to and from Finland through a statistical approach.

6.1.1 Migration / Immigration

Finland, with its safety, stability, and a promising future, continues to be a popular destination for immigrants from all over the world. Immigration raises housing demand since there are now more people who require a home than before. This rising demand requires the housing market to be able to meet it by constructing and supplying adequate number of houses. As demonstrated in Figure 4, migration to Finland from non-EU countries has been higher than from Finland to non-Eu countries. Simply put, this implies that a much larger number of people have moved to Finland than people that moved out

from Finland. As visible, the highest peak can be seen in year 2016, which has the largest value from non-EU countries and non-EU net migration. This indicates that the highest immigration Finland has witnessed from 1994-2020 was approximately in the year 2016.



Kuvio 4. Migration between Finland and non-EU countries 1994-2020. (Official Statistics of Finland, n.d.)

The overall growth in terms of migration to Finland from non-EU countries has been increasing over the years with several peaks whereas the overall migration to non-EU countries from Finland has been quite stable and comparatively much lower as mentioned earlier. This further supports the claim made earlier regarding Finland being a popular choice for people all around the word. The reasons for this could be a few. Finland offers safety, stability as well as a promising future which makes it an attractive country for people to call home. Besides this, Finland offers great quality education that makes it a great spot for students to move to. This brings forward a very important sector of housing – that is student housing in Finland which is also a part of the housing market and serves the purpose of accommodating not only Finnish students, immigrant students but also exchange students. All of which results in benefits for the Finnish economy as these foreign students also bring large sums of money into Finland through their

academic fees and other education and living costs. Many of these students end up working in the Finnish labor force as well. Thereby, education is widely regarded as a key predictor of economic prosperity. (Bergerhoff, 2013).

A key aspect to discuss in order to understand the law of supply and demand in terms of the housing market is the population. As highlighted in Figure 5, Finland's total population as of 2020 has not increased substantially from the previous year or even from the year 2000. Furthermore, male and females are very close to each other in numbers as well. Another vital detail to take into account from this figure is the age percentage. Approximately 61.7% of Finland's population falls into the category of 15-64 years old. This implies that majority of the population is able to work and thereby the demand for housing is determined accordingly. It must also be noted that income plays a crucial role in evaluating the affordability of housing and since majority of Finland's population is at a working age, this can be considered a positive factor.

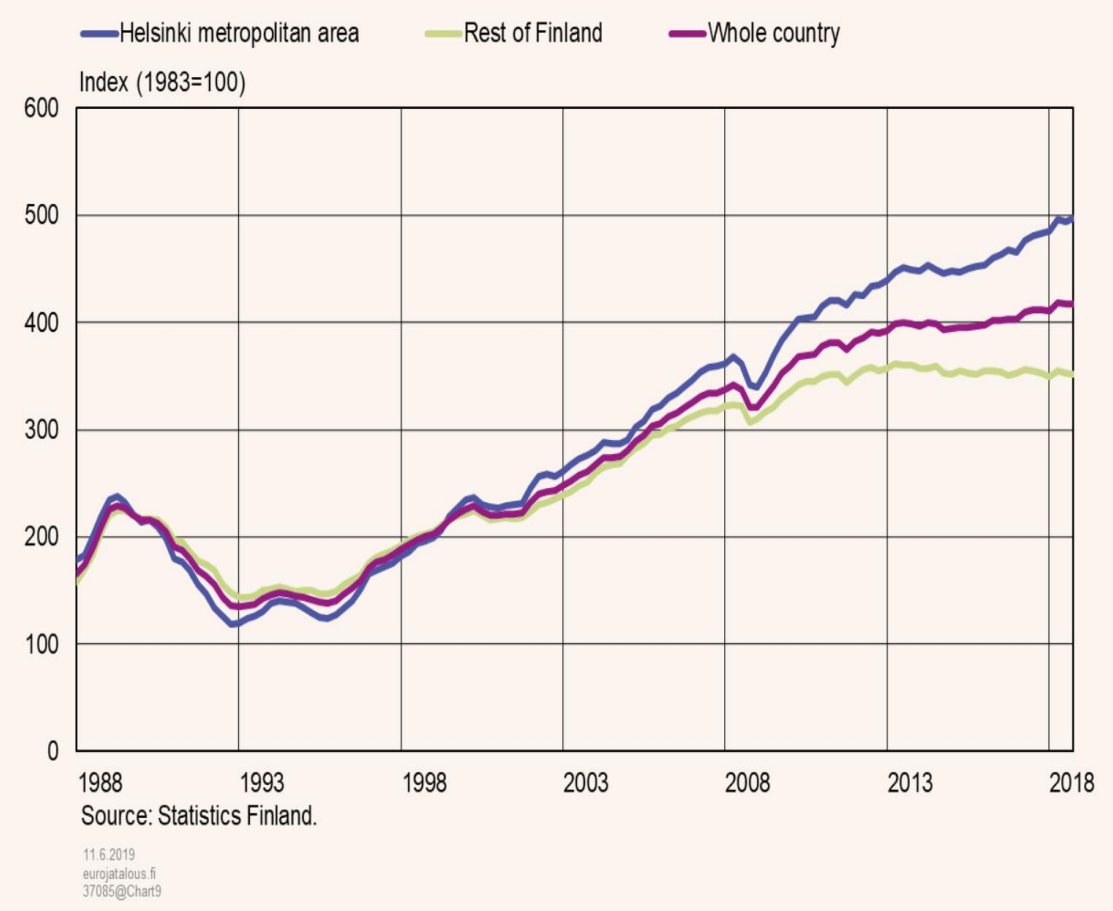
	1900	1950	2000	2019	2020
Population, thousand					
Total	**2 656**	**4 030**	**5 181**	**5 525**	**5 534**
Males	1 311	1 926	2 529	2 728	2 734
Females	1 345	2 104	2 652	2 797	2 800
Age, %					
0–14	35,1	30,0	18,1	15,8	15,6
15–64	59,6	63,4	66,9	62,0	61,7
65–84	5,2	6,4	13,5	19,6	19,9
85–	0,1	0,2	1,5	2,7	2,8

Kuvio 5. Population structure of Finland including gender and age. (Official Statistics of Finland, n.d.)

Approximately only 2.8% of the population are over the age of 85 hence their demand of bigger houses is much lower than for example families that have children in ages between 0-14 as they would need to accommodate for their growing family. However,

the older population, from 65 years and above demands houses that provide other care services as well which can also affect the housing market as the need for specific types of houses may increase. For example, the elderly population would need houses which may be converted to disabled standards and be big enough to allow for health care workers to provide any assistance needed.

In addition to these details, regional differences in population holds significance as well. Although, the housing price differences across the various different regions of Finland is not substantial, it is nevertheless important to mention why those regional differences exist and to what extent. As seen in Figure 6, the flat prices in apartment blocks have started increasing in Helsinki metropolitan area more than the rest of Finland. This explicitly indicates the increasing division between the two.



Kuvio 6. Flat prices in apartment blocks

Understanding of the regional differences in the housing market and how they affect and are affected by supply and demand of houses in the Finnish housing market are all crucial aspects of the housing market and thereby are discussed in this research. As seen in Figure 7, Uusimaa has the largest population amongst all the Finnish regions. The difference between populations across regions is notable. The Uusimaa region consists of various municipalities including the capital, Helsinki.

Region	Population 31.12.		Increase of population, %
Regional division as on 1 January 2021	2019	2020	2019–2020
Uusimaa	1 689 725	1 702 678	0,8
Southwest Finland	479 341	481 403	0,4
Satakunta	216 752	215 416	-0,6
Kanta-Häme	170 925	170 577	-0,2
Pirkanmaa	519 872	522 852	0,6

Kuvio 7. Regional differences in population across Finland

Helsinki being the capital opens doors to various opportunities and has a great scope for a successful future especially for professionals working in various sectors such as health care, entrepreneurs, social workers etc. as the demand for such jobs is much higher in Helsinki and the Uusimaa region than the other regions. Thereby, many people migrate to Helsinki in search of a better job, lifestyle, or the city life that it offers. Due to this migration and therefore an increase in demand of houses, the price of housing is higher than in other regions. Additionally, the price gap has started increasing within Helsinki as well. This can be supported by an article published by Helsinki times - it suggests that house prices in Helsinki have climbed gradually from the early 2000s, to an average of 4,323 euros per square meter in 2019. Additionally, Helsinki is becoming increasingly separated into lower and higher-cost postal code districts, with the difference between the most costly and most affordable areas rising from 2,078 euros in 2000 to 6,505 euros in 2019. (Teivainen, 2020).

Regional migration influences regional demand, resulting in a distinct divide between Helsinki and the rest of Finland- that is the working-age population beyond the greater Helsinki area will continue to fall even towards late 2020s. Hence, arguably although the prices for houses are cheaper outside the capital region, many prefer to migrate to Helsinki due to their work and career. To be more specific, housing starts for new blocks of flats have surged significantly since the global financial crisis, well above pre-crisis values. Housing starts for apartment blocks in the Helsinki metropolitan region have been boosted in past years by favorable trends in both demand and supply variables, with demand considerations becoming more dominant in the last year. Price increase has been roughly average, driven upwards by demand factors on the one hand and pulled down by supply considerations on the other. Starting 2015, supply variables have dropped prices throughout Finland, but demand factors have tempered the drop. Housing starts on the other side, have grown much faster, owing to both supply and demand variables.

Beyond the Helsinki metropolitan area, a weakening of demand in late 2018 had its toll on pricing and housing starts. The regional price disparity is mostly justified by beneficial longer-term changes on the supply side of the housing market, especially the slow increase of demand outside of Helsinki area during the previous year. With the exception of growth centers, demand factors are anticipated to be a drag on the housing market in the near future, based on Statistics Finland's demographic projections. Due to the factors discussed, demand for housing in the Helsinki metropolitan region, and several other growth centers, will likely continue rising throughout the next decade as well, which is crucial for the housing market to consider. (Lindblad, Sariola and Viertola, 2019).

Research was conducted to investigate migration and the housing markets in Stockholm and Helsinki. These two cities were chosen specifically as they have become increasingly substantial and more critical economic centers. For the years 1990–2019, both Stockholm and Helsinki had an increase in city population. One of the elements propelling this urbanization trend has been migration. Higher urban housing attractiveness translates into a higher for urban housing, which impacts the characteristics of the urban housing market. For the majority of the years 2005–2019, the real house prices of old flats in Stockholm and Helsinki, as metropolitan cities, grew. The study's main goal is to investigate if excessive migration is a cause for rising house

prices. Furthermore, the impact of real income per individual, real interest rates, new apartment development, and the unemployment rate on home prices is investigated. House prices are inextricably related to household wealth and personal spending. Furthermore, home prices have an impact on people's capacity to relocate to other locations in order to find new employment. In the empirical section, the home price drivers for old flats are investigated using panel data from Stockholm and Helsinki for the years 2005–2019 and a two-stage least squares model. Essentially, the observation period spans nearly the first two decades of the millennium, beginning with the aftermath of the tech bubble. (Räsänen, 2021).

A tech bubble is defined as a rapid and unsustainable market surge caused by increasing speculation in technology stocks. (Ganti, 2021). Moreover, this time span encompasses the worldwide financial crisis of 2008, as well as the European debt crisis that began in 2010. The municipality level data includes modified statistics on home prices, surplus migration, real income per person, new finished units, and the unemployment rate. Besides the 6 months EURIBOR, which is data from the euro area level, the real interest rates are derived using national level data from Sweden and Finland. Valueguard, Statistics Sweden, Statistics Finland, the OECD, and the City of Helsinki provided the data. The empirical findings strongly suggests that in the years 2005–2019, the real interest rate and real income per person have an impact on the house prices of old flats in Stockholm and Helsinki. The empirical data, on the other hand, do not provide a statistically significant estimate of the impact of excessive migration in determining home prices. Additionally, the figures for newly constructed flats and the unemployment rate are statistically negligible, making it difficult to analyze these factors as predictors for house prices. (Räsänen, 2021).

The empirical findings on the impact of real income on home prices are consistent with prior findings from the Swedish and Finnish housing markets. Furthermore, prior evidence from the Finnish housing markets strongly supports the hypothesis that the real interest rate influences house prices. The empirical findings highlight the necessity of having macroprudential measures available to prevent housing markets from overheating in a low-interest rate environment. Furthermore, the results demonstrate the need of keeping a careful eye on household debt and the percentage of household income dedicated to loan payments. Moreover, the findings lead to the question of

whether housing markets in these cities are capable of sustaining employment migration from places with lower real income levels than Stockholm and Helsinki. Further research would be needed to investigate the questions unanswered. (Räsänen, 2021).

6.2 Taxation

Taxation, in addition to the other factors mentioned, can be utilized to impact the housing market. The tax is based on the property's value. Varied municipalities have different tax rates, varying from 0.41 percent to 6 percent (Global Property Guide, 2020). Tax policy is mostly used to influence progression is the housing market. The Finnish tax system has played a crucial role in encouraging home ownership, notably through its favorable tax treatment of housing. Mortgage interest payments are capital gains, tax deductible and imputed rental income are not taxable. Additionally, property taxation, may be referred to as real estate taxation hereafter, is much lower when compared to various other OECD countries. A potential method to motivate municipalities to allocate more land for building purposes and accelerate planning procedures would be to increase their prospects to levy property taxes and to expand the tax base to undeveloped land, specifically in urban areas that are currently not taxed. The property tax was introduced in Finland in 1993 when a significant tax reform of the income tax system was enacted. Property taxes, however, remain a limited source of revenue. While municipalities are free to make decisions of their own income tax rate with no upper point, the property tax rate may only be permitted to vary within certain definable limits. (Vartia, 2006)

Deductions for home mortgages and transfer taxes, for example, may be altered. A transfer tax could potentially boost the transaction costs of relocating and hence result in a declined housing demand. (Lindblad, Sariola and Viertola, 2019). The greatest immediate result in housing demand is due to the decrease in tax deductions in the tax code that are meant to encourage home ownership (Zandi as cited in Knowledge@Wharton, 2019). This, combined with the smaller mortgage interest deduction, made it less appealing for several people to purchase homes, thus diminishing the overall housing demand. (Knowledge@Wharton, 2019). Real estate tax is paid annually in Finland and is determined by the ownership of a property. The real estate tax is paid to municipalities. It applies to both land and buildings. Aside from water,

land utilized for agriculture or forestry is excluded from real estate tax, although buildings on same land are taxable. (The Ministry of Finance, n.d.)

According to Ihlanfeldt from the department of Economics in the College of Business Administration US, the impact of a regional rise in real estate taxes on the housing market is a source of debate among economists. Studies of housing demand have considered the real estate tax solely as an indirect tax on housing consumption in determining the price of housing services. Two major theoretical discoveries imply that the tax is being misrepresented. According to one theory, the excise consequences of property taxes can be pushed back to the factors used in house production. According to the opposing theory, the real estate tax is not an excise, but a fair charge for local public services. Ihlanfeldt put these theories to the test by calculating a model for housing demand with the net effective real estate tax rate as one of the independent variables utilizing data obtained from the Annual Housing Survey. By eliminating specification mistakes observed in prior studies, this model highlighted the relationship between real estate tax-housing demand and furthermore gave further realistic predictions of price and elasticities. Overall, the findings highlighted that the real estate tax decreases central city homeowners' housing consumption but has little effect on the suburban housing market. This indicates that real estate taxation indeed plays a role in housing demand and housing consumption. (Ihlanfeldt, 1984).

The factors discussed highlight the demand side. The next step forward is to look the hat affects the supply side of the housing market and how that consequently affects house prices, in order to understand both sides of supply-demand perspective.

6.3 Supply

Variations in the availability of construction site and municipal zoning restrictions have a substantial influence on home investment. Municipalities, for instance, may decide to expand their residential zones if sufficient land is available thereby encouraging the development of new houses. Changes in construction laws and the taxation of available land for construction could boost or decrease supply. In addition, as stated in section 8, interest rate levels and the availability of funding have an impact on consumer and

business decisions specifically in terms of investment decision. Construction of new homes could be slowed by labor shortages as they play a key role in the housing market.

Likewise, variations in construction productivity may have an impact on house output, significant in the long run. Competitive pressure in the construction industry minimizes housing prices while increasing production. Fiscal policy may be utilized to affect the appeal of newly built construction, for instance by changing the interest subsidy system. Several supply-side factors influence construction costs, which consequently affect housing prices and development. Low productivity increases construction costs, which thereby leads to higher price for new homes. Similarly, tighter construction restrictions raise construction costs, which also has an impact on new housing pricing. The aforementioned consequences do not indicate that a new-build unit's construction expenses will have a significant impact on its selling price, which is set by the market's current price level. Cost of construction, on the other hand, determine which of the numerous potential construction projects is feasible at the current price level. As a result, because construction expenses affect the volume of home production over a period, they also have an impact on the current price level.

The European Commission's Construction Confidence Indicator, that is based on research wherein builders can indicate factors restricting production, can be used to measure the influence of various supply factors. Supply-side limitations have become heavily essential in recent years, particularly as labor shortages worsen. On the other end, labor shortages, along with the construction industry's strong employment rate and substantial number of houses starts, overall indicate towards a healthy construction sector. The labor shortage is projected to lessen in the future, as construction industry employment growth and permit approvals have both begun to fall. In recent years, financial constraints have not been a substantial limitation on supply. Essentially, there is a level of rigidity in the housing supply, which indicates that supply-side issues affect the housing market more slowly than demand-side factors. Boosting the availability of trained professionals, for instance may take up to many years, or the entire course of a training program.

From the factors discussed, it becomes clear that while it may seem quite obvious that there are several factors affecting housing demand and supply, their overall contribution to the performance of a housing market have now become evident.

6.4 Time series modelling

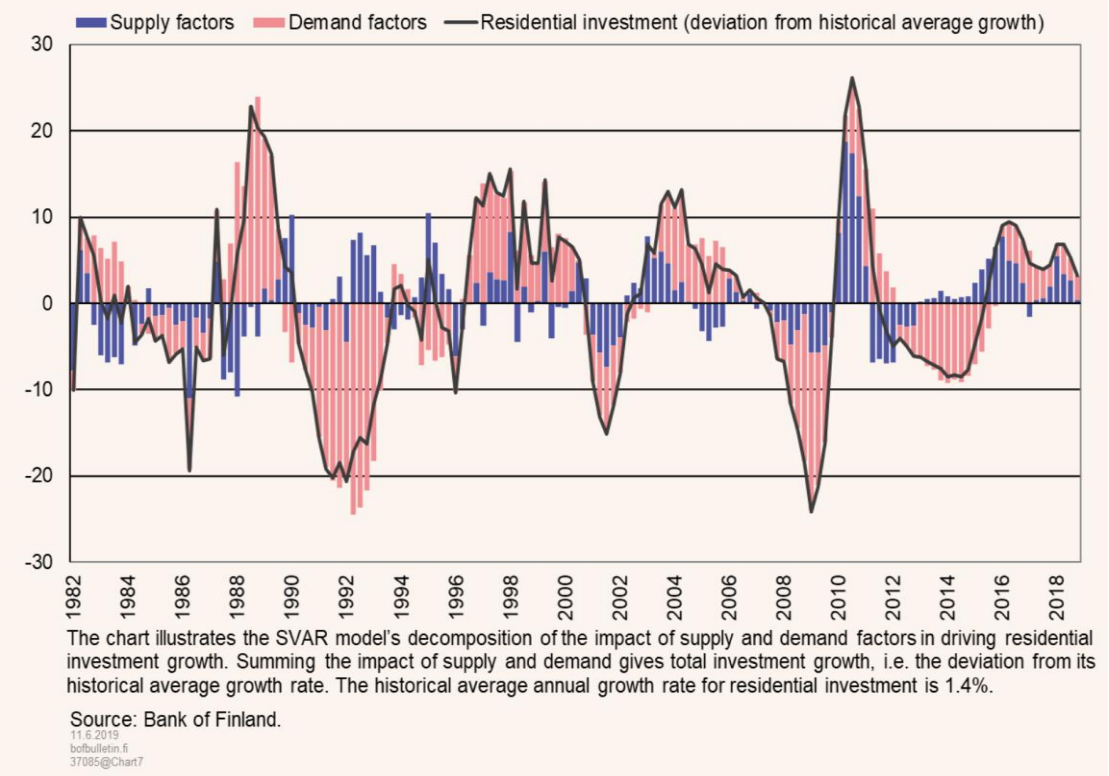
The reduction in the number of housings starts and building permits obtained for new blocks of flats is an indication of a transition, as of 2019. As the rate of new-build development decreases, residential investment growth is expected to reduce significantly in the future. The impact of demand and supply on the Finnish housing market is examined carefully and their impacts are decomposed using a time series model, in an article published in the Bank of Finland Bulletin. The model allows for comprehensive predictions of the relative impacts of multiple supply and demand factors in determining changes in house prices and residential investment. It is quite difficult to assess their respective effects of supply and demand without a model framework because both supply and demand factors come into play and affect the housing market at the same time. A structural vector autoregressive (SVAR) model is employed to address this. (Lindblad, Sariola and Viertola, 2019).

Supply and demand components are separated in the model by sign constraints, which means that the manner in which supply and demand factors impact house prices and residential investment is predetermined. The sign constraints are based on our expectations for how supply and demand will affect house prices and construction rates. Positive co-movement among housing prices and construction is caused by demand variables. This implies that if demand rises for example, due to reduced interest rates, so do housing prices and construction volumes. As a result of the decreased demand, house prices are cheaper, and construction is decreased. Supply factors correspondingly cause negative co-movement. Increasing supply, such as by boosting residential zoning, reduces price hike while increasing output. Decreasing supply, on the other end, increases prices, leading to lower demand. As previously stated, this form of segmentation only provides for a cursory examination of demand and supply shocks because the shocks involve a wide range of various probable variables. Nonetheless, the model sheds light on the significance and impact of supply and demand factors in driving house price changes and residential investment flows across time.

A two-variable model is employed in this article: residential investment and current home prices. The models are based on data spanning the first quarter of 1980 to the last quarter of 2018. Year-on-year variances from long-term averages are depicted by the variables. To put it another way, in relation to house prices it essentially refers to deducting the historical average growth rate from the rate of growth recorded for each particular year within the data period. House prices have risen at a 5.1 percent annual rate, while residential investment has risen at a 1.4 percent annual rate. The model's sign constraints are applicable for four yearly quarters, implying that demand shocks have a one-year unilateral effect on pricing and volumes. Supply shocks are characterized as shocks that lead to negative co-movement in price and volume developments for a year.

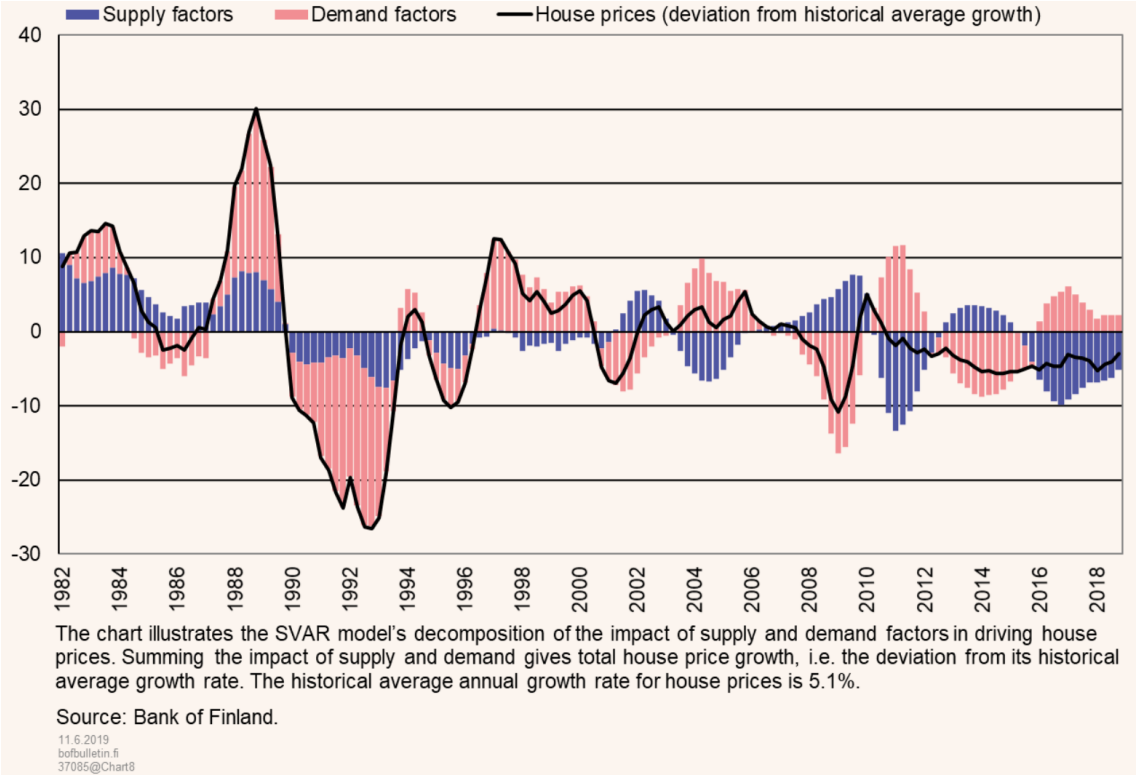
Overall, there are various indicators that tracks construction changes. However, because of their strong seasonality and other unforeseeable elements residential investment is instead employed to highlight the flow of new housing in the discussed analysis. Residential investment encompasses both new-build and renovation projects, with the latter's growth in Finland being stable. The oscillations in new-build development drive most residential investment cycles. Since there is not a housing price index that incorporates new home prices, the discussed analysis is determined by an existing housing price index. As a consequence, the analysis is reliant on the presumption of positive co-movement in new and existing house growth. (Lindblad, Sariola and Viertola, 2019).

Hence, it can be suggested that demand factors appear to have played a significant influence in driving movements on the Finnish housing market. The relative effect of both supply and demand in impacting residential investment and house prices are demonstrated in Figure 8 and 9. (Lindblad, Sariola and Viertola, 2019).



Kuvio 8. Effect of supply and demand factors on residential investment

The annual growth in prices and investment has been dissected into their demand and supply factors for each annual quarter, with the sum of equaling aggregate growth. In the figures, aggregate growth is expressed as a percentage deviation from the historical average rate, implying that the recent negative yearly growth in house prices reflects slower-than-normal price growth. In past years, residential investment has climbed at a faster-than-average annual rate.



Kuvio 9. Effect of supply and demand factors on prices of houses

Figures 8 and 9 illustrate how, by late 1980s, demand considerations greatly enhanced both housing prices and investment. During this time, capital market liberalization had an important effect on increasing housing demand in the Finnish housing market. As a result, the reduction in demand during Finland's recession in the early 1990s drove down prices and investment dramatically. According to the model, the recovery from the recession was mostly led by an increase in demand, as evidenced by rising investment and housing prices. Low demand impacted prices and investment during the financial crisis of 2008–2009, although insufficient supply helped to alleviate the price drop.

When evaluated at a national level, the restoration of supply and demand following the crisis resulted in a substantial increase in investment. Growth in prices were lower than typical due to increasing supply reducing developments in price. Weak economic growth in the 2010 had a particularly negative impact on demand, lowering investment and driving prices down. On a nationwide scale, both supply and demand have witnessed positive changes since 2015. As a result, investment has increased significantly, however slower than the average growth in price. As seen through a historical

perspective, increases in aggregate demand for housing have had had a minor impact on home prices in Finland. Furthermore, the consequences of supply have overtaken the implications of demand. Certainly, the increased supply has significantly slowed the rise in house prices. Residential investment would have been approximately 10% lower and the house price index would have been approximately 30% greater by the fourth quarter of 2018 if supply elements had not influenced it from the second quarter of 2015.

Overall, the comparably slow growth of house prices following the financial crisis can arguably be attributed to low demand and abundant supply in the Finnish housing market. Investments have frequently benefited from supply factors near the end of recessions or shortly afterward, which could represent the impact of fiscal accommodation, among other things. Low interest rates have boosted both supply and demand and are expected to continue doing so for the coming years. The time series model has assisted in separating the relative influence of supply and demand on price and investment changes in residential real estate. The model is based on house prices and residential investment, and specifically emphasizes the relevance of demand in determining housing market trends. As a result, it proves to be highly valuable for the purposes of this thesis. (Lindblad, Sariola and Viertola, 2019).

7 Housing loans

Housing construction is slow and subjected to several laws and restrictions. Housing has a long lifespan once it is constructed and is also very pricey that only very few families can simply purchase a house right away. Therefore, in the housing market landlords, developers, and financial institutions such as banks play a key role in addition to producers and customers. (Mulder, 2006). This is where housing loans become prominent. The cost of borrowing for a home purchase is influenced by monetary policy, housing loan reference rates, as well as other terms associated to a housing loan. Cheap borrowing costs have boosted housing market demand in past years. (Lindblad, Sariola and Viertola, 2019).

The state plays an integral role in the operations of the housing market, especially in relation to the policies introduced into the economy. If one borrowed money to buy a permanent residence or pay for a big renovation, their interest payments entitle them to

partial tax deductions. It makes no difference whether the residence is a single-family residence or an apartment in a housing cooperative. The portion of home-loan interest payments that is deductible in 2019 is 25%.(Expat Finland, n.d.). Just like the state, banks play an integral role as well.

7.1 Primary research – Interview with Nordea Employee

Being an intern in Nordea Bank allowed for primary research to be conducted with one of Nordea's Financial Advisor. Questions regarding Nordea, as a representative of a Finnish bank, and its operations specifically in relation to housing loans were asked. The set of questions asked are presented in Figure 10. The answers to the asked questions are mentioned without the questions, solely as the answers themselves. The language of the interview was English. However, the answers were in Finnish. For the purposes of this research, the answers have been translated while paying additional care to maintain the originality. The interviewee's anonymity has been maintained hence the name or any other personal information was neither asked nor presented. Additionally, as there was no need for any sort of demographic information, no such questions were asked. Questions that would provide any insight into the housing loan system of Nordea were asked.

Due to the restrictions owing to the pandemic, a face-to-face interview was not possible. Hence, the most feasible alternative was sending the questions to the interviewee as an email, which was done. The interviewee sent back her answers. Although, the answers are not specifically numbered according to the questions, they provide helpful information regarding the operations of the bank in terms of housing loan which is an important aspect of the housing market.

I. *Approximately how many people apply for housing loan in Finland every year?*
II. *Approximately what percentage of the applicants are granted housing loan every year?*
III. *Approximately what percentage of the applicants are immigrants/foreigners?*
IV. *Has there been a specific trend in housing loan applicants?*
V. *What is the average age of housing loan applicants?*
VI. *What are the basic criteria to apply for housing loan? Are the basic criteria the same for Finnish and Foreigners?*
VII. *What factors does the housing loan amount depend on?*
VIII. *Is there an approximate savings amount percentage an applicant must have prior to applying for housing loan?*
IX. *What is the current interest rate?*
X. *Could a relationship be established between interest rate and housing loan applications?*
XI. *Has there been a significant change in the interest rate over the past 5 years or has it remained unchanged?*
XII. *Has there been any significant change in housing loan applicants or housing loan granted due to Covid-19?*
XIII. *Approximately what percentage of the applicants take additional loan to fix their houses for the house price to increase?*
XIV. *How does the mortgaging system operate in Finland?*
XV. *Is there anything else you feel would be useful to know regarding housing loan in Finland?*

Kuvio 10. Set of interview questions

About 10 years ago Nordea was one of the only banks who offered its customers an option to apply for housing loans in the English language. The basic criteria for to apply for housing loan for Finns and foreigners or immigrants are the same. However, when it comes to offering housing loan the risk is slightly bigger when an individual from a foreign background is granted a loan as they may choose to go back to their home country and perhaps never come back. Thereby, making it nearly impossible for the bank to get their money back thus banks are required to analyse the risks and be aware of the customers relationship to the mainland Finland.

The most prominent criterion of granting a loan depends almost totally on the paying back capability of the customer. A permanent job or income and the field they are working in is also analysed while considering a loan application. For instance, an individual who is a doctor or lawyer is much more likely to be granted a housing loan than a waitress based on the calculated assumption that a doctor will always find a job whereas a waitress may lose his/her job under different circumstances for example the Covid-19 pandemic. When banks grant loans, they need to analyse whether the applicant will have

enough money left after paying his mortgage that they could still pay their bills and even have some savings. An individual will usually be able to pay approximately 30 to 40% of their income to mortgage. The maximum paying back time, in Nordea, is 35 years. Hence, the monthly mortgage payment is a small amount thus allowing the customer to lead a normal life as their lifestyle will not be greatly affected by the housing loan they have taken.

Currently, in Finland the first house loan down payment is 5% of the loan being taken which will jump to 10% with the second loan being taken to purchase another house or if a customer sells his/her first house in order to purchase a bigger or another house in a different area, then the down payment is 10% of the loan they are applying for. The down payment does not always need to be money, it could be a cottage, land or any type of asset which could be liquefied if needed. Additionally, it does not always need to be their own assets which are insured for the 5 or 10% down payment it could also be their families' , relative's even close friend's assets. However, this is the case only if the owner of the asset agrees and provides fully informed consent.

There is a trend between the younger generation of opening an ASP account which is for the sole purpose of their first house loan. An individual from a young age till even 30 years old can have an ASP account only if they do not have any house loans prior to obtaining this account. Once they have saved a certain amount which equals 10% of the house price the individual has chosen, this account guarantees them a house loan. Essentially, this account offers evidence that the customer is capable of paying back the house loan which is crucial for the bank. Unlike various other countries where the interest rate is usually a fix rate, in Finland the interest rate is dependent on the Euribor. Currently the Euribor interest rate is 0.7%, however while granting a house loan the housing department runs a stress test which essentially implies that they will check that if the Euribor percentage goes from 0.7 to 0.6%, will the individual still capable of paying the loan back and that it will not affect their daily life in a drastic way. Every time an individual takes a housing loan and purchases a house, they are required to take house insurance which also boosts insurance company incomes.

Due to pandemic, there has been a substantial amount of house loan applicants and renovation loan applicants as well. People have had a break from their busy schedules

hence they have had time to do renovations in order to keep the house value up or invest in some necessary renovations which the house is in need of. As the world shifted from face-to-face interactions to work-from-home, it increased the need of house office or an extra room where people can work peacefully or just a getaway cottage. This is also one of the reasons the house loan applications have grown this year, in 2021. Additionally, as a result of the pandemic, several banks housing loan services have changed to online meetings which has made the process simpler, saved money and also hinted towards to a future trend.

7.2 Interest rates

As previously mentioned, in Finland the interest rate is based on Euribor. People are eager to take higher debt when interest rates are low since they can afford a higher debt amount for the same monthly outlay. This means that they may be able to afford buying a house because the amount of interest required to pay is not as high when interest rates are low. As even more people intending to purchase houses enter the market, housing demand rises. In a market with low-interest rate, prices can increase even higher if there is a low supply of housing supply. (Investopedia, 2020). Interest rates in Finland are projected to continue low for the foreseeable future, boosting demand (Lindblad, Sariola and Viertola, 2019).

8 Housing loan debt

The chronic and growing debt of Finnish households jeopardizes the country's ability to deal with future economic crises (Bank of Finland as cited in Yle Uutiset, 2021). According to Marja Nykänen, the central bank's deputy governor, the expansion of housing mortgage loans that began in the summer of 2020 has resulted in an increased household debt burden. The expanding indebtedness of Finns, notably the increasing provision of long-term house loans, is concerning from the standpoint of financial stability in Finland. The demand for additional macroprudential measures is growing as household debt continues to rise and terms on new housing loans become more lenient. To stop the easing of loan terms, a debt-to-income cap (DTI) and restrictions on housing loans maturity must be implemented as soon as possible. The additional macroprudential measures should target credit provided by banks as well as other creditors. She went on

to warn that rising debt in households was only a portion of the concern, that housing businesses were also borrowing more, a circumstance that can obfuscate the true costs faced by potential house buyers. Despite the fact that the number of families with mortgages for purchasing houses has remained constant through the past ten years, the amount of borrowing by purchasers for housing company mortgages has continued to rise, according to bank statistics. She went on to suggest that housing company loans can cloud home buyers' understanding of their overall housing expenditures, luring them into purchasing homes that are too pricey for their capacity to meet their debt and the property's upkeep needs. Despite the gloomy outlook for household economies, the central bank stated that banks in Finland were in fine condition and that they witnessed a growth in profitability in the year 2020, highlighting those recent modifications had aided in strengthening banks' global capabilities. (Yle Uutiset, 2021).

According to a study conducted, house prices in Finland have been growing for nearly twenty years, with a total inflation-adjusted growth of 84 percent since the low in 1993. The upswing has resulted in a gradual growth in valuation ratios, which compare housing prices to disposable income and rental revenue. However, in comparison to other Nordic countries, this has been more modest. Growing house prices were accompanied by rising household debt, which began at low levels and has now reached euro-area levels. If the real estate market becomes overvalued, a severe correction might threaten monetary sustainability and the economy. Yet, according to the findings of this study, the housing market has merely responded to structural alterations in fundamental supply and demand mechanisms. Once again, the importance of supply and demand factors become prominent. It further supports the notion that supply and demand both are crucial in driving the housing market. (Marrez and Pontuch, 2013).

Shifts in financing prices, demographic trends, land supply shortages, and weak construction activity all contributed to diminishing affordability and increasing price-to-rental ratios. Even though the level of debt in terms of households in Finland is a source of worry, particularly when considering its rapid growth in the 2000s, dangers appeared to be mild in 2013. The case seems to have deteriorated as suggested by Nykänen in 2021, who stated that an urgency for new macroprudential measures.

According to the International Monetary Fund's 2019 report, for many years, loans to housing firms have been growing at a high rate (over 10%). The drivers housing stock development and rental property renovation are both favourable. However, because homeowners are shareholders in housing businesses, these de facto indirect loans to households are made, and people may be persuaded to take more loan than they can comfortably repay. Consumer credit has been constantly growing, above 7% in the second quarter of 2018, accounting for nearly 12% of total household debt, owing to credit institutions' loosening borrowing requirements and a significant growth in non-bank borrowing. Payment defaults have increased as a result of the expansion. This bolsters Nykänen's case and points to the need for new measures to prevent further easing of loan terms. (Finland, 2019).

Despite growing real disposable wages, household debt has been constantly growing. Although some of the disparity can be attributed to Finland's public pension system, savings rates are lower than contemporaries. Household debt continues to remain be less than in the Nordic countries, but it is anticipated to rise significantly. In 2016, highly indebted families; those with debt higher than four times their income were more than one fourth of all debt. Data from 2017 obtained by a preliminary survey found that the median new lender for house purchases takes on debt of about 4.5 times earnings. Even while the recurrence of loans with annual payments mitigates the vulnerability of families to interest rate and/or income shocks, the amount of floating rate loans in house loans is large, exacerbating their vulnerability to interest rate and/or income shocks. Although housing markets do not appear to be overheated, demand continues to outstrip supply in key metro metropolitan regions. Commercial property could open the economy to shocks. Despite the fact that home starts, and closures have grown, price increases in Metropolitan Helsinki demonstrate that, as previously stated, demand remains to outstrip supply. Home price growth have been modest across Finland, notably when compared to Nordic neighbours, with house price decline in areas outside of Helsinki.

During the economic recovery, the price-to-rent and price-to-income ratios have not increased dramatically. Commercial real estate yields are low and decreasing, implying

relatively high prices. Even though general household debt and leverage are low comparatively to other Nordic countries, some cohorts are becoming extremely susceptible to income and/or interest rate shocks, exposing the financial system to risks due to the high amount of total borrowing in real estate. The authorities tightened credit policies in response to rising household debt. For banks utilizing internal risk-based (IRB) models, a floor of 15% on the average risk weight for housing loans went into effect. The maximum loan-to-collateral (LTC) ratio for housing loans, excluding first-time homebuyer loans, was reduced from 90% to 85%.

The present limit on mortgage loans based on collateral might be substituted by a limit based on the property value, as is the situation in other nations. Since the fundamental worry is debt levels rather than house values, regulators may find debt-based macroprudential mechanisms like debt-to-income or debt-service-to-income limitations useful if leverage gets further strained. Implementing such measures effectively highly dependent on the accuracy of the information. The staff favours the Justice Ministry suggestion to develop a positive credit register. Additional problems arise as a result of the rising dependency on user credit, particularly that granted by organizations that are not banks and through digital systems. A few of these businesses are unregulated and offer cross-border lending. Efforts have been made to get around legally bound interest rate caps, addressing the concern regarding borrowers. Particularly, if the borrowers, those working with non-bank lenders, are fully educated about their loan terms. To address flaws in the interest rate cap law, the authorities are revising it. Further consumer protection regulations are required and demand greater data collecting, specifically on consumer financing supplied through digital platforms. To establish creditworthiness, stricter prudential criteria might be adopted. (Finland, 2019).

Contrary to Nykänen's suggestions, the IMF report suggests that it is unrealistic to expect macroprudential authority methods to overcome underlying supply issues. In urban areas, such as Helsinki, the authorities have already taken steps to increase housing supply. The government supports social housing in a big way, which would make it less difficult to shift between regions. Thereby, it can be suggested that although macroprudential policies play an important role, it would be inadequate to neglect the underlying core problem of insufficient supply.

9 Housing First

In 2015, Finland had approximately 6,785 homeless people living alone and about 424 families that are homeless. Immigrants made up 27% of the homeless people living alone. Between 2012 and 2015, around 400 clients of homeless programs became homeless again. Furthermore, new people are becoming homeless as a result of challenges such as financial difficulties. As per the National Administrative Office for Enforcement's statistics, the amount of people that have been evicted rose by 4% in 2015. An interesting initiative taken by Finland is “Housing First” which is a step towards ending homelessness in Finland. This may give firms and investors an indication of the scope they have in the Finnish housing market. For example, the need of housing market highlights the potential of new housing starts catering to those that need it, in an affordable price.

The core purpose of launching this national program was to eliminate long-term homelessness. This program brought together various non-governmental organizations, the Y-Foundation, municipalities, and cities, as well as the central government to work on one collective goal. (Ministry of the Environment, n.d). It was introduced in 2007 (Housing First Europe Hub, n.d.). The action plan is expected to cost €78 million. Construction, procurement, and rental investments account for around €54 million, while coordination and service development and accounts for around €24 million. The financing comes from a variety of streams, including investment and development aid, funding from ministry budgets, project funding and other financial vehicles. During the program time, the Slot Machine Association of Finland (RAY) is expected to receive around €23.6 million, while the cities will receive approximately €6 million. The financing for most of the initiative’s projects has been acquired. (Action Plan for Preventing Homelessness in Finland, 2016).

The concept is based on the idea that everyone, including individuals with complicated behavioral, physical, and financial challenges for example addictions or weak credit ratings, is entitled to a place to reside. According to this idea, having a secure home makes it simpler to deal with the various challenges that an individual undergoing homelessness face. The Housing First Model is based on four core principles. For one, permanent housing allows individuals to be self-sufficient. Secondly, individuals can

decide how they interact with services; total abstinence from intoxicants is not demanded; alternatively, a harm reduction approach that respects the individual's autonomy is used. Thirdly, employees treat clients as equals with the goal of establishing trust and motivating them. Lastly, to aid people in integrating into their communities and forming better connections., (Malinen, 2019).

Since 2008, homeless policies have been centered on the Housing First strategy. Long-term homeless individuals were the focus of the government's PAAVO programs from 2008-2015. Homelessness prevention was the goal of the following national policy program, AUNE from 2016-2019. The current government initiative starting from 2020, aims to reduce the number of homeless individuals by half in the next four years and eliminate homelessness within next four years. Since 1987, when there were approximately 19 000 homeless individuals in Finland, comparable data on homelessness has been accessible. Since then, arguably due to the action plans, the number of homeless individuals had dropped. In addition, since the Finnish government implemented the PAAVO programs, that made the Housing First strategy the default for managing homelessness in Finland, long-term homelessness has dropped dramatically. According to data from 2019, the number of single people in these homeless situations was around 4 600, while the number of families was 264. As the figures show, the model's planned activities have resulted in a significant decrease in homelessness. (Housing First Europe Hub, n.d.).

Long-term homelessness declined by 1,345 individuals which is approximately 35%, over the PAAVO program's run from 2008 till 2015, where The Housing First principles were implemented. For the first time in history, homelessness fell below 7,000 individuals in 2015. Despite the economic slump and societal pressures, Finland seems to be the only country in Europe where homelessness is declining, according to FEANTSA, the European Federation of National Organizations Working with the Homeless. Despite the fact that the ambitious target of ending long-term homelessness has not been completely achieved, the work to end homelessness generated undeniable outcomes, according to an international assessment of the model by researchers. Furthermore, it is stated that Finland is a fine example of being successful at utilizing the Housing First model. (Action Plan for Preventing Homelessness in Finland, 2016).

The Housing First example is used to highlight the idea that the housing market is an extremely crucial aspect of the economy, as homelessness is especially relevant for the economy. Thereby, decisions made for and in the housing, market can have inevitable consequences. For example, lack of funding or adjusting to the changing circumstances such as changes in demographics can lead so insufficient supply and thereby increasing homelessness as well. It is like a domino effect; one action leads to another. Therefore, any decision made in relation to the housing market must be well thought of and well analyzed as it can play a crucial role in the operations of the economy specifically in terms of new policies and models such as the Housing First model. Homelessness can have crucial effects on the economy hence eliminating it becomes vital for any economy to thrive. The same applies to the Finnish economy. Although, the case of homelessness is not as significant in Finland as it is evidently various parts of the world, neglecting it would mean turning a blind eye to an issue that may otherwise develop into something much bigger. Therefore, dealing with it as it comes becomes important. Thus, this initiative is a great step ahead towards a more secure and stable housing market consequently economy in Finland.

10 Consequences of Covid-19

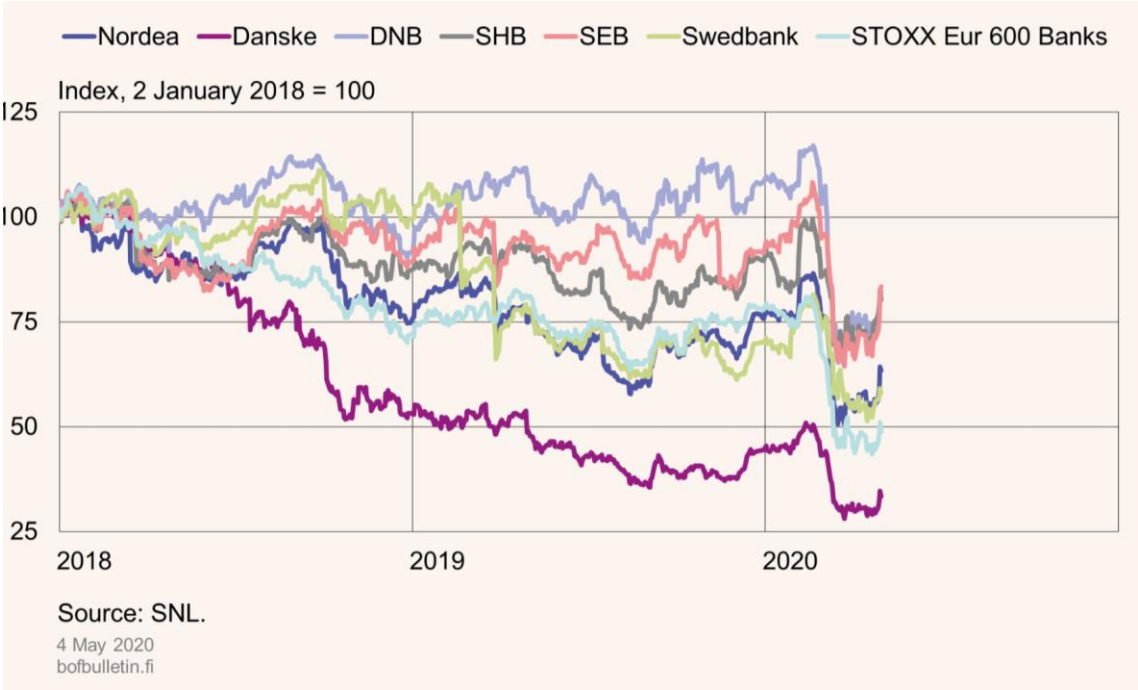
The Covid-19 pandemic has undoubtedly affected the entire world population, countries, and their economy. It may also be referred to as Coronavirus in this section. In many ways, the coronavirus outbreak is weakening the Nordic housing market. However, according to Marrez and Pontuch in 2013, prior to the emergence of the coronavirus pandemic, economic growth in the Nordic countries was already declining. (Marrez and Pontuch, 2013). Consumer confidence in the economy has plummeted, as has the economy's outlook. Banks, real estate brokers, and clients are all affected by the state of emergency's restrictions on their activity and financial situation. Home sales are dropping, and sales times are getting longer. Banks are susceptible to international financial market turbulence because they rely on wholesale funding. (Ahoniemi and Putkuri, 2020).

In March 2020, the coronavirus pandemic drove international financial markets into tremendous instability, bringing the global economy to a halt. Estimates of the pandemic's duration and effects on health and the economy are updated on a regular

basis. While the pandemic was an external shock to the economy, it has the potential to exacerbate vulnerabilities that have been stacking momentum in the financial system and the housing market for some time. While the pandemic was an external shock to the economy, it has the potential to exacerbate vulnerabilities that have been stacking momentum in the financial system and the housing market for some time. The coronavirus outbreak has necessitated fast revisions to economic forecasts for the coming years. Employee collaboration negotiations have intensified, and the number of layoffs and job searchers has increased dramatically. Although the risk of a long recession has grown, a reasonably quick recovery is still possible following the crisis's worst phase. (Ahoniemi and Putkuri, 2020).

Since the global financial crisis, the Nordic banking sector has been improved in a variety of ways. Banks' solvency and liquidity have been restored, and additional macroprudential measures have been used to limit lending for home purchases and heavy household debt. When the pandemic came, these regulations were relaxed, and banks and households are using buffers to reduce the recession's economic effects. In responding to the pandemic, Finnish banks have provided home loan customers interest-only periods for a limited time. (Ahoniemi and Putkuri, 2020)

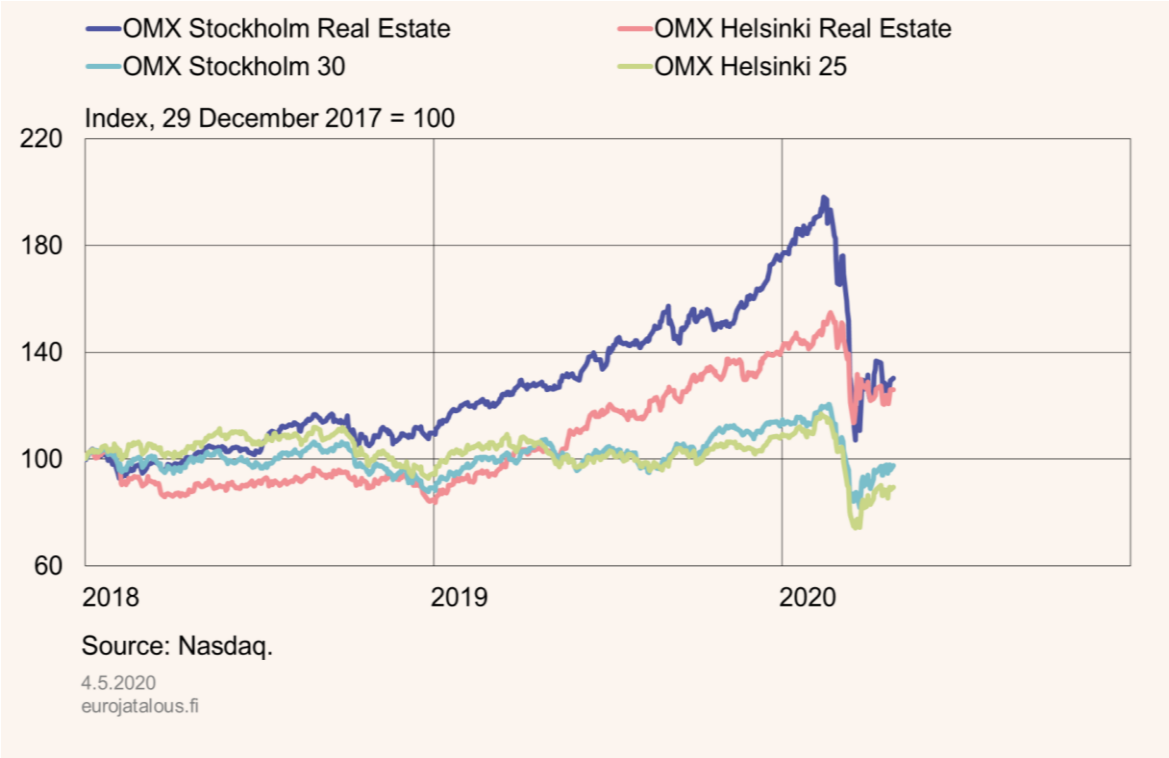
As evident in Figure 11, there is a steep decrease in bank share prices when Covid-19 broke out. It appears that the pandemic had a notable impact on the stock and bond prices across various banks. Despite the fact that Nordic banks have long maintained investor confidence, doubts regarding the banks' anti-money laundering measures have risen in recent years, affecting their stock prices.



Kuvio 11. Bank share prices affected by Covid-19

With stock prices plummeting, it's critical for banks to ensure that their bond market borrowing costs have not increased much. As illustrated in Figure 11, the sudden drop in share prices at the time out Covid-19 further supports the notion that the pandemic had inevitable consequences on this sector of the economy. Stock prices are important since they indicate a company's overall financial health. To put it another way, a company with a high share price is in a far better financial position than one with a low share price. Analysts assess the trend of stock prices determine a company's overall situation. The stock price signifies investor expectations of a company's capacity to generate and expand profits in the future. As a result, if a company's stock price is rising in tandem with its performance, analysts and the media are more inclined to give it good coverage. (Murphy, 2021).

As illustrated in Figure 12, there is a strong correlation between real estate share prices. Real estate companies have received a large number of loans from Nordic banks. The stock prices of listed firms in the industry climbed sharply in 2019, owing to fairly stable home prices and the attractiveness of residential property as an investment asset, which kept the real estate market optimistic.



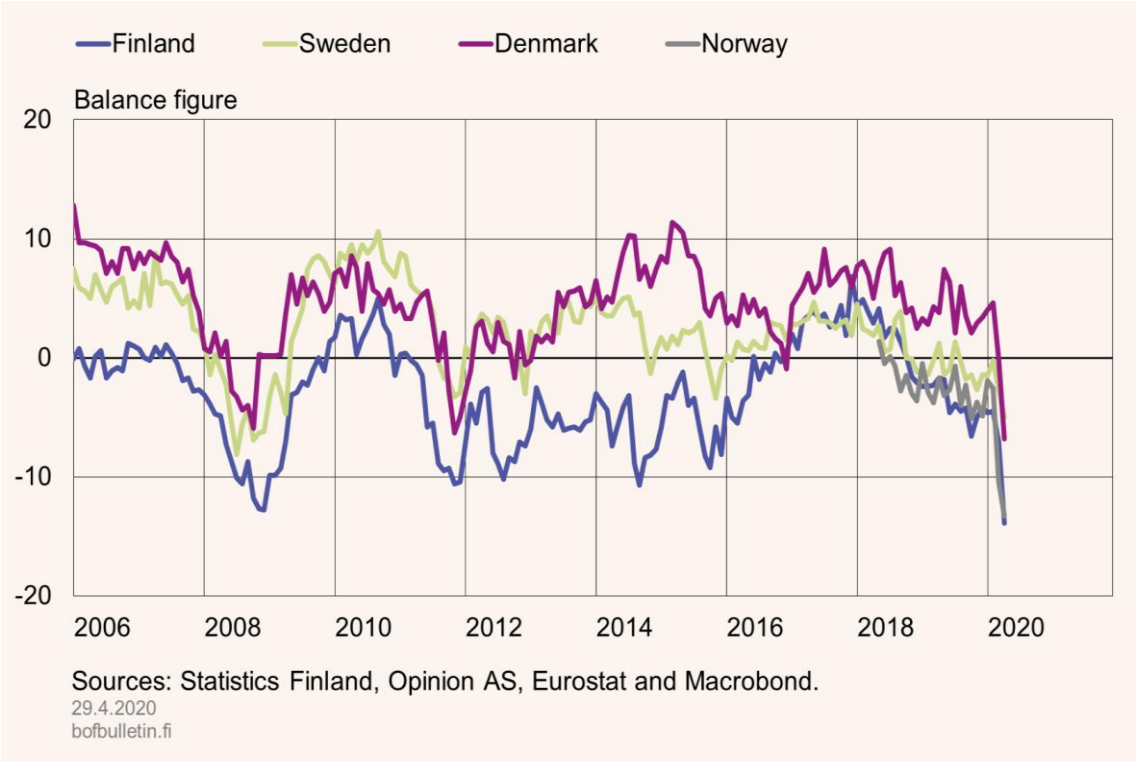
Kuvio 12. Correlation between Real estate share prices.

The real estate equity index in Sweden had risen in value since the outset of 2018, however after the pandemic emergence, the index, like other stocks, plunged. For Nordic banks, covered bonds are a significant source of finance. While finance secured by house loans has been relatively inexpensive for Nordic banks in recent times, the pricing of such financing is dependent on investor confidence in banks and the housing market. When the Covid-19 crisis broke out, the values of large Nordic banks' covered bonds fell, causing needed yields to rise. However, the yields on these loans are still historically incredibly low, as illustrated in Figure 13.

Kuvio 13. Cost of Market Funding

The cost of market funding is evidently low even despite the Covid-19 outbreak. In past years, the yields have even been negative since investors have viewed covered bonds as extremely safe investment instruments. A considerable spike in finance costs would have an impact on banks' lending capacity and restrict the criteria of new loans.

Since March 2020 when Covid-19 emerged, the consequences of the pandemic have been visible in the Nordic housing market, with house sales declining for both economic and practical causes. Households and investors have been more careful to make significant economic choices as the economy has rapidly weakened and unemployment has increased. Consumer confidence in the economy has plummeted, and consumer intents to borrow money or buy a house have dwindled, as highlighted in Figure 14.



Kuvio 14. Consumer confidence in the four different EU economies

The pandemic's restrictions are impacting the work of banks, real estate brokers, and buyers. The importance of digital services has grown. Real estate brokers have organized private and virtual home tours in order to increase property sales. Already prior to the pandemic, bank customers could apply for new housing loans using mobile application and online banking. The purchase and sale agreement, as well as loan documentation, can be signed electronically as well. This perfectly is adjusted to the new restrictions in force due to Covid-19 as well.

Although, Covid-19 pandemic affected Finland, its economy, and the housing market as discussed, according to a news article published in Yle, the central bank stated that the country's economy fared better than expected during the coronavirus crisis. Finland's businesses and households benefited from their solid monetary and fiscal policy stimulus packages, elastic bank loans, and further banking laws. As mentioned, despite the gloomy outlook for household economies, it was stated that Finnish banks were in fine condition with an increased profitability in 2020. During the pandemic, Finnish banks

had sufficient capital and were able to borrow to businesses and households. (Yle Uutiset, 2021).

11 Conclusion

Since, the housing market is such a crucial part of Finland's economy, any changes in the housing market will have a great impact. The housing market, their operations, and the consequences of those operations play a key role in Finland. Therefore, changes in the world situation would result in changes in the housing market which would thereby lead to inevitable consequences in the Finnish economy. Expectations regarding these changes in the housing market are integral for firms to make investing decisions, an objective of the thesis.

As highlighted in the thesis, house demand in the Finnish housing market has begun to improve again in recent years, particularly regarding supply and demand as well as time series modeling. This has been ascribed to several factors, including demographic shifts, migration, taxation, and low interest rates. This has boosted residential investment and house price rise. Meanwhile, a concurrent increase in supply has greatly slowed price increases. As a consequence, price growth has been less than average, while residential investment has increased significantly. The research thus provides an all-rounded picture of the Finnish housing market in reference to the factors discussed, thereby meeting the objective of this thesis.

Another key aspect discussed was the role of Finland's Housing First model. This example was used specifically to achieve my research objective of allowing investors to understand the need of housing and overall situation of the Finnish housing market. In this difficult economic climate, especially dealing with the Covid-19 pandemic, preventing, and reducing homelessness necessitates extra coordination. This entails strengthening of integrated service networks through different initiatives, early detection of challenges that contribute to homelessness as well as adequate production of relatively affordable housing especially in the capital region where most migration takes place. This further highlights the need of investments to be made especially in those regions so that homelessness can be eradicated. This research can be of help to the Finnish housing organisations as well as investors in aiding their decisions making

process which would consequently assist the early detection and hence mitigating homelessness in an adequate manner. Thereby, it can be suggested that the Finnish housing market has a key role in the Finnish economy that is affected by a variety of different factors, all of which must be taken into account by investors and firms when making investment decisions. Its role is quite prominent and hence it can be considered a driving factor of the Finnish economy. With the changes taking place around the world, with Finland inviting and accepting increasing numbers of refugees and immigrants, the demand for housing may increase and as a result the supply would need to cater to that. It appears the Finnish housing market is in a good shape and would be able to survive such changes in the long term.

The research indicates that the core problem of increasing household debt, and higher prices in the greater Helsinki region is caused by the underlying issue of less supply and more demand. A potential explanation for this suggested in the research conducted is that there has been an increase of population in Helsinki as compared to the other regions. This is due to several factors such as migration for a better job and future. It can therefore be suggested that supply and demand factors play a crucial role in the Finnish housing market, as the major concerns regarding the housing market are essentially highly dependent of the law of supply and demand. This would essentially require improving municipalities' motivation to allocate land for constructing, speeding up planning procedures to provide sufficient supply to meet the increasing demand. Furthermore, implementing improved policies would arguably allow for improving household debt, and potentially allow for a recovery. Furthermore, the provision of Housing First initiative should remain targeted on those that need affordable housing the most, to increase incentive for more housing production.

The research conducted highlighted how the discussed factors affect the housing market in Finland and the extent to which affect. Hence, overall, it can be concluded that factors such as demographic changes, supply and demand affect the Finnish housing market to a large extent. It can arguably be considered the driving force of the housing market.

References

Action Plan for Preventing Homelessness in Finland. (2016). [online] Ministry of the Environment. Available at: <https://asuntoensin.fi/assets/files/2016/11/ACTIONPLAN_FOR_PREVENTING_HOMELESSNESS_IN_FINLAND_2016_-_2019_EN.pdf> [Accessed 18 Aug. 2020].

Ahoniemi, K. and Putkuri, H. (2020). BANK OF FINLAND ARTICLES ON THE ECONOMY. [online] . Available at: <https://helda.helsinki.fi/bof/bitstream/handle/123456789/17436/bofbulletin_2020_02_Ahoniemi_Putkuri.pdf?sequence=1&isAllowed=y> [Accessed 23 Aug. 2021].

Andersson, K., Korhonen, S., Ruuskanen, D., Valo, M. and Uski, A. (1989). Housing in Finland. Helsinki: National Housing Board.

Bergerhoff, P.-D. (2013). Alternative Silokonzepte für die Zuckerlagerung. Sugar Industry, [online] pp.44–51. Available at: <http://ftp.iza.org/dp7354.pdf> [Accessed 12 Aug. 2021].

Caldera, A. and Johansson, Å. (2013). The price responsiveness of housing supply in OECD countries. *Journal of Housing Economics*, [online] 22(3), pp.231–249. Available at: <https://www.sciencedirect.com/science/article/pii/S105113771300020X> [Accessed 8 May 2019].

Delmendo, L.C. (2020). *Investment Analysis of Finnish Real Estate Market*. [online] Global Property Guide. Available at: <http://www.globalpropertyguide.com/Europe/Finland/Price-History> [Accessed 8 May. 2021].

Dufitinema, J. and Pynnönen, S. (2019). Long-range dependence in the returns and volatility of the Finnish housing market. *Journal of European Real Estate Research*, 13(1), pp.29–54.

Expat Finland. (n.d.). Tax Advantages of Buying Property in Finland. [online] Available at: <https://www.expat-finland.com/housing/tax_advantages_for_housing.html>[Accessed 17 Aug. 2021].

Fallis, G. (1985). Housing economics. Toronto: Butterworth: Verlag Nicht Ermittelbar, p.22ff.

Finland. (2019). IMF Staff Country Reports, 19(7), pp.1–63.

Gevorgyan, K. (2019). Do demographic changes affect house prices? Journal of Demographic Economics, [online] 85(4), pp.305–320. Available at: <https://www.cambridge.org/core/journals/journal-of-demographic-economics/article/abs/do-demographic-changes-affect-house-prices/EDCD6AA8D40A41F19D9D24B4AD4F053A> [Accessed 12 Aug. 2021].

Ganti, A. (2021). *What Is a Tech Bubble?* [online] Investopedia. Available at: https://www.investopedia.com/terms/t/tech_bubble.asp#:~:text=Tech%20bubble%20refers%20to%20a [Accessed 19 Aug. 2021].

Global Property Guide. (2020). *Taxes on Residents' Income from Property in Finland.* [online] Available at: <https://www.globalpropertyguide.com/Europe/Finland/Living-There>[Accessed 7 Aug. 2021].

Housing First Europe Hub. (n.d.). *Finland*. [online] Available at: <https://housingfirsteurope.eu/countries/finland/> [Accessed 28 Aug. 2021].

Iacoviello, M. and Minetti, R. (2007). The credit channel of monetary policy: Evidence from the housing market. *Journal of Macroeconomics*, [online] 30(1), pp.69–96. Available at: <https://www2.bc.edu/matteo-iacoviello/research_files/JMACRO_2007.pdf.> [Accessed 5 Aug. 2021].

Ihlanfeldt, K.R. (1984). *Property taxation and the demand for housing: An econometric analysis.* Journal of Urban Economics, 16(2), pp.208–224.

infofinland.fi. (2020). *Housing in Finland*. [online] Available at: <https://www.infofinland.fi/en/living-in-finland/housing/housing-in-finland> [Accessed 20 Mar. 2021]

International Monetary Fund - Finland. (2019). IMF Staff Country Reports, [online] 19(7), p.1. Available at:

<https://www.imf.org/~/media/Files/Publications/CR/2019/cr1907.ashx>[Accessed 13 Aug. 2020].

Investopedia. (2020). How does the law of supply and demand affect the housing market? [online] Available at: <https://www.investopedia.com/ask/answers/040215/how-does-law-supply-and-demand-affect-housing-market.asp> [Accessed 11 Aug. 2021].

Knowledge@Wharton. (2019). Why Tax Changes Are Hurting the Housing Market. [online] Available at:< https://knowledge.wharton.upenn.edu/article/tax-changes-hurting-housing-market/>[Accessed 16 Aug. 2021].

Laakso, S. (2000). *PELLERVON TALOUDELLISEN TUTKIMUSLAITOKSEN RAPORTTEJA N:o 169 REGIONAL HOUSING MARKETS IN BOOM AND BUST: THE EXPERIENCE OF FINLAND Helsinki 2000*. [online] . Available at: <https://www.ptt.fi/media/liitteet/rap169.pdf>. [Accessed 2 Sep. 2021].

Lindblad, A., Sariola, M. and Viertola, H. (2019). *What factors influence house prices and residential construction?* [online] Bank of Finland Bulletin. Available at: https://www.bofbulletin.fi/en/2019/3/what-factors-influence-house-prices-and-residential-construction/ [Accessed 17 Jul. 2021].

Malinen, F. (2019). Finland's "Housing First" policy proves that homelessness is avoidable. [online] Equal Times. Available at: <https://www.equaltimes.org/finland-s-housing-first-policy?lang=en#.YRGMk4hKjLZ> [Accessed 10 Aug. 2021].

Marrez, H. and Pontuch, P. (2013). Finland's high house prices and household debt: a source of concern? *Finland's high house prices and household debt: a source of concern?*, [online] 10(6). Available at: <https://ec.europa.eu/economy_finance/publications/country_focus/2013/pdf/cf_vol10_issue6_en.pdf> [Accessed 22 Mar. 2021].

Ministry of the Environment. (n.d.). Homelessness. [online] Available at: <https://ym.fi/en/homelessness> [Accessed 1 Aug. 2021].

Mulder, C. (2006). The relationship between population and housing. [online] . Available at: h<ttps://unece.org/fileadmin/DAM/hlm/archive/Key%20note%20population%20and%20housing.pdf> [Accessed 4 Aug. 2021].

Murphy, C.B. (2021). Why Do Companies Care About Their Stock Prices? [online] Investopedia. Available at: <https://www.investopedia.com/investing/why-do-companies-care-about-their-stock-prices/> [Accessed 17 Aug. 2021].

Official Statistics of Finland. (n.d.). Statistics Finland - Migration. [online] Available at: <https://www.stat.fi/til/muutl/2020/muutl_2020_2021-05-12_kuv_001_en.html >[Accessed 5 Aug. 2021].

Oikarinen, E. (2008). Interaction between housing prices and household borrowing: The Finnish case. *Journal of Banking & Finance*, 33(4), pp.747–756.

Putkuri, H. (2010). Housing Loan Rate Margins in Finland. *SSRN Electronic Journal*. [online] Available at: <https://helda.helsinki.fi/bof/bitstream/handle/123456789/7570/166116.pdf?sequence=1&isAllowed=y> [Accessed 20 Aug. 2021].

Räsänen, T.T. (2021). *Migration and the housing markets in Stockholm and Helsinki*.

Rosenberg, S. (2019). Conventional and unconventional monetary policies: effects on the Finnish housing market. *Baltic Journal of Economics*, 20(2), pp.170–186.

Teivainen, A. (2020). *Divide in house prices has widened between neighbourhoods in Helsinki*. [online] www.helsinkitimes.fi. Available at: <https://www.helsinkitimes.fi/finland/finland-news/domestic/18008-divide-in-house-prices-has-widened-between-neighbourhoods-in-helsinki.html> [Accessed 9 Aug. 2021].

The Ministry of Finance. (n.d.). *Real estate taxation*. [online] Available at: <https://vm.fi/en/real-estate-taxation>[Accessed 14 Aug. 2021].

Vartia, L. (2006). *Finland's Housing Market: Reducing Risks and Improving Policies*. OECD Economics Department Working Papers. [online] Available at:

<https://www.oecdilibrary.org/docserver/045113767231.pdf?expires=1628533916&id=id&accname=guest&checksum=5796CAF84C1029823CB94281AC0A2D53> [Accessed 13 Aug. 2021].

Yle Uutiset. (2021). *Finland's central bank urges household debt-to-income caps.* [online] Available at: <https://yle.fi/uutiset/osasto/news/finlands_central_bank_urges_household_debt-to-income_caps/11914375> [Accessed 7 Sep. 2021].

Zhang, Y., Jin, H., Xiao, Y. and Gao, Y. (2020). *What are the Effects of Demographic Structures on Housing Consumption?: Evidence from 31 Provinces in China*. [online] Mathematical Problems in Engineering. Available at: <https://www.hindawi.com/journals/mpe/2020/6974276/> [Accessed 3 Aug. 2021]