UNIVERSITY OF LJUBLJANA
SCHOOL OF ECONOMICS AND BUSINESS

MASTER'S THESIS

HOUSING AFFORDABILITY IN CAPITAL CITIES IN EUROZONE

Ljubljana, December 2021 VITA KACAFURA

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

LIST OF ABBREVIATIONS

AT – Vienna, Austria
BE – Brussels, Belgium
CY – Nicosia, Cyprus
DE – Berlin, Germany
EE – Tallinn, Estonia
ES – Madrid, Spain
EUR – Euro(s)
EZ – Eurozone
FI – Helsinki, Finland
FR – Paris, France
GR – Athens, Greece
IE – Dublin, Ireland

IT – Rome, Italy
LT – Vilnius, Lithuania
LU – Luxembourg (City), Luxembourg
LV – Riga, Latvia
MT – Valletta, Malta
NL – Amsterdam, Netherlands
PT – Lisbon, Portugal
SI – Ljubljana, Slovenia
SK – Bratislava, Slovakia

INTRODUCTION

Housing affordability is an economic, political and social phenomenon that we all face every day. It is a subjective judgement of each individual of whether they deem their housing situation as affordable. It is based on unique experiences of each person and their individual perception of what is affordable.

We usually do not pay a lot of attention about our housing affordability situation, when we perceive our housing as affordable and adequate, but once we feel overburdened by our housing costs or we believe our housing conditions are not suitable for normal and decent living, we start to think about it. This often comes hand in hand with important decisions in our life like when to move out of our childhood home, where to go to school and find a job, whether we should buy or rent our next home, and what kind of dwelling can we afford in the first place. For majority of people, housing affordability is one of the key decision-making factors in these situations.

In recent years the talk about housing affordability problem in Europe got louder. Media is writing about it, politicians promise to solve it in their political agendas, governments around Europe started addressing it, European Parliament is trying to find solutions at European Union level and people organized protests demanding something to be done (let us remember the yellow vests movement in Paris, France).

Housing affordability is a rising problem in European capitals. Market prices for homeownership and rent prices are rising, making it harder for citizens to afford housing. Since average income of households stayed mostly the same in the last years, many households are facing poverty after their payment of mortgage or rent (Eurostat, 2021a and Eurostat, 2021d). This calls for more state subsidies which burdens state budget and drains resources from other departments results in rising of state income tax, which burdens citizens and pushes more of them below the poverty line. Europe has seen the diminishing of middle class, with more and more citizens living in richer high-income households and low-income households that require state financial aid. Much of this is due to poor housing affordability in capital cities, where citizens are inclined to move to in search for better employment, educational or other conditions. Since the supply of housing did not rise as fast as population in cities, many citizens are forced to live in unsuitable living conditions, while paying high market rents (Housing Europe, 2019; Inchauste, Karver, Kim, & Jelil, 2018).

Under the influence of all this (mixed together with my own experiences with housing affordability issues) I decided to research, if citizens of Eurozone capitals really face housing affordability problem that everybody is talking about. Purpose of this master thesis is to highlight the problem of housing affordability that was overlooked for long, but it turned out to be one of the biggest problems that the Europe is facing. I hope the thesis will be of use

to anybody trying to learn more about this problem or trying to find latest available data and information gathered all in one place. I believe this topic is important since people all over Europe are facing housing affordability issues that have big impact on their lives. Current housing solutions are financial burdens for countries and are not sustainable long-term, if the housing prices will keep rising. Therefore, the people and governments are both in need of successful long-term solutions for this problem.

My main goals in thesis are to find out what are the reasons for poor housing affordability in capitals of Eurozone and its consequences, to compare housing affordability amongst Eurozone capitals, to further focus on housing affordability in Ljubljana, and to look into possible solutions for housing affordability problem. Throughout this master thesis I will answer to the research question: "Do capital cities in Eurozone have a problem with housing affordability?". I am going to break down my research question into sub questions like "What are the main reasons for poor housing affordability?", "What are the consequences of poor housing affordability?", "What can be done to solve this issue?". By answering these sub questions, I will therefore be able to answer the main research question at the end of thesis.

Thesis has a qualitative and quantitative part. In theoretical part, I (with the help of available literature on the subject) determine the problem of housing affordability and appropriate method of measuring housing affordability. The empirical research is conducted for comparison of home and rent prices, average salaries, and financing possibilities amongst capital cities of Eurozone. I use the confirmatory method to show if there is a housing affordability problem in capitals of Eurozone. I found information and data for my thesis in databases and publications issued by organizations researching real estate markets.

The main issue I faced during research is lack of data. Housing affordability is a topic that started being researched only in recent years, therefore not much information and data is available. There are also different methods used for data gathering in different countries, so data available might not be comparable. Sadly, there is no organization that would gather data about home and rent prices for Europe with universal method. Available data is also old and therefore not applicable to today's situation anymore, because of fast changes happening on real estate markets.

In this master's thesis, I first take a closer look at what theory says about housing affordability, how it is measured and how we will measure it in our research. We move onto explaining the reasons behind poor housing affordability in Europe and its consequences. After that we compile research and compare housing affordability in capitals of Eurozone and in Ljubljana (Slovenia), where we define our research methodology, talk about limitations we faced and draw conclusions. In the end, we look at possible measures authorities can take to improve housing affordability and possibilities for further research.

Lastly, we draw overall conclusions of our research and answer the question of whether housing in capitals of Eurozone is affordable.

1 HOUSING AFFORDABILITY AND ITS MEASUREMENT

Stone (2006) defines housing affordability as: "It is an expression of the social and material experiences of people, constituted as households, in relation to their individual housing situations. Affordability expresses the challenge each household faces in balancing the cost of its actual or potential housing, on the one hand, and its non-housing expenditures, on the other, within the constraints of its income."

Similar to Stone, European Committee of Social Rights defines that housing is perceived as affordable, if a household can or would be able to afford to pay initial costs, rent or mortgage, utility and other costs linked to housing, on a long-term basis, while still being able to maintain a minimum standard of living (Mijatović, 2020).

Since housing affordability is based on unique individual experiences, it is in its core subjective and biased. In order to use housing affordability as a relevant measurement in decision and policy making, these individual experiences have to be represented through analytical indicators and normative standards for housing affordability. Because of this Stone (2006) recognizes five different approaches to defining housing affordability:

1. relative – changes in the relationship between summary measures of house prices or costs and household incomes,
2. subjective – whatever individual households are willing to or choose to spend,
3. family budget – monetary standards based on aggregate housing expenditure patterns,
4. ratio – maximum acceptable housing cost/income ratios,
5. residual – normative standards of a minimum income required to meet non-housing needs at a basic level after paying for housing.

The relative approaches are mostly used by mortgage lending and real estate industry. They primarily assess the affordability of residential sales market for potential home buyers based on prototypical housing costs. This enables them to compare housing affordability at two or more points in time, typically in relation to median income or in constant monetary unit.

The subjective approaches assume that every household is paying just what it can afford for housing. The underlying theory is that households are rational utility maximizers, therefore they choose dwelling that is the best option for them within their constraints. Thus, from this perspective, housing affordability per se has no generalizable meaning, it is neither rationally possible nor socially desirable to establish a normative standard of affordability other than individual choice.

The family budget approaches base standards on summary measures of what households in the aggregate actually spend. From this the budget standards approach developed that involves a market specification of essential items (housing, food…). A minimal standard of type, quantity and quality of this items was established in a given social construct at a given point in time. The standard of each item is then priced and summed into a minimal budget. If budget standards really represent the income needed for any household of a given type to obtain defined minimal standard of housing, then affordability has no independent meaning.

The ratio approaches express the relationship between housing costs and incomes. They recognize that what households pay for housing in relation to their income is the result of difficult choices among limited and often unsatisfactory alternatives. They conclude, that if a household pays more than a certain percentage of their income for housing, then it will not have enough left for other necessities. The ratio approaches have the longest history and widest recognition.

The residual income approaches recognize that because of housing distinctive features in comparison with necessities, its cost make the largest and least flexible claim on income for most households. Therefore, non-housing expenses are limited by how much income is left after paying for housing. This means that a household as a housing affordability problem, if it cannot meet its non-housing needs at some basic level of adequacy after paying for dwelling.

Gan and Hill (2009) argue that household's ability to purchase a house can be viewed in at least three different ways. They draw a distinction between the concepts of purchase affordability, repayment affordability and income affordability. Purchase affordability considers whether a household is able to borrow enough funds to purchase a house. Repayment affordability considers the burden imposed on a household of repaying the mortgage. Income affordability simply measures the ratio of house prices to income.

Internationally we can find quite a lot of different indexes measuring housing affordability. In the United States of America there are indexes from National Association of Realtors, United States Department of Housing and Urban Development, and the National Association of Home Builders. In Australia there are Real Estate Institute of Australia and AMP index, BIS Shrapnel index, and Commonwealth Bank of Australia/Housing Industry Association index. Demographia International is an international index that includes 227 regions in Australia, Canada, Ireland, New Zealand, United Kingdom and United States (Gan & Hill, 2009). On the European level or European Union level, sadly there are not any indexes measuring housing affordability.

Indexes often used in literature to measure housing affordability are financial pressure that households face due to housing costs and housing cost overburden rate. The median of the

ratio of housing cost over income gives an indication of the financial pressure that households face due to housing costs. Housing cost overburden rate measures the proportion of households or population that spend more than 40% of their disposable income on housing cost (Eurostat, 2014). Housing costs can refer to a narrow definition based on rent and mortgage costs (principal repayment and mortgage interest) or a wider definition that also includes the costs of mandatory services and charges, regular maintenance and repair, taxes and utilities, which are referred to as total housing costs. Housing costs are considered as a share of household disposable income, which includes social transfers (such as housing allowances) and excludes taxes (OECD, 2021).

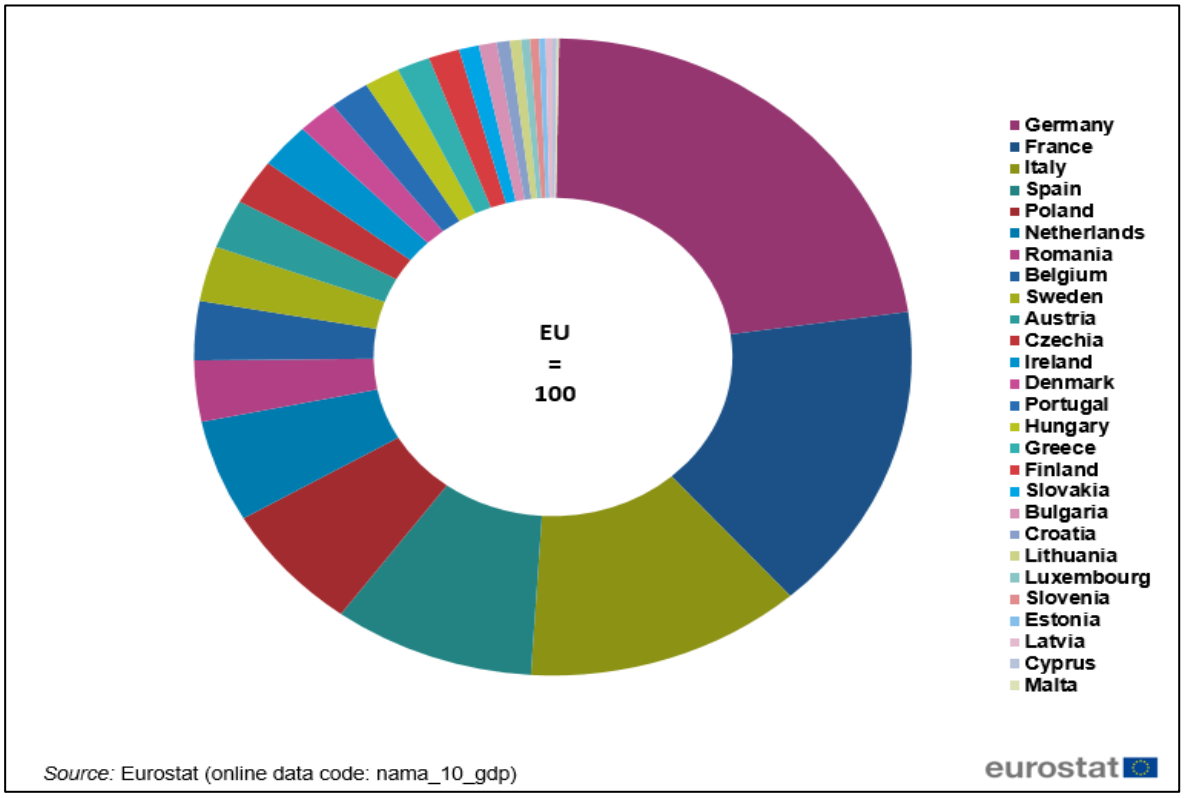
In this master's thesis we will use the ratio income approach of housing affordability. This means that we will compare what percentage of income households spend on housing costs. For our criteria of affordable housing, we will adopt the Eurostat's (2014) definition of housing cost overburden rate saying, that any household whose expenditure on housing exceeds 40% of disposable income is overburdened.

2 REASONS FOR POOR HOUSING AFFORDABILITY

Since we decided to use the ratio income approach of housing affordability in our thesis and we will compare what percentage of income households spend on housing costs, let us first take a look at what was happening with housing prices, rents and annual net earnings from 2010 through 2020 in European Union.

European Union sadly does not collect data on actual housing prices in member states but only follows housing price changes through house price index. The house price index measures the price changes of all residential properties purchased by households (flats, detached houses, terraced houses…), both newly built and existing, independently of their final use and independently of their previous owners. The member states' house price indexes are compiled by the national statistical institutes. The euro area and the European Union aggregate house price indexes are compiled by Eurostat. House price indexes are computed as annually chained indices with weights being updated each year. The European house price index aggregates are currently calculated as weighted averages of the national house price indexes using as weights the gross domestic product at market prices (expressed in millions purchasing power standards) of the countries concerned. In Figure 1, we can see weights of member states in the European Union house price index aggregate in 2020 (Eurostat, 2021d).

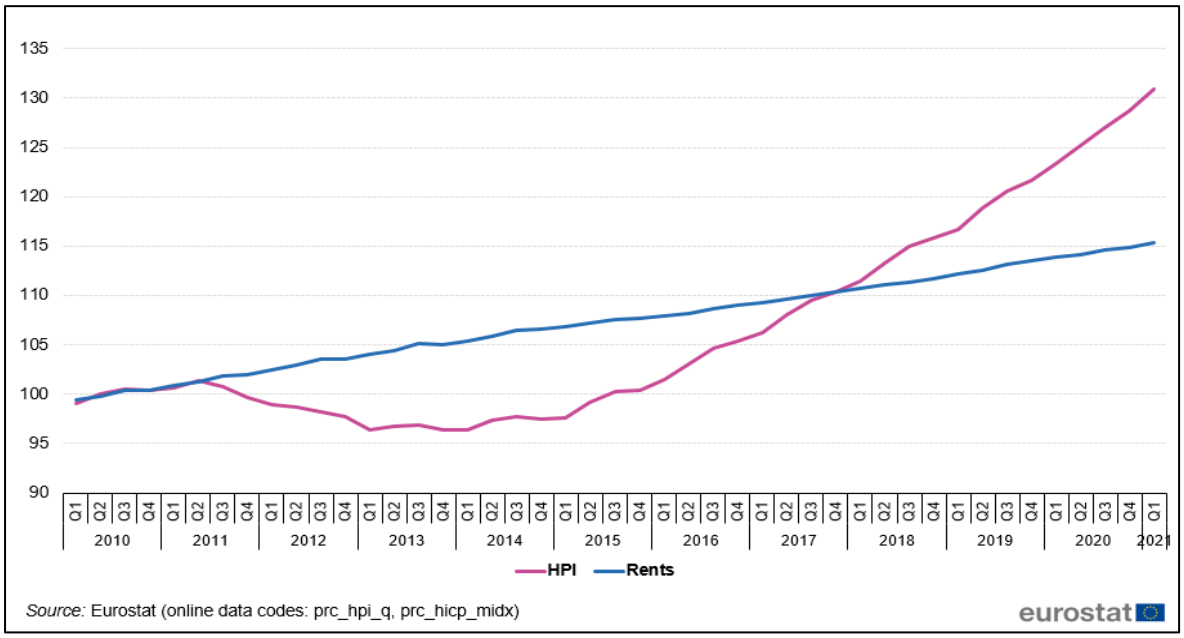
Figure 1: Weights of member states in the European Union house price aggregate in 2020 in %



Source: Eurostat (2021d).

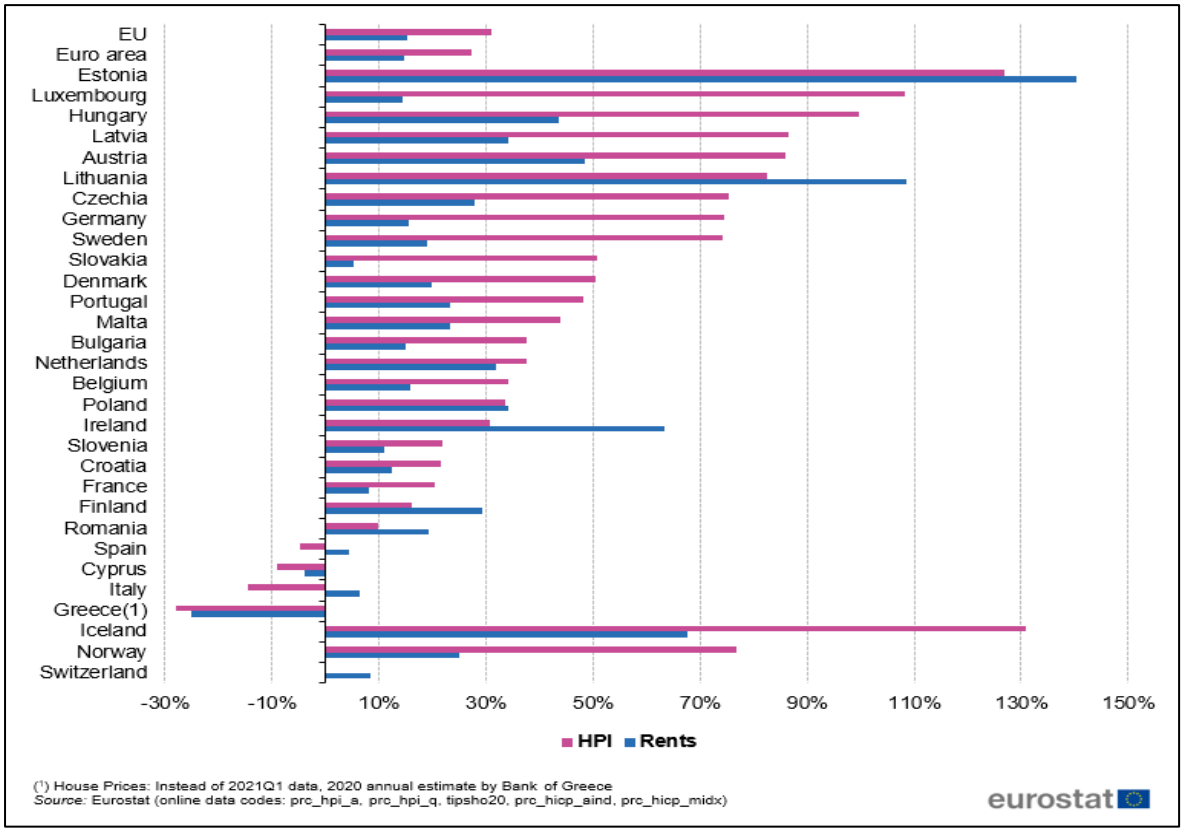
Over the period from 2010 until the first quarter of 2021, rents increased by 15% and house prices by 31%. Rents and house prices in the European Union have continued their steady increase in the first quarter of 2021, going up by 0.4% and 2.2%, respectively, compared to the fourth quarter 2020. We can notice from Figure 2, that between 2010 and the second quarter of 2011, house prices and rents in the European Union followed similar paths. Since the second quarter of 2011, they have followed very different paths – while rents increased steadily throughout the period up to the first quarter of 2021, house prices have fluctuated significantly. After a sharp decline between the second quarter of 2011 and the first quarter of 2013, house prices remained more or less stable between 2013 and 2014. Then, there was a rapid rise in early 2015, since when house prices have increased at a much faster pace than rents. When comparing the first quarter of 2021 with 2010, house prices increased more than rents in 17 European Union member states. Figure 3 shows how house prices increased in 23 member states and decreased in four, with the highest rises in Estonia (127%) and Luxembourg (108%). Decreases were observed in Greece (28%), Italy (14%), Cyprus (9%) and Spain (5%). For rents, the pattern was different. When comparing the first quarter of 2021 with 2010, prices increased in 25 European Union member states and decreased in two, with the highest rises in Estonia (140%), Lithuania (109%) and Ireland (63%). Decreases were recorded in Greece (25%) and Cyprus (4%) (Eurostat, 2021d).

Figure 2: House prices and rents (index level, 2010 = 100) in European Union from 2010 through first quarter of 2021



Source: Eurostat (2021d).

Figure 3: Changes in house prices and rents (in %) in European Union from 2010 through first quarter of 2021

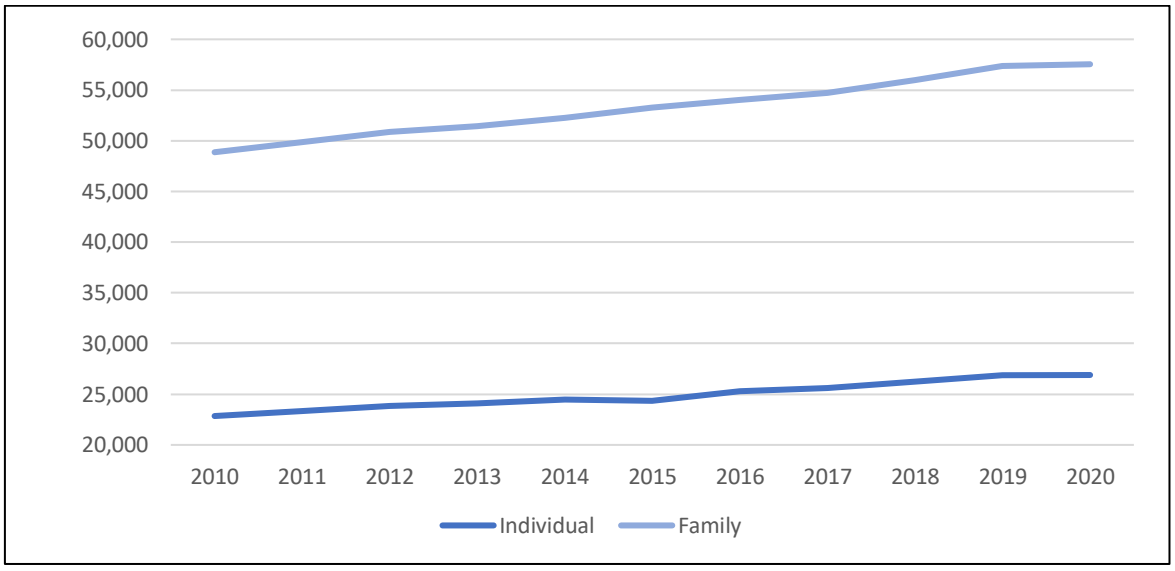


Source: Eurostat (2021d).

Next, let us take a look at growth of annual net earnings in Eurozone from 2010 through 2020 for an individual and family of four. Throughout the thesis, we use Eurostat's (2021a) definition for individual as a single person without children earning 100% of the average earning and family as two-earner couple with two children, both earning 100% of the average earning. According to Eurostat's methodology, net earnings take into account income taxes, employee's social security contributions and family allowances.

We calculated change in annual net earnings for an individual and family in Eurozone and its member states from 2010 through 2020. In general, annual net earnings of both individual and family grew by 18% in Eurozone from 2010 through 2020. As we can see from Figure 4, annual net earnings of an individual and family grew steadily in our observed period without major rises or decreases.

Figure 4: Annual net earnings (in EUR) of an individual and family in Eurozone from 2010 through 2020



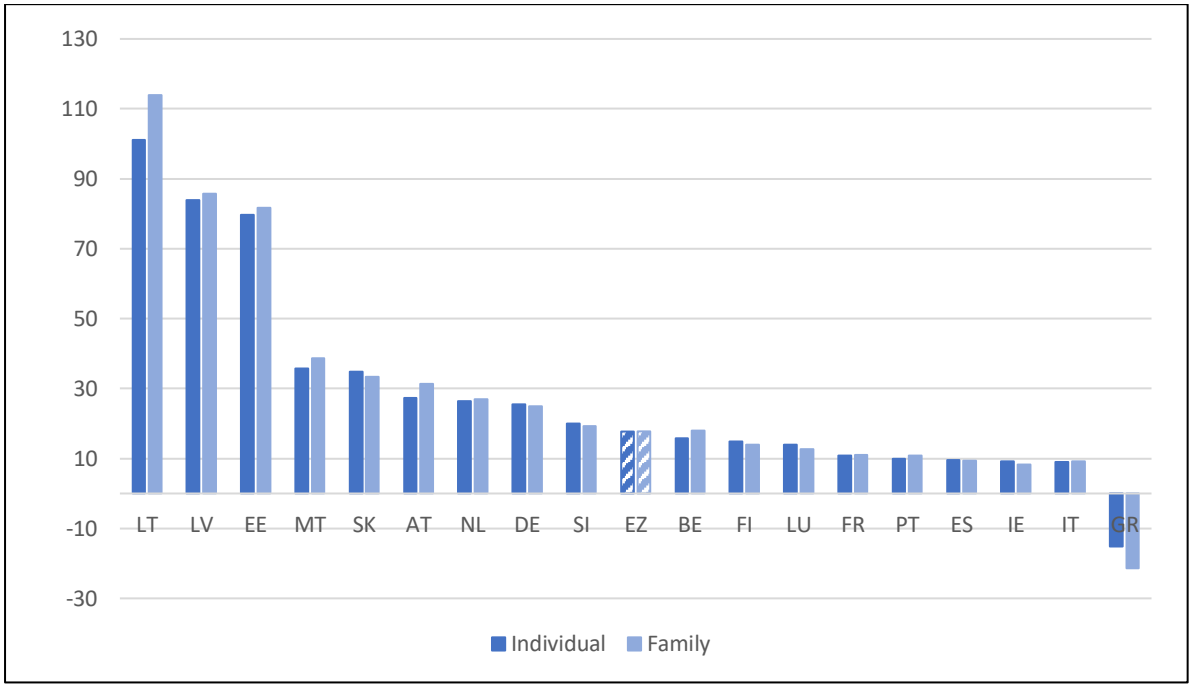
Source: Eurostat (2021).

We can see from Figure 5, that growth was the highest in Lithuania (101% for an individual and 114% for a family), Latvia (84% for an individual and 86% for a family) and Estonia (80% for an individual and 82% for a family). Growth was the lowest in Spain (9% for both individual and family), Ireland (9% for an individual and 8% for a family) and Italy (9% for both individual and family). Annual net earnings decreased only in Greece by 15% for an individual and by 21% for a family. There is sadly no data available on annual net earnings in 2010 for Cyprus (earliest data is available for 2014) which disabled us from calculating change in our observed period (Eurostat, 2021a).

In 13 member states that annual net earnings grew in, those of a family grew more or the same than those of an individual, and in case of Greece annual net earnings of a family decreased more than individual's. This shows us net earnings of a family are more volatile

than those of an individual. Meaning, net earnings of a family grow more when earnings grow and decrease more when earnings decrease. In only five member states growth in annual net earnings of an individual was higher than growth of a family (Eurostat, 2021a).

Figure 5: Change in annual net earnings (in %) in Eurozone from 2010 through 2020



Adapted from Eurostat (2021a).

From the data discussed above, we can see that house prices, rents and net earnings in general grew in European Union in the last ten years. In the rest of this chapter bellow, we will list and explain the reasons for this growth and how they negatively affected housing affordability. We present them in two categories as factors affecting housing demand and factors affecting housing supply.

2.1 Factors affecting housing demand

2.1.1 Rise in productivity

Economic theory predicts that increases in productivity should lead to increases in labor demand, which in turn should lead to increases in employment and wages. Higher labor productivity is mostly due to agglomeration externalities, including the presence of a thick labor market, a thick market for specialized service providers, and knowledge spillovers. Countries in the European Union are no exception to this – 28 primary cities and 228 secondary cities representing 23% of the European Union's population, generated 63% of total GDP, and were responsible for 64% of GDP growth between 2000 and 2013. Recent estimates for the European Union region find that a productivity growth increase of 1 percentage point was accompanied by a 0.3% increase of wages in the post-crisis period

(from 2008 through 2012), while the average number of hours worked also became more sensitive to increases in growth after the crisis. As such, increases in labor productivity led to increased household labor income because people receive higher real wages, because they work longer hours, or both. Not only are there big differences in productivity levels across regions within European Union countries, but most of the centers of highest productivity also happen to be in capitals and other large cities. For instance, labor productivity in Bucharest is at the same level as in Vienna or Copenhagen, and more than two times the national average of Romania (Inchauste, Karver, Kim, & Jelil, 2018; Housing Europe, 2019).

Growing employment can be expected to raise the local cost of housing. In the European Union, the evidence for the post-crisis period suggests that wages and employment growth have indeed followed increases in productivity (as discussed above). However, housing prices are also the highest in large cities and centers of agglomeration, and where they are rising, they are rising faster than wages. For example, in Dublin labor productivity measured as GDP per person employed grew by 13% between 2012 and 2014, while real housing prices grew by 35% over the same period. This affects young people and new comers to the cities the hardest (Inchauste, Karver, Kim, & Jelil, 2018; Housing Europe, 2019).

2.1.2 Housing prices have been rising faster than wages

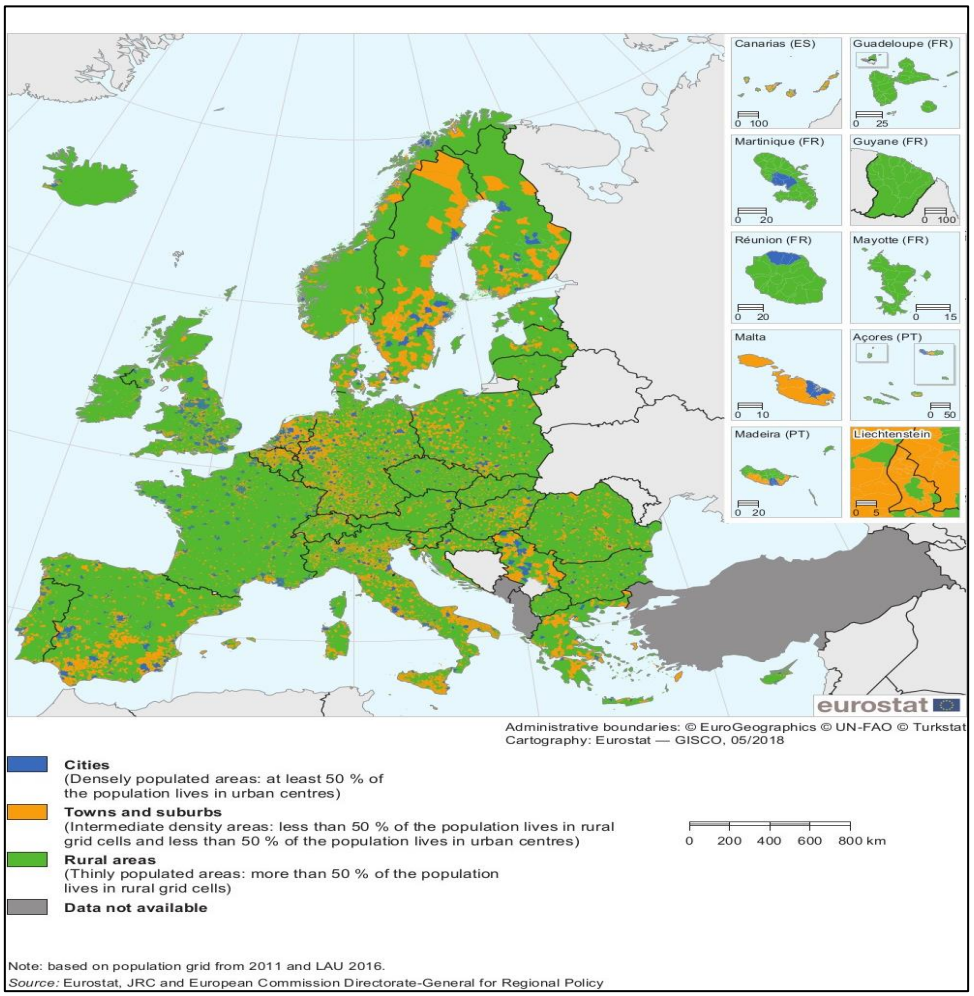
From our overview of the change in housing prices, rents and net earnings in European Union in the last ten years, in the beginning of this chapter, it is obvious that housing prices grew faster than wages. Let us recap, from 2010 until the first quarter of 2021, rents increased by 15% and house prices by 31% in the European Union, while annual net earnings of both individual and family grew by 18% in Eurozone from 2010 through 2020. On the national level, there are some exceptions where house prices fell, while income grew (like Spain and Italy), it is not the case for the majority. The obvious outlier is Greece, where house prices, rents and wages fell in the last decade.

Across European Union, housing prices are typically the highest in large cities and centers of agglomeration. Moreover, changes in housing prices in capital cities and agglomeration areas are more extreme than in other regions, growing faster in countries where there is housing price growth, and falling faster where there is a decrease. When measured at the national level, housing price averages have generally not been rising faster than wages. Data at the national level suggest that wages have been growing faster than housing prices, albeit with a few exceptions. However, national averages do not reflect what occurs within countries or the differences between cities and the rest of the country. There are instances where housing prices have clearly increased faster than wages. For instance, in the United Kingdom between 2011 and 2015, housing prices increased by more than 20% in London, East England, and Southeast England, while real wages declined or, in the case of Southeast region, increased by less than 1%. Similarly, in Bulgaria, housing prices have been growing

faster than wages in Sofia, although this is not the case in all the country's other major cities (Inchauste, Karver, Kim, & Jelil, 2018).

2.1.3 Urbanization

Figure 6: Degree of urbanization for local administrative units in Europe in 2016



Source: Eurostat (2021b).

Worldwide, between 1975 and 2015, there has been an increase in the number of urban dwellers from 69% to 76%. While, during the same period, the countries where less than half of the total population lives in urban areas has decreased from 48% to 36%. European Union is no exception with 75% of population living in urban areas, as seen in Figure 6. People tend to move to urban areas because of strong job opportunities and higher wages. Because of increased demand and lack of supply of housing in urban areas, rent and prices are higher than those in rural areas. In essence, people will pay more to live in areas that are economically strong. Given that land is a finite resource and that most well-paying service sector jobs tend to be clustered in large urban hubs, it is reasonable to assume that city dwellers will continue to face above average overburden rates. House prices in the capital

cities were average across Europe around 10% higher than the respective country in 2018 (Geospatial World, 2020; European Environment Agency, 2017; Housing Europe, 2019; European Mortgage Federation, 2019).

2.1.4 Mortgage inaccessibility

Young people in Europe (Eurostat defines them aged between 15 and 29) are facing challenge of not having access to mortgage lending. European banks require between 15 to 20% down payment of property value, which might turn out to be the most considerable expense. A young adult at the start of his or her career (therefore being paid a bellow average salary), who is paying market rent and other living expenses, usually cannot afford to save such amount of money. This automatically excludes him or her from lending market and disables him or her to become a homeowner. An individual like this has no other option but to pay market rent for extensive time periods (or the rest of his or her life) which is usually higher than monthly mortgage payment as we will see in the following chapters (Eurostat, 2021g; N26, 2020; BBC, 2018; Valle, 2018).

2.1.5 Buy to leave/let

The term refers to the practice of purchasing dwelling as investments and leaving them unoccupied in the expectation that their value will rise. Foreign investors buy property in the area where demand for housing is high and the price of the property is expected to increase. They are not interested in renting, since it brings poor returns. This results in sometimes almost entire buildings being empty (Designing Buildings, 2021).

While investors have long been operating on real estate markets, in recent years urban property has increasingly become the commodity of choice to stash capital and excess liquidity. In some countries such as Netherlands, France and Germany, residential housing has been a key real estate investment sector for investors for many years. However, in many other countries in Europe, until about 5 to 10 years ago, institutional investors concentrated almost exclusively on commercial real estate, such as offices and retail. Today the demand for housing as an investment good, from domestic as well as foreign investors, contributes to the increasing demand for urban housing (Housing Europe, 2019).

Because of this phenomenon, in some cities, a significant proportion of property is left vacant. In Paris, around 7% of houses lie vacant – 40% of which are not even connected to the electricity grid. Cities such as Amsterdam are witnessing an increase in buy to let and other investor activity. This has a negative effect on both the affordability and the availability of housing. In reaction to this, Amsterdam has proposed legislation that would make it compulsory to live in a house that you own. Despite concerns about the financialization of the urban housing market, some cities consider the presence of investors as positive and

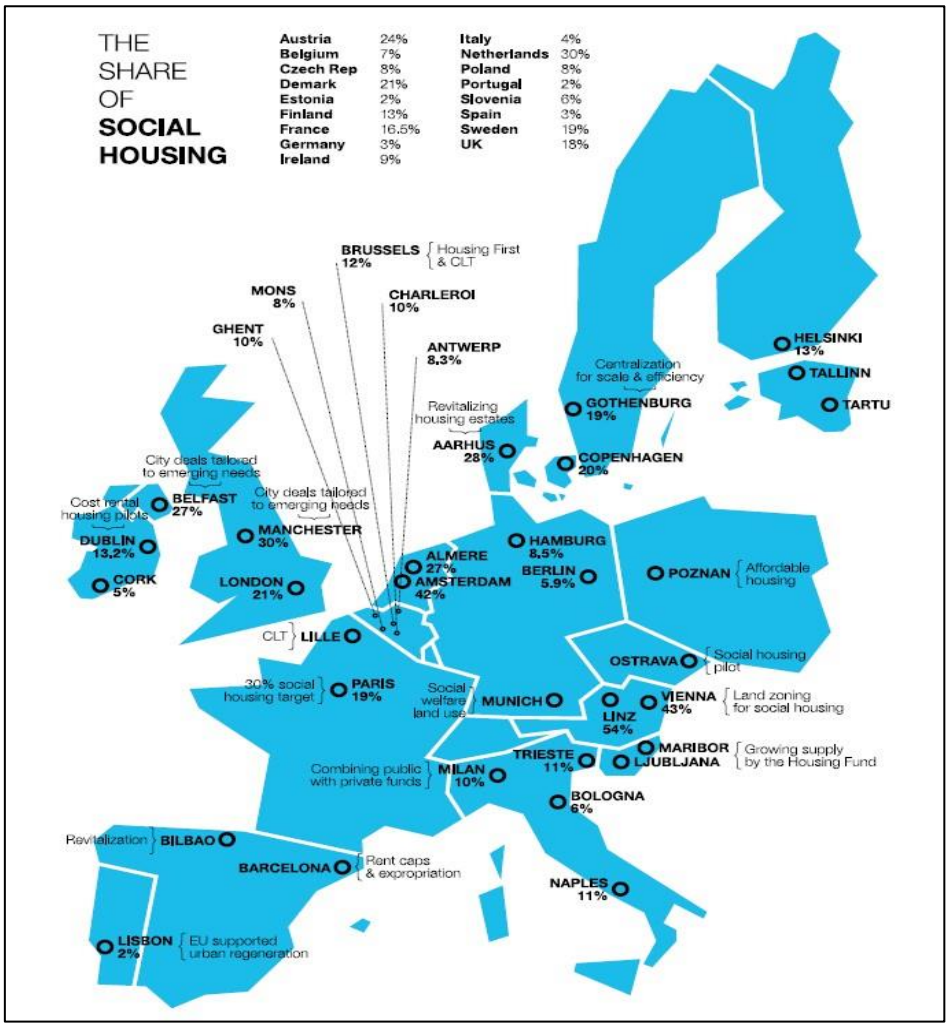
encouraged this development. Cyprus, Greece, Portugal and Spain, for example, have specifically implemented policies to attract investment into property from wealthy foreigners (Housing Europe, 2019).

2.2 Factors affecting housing supply

2.2.1 Lack of affordable and social housing

Currently no definition of affordable housing exists at European level which presents a challenge when defining the scope of what we understand by this concept. European Mortgage Federation (2019) therefore decided that they understand affordable housing as either social housing, affordable rental housing and/or affordable home ownership. Their research that included 11 countries showed that the share of affordable housing compared to the total housing market is around 20%, with some exceptions where levels are considerably lower. Figure 7 presents the share of social housing in Europe in 2019.

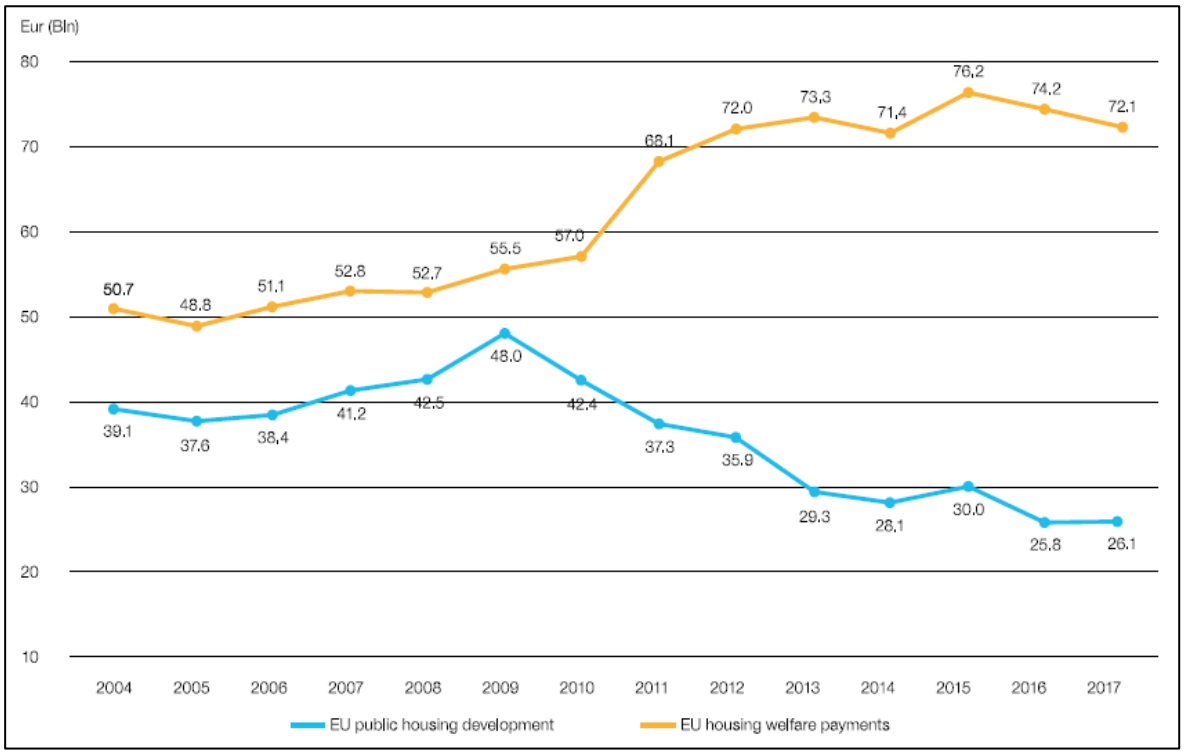
Figure 7: The share of social housing in Europe in 2019



Source: Housing Europe (2019).

European governments developed very different schemes to make housing more affordable. Government spending on housing allowances has continued to increase in the countries where it is already relatively high, such as Denmark, Ireland, Finland, France, and the United Kingdom, while spending on housing development has declined. This shift toward demand-side interventions has also meant that funding for social housing has been declining as presented in Figure 8. In several countries private initiatives are present that reflect an increasing role of private financing in affordable housing. Since spending capacity of public authorities on affordable housing is decreasing and the share of population in need of affordable housing is increasing, there is potential for private sector to play a significant role in this area in the future (European Mortgage Federation, 2019; Inchauste, Karver, Kim, & Jelil, 2018).

Figure 8: Housing supports in European Union from 204 through 2017 (Total combined spending by member states by type of support)



Source: Housing Europe (2019).

Foundation Abbe Pierre - FEANTSA (2020) reports that funding for property construction comes second last in terms of government spending on average across Europe. Government expenditure on funding for the construction of housing and public utilities accounted for 1.3% of total government expenditure in 2018 across Europe. Expenditure fell by an average of 31.6% in the European Union in ten years – from 2008 to 2018. With exception of Lithuania and Sweden, expenditure on housing construction and utilities declined from 2008 through 20018 in all European Union member states. Results for other countries are presented in Table 1 (Foundation Abbe Pierre - FEANTSA, 2020).

Table 1: Government expenditure on housing construction and utilities in 2018 as % of total expenditure

Country	2018	Change 2008-2018
Croatia	3.6	-51.4
Cyprus	3.5	-45.3
Bulgaria	2.9	-25.6
Latvia	2.9	-9.4
Romania	2.7	-18.2
Ireland	2.0	-48.7
France	2.0	-13.0
United Kingdom	2.0	-25.9
Czech Republic	1.9	-13.6
Lithuania	1.5	50.0
Hungary	1.5	-21.1
Luxembourg	1.4	-17.6
Poland	1.4	-22.2
Sweden	1.4	27.3
EU (28)	1.3	-31.6
Slovakia	1.3	-23.5
Malta	1.2	-29.4
Spain	1.0	-57.7
Portugal	1.1	-35.3
Italy	1.0	-23.1
Slovenia	1.0	-44.4
Germany	0.9	-43.8
Estonia	0.8	-46.7
The Netherlands	0.8	-38.5
Austria	0.7	-12.5
Belgium	0.6	-25.0
Finland	0.6	-25.0
Denmark	0.5	-28.6
Greece	0.4	-20.0

Source: Foundation Abbe Pierre - FEANTSA (2020).

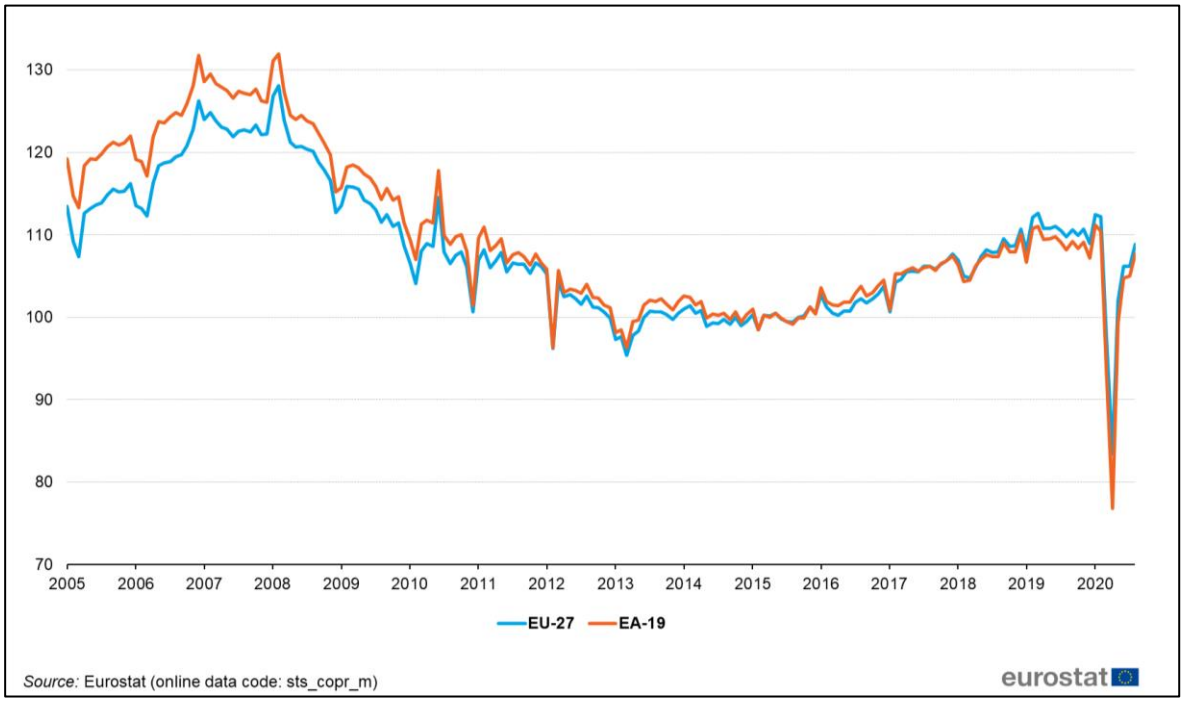
2.2.2 Lack of available land

In Federation of Master Builders' House Builders' Survey 2018, 59% of small and medium sized housebuilders listed a lack of available and viable land as the most commonly cited barrier to increasing housing delivery already for fourth year in a row. Countries are not releasing enough new land which drives land prices up and therefore results in higher housing prices (Building Products, 2018; Griffith & Jefferys, 2013).

2.2.3 Lack of construction activities

In 2019 construction investment grew for the sixth consecutive year expanding by 3.2% and dwelling construction increased by 5.3% from 5.1% the year before, which is still 1.3 percentage points below the peak reached in 2007. Building permits continued to increase, accounting for a 35% increase with respect to 2013, reaching 0.7% of the existing housing stock. In terms of transaction figures, 2019 saw an increase of nearly 1% with respect to 2018 and 38% with respect to 2013. Even though construction grew in the past years, supply still has not met demand. This is mostly true for cities where demand grows because of urbanization (European Mortgage Federation, 2020). From Figure 9 we can notice, that even though supply grew in the last couple of years, it still has not reached pre-crisis level in 2008.

Figure 9: Construction production in European Union and Eurozone (2015=100) from 2005 through 2020



Source: Eurostat (2020b).

2.2.4 Short-term tourist lettings

Online holiday renting and home sharing got an entirely new meaning with platforms like Airbnb, Booking.com and HomeAway. There was a 40% increase in the number of nights spent by non-residents in European Union countries between 2009 and 2016. Therefore, demand for short-term tourist letting is increasing. Data shows the majority of Airbnb listings in most cities are entire homes, many of which are rented all year round. Many "hosts" are businesses with multiple properties, benefiting from an unregulated market and making large profits. Studies show that increase in Airbnb listings, increase market rents and prices in that area (Housing Europe, 2019; Corporate Europe Observatory, 2018).

Major international platforms (Airbnb, Booking.com, Expedia Group and Tripadvisor) agreed to exchange data on the occupancy of tourist accommodation with the European Commission (Eurostat). In 2019, more than 554 million guest nights spent in the European Union were booked via one of the four platforms or on average 1.5 million guests on a random day. The number of guest nights takes into account the number of nights spent during a stay and the number of tourists in the travel party. One in five guest nights was spent in Spain (112 million guest nights), closely followed by France (109 million), Italy (83 million guest nights), Germany (40 million) and Portugal (33 million) complete the top five. Further countries with over 10 million guest nights recorded in 2019 were Greece (29 million guest nights), Croatia (26 million), Poland (22 million), Austria (17 million), Czechia and Hungary (both 10 million). On average in the European Union, throughout 2019, one booking or stay represented 10.4 guest nights (Eurostat, 2021f).

The top city destinations for tourists booking their accommodation through one of the four platforms were the greater city of Paris (15.1 million guest nights, or more than 41 000 guests on an average night), Barcelona (11.3 million), Rome (10.4 million), Lisbon (10.5 million) and Madrid (8.3 million). In the European Union as a whole, most guest nights (91 %) were spent at facilities where the tourists could use the entire dwelling (apartment, house). Looking at the size of the facilities, the majority of the guest nights (92 %) were spent in smaller accommodation with fewer than 10 bed places (Eurostat, 2021f).

2.2.5 Not in my backyard (NIMBY)

This acronym is used to characterize the opposition of residents to a proposed development plan in their area. NIMBY describes the phenomenon in which communities will adamantly resist a development plan near their area regardless of whether positive or negative externalities are generated. It is used to describe communities that act in their own interests and oppose nearby developments they would otherwise support and benefit from, if the developments did not take place near their area. The construction of housing benefits the overall economy by making housing more affordable, improving the location's economic conditions, and providing employment opportunities. NIMBYs will highlight the potentially increased crime rate, decreased utility for existing residents, and disruption from increased traffic as reasons to oppose construction (Corporate Finance Institute, 2020).

3 CONSEQUENCES OF POOR HOUSING AFFORDABILITY

In this chapter we take a closer look at the main consequences of poor housing affordability in Europe. We present them in two categories as consequences affecting economy and consequences affecting social well-being.

3.1 Consequences affecting economy

3.1.1 Increase in the value of housing equity

A significant part of the wealth created by the dynamism of cities accrued not just to workers through the labor market but also to homeowners through the housing market, in the form of capital gains, thus deepening inequalities within cities, and between homeowners in cities and the population living in other regions. Increases in real estate prices can effectively redistribute wealth created by workers (as measured by higher labor productivity and then by increases in wages) to local homeowners (through higher housing values). The youth and newcomers are especially affected, while older generations owning homes in prime locations have benefited from important increases in the value of capital (Inchauste, Karver, Kim, & Jelil, 2018).

In European Union housing represents the main source of wealth for most households. In 2014, the value of households' main residence accounted for 60.2% of total real assets in 20 of the 28 European Union member states and as much as 49.5% of total household assets. In nearly 90% of cases, the value of a homeowner's residence represents the largest share of the household's total asset portfolio. As such, land and housing assets are a source of wealth inequality, have an important impact on spatial inequality, and could potentially determine the degree of intergenerational mobility within a society (Inchauste, Karver, Kim, & Jelil, 2018).

3.1.2 Lack of mobility

The relocation of workers toward more productive jobs increases returns to labor by promoting agglomeration – that is, the concentration of economic activity. Moving for better jobs can pay off for skilled as well as unskilled workers, driven by a positive relationship between human capital and the productivity of workers. The more that places can attract highly skilled workers, the more they generate human capital spillovers that also benefit unskilled workers, because skilled and unskilled workers tend to complement each other. Formal and informal interactions create knowledge spillovers that can work as an important engine of growth by enhancing innovation and productivity (Inchauste, Karver, Kim, & Jelil, 2018).

However, residential mobility is low in the European Union overall compared with Canada and the United States, and it is particularly low in Central and Eastern European countries, which could limit agglomeration and productivity gains. Although overall mobility is low in the European Union, there is wide variation among different population groups even within the same country, and household tenure status emerges as an important determinant. Across all countries, outright owners are the least mobile, and market tenants are the most mobile.

Owners with a mortgage and tenants who pay below-market rent rank in between these two extremes. Usually, countries with high rates of homeownership also have higher aggregate unemployment. At the household level, the lack of mobility can affect household welfare, if unemployed workers cannot easily relocate for their job search (Inchauste, Karver, Kim, & Jelil, 2018).

Excessive regulations concerning land use and rental markets and insecurity over property rights can severely affect the development of housing markets and their ability to respond to local demands, because such regulations influence housing supply and thus the capacity of households to relocate. Research showed residential mobility is higher in countries with lower transaction costs, more responsive housing supply, lower rent controls and tenant protection, and greater access to credit. Conditions oppose to this, lead to an overall low availability of vacant housing stock, effectively constraining housing supply, which in turn affected the availability of affordable housing (Inchauste, Karver, Kim, & Jelil, 2018).

3.2 Consequences affecting social well-being

3.2.1 Inadequate living conditions

Foundation Abbe Pierre - FEANTSA (2020) measures housing quality and quality of life in three categories – over crowdedness, damp housing and inadequate temperature. They found that in 2018, 15.5% of European Union's population and 26.3% of poor households (under Eurostat's definition for households at risk of poverty) were living in overcrowded conditions. Eurostat (2020c) defines households whose income is 60% of the median national level or less at risk of poverty. In the European Union, 36.4% of all children (minors aged under 18 years) were living in overcrowded housing in 2018, compared to 21.9% of all households.

24.5% of children living in poor households in the European Union in 2018 lived in damp housing, compared to 15.6% of children of all households. Damp housing is defined as housing with either leaks in the roof, or damp walls, flooring or foundations, or mold in the window frames or flooring (Foundation Abbe Pierre - FEANTSA, 2020).

In 2018, 7.3% of European Union's population and 17.9% of poor households could not afford to maintain an adequate temperature in their homes. Nearly a quarter of poor children and 15.6% of all children were living in cold housing (Foundation Abbe Pierre - FEANTSA, 2020).

4% of European Union's population and 9.6% of poor households were facing severe housing deprivation in 2018. Severe housing deprivation is a dwelling that is not only

overcrowded but also unacceptable due to damp conditions, an absence of basic sanitary facilities or a lack of light (Foundation Abbe Pierre - FEANTSA, 2020).

3.2.2 Growing divides among social classes

Foundation Abbe Pierre - FEANTSA (2020) reports that in 2018, 10.3% of households in the European Union spent over 40% of their disposable income on housing costs, but this share increases to 38.0% when considering households at risk of poverty. As mentioned previously, Eurostat (2014) defines being overburdened as any household whose expenditure on housing exceeds 40% of disposable income. The differences between households whose income is 60% of the median national level or less (defined as the risk of poverty) and those above 60% is often stark. In 2018 the population as a whole spent an average of 21% of its income on housing, whereas poor households spent 41% of their income on housing.

In 2019 the OECD released a report investigating to what extent middle class households have been left behind in an increasingly globalized and polarized economy, and the factors that are driving this trend – notably rising house prices. The report points out that while middle incomes have barely grown, the cost of essential parts of middle class lifestyle has increased faster than incomes, notably housing, health and higher education. At the same time job insecurity has risen in the context of fast transforming labor markets. Between 1995 and 2015, the share of middle-incomes budget going into housing has increased from a quarter to almost one-third. Expenditure on owned homes made up most of the rise, although spending on rent and utilities also expanded considerably. Poor housing affordability therefore burdens lower- and middle class households more than upper ones, pushing them deeper into poverty and contributes to deepening divide among them (Foundation Abbe Pierre - FEANTSA, 2020; Housing Europe, 2019; OECD, 2019).

3.2.3 Spatial inequality and inequality between cities and rural areas

Spatial inequality is the unequal distribution of resources and services across different areas or locations, such as healthcare, welfare, public services, household income and infrastructures. In cities and agglomeration areas unemployment is usually lower, income is higher, education, healthcare and public services are more accessible… All of this makes moving to and living in cities attractive. Companies and investors find it easier and economically sensible to move and build in urban areas, since everything is in close proximity (workforce, public services, infrastructure…). This results in urban areas becoming richer, more developed and its citizens having a higher quality of life, while on the other hand, rural areas are underdeveloped and poorer (BMC, 2021; Widuto, 2019; Ham, Tammaru, Vuijst, & Zwiers, 2016; Council of Europe Development Bank, 2017).

Entry barrier for people moving from rural areas to cities is often high. They usually make bellow national average income and face above national average housing prices when moving to urban areas. Because of this, many people living in underdeveloped regions are unable to move and pursue higher quality life (BMC, 2021; Widuto, 2019; Ham, Tammaru, Vuijst, & Zwiers, 2016; Council of Europe Development Bank, 2017).

Spatial inequality is also present inside cities and centers of agglomerations. Citizens with lower income tend to live in neighborhoods where the cost of housing is cheaper. These neighborhoods usually have higher crime, noise and pollution levels, less green spaces and community facilities (like cultural and sport facilities), and poor access to public infrastructure (like public transport, schools and health services). Restrained by their income they have less choices available to them and often live in overcrowded homes with limited basic amenities and little floor space (BMC, 2021; Widuto, 2019; Ham, Tammaru, Vuijst, & Zwiers, 2016; Council of Europe Development Bank, 2017).

Moreover, their homes are often not environmentally sustainable, which adds to the long-term quality and cost issues. All of this deepens divides among social classes and country's regions, since low-income citizens are unable to afford housing in richer neighborhoods or highly productive urban areas (BMC, 2021; Widuto, 2019; Ham, Tammaru, Vuijst, & Zwiers, 2016; Council of Europe Development Bank, 2017).

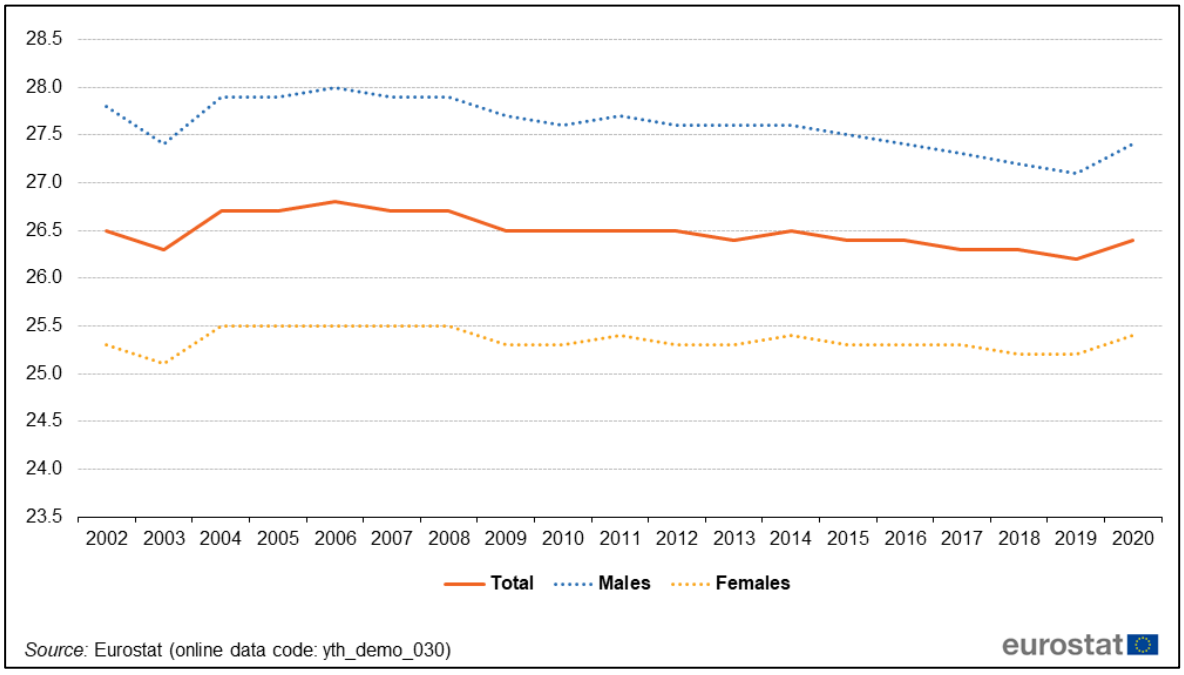
3.2.4 Young adults live longer with their parents

Because of high cost of housing many young adults in European Union still live with their parents. In 2019 69% of young people aged between 18 and 34 lived with their parents. This percentage falls to 30%, if we narrow the age gap between 25 and 34. In the same year, young people in the European Union left their parental home on average at the age of 26.2 years. The age is the lowest in north and central European countries (the lowest was Sweden with 17.8 years) and the highest in southern and eastern Europe (the highest was Croatia with 31.8 years). This results in young adults still depending on their parents and being unable to become independent and start a life on their own. Some countries like Italy, are cutting housing taxes and help with mortgages for young adults who are buying their first home to tackle this problem (Eurostat, 2020a; Eurostat, 2020d; Eurostat, 2021e; The Local IT, 2021). Figure 10 shows estimated average age of young people leaving parental household in European Union from 2002 through 2020.

The key demographic factor related to home-leaving is household formation, particularly the formation of a partnership and entry to parenthood as well as whether they are anticipated by social norms. What is of structural importance here are household formation patterns or models. Not only are they integral parts of wider demographic processes and changes in modern societies, but they also imply the specific cultural settings, norms and beliefs that

surround family and habitual living arrangements transitioning to adulthood and to an independent household. Mandič (2008) sorted countries into three clusters regarding their age of leaving parental home and becoming parents themselves. The first is the "north-western cluster", consisting of 10 countries (Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, the Netherlands, Sweden and the United Kingdom), that are in geographical terms mostly located in the north-western part of the European Union. The second is the "south-western cluster", consisting of nine countries (Cyprus, Greece, Hungary, Ireland, Italy, Luxembourg, Portugal, Slovenia and Spain), predominately located in the south-western parts of the European Union. Third is the "north-eastern" cluster, consisting of five countries (Estonia, Latvia, Lithuania, Poland and Slovakia), predominantly located in the north-eastern part of the European Union. It should be noted that the names for the clusters are only provisional – the western or eastern distinction, often implying a major symbolic load, is used here only in geographic terms.

Figure 10: Estimated average age (in years) of young people leaving the parental household by sex in European Union from 2002 through 2020



Source: Eurostat (2020a).

The north-western group of European countries constitutes the first cluster, demonstrating the best opportunity structures for independent housing in terms of all components of the welfare mix – welfare state provisions, the well-functioning market, a relatively strong support by the family and coupled with late parenthood. This constellation of structural factors results in the earliest home-leaving. The second, the south-western cluster is characterized by another constellation: somewhat less favorable opportunity structures for independent housing, with specifically scarce social rented housing and distinctively frequent family support, coupled with extremely late parenthood. This constellation results

in extremely late leaving of the parental home. Finally, the north-eastern cluster is marked by the earliest parenthood and by outstandingly unfavorable opportunity structures in terms of all components of the welfare mix – market conditions with high unemployment rates and underdeveloped private rented sector, strikingly low family support and seriously retrenched expenditure for social protection, with social rented housing as the only component that escaped the bottom comparative position. This constellation results in late, although not extremely late, home-leaving (Mandič, 2008).

From her studies we can see a correlation between housing affordability for young people and age of women at birth of the first child. This indicates that poor housing affordability affects demographic characteristic of a country on long-term. Women in the European Union appear to be having fewer children while they are young, and more children later. While the fertility rates of women aged less than 30 in the European Union have declined since 2001, those of women aged 30 and over have risen. In 2001, the fertility rate of women aged 25-29 years old was highest among all the age groups. In 2019, the fertility rate of women aged 30-34 became the highest. The fertility rate at ages higher than 35 is also rising. In 2019, the total fertility rate in the European Union was 1.53 live births per woman. The lowest total fertility rates in 2019 were recorded in Malta (1.14 live births per woman), Spain (1.23 live births per woman), Italy (1.27 live births per woman), Cyprus (1.33 live births per woman), Greece and Luxembourg (both 1.34 live births per woman) (Eurostat, 2021c). Five of these countries Mandič (2008) placed into south-western cluster (Malta was excluded from Mandič research) with highest age of women at birth of first child considering housing affordability situation (Mandič, 2008).

4 HOUSING AFFORDABILITY IN CAPITAL CITIES OF EUROZONE

In this chapter, we will research housing affordability of capital cities in Eurozone. We decided to focus on capital cities only, because theoretical part of this thesis showed us, urban areas have higher possibilities for housing affordability issues. As mentioned in the previous chapter urbanization is on the rise, productivity is the highest in the centers of agglomeration and people migrate to cities for work opportunities. Divide between rural and urban areas makes us believe, cities are almost like an oasis, where both perks and problems are potentiated. Since capital cities are also the biggest cities in all countries of Eurozone, we chose to compare the latter. Firstly, we will describe methodology of our research and limitations we faced. Secondly, we will compare our findings and draw conclusions.

4.1 Methodology

In our in-depth comparison we will take a closer look at housing prices in capital cities in Eurozone. We focused on Eurozone and not the whole European Union, to lose valuation

aspect since currency exchange rates of European Union countries who have not adopted euro, change on a daily basis. Since available data was yearly average, we faced question of which exchange rate to take into consideration. Should we take yearly average? Should we take monthly average of the month the data was posted? There was also limited data available and even this data was available for different time periods, sometimes even different years (more on this in limitations). Because of data limitations and additional layer of non-comparison different exchange rates would give, we compared Eurozone countries only.

The next important decision we had to make, was whether we should compare countries' average housing prices and rents, but research done in previous chapters showed us that prices can vary greatly between country's regions and cities. It also showed us that urban areas are those with the most opportunities for a better life and consequently more and more people decide to move there. Therefore, we focused on housing affordability in urban areas and since in all Eurozone countries the biggest city is also the capital, we compared the latter.

We included buying and renting housing prices in comparison. Homeownership is not possible for everyone and theory showed us there is a higher demand for rental dwellings in recent years, especially in urban areas. We compared affordability for an individual (single person without children earning 100% of the average earning) and family (two-earner couple with two children, both earning 100% of an average earning). Most housing affordability research we came across never considered individuals, so we decided to "fill" this gap. We had young adults in mind at the start of their careers who are single and want to live on their own. Since an individual and a family of four do not have the same space requirements, we set base square footage needed for each group. We have not found any European standard of minimal square footage needed for adequate living conditions (for example per number of people in household), therefore based on the data we found in literature (Breach, 2020; Nađ & Podlogar Kos, 2017; Park, 2017 and Sozialreferat - Amt für wohnen und migration, 2017) we estimated and set base square footage we worked with at 35 square meters for an individual and at 85 square meters for a family of four.

When comparing renting housing prices, we calculated monthly housing cost (excluding utility costs) for previously set square footages for each group and calculated what percentage of monthly net earnings it represents. We omitted one-time costs like real estate agency fees, security deposit, moving costs, furnishing costs… Nonetheless, we have to keep in mind, that one-time and utility costs raise the price of rental housing.

When comparing buying housing prices, we developed a financing scenario. We chose a 30-year residential loan with a down payment. We adjusted the amount of down payment for each capital according to Hypostat's (2018, 2019 and 2020) loan to value data presented in Table 2 (amount of down payment is calculated as "(100% - loan to value)*total housing

value"). For capitals that data on loan to value was not available, we estimated down payment of 20% of total housing value since it was the most common.

Table 2: Loan to value (in %) for capitals of Eurozone for observed year

Country	Capital	Abbreviation	Year	LTV
Austria	Vienna	AT	2019	60
Belgium	Brussels	BE	2018	80
Cyprus	Nicosia	CY	2018	80
Estonia	Tallinn	EE	2018	85
Finland	Helsinki	FI	2019	80
France	Paris	FR	2017	86
Germany	Berlin	DE	2017	78
Greece	Athens	GR	2018	N/A
Ireland	Dublin	IE	2018	80
Italy	Rome	IT	2018	N/A
Latvia	Riga	LV	2018	90
Lithuania	Vilnius	LT	2018	80
Luxemburg	Luxemburg	LU	2017	80
Malta	Valletta	MT	2018	73
Netherlands	Amsterdam	NL	2017	N/A
Portugal	Lisbon	PT	2017	90
Slovakia	Bratislava	SK	2018	70
Slovenia	Ljubljana	SI	2018	60
Spain	Madrid	ES	2018	80
Eurozone		EZ		78

Adapted from European Mortgage Federation (2018); European Mortgage Federation (2019); European Mortgage Federation (2020).

We used Hypostat's (2020) annual average interest rates in our calculation. Just as in rental housing prices comparison, we then calculated monthly housing or mortgage cost (excluding utility costs) for previously set square footages for each group and calculated what percentage of monthly net earnings it represents. We omitted one-time costs like down payment, mortgage origination fee, real estate agency fees, notary expenses… Same as in rental housing prices comparison, we have to keep in mind, that one-time and utility costs raise the buying price of housing.

From the data we used in our research, we also calculated Eurozone's average loan to value, buying and renting housing prices, net average earnings, interest rate… We used this as a benchmark in our comparison. To calculate housing affordability, we used the ratio income approach, meaning we calculated what percentage of net earnings households spend on housing costs. To present our housing affordability results, we used Eurostat's (2014) housing cost overburden rate as a selected indicator and guidance threshold. We cannot apply housing cost overburden rate to our results directly, since we are using average price

and rent data in our comparison and not actual household data, and net earnings instead of disposable income.

All the data we used in our comparison (along with references) is available in the continuation of this chapter and in appendices.

4.2 Limitations

As we dig deeper into data available, we found quite a few limitations that disabled or posed limitations for detailed comparison. We had to take these limitations in consideration when planning our methodology, since a more complex model would give us even less comparable data. Below we describe limitations we found and how we adjusted our methodology.

4.2.1 Available data is limited

Even though housing affordability is a hot topic in recent years there sadly is not a lot of data available. Countries gather housing prices data on their own, since Eurostat does not (Eurostat only holds information about housing price index). European Union as a whole, does not have a platform where statistical data about housing prices would be available. Therefore, we could not find fully comparable data (we will explain later in the chapter, why our data is not fully comparable) from an official European Union source. We used data from unofficial website called Global Property Guide (2021), which lists buying and renting housing prices (along with other data) for countries around the world. Since data is scarce our comparison will be done for year 2018, as more recent data was not available.

4.2.2 Data is available for different time periods

Global Property Guide (2021) states buying and renting housing prices at a certain point in time (usually for a year). The website does not have an option to look at historical data, but only has the latest data available. This sometimes results in data being available for different time periods and therefore not comparable. Example of this would be Vienna (Austria) and Paris (France). Latest data available for Vienna is from year 2019, but the latest data available for Paris is from 2017. This makes it hard to compare housing affordability between them, since we are comparing at different points in time. For most of the Eurozone capitals data is available for 2018 (12 out of 19 capitals). For capitals that we have data for either 2017 (5 out of 19 capitals) or 2019 (2 out of 19 capitals), we will use available data and take this limitation in consideration when drawing conclusions. In graphs capitals with data from 2017 will be marked with a star (*) and capitals with data from 2019 will be marked with two stars (**). For other capitals data is stated for 2018. This marking will be used throughout the whole chapter for all data (for example other input data like net earnings, since we had to compare net earnings from a year for which housing price was stated).

4.2.3 Data uses different units of measurement

Majority of data is stated as price per square meters for certain square footage (since price per square meters is different for small and large apartments). But there is inconsistency for which square footage price per square meters is stated. Example of this would be Amsterdam (Netherlands) and Bratislava (Slovakia). For Amsterdam the price per square meter is stated for 70 and 120 square meters, while for Bratislava price per square meters is stated for 40, 75, 120 and 200 square meters. Since we set our base square footage at 35 square meters for an individual and 85 square meters for a family, we would have to use the same price for both square footages in case of Amsterdam, but for Bratislava we would have different price as data is more detailed. Because of this, we calculated average price per square meter to "even" the error and used calculated price in our comparison.

For Lisbon (Portugal) data does not say for what square footage it is stated, so we assumed it is an average of prices and used it in our comparison.

There are also capitals for which prices are stated by districts and price difference among them can sometimes vary greatly. For example, stated buying price per square meter in 19th district in Paris (France) is roughly 7,000 euros, while price per square meter in 6th district is roughly 13,000 euros – the price almost doubles. In these cases, we calculated average price per square meter across all districts and used it in our comparison.

For some other capitals price is stated as a cost of the apartment as a whole and size is determined as 1-bedroom, 2-bedroom, 3-bedroom… (the same is true for Luxembourg, except that its price is also given as price per square meters). For these capitals we set square footages for each category (for 1-bedroom, 2-bedroom and so on) that we would use to calculate price per square meter. Set square footages were based on our research of housing offers at the time of making this thesis. Assumption we made was that apartment sizes in these capitals are the same or comparable, meaning 1-bedroom apartment in Dublin (Ireland) is roughly the same size as 1-bedroom apartment in Valletta (Malta).
Set square footages were as follows:

- Studio as 30 square meters,
- 1-bedroom as 40 square meters,
- 2-bedroom as 55 square meters,
- 3-bedroom as 70 square meters,
- 4-bedroom as 90 square meters,
- 5-bedroom as 120 square meters.

With set square footages above we were able to calculate price per square meter for given size. After that we calculated average price per square meter and used in our comparison.

For Luxembourg City data for rent per square meter was not available, but it was available for the whole country of Luxembourg. Since this was the only given data, we used it in our comparison as it would be stated for Luxembourg City. Global Property Guide (2021) states, that rental apartments in Luxembourg City are scarce and that the number of rental offers they found was too small to draw price conclusions for the whole city. Therefore, our assumption was that difference between rent prices in country of Luxembourg and Luxembourg City is minimal.

4.2.4 It is unknown whether rent prices include utility expenses

We do not know, if rental prices at Global Property Guide (2021) include monthly utility expenses. Sometimes, rental prices include monthly utility costs and therefore renter does not face any additional regular monthly costs for apartment use. In cases like this, rent prices are usually higher, since they include unlimited amount of utilities renter can use per month (by unlimited we understand rational amount per number of people in household). If data for monthly rent prices include monthly utility costs in some capitals included in our research, it is overvalued in comparison to data for monthly rent prices in the rest of capitals included in research. We conduct our research under assumption, that rent prices do not include utility expenses and that the latter represent additional costs on top of rent.

4.2.5 Average net earnings are given for a whole country

In our calculations and comparison, we used Eurostat's data (2021a) on average net earnings for an individual (single person without children earning 100% of the average earning) and family (two-earner couple with two children, both earning 100% of an average earning) for Eurozone countries. The data is given for countries as a whole, but to have a completely comparable data, we would need average net earnings in Eurozone capitals, since earnings are usually higher in capital cities than rural areas and sometimes even other urban areas (as mentioned in previous chapters, this is one of the incentives for migration to capital cities). Higher net earnings make housing more affordable, so we will keep this in mind when interpreting results.

4.2.6 Condition of the apartments is unknown

We do not know, if rent and buying prices at Global Property Guide (2021) are stated for new or used apartments or maybe a mixture of both. We do not know, if apartments are furnished, unfurnished or maybe partly furnished. If they are furnished, we do not know with what equipment and whether this equipment is standard or luxury. In the case of used apartments, we do not know if apartments are renovated and into what category they fit under energy performance certificate. In general, we do not know the amount of additional resources a household will need after renting or buying a dwelling to establish satisfactory

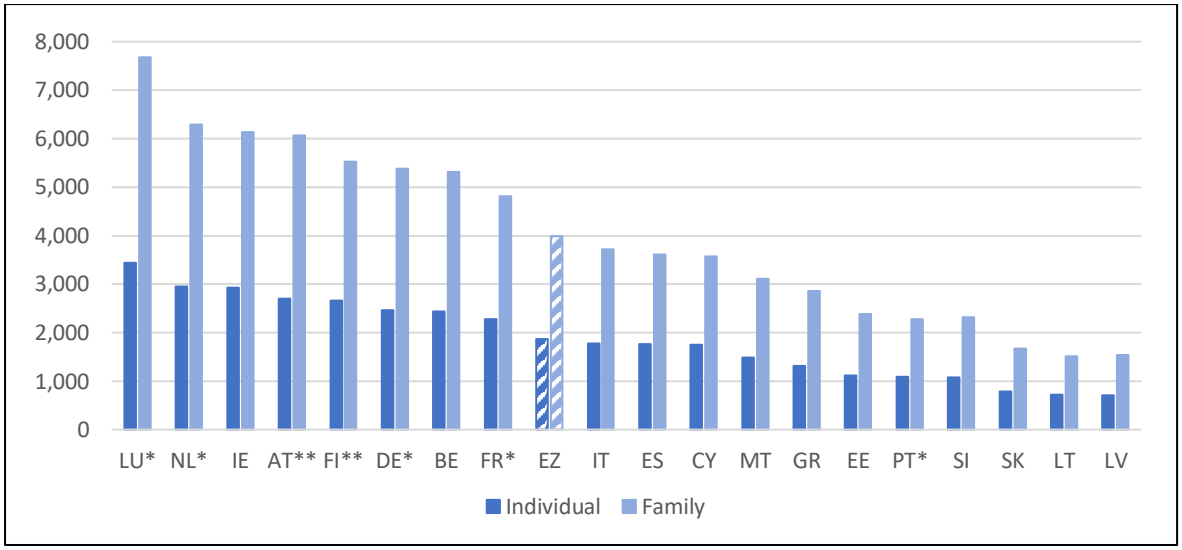
living conditions. Since our data was scarce, we neglected this limitation and worked under assumption that the apartments in capitals we compared are in the same condition. We understand, that this is a far-fetched assumption and that the condition of the apartment can have a big impact on its rent and price.

4.3 Comparison

In our comparison we used the ratio income approach for housing affordability. This means, we calculated and compared what percentage of net earnings households spend on housing costs in capitals of Eurozone. All data used in our comparison is available in the continuation of this chapter and in appendices.

Since we are using the income approach, let us take a look at monthly net earnings in Eurozone's countries presented in Figure 11 and Table 3.

Figure 11: Average monthly net earnings (in EUR) for countries of Eurozone in 2018[1]



Adapted from Eurostat (2021a).

Monthly net earnings for both individual and family were the highest in Luxembourg (3,445 euros for an individual and 7,679 euros for a family), Netherlands and Ireland. On the other hand, monthly net earnings were the lowest in Latvia (706 euros for an individual and 1,535 euros for a family), Lithuania (monthly net earnings for a family are even lower than in Latvia – 1,509 euros) and Slovakia.

[1] Data is from 2017 for countries marked with a star (*) and from 2019 for countries marked with two stars (**).

Table 3: Average net earnings (in EUR) for countries of Eurozone for observed year

				Annually		Monthly	
Country	**Capital**	**Abbreviation**	**Year**	**Individual**	**Family**	**Individual**	**Family**
Austria	Vienna	AT	2019	32,325.12	72,818.24	2,693.76	6,068.19
Belgium	Brussels	BE	2018	29,240.96	63,774.71	2,436.75	5,314.56
Cyprus	Nicosia	CY	2018	21,062.48	42,884.95	1,755.21	3,573.75
Estonia	Tallinn	EE	2018	13,437.69	28,564.99	1,119.81	2,380.42
Finland	Helsinki	FI	2019	31,970.67	66,337.99	2,664.22	5,528.17
France	Paris	FR	2017	27,314.33	57,713.99	2,276.19	4,809.50
Germany	Berlin	DE	2017	29,562.73	64,591.09	2,463.56	5,382.59
Greece	Athens	GR	2018	15,712.76	34,335.28	1,309.40	2,861.27
Ireland	Dublin	IE	2018	35,126.52	73,613.04	2,927.21	6,134.42
Italy	Rome	IT	2018	21,294.82	44,622.87	1,774.57	3,718.57
Latvia	Riga	LV	2018	8,474.82	18,419.32	706.24	1,534.94
Lithuania	Vilnius	LT	2018	8,691.07	18,102.13	724.26	1,508.51
Luxemburg	Luxemburg	LU	2017	41,340.39	92,151.41	3,445.03	7,679.28
Malta	Valletta	MT	2018	17,890.15	37,330.30	1,490.85	3,110.86
Netherlands	Amsterdam	NL	2017	35,426.38	75,568.76	2,952.20	6,297.40
Portugal	Lisbon	PT	2017	13,040.67	27,281.34	1,086.72	2,273.45
Slovakia	Bratislava	SK	2018	9,464.61	20,014.98	788.72	1,667.92
Slovenia	Ljubljana	SI	2018	12,902.38	27,872.25	1,075.20	2,322.69
Spain	Madrid	ES	2018	21,198.42	43,365.84	1,766.54	3,613.82
Eurozone		EZ[2]		22,393.52	47,861.24	1,866.13	3,988.44

Adapted from Eurostat (2021a).

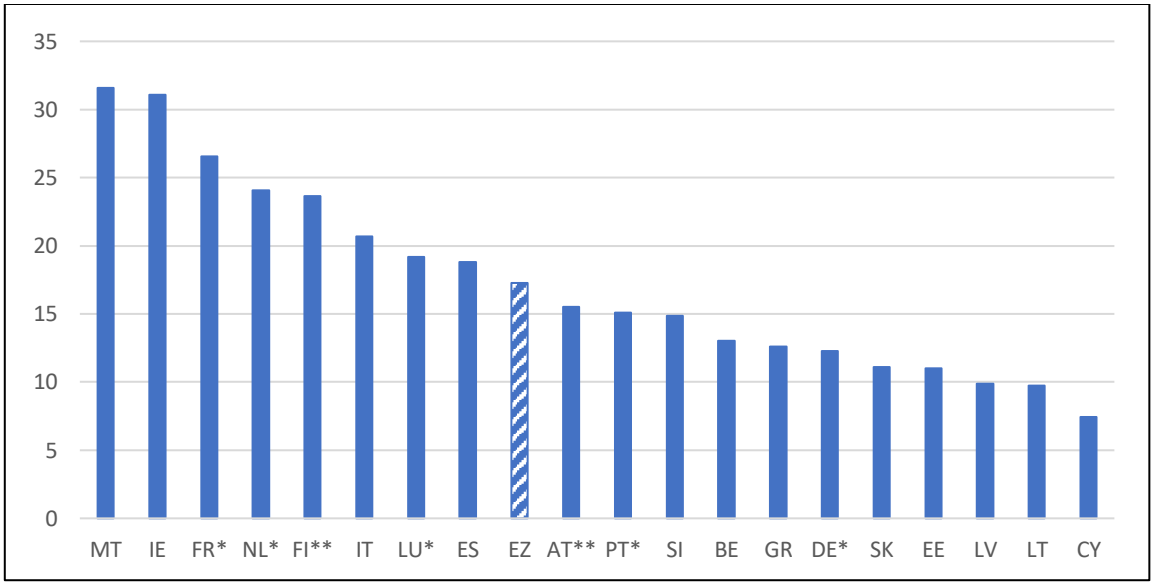
From Eurozone average we can notice, that family's net earnings were more than twice as high as individual's. This might seem unusual at first, since family in our case represents a two-earner couple with two children, both earning 100% of an average earning and an individual is defined as single person without children earning 100% of the average earning. Since both individual and family were earning 100% of the average earning, we would expect that family's net earnings would be exactly twice as high (because of a two-earner couple). This is not the case, because countries offer families with children child support payments or/and tax deductions, which results in net earnings of a family being more than twice as high as those of an individual.

From Figure 12 and Table 4, we can see, that monthly rent per square meter was the highest in Valletta (Malta) with 31.58 euros per square meter, Dublin (Ireland) and Paris (France). Monthly rent per square meter was the lowest in Nicosia (Cyprus) with 7.44 euros per square meter, Vilnius (Lithuania) and Riga (Latvia). Comparing it to monthly net earnings, it is

[2] Net earnings for Eurozone are calculated as arithmetic mean from Eurozone countries data. Figures for annual net earnings in Eurozone are different from those in Eurostat, since their data is weighted average by population size. Since all other Eurozone average data we used is calculated arithmetic mean, we also used it here to make data more comparable.

clear that monthly rent per square meter was not the highest or the lowest in the same capitals as the highest and the lowest monthly net earnings.

Figure 12: Average monthly rent per square meter (in EUR) of apartment for capitals of Eurozone in 2018[3]



Adapted from Global Property Guide (2021).

Table 4: Average monthly rent prices (in EUR) for capitals of Eurozone for observed year

				To rent		
Country	**Capital**	**Abbreviation**	**Year**	**Avg. price**	**35 m²**	**85 m²**
Austria	Vienna	AT	2019	15.50	542.43	1,317.33
Belgium	Brussels	BE	2018	13.03	456.05	1,107.55
Cyprus	Nicosia	CY	2018	7.44	260.40	632.40
Estonia	Tallinn	EE	2018	11.00	385.00	935.00
Finland	Helsinki	FI	2019	23.66	828.04	2,010.96
France	Paris	FR	2017	26.57	929.78	2,258.03
Germany	Berlin	DE	2017	12.29	430.12	1,044.58
Greece	Athens	GR	2018	12.58	440.40	1,069.54
Ireland	Dublin	IE	2018	31.08	1,087.83	2,641.87
Italy	Rome	IT	2018	20.71	724.72	1,760.03
Latvia	Riga	LV	2018	9.90	346.35	841.15
Lithuania	Vilnius	LT	2018	9.75	341.25	828.75
Luxemburg	Luxemburg	LU	2017	19.16[4]	670.74	1,628.94
Malta	Valletta	MT	2018	31.58	1,105.15	2,683.93
Netherlands	Amsterdam	NL	2017	24.06	841.93	2,044.68
Portugal	Lisbon	PT	2017	15.10	528.50	1,283.50

(table continues)

[3] Data is from 2017 for capitals marked with a star (*) and from 2019 for capitals marked with two stars (**).
[4] Price is for the whole country of Luxembourg. For more information, please see chapter limitations.

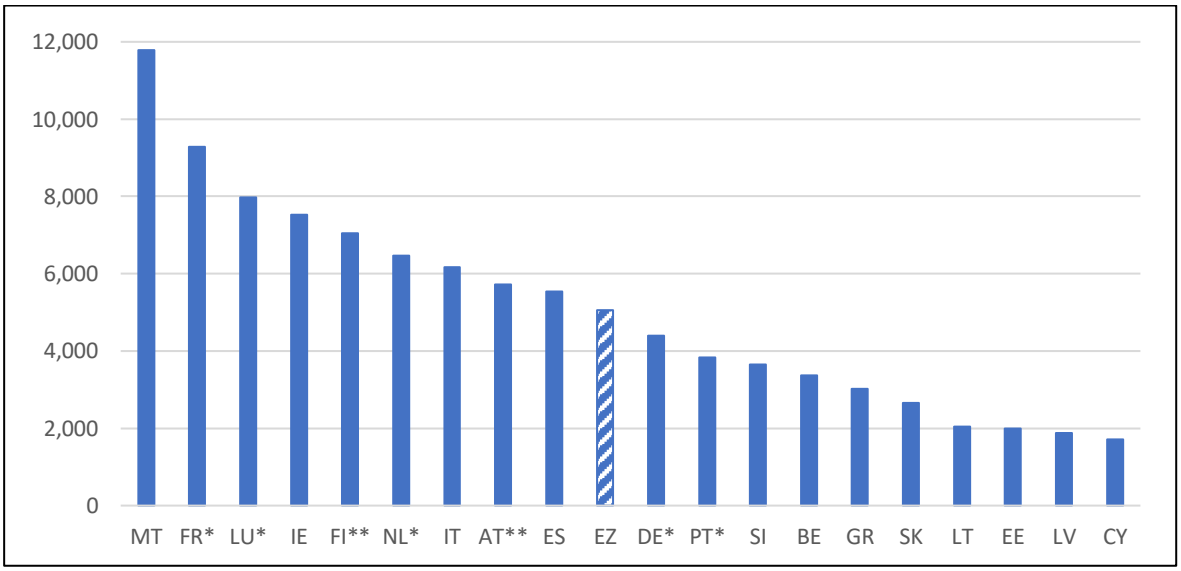
Table 4: Average monthly rent prices (in EUR) for capitals of Eurozone for observed year (continued)

				To rent		
Country	**Capital**	**Abbreviation**	**Year**	**Avg. price**	**35 m²**	**85 m²**
Slovakia	Bratislava	SK	2018	11.12	389.07	944.89
Slovenia	Ljubljana	SI	2018	14.86	520.10	1,263.10
Spain	Madrid	ES	2018	18.81	658.25	1,598.60
Eurozone		EZ		17.27	604.53	1,468.15

Adapted from Global Property Guide (2021).

While comparing the Figure 11 displaying monthly net earnings and Figure 12 displaying monthly rent per square meter, we noticed, there were some capitals earning below Eurozone average net earnings, while paying above Eurozone average rent and the other way around. Rome (Italy), Madrid (Spain) and Valletta (Malta) fit into the first category of earning below Eurozone average net earnings, while paying above Eurozone average rent. On the other hand, people living in Vienna (Austria), Berlin (Germany) and Brussels (Belgium) fall into the second category, since their net earnings were above and their rent was below Eurozone average.

Figure 13: Average price per square meter (in EUR) of apartment for capitals of Eurozone in 2018[5]



Adapted from Global Property Guide (2021).

From Figure 13 and Table 5 we can notice, that price per square meter was the highest in Valletta (Malta) with 11,781 euros per square meter, Paris (France), and Luxembourg City (Luxembourg) and the lowest in Nicosia (Cyprus) with 1,717 euros per square meter, Riga (Latvia) and Tallinn (Estonia). Just like when comparing monthly rent to square meter with monthly net earnings, we can see that capitals with the highest and lowest price per square meter were not those with the highest and lowest monthly net earnings.

[5] Data is from 2017 for capitals marked with a star (*) and from 2019 for capitals marked with two stars (**).

Table 5: Average buying prices (in EUR) for capitals of Eurozone for observed year

				To buy		
Country	**Capital**	**Abbreviation**	**Year**	**Avg. price per m^2**	**35 m^2**	**85 m^2**
Austria	Vienna	AT	2019	5,729	200,508	486,948
Belgium	Brussels	BE	2018	3,366	117,822	286,138
Cyprus	Nicosia	CY	2018	1,717	60,095	145,945
Estonia	Tallinn	EE	2018	1,987	69,529	168,857
Finland	Helsinki	FI	2019	7,054	246,888	599,584
France	Paris	FR	2017	9,287	325,054	789,416
Germany	Berlin	DE	2017	4,391	153,698	373,267
Greece	Athens	GR	2018	3,029	106,010	257,453
Ireland	Dublin	IE	2018	7,527	263,428	639,755
Italy	Rome	IT	2018	6,176	216,156	524,949
Latvia	Riga	LV	2018	1,878	65,734	159,641
Lithuania	Vilnius	LT	2018	2,044	71,540	173,740
Luxemburg	Luxemburg	LU	2017	7,982	279,353	678,428
Malta	Valletta	MT	2018	11,781	412,328	1,001,369
Netherlands	Amsterdam	NL	2017	6,466	226,293	549,568
Portugal	Lisbon	PT	2017	3,830	134,050	325,550
Slovakia	Bratislava	SK	2018	2,652	92,818	225,415
Slovenia	Ljubljana	SI	2018	3,649	127,715	310,165
Spain	Madrid	ES	2018	5,545	194,075	471,325
Eurozone		EZ		5,057	177,005	429,869

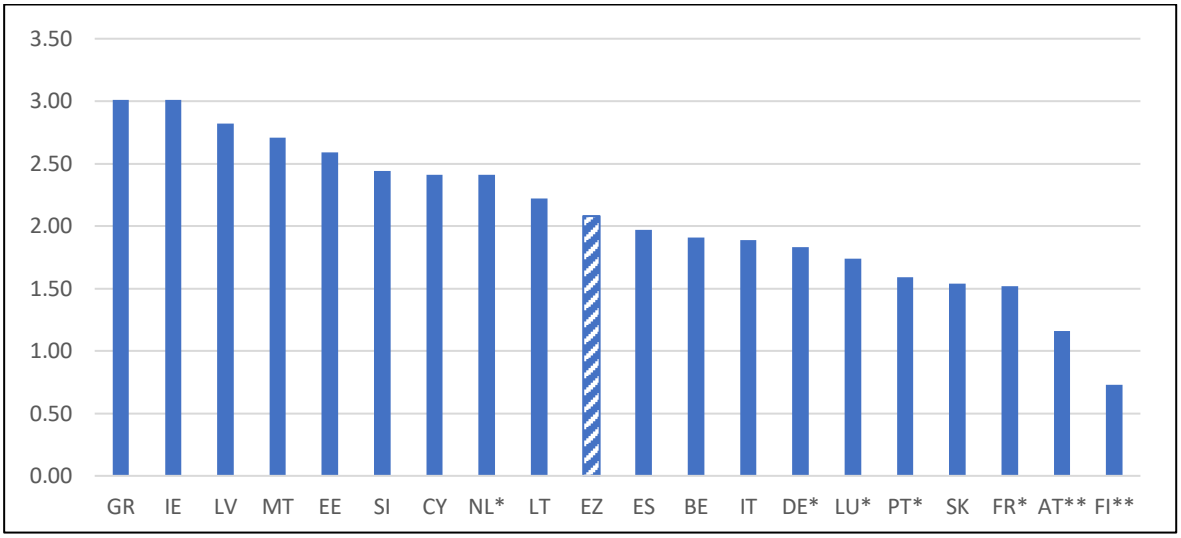
Adapted from Global Property Guide (2021).

While comparing Figure 11 displaying monthly net earnings and Figure 13 displaying price per square meter, we noticed, there were some capitals earning below Eurozone average net earnings, while paying above Eurozone average price per square meter and the other way around. Citizens of Valletta (Malta), Rome (Italy) and Madrid (Spain) faced above Eurozone average price per square meter, while earning below Eurozone average net earnings. On the other hand, net earnings in Berlin (Germany) and Brussels (Belgium) were above Eurozone average and price per square meter was below Eurozone average.

As mentioned in methodology, we developed a financing scenario for comparing buying housing prices. We chose a 30-year residential loan with a down payment adjusted for each capital according to its loan to value (please refer to Table 2). We used annual average interest rates in our calculation presented in Figure 14 and Table 6.

Eight out of 19 Eurozone countries had annual mortgage interest rate between 1.5% and 2%, 2 countries had interest rate lower than 1.5% and in others interest rate was higher than 2%. Finland had the lowest annual mortgage interest rate with 0.73%, while Ireland and Greece had the highest one with 3.01%. Since Finland's, Ireland's and Greece's interest rates differentiated much from Eurozone average, we wanted to know the reasons behind it.

Figure 14: Average annual mortgage interest rate (in %) for countries of Eurozone in 2018[6]



Adapted from European Mortgage Federation (2020).

Table 6: Average annual mortgage loan interest rates (in %) for countries of Eurozone for observed year

Country	Capital	Abbreviation	Year	IR
Austria	Vienna	AT	2019	1.16
Belgium	Brussels	BE	2018	1.91
Cyprus	Nicosia	CY	2018	2.41
Estonia	Tallinn	EE	2018	2.59
Finland	Helsinki	FI	2019	0.73
France	Paris	FR	2017	1.52
Germany	Berlin	DE	2017	1.83
Greece	Athens	GR	2018	3.01
Ireland	Dublin	IE	2018	3.01
Italy	Rome	IT	2018	1.89
Latvia	Riga	LV	2018	2.82
Lithuania	Vilnius	LT	2018	2.22
Luxemburg	Luxemburg	LU	2017	1.74
Malta	Valletta	MT	2018	2.71
Netherlands	Amsterdam	NL	2017	2.41
Portugal	Lisbon	PT	2017	1.59
Slovakia	Bratislava	SK	2018	1.54
Slovenia	Ljubljana	SI	2018	2.44
Spain	Madrid	ES	2018	1.97
Eurozone		EZ		2.08

Adapted from European Mortgage Federation (2020).

Main reason for low mortgage interest rate in Finland was that opposite to the rest of Europe, they prefer lower prices over security, meaning their mortgages usually have fluctuating

[6] Data is from 2017 for capitals marked with a star (*) and from 2019 for capitals marked with two stars (**).

interest rate and they carry the burden of market risk. Compared with the rest of Europe, Finland has a particularly high proportion of variable interest rate residential mortgage loans. As much as 97% of new loans are linked to Euribor (mostly to 12-month rate). Since interest rates were low in European Union in 2019, they benefited and paid the lowest interest in Eurozone. In the rest of Eurozone fixed interest rates were more common and borrowers paid a premium for that. This way, they had a sense of security knowing that their interest rate will not change, but hence paid higher interest (YLE, 2018; European Mortgage Federation, 2020).

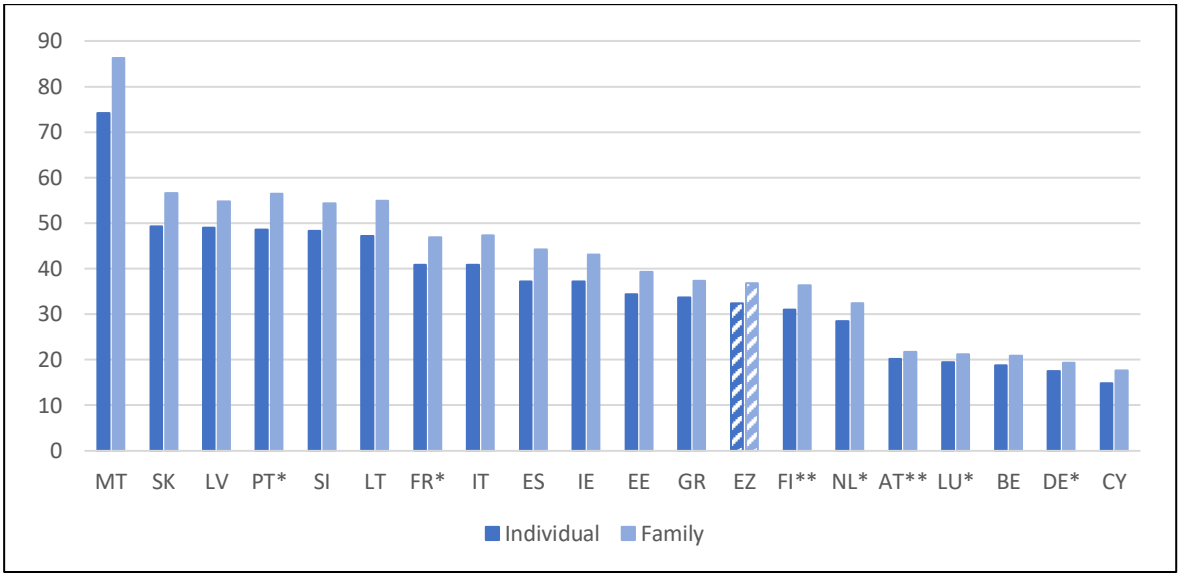
There were few reasons for high mortgage interest rates in Ireland and Greece, the most prevailing one being the amount of bad debt banks still had on their books from European debt crisis. Most of bad debt came from mortgage lending, so banks were still reluctant to lend. Irish and Greek banks also had to hold excess capital under European Central Bank policy, since one of the reasons they got into so much trouble in financial crisis was because, they did not hold enough capital to cover their loses. This consequently made lending more expensive and raised interest rates for consumers. As mentioned above, citizens of both countries also preferred fixed interest rate over a variable one, therefore paying a premium. Banks in Ireland and Greece also had problems with home repossessions on bad mortgages, making it riskier for them to lend (Cassidy, 2021; Hamilton, 2019; Hearne, 2021).

Until now we analyzed input data, now let us move to results on housing affordability we calculated according to our methodology.

Before looking at housing affordability in capitals of Eurozone, let us remind ourselves, that as our selected indicator we are using Eurostat's (2014) definition for overburdened households, which sets threshold at 40% of disposable income. Our input price and rent data is based on averages and cannot be applied to a household level, and at the same time we used net earnings instead of disposable income in our calculations. Because of this we will use household overburden rate only as a guidance threshold to present our results.

As shown in Figure 15 and Table 7, capitals where housing affordability was the lowest when renting an apartment are Valletta (Malta), Bratislava (Slovakia) and Riga (Latvia). In Valletta (Malta) individual on average spent 74% of monthly net earnings on monthly rent, while family on average spent 86%. Renting a dwelling was most affordable in Nicosia (Cyprus), Berlin (Germany) and Brussels (Belgium). In Nicosia (Cyprus) individual on average spent 15% of monthly net earnings on monthly rent, while family on average spent 18%.

Figure 15: Percentage of monthly net earnings households spent on monthly rent for capitals of Eurozone in 2018[7]



Source: Own work.

Table 7: Percentage of monthly net earnings households spend on monthly rent for capitals of Eurozone for observed year

				Affordability rent	
Country	**Capital**	**Abbreviation**	**Year**	**Individual**	**Family**
Austira	Vienna	AT	2019	20	22
Belgium	Brussels	BE	2018	19	21
Cyprus	Nicosia	CY	2018	15	18
Estonia	Tallinn	EE	2018	34	39
Finland	Helsinki	FI	2019	31	36
France	Paris	FR	2017	41	47
Germany	Berlin	DE	2017	17	19
Greece	Athens	GR	2018	34	37
Ireland	Dublin	IE	2018	37	43
Italy	Rome	IT	2018	41	47
Latvia	Riga	LV	2018	49	55
Lithuania	Vilnius	LT	2018	47	55
Luxemburg	Luxemburg	LU	2017	19	21
Malta	Valletta	MT	2018	74	86
Netherlands	Amsterdam	NL	2017	29	32
Portugal	Lisbon	PT	2017	49	56
Slovakia	Bratislava	SK	2018	49	57
Slovenia	Ljubljana	SI	2018	48	54
Spain	Madrid	ES	2018	37	44
Eurozone		EZ		32	37

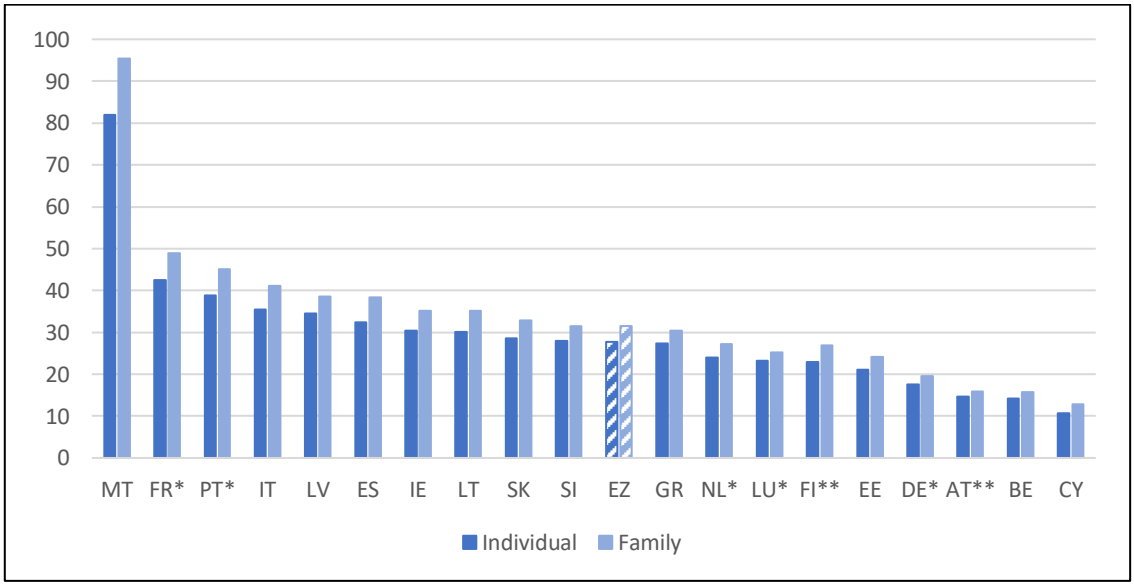
Source: Own work.

[7] Data is from 2017 for capitals marked with a star (*) and from 2019 for capitals marked with two stars (**).

We can see that according to our guidance threshold, an individual had on average higher possibility to be overburdened in 8 out of 19 capitals and family in 9 out of 19 capitals. We also have to keep in mind, that we were looking purely at renting cost, excluding utility costs and other one-time costs linked to renting an apartment (furnishing costs, deposit costs, real estate agency fees…). If we keep this in mind, we can say with some assurance, that on average individuals and families renting in capitals where according to our calculation percentage of average monthly net earnings spent on average monthly rent was between 35 and 40%, also possibly faced housing affordability issues. In this case, housing was on average potentially unaffordable in 9 out of 19 capitals for an individual and in 12 out of 19 capitals for a family. On average, an individual in Eurozone spent 32% of net earnings on rent per month, while family spent 37%.

In Figure 16 and Table 8, we will look at housing affordability when buying a dwelling in capitals of Eurozone. Buying an apartment was least affordable in Valletta (Malta), Paris (France) and Lisbon (Portugal), and most affordable in Nicosia (Cyprus), Brussels (Belgium) and Vienna (Austria). In Valletta (Malta) individual on average spent 82% of monthly net earnings on monthly mortgage annuity, while family on average spent 95%. In Nicosia (Cyprus) individual on average spent 11% of monthly net earnings on monthly mortgage annuity, while family spent 13%.

Figure 16: Percentage of monthly net earnings households spent on monthly mortgage annuity for capitals of Eurozone in 2018[8]



Source: Own work.

We can see that according to our guidance threshold, an individual had on average higher possibility to be overburdened in 2 out of 19 capitals and family in 4 out of 19 capitals. Just

[8] Data is from 2017 for capitals marked with a star (*) and from 2019 for capitals marked with two stars (**).

like when calculating housing affordability when renting a dwelling, we also omitted utility costs and one-time costs when calculating housing affordability when buying a dwelling. One of the biggest costs when buying an apartment is a mortgage down payment, that we did not take into account. Down payment, together with utility and other one-time costs (real estate agency fees, mortgage origination fee, furnishing and renovating costs…) raise monthly cost of housing. Because of this, we assume, that on average individuals and families buying an apartment in capitals where according to our calculation percentage of net earnings spent on mortgage annuity was between 35 and 40%, would also have high possibility of facing housing affordability issues. In this respect to our chosen guidance threshold, buying an apartment was potentially unaffordable in 5 out of 19 capitals for an individual and in 8 out of 19 for a family. On average in Eurozone, individual spent 28% of average monthly net earnings on monthly average mortgage payment, while family spent 32%.

Table 8: Percentage of monthly net earnings households spend on monthly mortgage annuity for capitals of Eurozone for observed year

				Affordability annuity	
Country	**Capital**	**Abbreviation**	**Year**	**Individual**	**Family**
Austria	Vienna	AT	2019	15	16
Belgium	Brussels	BE	2018	14	16
Cyprus	Nicosia	CY	2018	11	13
Estonia	Tallinn	EE	2018	21	24
Finland	Helsinki	FI	2019	23	27
France	Paris	FR	2017	43	49
Germany	Berlin	DE	2017	18	20
Greece	Athens	GR	2018	27	30
Ireland	Dublin	IE	2018	30	35
Italy	Rome	IT	2018	35	41
Latvia	Riga	LV	2018	35	39
Lithuania	Vilnius	LT	2018	30	35
Luxemburg	Luxemburg	LU	2017	23	25
Malta	Valletta	MT	2018	82	95
Netherlands	Amsterdam	NL	2017	24	27
Portugal	Lisbon	PT	2017	39	45
Slovakia	Bratislava	SK	2018	29	33
Slovenia	Ljubljana	SI	2018	28	31
Spain	Madrid	ES	2018	32	38
Eurozone		EZ		28	32

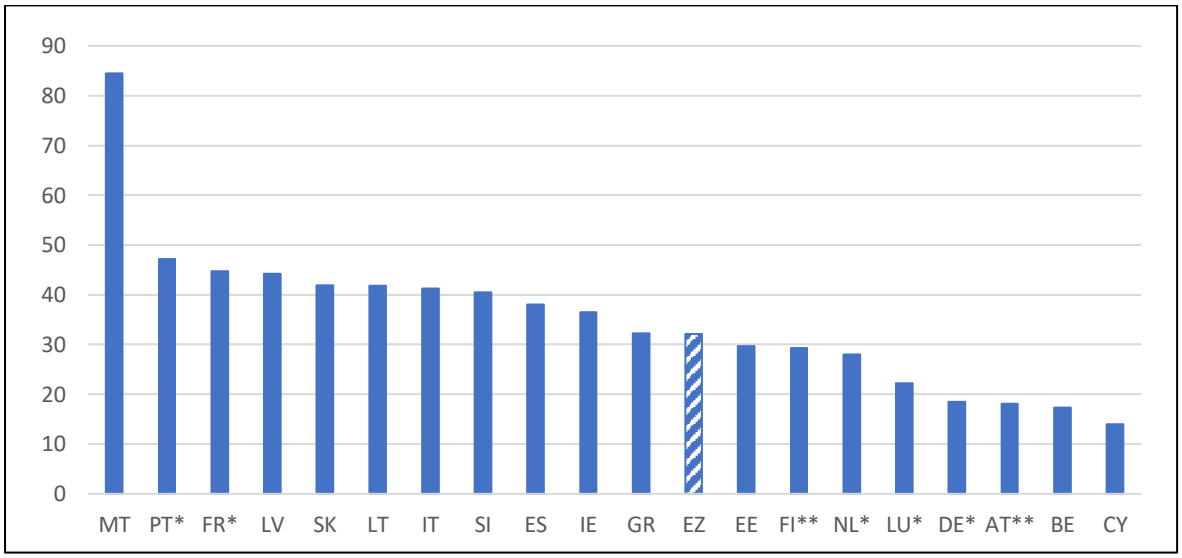
Source: Own work

.

4.4 Conclusion

When comparing average net earnings, rent and housing prices of capitals, we noticed indications for poor housing affordability in Rome, (Italy), Madrid (Spain) and Valletta (Malta). All of our assumptions were correct, since these capitals had or were close to having housing affordability issues in accordance with our chosen indicator, especially when it comes to buying. In case of Lisbon (Portugal), Paris (France), Riga (Latvia), Bratislava (Slovakia), Vilnius (Lithuania) and Ljubljana (Slovenia) it turned out these capitals probably faced housing affordability issues as well. We expected good housing affordability in Vienna (Austria), Berlin (Germany) and Brussels (Belgium), which in accordance to our guidance threshold, turned out to be true. In our research we found that housing is most affordable in Nicosia (Cyprus).

Figure 17: Average percentage of monthly net earnings households spent on monthly housing costs for capitals of Eurozone in 2018[9]



Source: Own work.

Our research presented in Figure 17 and Table 9 showed, that Valletta (Malta), Lisbon (Portugal), Paris (France), Riga (Latvia), Bratislava (Slovakia), Vilnius (Lithuania), Rome (Italy) and Ljubljana (Slovenia) had high possibility for housing affordability problem according to our selected indicator in this order respectively. Madrid (Spain) and Dublin (Ireland) still had affordable housing according to the guidance threshold we set, but since we did not include utility costs and one-time costs into our calculation, we assume, that people living and working there might face housing affordability issues. Housing was probably most affordable in Nicosia (Cyprus), Brussels (Belgium), Vienna (Austria), Berlin (Germany), Luxembourg City (Luxembourg), Amsterdam (Netherlands), Helsinki (Finland)

[9] Data is from 2017 for capitals marked with a star (*) and from 2019 for capitals marked with two stars (**).

and Tallinn (Estonia) respectively. On average, people in Eurozone spent 32% of their monthly net earnings on monthly housing costs.

Table 9: Average percentage of monthly net earnings households spend on monthly housing costs for capitals of Eurozone for observed year

Country	Capital	Abbreviation	Year	Average affordability
Austria	Vienna	AT	2019	18
Belgium	Brussels	BE	2018	17
Cyprus	Nicosia	CY	2018	14
Estonia	Tallinn	EE	2018	30
Finland	Helsinki	FI	2019	29
France	Paris	FR	2017	45
Germany	Berlin	DE	2017	18
Greece	Athens	GR	2018	32
Ireland	Dublin	IE	2018	36
Italy	Rome	IT	2018	41
Latvia	Riga	LV	2018	44
Lithuania	Vilnius	LT	2018	42
Luxemburg	Luxemburg	LU	2017	22
Malta	Valletta	MT	2018	84
Netherlands	Amsterdam	NL	2017	28
Portugal	Lisbon	PT	2017	47
Slovakia	Bratislava	SK	2018	42
Slovenia	Ljubljana	SI	2018	41
Spain	Madrid	ES	2018	38
Eurozone		EZ		32

Source: Own work.

We also discovered some indications that, renting an apartment was more affordable than buying it, but we have to keep in mind that we did not take into account the down payment, which is usually the biggest one-time expense when buying a dwelling and the biggest barrier to entry into homeownership for most people.

Results showed us, that housing was more affordable for an individual, than it was for a family. When renting an apartment, individual spent on average 32% of monthly net earnings on monthly rent, while family spent 37%. When buying an apartment, individual spent on average 28% of monthly net earnings on monthly mortgage annuity, while family spent 32%.

To conclude our research, in accordance with our methodology, selected indicator and guidance threshold, we identified 8 out of 19 capital cities of Eurozone in which we assume housing affordability issues existed in observed year. Results for 2 out of 19 capitals of Eurozone makes us think, there is a higher chance of housing affordability problem. Research showed us that housing was on average probably affordable in 9 out of 19 capitals.

As mentioned earlier, we cannot draw concrete conclusions about housing affordability, because of the nature of our input data. Majority of our data consisted on averages, which is too broad to apply at a household level. We also used net earnings instead of disposable income in our calculations. It is only clear some capitals' circumstances allow for less and some for more affordable housing.

In the end, let us take a closer look at housing affordability in Ljubljana (Slovenia) in comparison with other capital cities of Eurozone for observed year. Monthly average net earnings in Slovenia were the fourth lowest in Eurozone, with 1,075 euros for an individual and 2,323 euros for a family. Slovenia also had, together with Austria, the lowest loan to value of 60%, meaning its citizens needed a down payment of 40% of housing value. Down payment was therefore significantly higher in comparison with other Eurozone countries and Eurozone average. Average annual mortgage interest in Slovenia was 2.44%, which was the fifth highest of Eurozone member states. In Ljubljana average monthly rent per square meter was 14.86 euros (ninth lowest out of all Eurozone capitals) and buying price per square meter was 3,649 euros (eight lowest out of all Eurozone capitals). Ljubljana is the fifth capital according to percent of monthly net earnings people on average spent on monthly rent and tenth when applying monthly buying prices in the same ratio. On average people in Ljubljana spent 41% of their monthly net earnings on monthly housing costs, which puts it in eighth place in comparison with other Eurozone capitals.

5 HOUSING AFFORDABILITY IN LJUBLJANA (SLOVENIA) FROM 2008 THROUGH 2019

In this chapter, we will research housing affordability in Ljubljana (Slovenia) from 2008 through 2019. Firstly, we will describe our methodology and limitations. Secondly, we will compare our findings and draw conclusions.

5.1 Methodology

Since we used a static approach in our research on housing affordability in capital cities of Eurozone (we looked at housing affordability at a certain point in time), our research of housing affordability in Ljubljana (Slovenia) uses a dynamic approach (we will look at how housing affordability changed through time). According to the available data, our research was done from 2008 through 2019. Similarly to Eurozone comparison, we wanted to calculate housing affordability when buying and renting an apartment, but there was no official data available on renting prices (more on this in limitations), so our research only includes housing affordability when purchasing a dwelling. For average housing prices, we used data from Geodetic institute of Slovenia (2021) which issues annual reports on real estate market in Slovenia.

Same as in housing affordability in capitals of Eurozone research, we compared housing affordability for an individual (single person without children earning 100% of the average earning) and family (two-earner couple with two children, both earning 100% of an average earning). Since an individual and a four-member family do not have same space requirements, we had to set base square footage for both. We found "Rules on minimum technical requirements for the construction of appartement buildings and apartments" by Ministry of the Environment and Spatial Planning of Republic of Slovenia (2011), which sets square footage required according to the number of people in household. With the help of these rules, we set base square footage for an individual at 45 square meters and at 85 square meters for a family.

We had to develop a financing scenario to compare affordability when buying an apartment. We chose a 30-year residential loan with a down payment. We adjusted the amount of down payment for each observed year according to Bank of Slovenia's (2021) loan to value data presented in Table 10 (amount of down payment is calculated as "(100% - loan to value)*total housing value").

Table 10: Loan to value (in %) for Slovenia from 2008 through 2019

Year	LTV
2008	52
2009	56
2010	59
2011	58
2012	67
2013	70
2014	67
2015	58
2016	60
2017	60
2018	59
2019	55

Source: Bank of Slovenia (2021).

We used Hypostat's (2020) annual average interest rate in our calculation. We then calculated monthly housing or mortgage cost (excluding utility costs) for previously set square footages for each group and calculated what percentage of monthly net earnings it represents. We omitted one-time costs like down payment, mortgage origination fee, real estate agency fees, notary expenses… Nevertheless, we have to keep in mind, that one-time and utility costs raise the buying price of housing.

Just like before, we used the ratio income approach to calculate housing affordability, meaning we calculated what percentage of net earnings households spend on housing costs.

To present our housing affordability results, we used Eurostat's (2014) housing cost overburden rate as a selected indicator and guidance threshold. We cannot apply housing cost overburden rate to our results directly, since we are using average price data in our comparison and not actual household data, and net earnings instead of disposable income.

All the data we used in our comparison (along with references) is available in the continuation of this chapter and in appendices.

5.2 Limitations

As we started to dig deeper into available data, we found few limitations that disabled or posed limitations for detailed comparison. We had to take these limitations in consideration when interpreting results. Below we describe limitations we found and how they affect our comparison and results.

5.2.1 There is no official data available about rent prices

We wanted to compare buying and renting housing affordability, but were unable to find data about rent prices from an official source. We discovered, there is no agency or institute in Slovenia that would gather such data. Another problem is, that a lot of apartments for rent are not reported. People rent dwellings without contracts and do not report them to authority so they avoid paying taxes. Even if they rent them with a contract and report them, the price stated in the contract might not be the actual price the renter pays (renter usually pays higher price, than the one stated in the contract), since higher rent price means higher tax obligation for landlord. In the past Geodetic institute of Slovenia collected data on rents, but later stopped. Now data on rents is collected by Financial administration of the Republic of Slovenia, but it is undervalued (since landlords report lower than actual rent, because of taxation reasons mentioned above) and does not represent actual market rent paid by renter. Because of this, it is almost impossible to know, how many apartments in Ljubljana are for rent or rented and how much is their rent. Therefore, we were sadly unable to include rent affordability in our research and by this omitted many residents of Ljubljana and their housing situation.

5.2.2 Buying prices are only available for used apartments

As mentioned before, in our comparison we used housing prices published by Geodetic institute of Slovenia (2021), but these prices represent arithmetic mean of prices from second-hand apartments sold in a given year. These prices do not include new dwellings, which have also been sold in a given year and usually have higher price. We understand, that according to housing supply in Ljubljana, great majority of transactions happen on existing housing stock, nevertheless we have to keep in mind that housing prices we work with and

housing affordability we calculated end up being undervalued. We will keep this in mind when interpreting results.

5.2.3 Condition of the apartments are unknown

We do not know the condition of the apartments for which buying prices are stated at Geodetic institute of Slovenia (2021). We do not know, if apartments are furnished, unfurnished or maybe partly furnished. If they are furnished, we do not know with what equipment and whether this equipment is standard or luxury one. Since prices are stated for used apartments, we do not know if dwellings are renovated and into what category they fit under energy performance certificate. In general, we do not know the amount of additional resources a household will need after buying a dwelling to establish satisfactory living conditions. Since our data was scarce, we neglected this limitation and worked under assumption that the apartments are in the same condition for the entire time period in our research. We understand, that this is a far-fetched assumption and that the condition of the apartment can have a big impact on its price.

5.2.4 Average net earnings are given for a whole country

In our calculations and comparison, we used data on average net earnings from Statistical Office of the Republic of Slovenia (2021) for an individual (single person without children earning 100% of the average earning) and Eurostat's data (2021a) on average net earnings for a family (two-earner couple with two children, both earning 100% of an average earning) for Slovenia. Data for an individual was available for Ljubljana's cohesion and statistical region, meaning that this data was comparable with other input data applying to Ljubljana. Sadly, Statistical Office of the Republic of Slovenia (2021) only offers data on average net earnings for an individual but not for family. This is why, we used Eurostat's data on average net earnings for a family. This data is given for country as a whole, but to have a completely comparable data, we would need family's average net earnings in Ljubljana, since earnings are usually higher in capital cities than rural areas and sometimes even other urban areas (as mentioned in previous chapters, this is one of the incentives for migration to capital cities). Higher net earnings make housing more affordable, so we will keep this in mind when interpreting results.

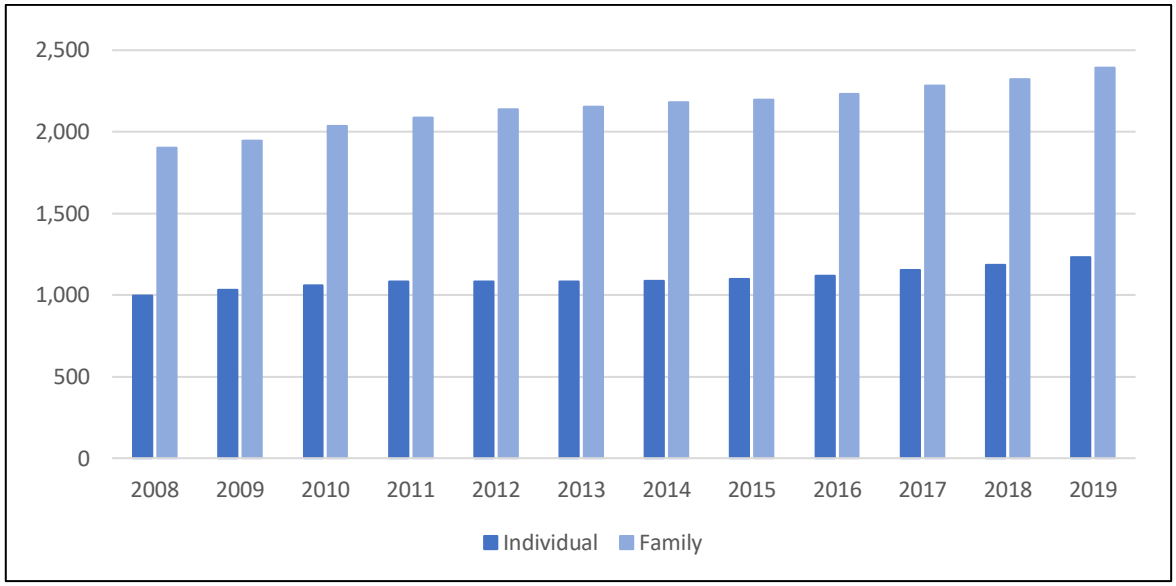
5.3 Comparison

We used the ratio income approach for housing affordability in our comparison. This means, we calculated and compared what percentage of net earnings households spent on housing costs in Ljubljana from 2008 through 2019. All the data we used in our comparison (along with references) is available in the continuation of this chapter and in appendices.

Since we are using the income approach, let us take a look at monthly net earnings in Slovenia from 2008 through 2019 presented in Figure 18 and Table 11.

We can see that average monthly net earnings steadily grew for about 24% for an individual in Ljubljana and 26% for a family in Slovenia from 2008 through 2019. For an individual monthly net earnings grew from 997 euros in 2008 to 1,231 euros in 2019 and for a family from 1,905 euros in 2008 to 2,394 euros in 2019.

Figure 18: Average monthly net earnings (in EUR) in Ljubljana and Slovenia from 2008 through 2019



Source: Eurostat (2021a); Statistical Office of the Republic of Slovenia (2021).

Table 11: Average monthly net earnings (in EUR) in Ljubljana and Slovenia from 2008 through 2019

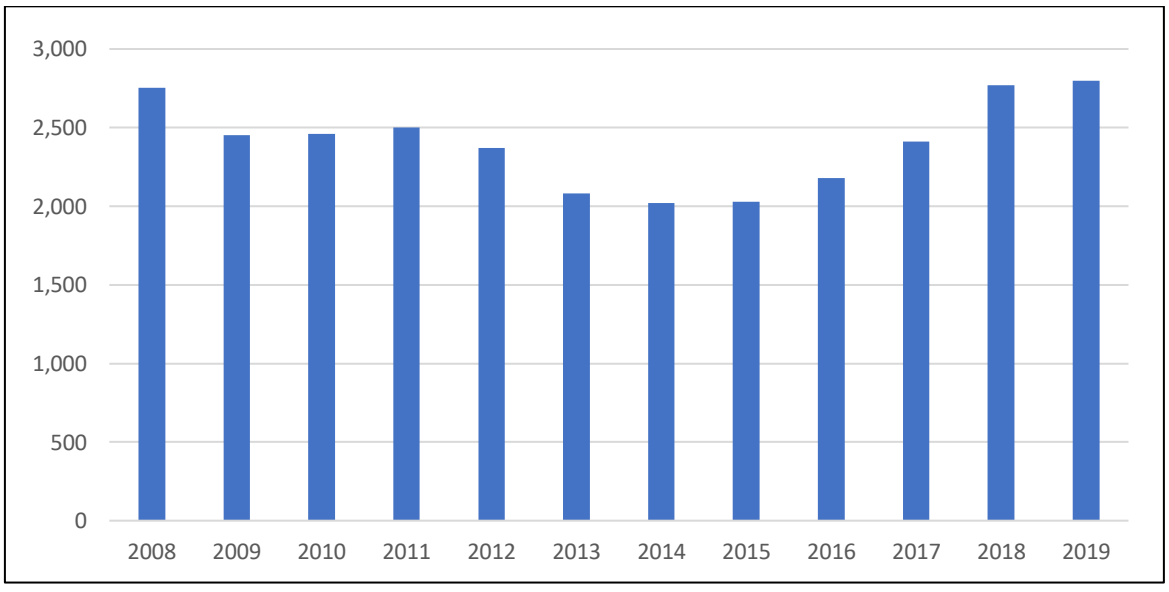
	Annually		Monthly	
Year	**Individual**	**Family**	**Individual**	**Family**
2008	11,961.72	22,856.87	996.81	1,904.74
2009	12,377.04	23,347.87	1,031.42	1,945.66
2010	12,727.08	24,429.97	1,060.59	2,035.83
2011	12,982.32	25,037.75	1,081.86	2,086.48
2012	12,991.08	25,672.04	1,082.59	2,139.34
2013	13,005.00	25,855.18	1,083.75	2,154.60
2014	13,056.24	26,191.52	1,088.02	2,182.63
2015	13,190.76	26,367.63	1,099.23	2,197.30
2016	13,416.72	26,793.42	1,118.06	2,232.79
2017	13,832.16	27,406.16	1,152.68	2,283.85
2018	14,215.08	27,872.25	1,184.59	2,322.69
2019	14,775.96	28,723.48	1,231.33	2,393.62

Source: Eurostat (2021a); Statistical Office of the Republic of Slovenia (2021).

We can also notice, that in most years family's average net earnings were more than twice as high as individual's. This might seem unusual at first, since family in our case represents a two-earner couple with two children, both earning 100% of an average earning and an individual is defined as single person without children earning 100% of the average earning. Since both individual and family were earning 100% of the average earning, we would expect that family's net earnings would be exactly twice as high (because of a two-earner couple). This is not the case, because Slovenia offers families with children child support payments and tax deductions, which results in net earnings of a family being more than twice as high as those of an individual. This trend is visible even when we are using data from different sources, since we have to keep in mind that data for family applies to Slovenia as a whole and is therefore undervalued as earnings in Ljubljana are higher than country average.

In Figure 19 and Table 12, presenting average price per square meter in Ljubljana from 2008 through 2019, we can see that price was the lowest in 2014 with 2,020 euros per square meter and the highest in 2019 with 2,800 euros per square meter. Looking at average price per square meter of apartments in Ljubljana from 2008 through 2019, we can see there was no trend in price change. Price per square meter fell from 2008 through 2015, which is aftermath of subprime mortgage crisis in 2008 and European debt crisis with its peak from 2010 through 2012. Price per square meter grew from 2016 through 2019, which is a result of economic growth in Slovenia in those years, together with higher urbanization in Ljubljana, main reason for it being more job opportunities in comparison to the rest of Slovenia. In 2018 and 2019 average price per square meter ended being higher than before crisis in 2008.

Figure 19: Average price per square meter (in EUR) of second-hand apartments in Ljubljana from 2008 through 2019



Source: Geodetic institute of Slovenia (2021).

Table 12: Average price per square meter (in EUR) for second hand apartments in Ljubljana from 2008 through 2019

Year	Price per m^2	45 m^2	85 m^2
2008	2,755	123,975	234,175
2009	2,450	110,250	208,250
2010	2,460	110,700	209,100
2011	2,500	112,500	212,500
2012	2,370	106,650	201,450
2013	2,080	93,600	176,800
2014	2,020	90,900	171,700
2015	2,030	91,350	172,550
2016	2,180	98,100	185,300
2017	2,410	108,450	204,850
2018	2,770	124,650	235,450
2019	2,800	126,000	238,000

Adapted from Geodetic institute of Slovenia (2021).

In Figure 20 and Table 13 we can notice that average annual mortgage interest rate in Slovenia lowered from 2008 through 2019. It was the highest in 2008 with 6.73% and the lowest in 2016 with 2.33%. Nevertheless, mortgage interest rate in Slovenia was higher than in majority of countries in Eurozone (as we saw in the previous chapter). There were several potential reasons behind it like: the stability of the macroeconomic environment, the banks' average funding costs, bond funding, the average original maturity of housing loans and the fixation period, the level of competition on the banking market, the differing risk profiles of individual loan, type and level of collateral for housing loan, differences in regulatory regime, the fiscal framework, existence of housing schemes supported by the government, possibility that in countries with lower interest rate banks charge higher non-interest fees, the effectiveness of the judicial system (the recovery rate), expectations regarding the evolution of residential real estate prices… (Bank of Slovenia, 2019).

Table 13: Average annual mortgage loan interest rates (in %) in Slovenia from 2008 through 2019

Year	Annual Interest Rate
2008	6.73
2009	4.45
2010	3.34
2011	3.77
2012	3.37
2013	3.20
2014	3.21
2015	2.53
2016	2.33
2017	2.50

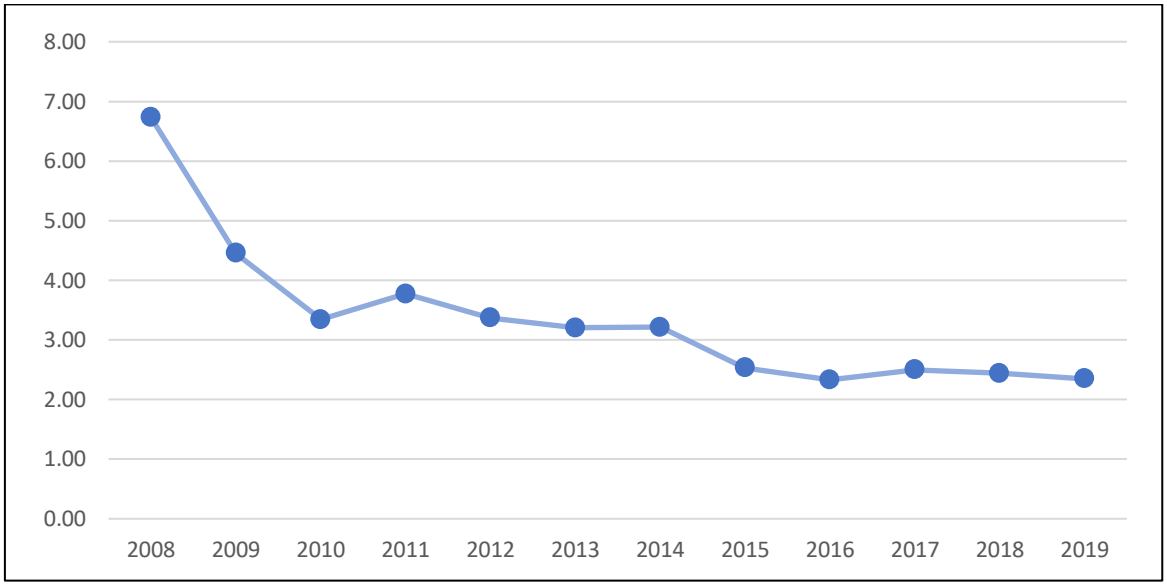
(table continues)

Table 13: Average annual mortgage loan interest rates (in %) in Slovenia from 2008 through 2019 (continued)

Year	Annual Interest Rate
2018	2.44
2019	2.35

Source: European Mortgage Federation (2020).

Figure 20: Average annual mortgage interest rate (in %) in Slovenia from 2008 through 2019



Source: European Mortgage Federation (2020).

Until now we analyzed input data, now let us move to results on housing affordability we calculated, according to our methodology.

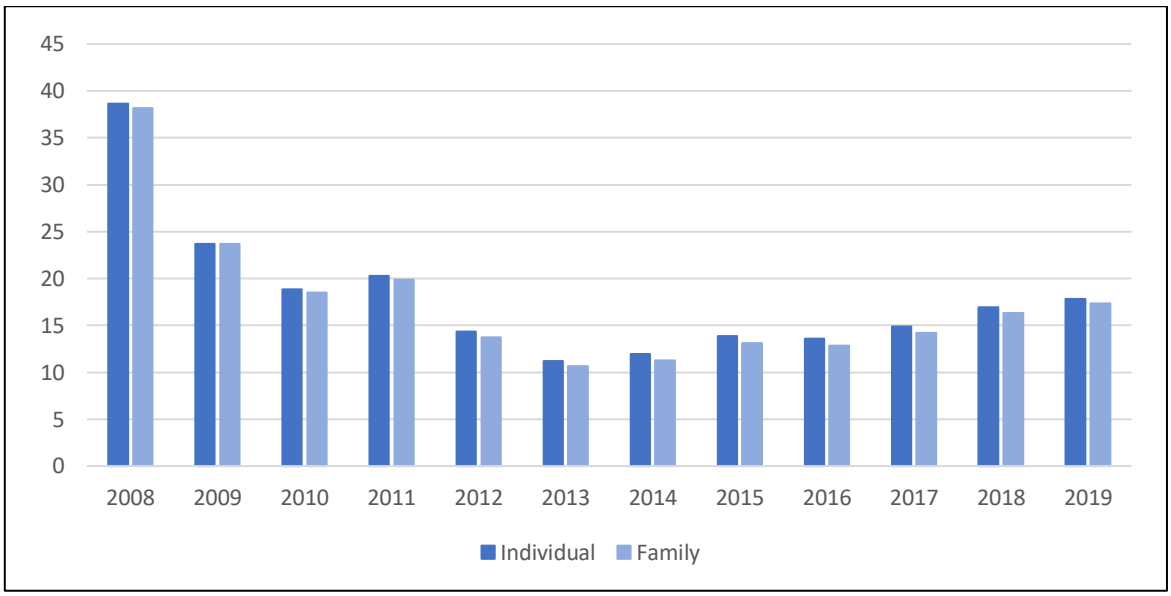
Before looking at housing affordability in Ljubljana, let us remind ourselves, that as our selected indicator we are using Eurostat's (2014) definition for overburdened households, which sets threshold at 40% of disposable income. Our input price data is based on averages and cannot be applied to a household level, and at the same time we used net earnings instead of disposable income in our calculations. Because of this we will use household overburden rate only as a guidance threshold to present our results.

We can see from Figure 21 and Table 14, that apartments were most affordable in 2013 and least affordable in 2008 for both individual and family. In 2008 on average an individual spent 39% of monthly net earnings on monthly mortgage annuity, while in 2013 on average monthly mortgage annuity represented 11% of monthly net earnings for an individual. On average family spent 38% of their monthly net earnings on monthly mortgage annuity in 2008 and 11% in 2013. In none of the observed years, the calculated percentage of average monthly net earnings that individual or family spent on average monthly mortgage annuity exceed 40%, which was our guidance threshold. We can see, housing became more

affordable from 2008 through 2013 (with the exception of 2011, when housing got less affordable in comparison with 2010). From 2013 through 2019 there was a trend of housing becoming less affordable, but not coming close to 2008 levels, when housing was least affordable.

Our calculations also showed, that an apartment was more affordable for a family than for an individual, which is opposite of what our research of housing affordability in capital cities in Eurozone showed for Ljubljana. We believe the reason for this is difference in the methodology of research. It is visible from our results, that families find housing more affordable in Ljubljana even as our data for family's average net earnings is undervalued (as mentioned earlier).

Figure 21: Percentage of monthly net earnings households spent on monthly mortgage annuity for Ljubljana from 2008 through 2019



Source: Own work.

Table 14: Percentage of monthly net earnings households spend on monthly mortgage annuity in Ljubljana from 2008 through 2019

	Affordability annuity	
Year	**Individual**	**Family**
2008	39	38
2009	24	24
2010	19	19
2011	20	20
2012	14	14
2013	11	11
2014	12	11
2015	14	13

(table continues)

Table 14: Percentage of monthly net earnings households spend on monthly mortgage annuity in Ljubljana from 2008 through 2019 (continued)

	Affordability annuity	
Year	**Individual**	**Family**
2016	14	13
2017	15	14
2018	17	16
2019	18	17

Source: Own work.

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5.4 Conclusion

Looking at average percentage of monthly net earnings households spent on monthly mortgage annuity in Ljubljana we can see, that according to our selected indicator housing was on average probably affordable from 2008 through 2019. Housing was least affordable in 2008 and most affordable in 2013. Affordability was improving until 2013, when it started decreasing all through 2019. In our selected time period, families on average found housing more affordable than individuals.

Nevertheless, we have to keep in mind limitations of our data and methodology. We did not include monthly utility expenses and one-time costs in our calculations, which lowers housing affordability of a household. According to loan to value for Slovenia from 2008 through 2019 (please refer to the Table 9), it is obvious that down payment is the biggest one-time expense households face. As we saw in our research of housing affordability in capital cities in Eurozone, Slovenia has one of the lowest loan to value out of all countries. Even though housing in Ljubljana might seem affordable on average, according to our selected indicator, we have to keep in mind the extensive amount of resources need for down payment. Our data also did not include prices of new dwellings that rise average price per square meter and though negatively impact housing affordability.

In conclusion, right off the bat it looks like Ljubljana probably did not face housing affordability issues in the years included in our research. But at a closer look we can notice some potential indicators (like rising housing prices, high interest rate, low loan to value…) that make it seem like Ljubljana might have faced some housing affordability challenges from 2008 through 2019 and that if this trend continues will likely face housing affordability issues in the future.

6 POSSIBLE MEASURES TO IMPROVE HOUSING AFFORDABILITY

In this chapter we discuss possible measures to improve housing affordability in Europe. We present them in two categories as measures affecting housing demand and measures affecting housing supply.

6.1 Measures affecting housing demand

6.1.1 Do not favor homeownership over renting

Better-targeted, tenure-neutral allowances could help achieve the goals of affordable housing. Tax relief directed at homeowners and home buyers is expensive, the cost of which often outweighs all other spending on housing. Moreover, it is also concentrated in the top half of the income distribution, making it ineffective at ensuring housing affordability for those who need it the most (we talked about mortgage inaccessibility problem in previous chapter). A move away from tax and benefit policies that incentivize homeownership toward housing benefits and allowances that are portable and based on income regardless of homeownership status would improve housing affordability. Generally, striking the right balance between tenant and landlord incentives is important. For instance, creating security of tenancy and avoiding market segmentation between existing and new tenants while ensuring landlords' property rights can help mitigate rental market inefficiencies and correct for market failures without contributing to housing market imbalances (Inchauste, Karver, Kim, & Jelil, 2018).

6.1.2 Stop treating housing as a tradable asset

Rather than a fundamental right to be guaranteed for all, housing has increasingly been considered simply as a market to make profits. Through speculative acquisitions some investors treat housing as a tradeable asset (we talked about buy to leave problem in the previous chapter). This has a dramatic effect on prices. Governments need to fight speculation and vacancy through taxation measures and sustainable urban planning. Action can be also be taken at European Union level by looking into the impact banking and finance rules have on this trend, putting transparency tools in place for real estate transactions and ownership (Sparrentak, 2021).

6.1.3 Encourage job creation in less developed regions

Governments should encourage companies to move or open subsidiaries in less developed regions. They could do this by incentives, tax deductions and investment in infrastructure. This would lower spatial inequality in the country, since job opportunities would be more

equally distributed. Less people would move into cities and centers of agglomeration for work, where housing is more expensive.

6.2 Measures affecting housing supply

6.2.1 Create enabling conditions to allow housing supply to expand

Policy makers on local, national and regional level should reduce the housing supply barriers. Overly restrictive land-use and development regulation constraints housing growth and drives up prices. Cities could encourage new construction or the redevelopment of existing structures by permitting appropriate floor-space ratios, building heights and density in specific target zones. They could also smooth their processes to speed up land-use approval and permitting, creating a more predictable and less burdensome process (Inchauste, Karver, Kim, & Jelil, 2018).

Housing reforms should focus on two groups: planners and homeowners. In many countries local governments assume the position of planners. They must deal with the downsides of extra houses – the need to provide more school places, for instance. Yet they do not often reap the gains in the form of a bigger tax base, since the majority of taxes in rich countries accrue at the national level. This creates large disincentives to allow housing development. One solution is to take power from local bureaucrats and another involves incentivizing local authorities to become more development-friendly. Reforms focused on homeowners may prove even more powerful. The main reason for the long-run decline in housebuilding relates to rising homeownership. More people on the property ladder means more voters with an interest in rising prices and consequently a political system that becomes hostile to development. One incentive would be for existing residents to share the benefits of more housebuilding. A street would vote to put extra floors on its houses or even rebuild with more homes, and would keep the biggest share of the profits accruing from the value of existing houses rising or from the sale of the new properties. Another idea is that homeowners could take out "home-equity insurance", which would pay out in the event of falling house prices (Economist, 2021).

Countries should make a priority improving property rights and the land administration system. Governments could emphasize strategic investment projects in greenfield housing and transportation to facilitate commuting to the centers of economic activity. They could also earmark unused public lands for housing development, while cities can identify sites that are underutilized and provide incentives for development. Removing barriers to housing supply also requires developing governance structures that represent all stakeholders and streamline execution. Housing strategies involve policies across financing, urban planning, infrastructure development, land use regulation, building codes, delivery and contracting approaches (Inchauste, Karver, Kim, & Jelil, 2018).

Governments should also promote a favorable framework to boost competitiveness and support sustainable growth in construction sector. The sector could contribute significantly to job creation by increasing its activity in some very promising areas, such as the renovation of buildings and in infrastructure, with support through, for example, appropriate policies to promote demand but also to encourage investment. Ensuring efficient coordination mechanisms across these tasks is critical (European Commission, 2012).

6.2.2 Investment in affordable and social housing

There is an investment gap in affordable and social housing of 57 billion euros per year in the European Union. Over the last decade, the share of social housing has decreased in most member states. Investment in affordable, social and energy-efficient housing should be a priority for all member states and European Union as a whole. The European Union's new fiscal rulebook should also create space for more public investments, and should set affordable housing as an important policy goal, instead of only seeing the development of housing prices as a macroeconomic risk factor (Sparrentak, 2021).

6.2.3 Improve collecting, monitoring and dissemination of housing data

Improved collecting, monitoring and dissemination of national, metropolitan and city-level data would help to reduce spatial inequalities. Better monitoring and dissemination of housing prices, employment, wages, housing policies and regulations, and other main indicators would help to inform policy makers at the national, regional, and local levels. Ideally, governments would create a publicly available house price registry with information on addresses, sales prices, and quality (energy rating, square footage…), with information as close to real time as possible (Inchauste, Karver, Kim, & Jelil, 2018).

In addition, national and European Union authorities could develop an index of house purchase costs that would allow for benchmarking across localities and regions. This level of transparency would reduce information asymmetries and provide incentives for more streamlined policies and regulations that could help housing markets become more efficient and equitable. Consistent, comparable information across countries and regions would go a long way toward ensuring that new initiatives are monitored and evaluated and that good experiences get the attention they deserve (Inchauste, Karver, Kim, & Jelil, 2018).

7 POSSIBLE FURTHER RESEARCH

When compiling our research, the biggest limitation we faced was lack of official, quality and close to real time data. Therefore, we believe, the biggest possible upgrade would be redoing our research with updated data. This is easier said than done. Since Eurostat does not gather data on European Union level, each country collects it on its own. There is an

option of contacting official institute or department of each country, trying to get their latest housing data, but even this data would not be comparable, since each country uses its own methodology.

This is why we recommend using dynamic approach (like we did in our research of housing affordability in Ljubljana) and research housing affordability for each individual capital in recent years. This way, data would be comparable (assuming the methodology did not change in the years we plan to research on) and conclusions could be drawn according to trends in change of housing affordability. This way face to face comparison among capitals would not be possible, but it would show which capitals face housing affordability issues and which do not. It would also be possible to predict if any capital is going to have housing affordability problem in the future and which are successfully tackling it.

Interesting research would also be to check if there is any correlation between housing prices, unemployment, age of population, distance to schools, hospitals, parks, bodies of government, bodies of water and other factors within a country. This would give more insight of why housing in some regions or districts is cheaper and how to lower these spatial inequalities.

CONCLUSION

Throughout this thesis we discovered that housing affordability is subjective experience and perception of each individual. It is in its core biased and therefore hard to measure. Theory recognizes five different approaches to defining and measuring housing affordability: relative, subjective, family budget, ratio and residual. It can also be viewed in three different ways: purchase affordability, repayment affordability and income affordability. Internationally we can find quite a few indexes measuring housing affordability, sadly there are none on European or European Union level.

Housing affordability problem is a complex problem with many interconnected reasons behind it. Most of them are systemic and of economic and political nature. Some of the main reasons for poor housing affordability are buy to leave phenomenon, housing prices have been rising faster than wages, lack of affordable and social housing, lack of available land, lack of construction activities, mortgage inaccessibility, not in my backyard, rise in market rents, rise in productivity and urbanization.

Just like many reasons behind poor housing affordability, there are also many consequences low affordability of housing brings to society. Majority of them are economic, social and ethical. Main consequences housing affordability problem brings are: growing divides among social classes, increase in the value of capital, lack of mobility, inadequate living

conditions (over crowdedness, damp housing, inadequate temperature), spatial inequality and inequality between cities and rural areas, and young adults live longer with their parents.

In our research of housing affordability in capital cities of Eurozone in we discovered, that people on average spent 32% of their monthly net earnings on monthly housing costs. Capitals where people on average spent less than Eurozone average and where housing is most affordable are Nicosia (Cyprus), Brussels (Belgium), Vienna (Austria), Berlin (Germany), Luxembourg City (Luxembourg), Amsterdam (Netherlands), Helsinki (Finland) and Tallinn (Estonia) respectively. Capitals where housing is least affordable and people spent more than Eurozone average are Valletta (Malta), Lisbon (Portugal), Paris (France), Riga (Latvia), Bratislava (Slovakia), Vilnius (Lithuania), Rome (Italy), Ljubljana (Slovenia), Madrid (Spain) and Dublin (Ireland). We also discovered, buying a dwelling is more affordable then renting it and that families find housing less affordable than an individual.

Results of our research of housing affordability in Ljubljana (Slovenia) from 2008 through 2019 showed, that citizens of Ljubljana on average spent less than 40% of their monthly net earnings on monthly housing costs. Housing in Ljubljana was most affordable in 2013 and least affordable in 2008. The percent of monthly net earnings spent on monthly housing was dropping from 2008 through 2013, when it started to rise all through 2019. This research also showed that housing is more affordable for a family than for an individual, which is opposite than what research of housing affordability in capital cities of Eurozone showed. We see this as an opportunity for further research.

Just like the problem itself, the solutions to resolve housing affordability issues are also complex and systematic. As main possible measures to improve housing affordability we call attention to: create enabling conditions to allow housing supply to expand, do not favor homeownership over renting, encourage job creation in less developed regions, improve collecting, monitoring and dissemination of housing data, investment in affordable and social housing and stop treating housing as a tradable asset.

According to the research we conducted, results we obtained and limitations we faced, we highlighted some topics for possible further research and upgrade of the work done in this thesis.

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APPENDICES

Appendix 1: Povzetek

Stanovanjska dostopnost je gospodarski, politični in družbeni pojav, s katerim se soočamo vsak dan. Je subjektivna presoja vsakega posameznika, ali meni, da je stanovanje zanj cenovno dostopno. Temelji na edinstvenih izkušnjah vsake osebe in njenem individualnem dojemanju, kaj je cenovno dostopno.

Običajno ne posvečamo veliko pozornosti stanju na področju stanovanjske dostopnosti, ko svoje stanovanje dojemamo kot cenovno ugodno in ustrezno. To se spremeni, ko stanovanjski stroški postanejo preveliko breme ali pa menimo, da naši stanovanjski pogoji niso primerni za normalno in dostojno življenje. To pogosto sovpada z roko v roki s pomembnimi življenjskimi odločitvami, kdaj se odselimo od staršev, kam gremo v šolo, kje najdemo službo, kupimo ali najamemo svoj naslednji dom ter razmislekom, kakšno stanovanje si lahko privoščimo. Za večino ljudi je dostopnost stanovanj eden od ključnih dejavnikov odločanja v teh situacijah.

V zadnjih letih je vse več govora o problemu stanovanjske dostopnosti v Evropi. O tem pišejo mediji, politiki obljubljajo rešitve v svojih političnih programih, vlade po vsej Evropi naslavljajo ta problem, Evropski parlament poskuša najti rešitve na ravni Evropske unije, ljudje pa zahtevajo ukrepanje tudi na protestih (spomnimo se gibanja rumenih jopičev v Parizu).

Dostopnost stanovanj je vse večji problem evropskih prestolnic. Tržne cene lastniških stanovanj in najemnine naraščajo, zato si državljani vse težje privoščijo stanovanje. Ker je povprečni dohodek gospodinjstev v zadnjih letih ostal skoraj enak, se mnoga gospodinjstva po plačilu hipoteke ali najemnine soočajo z revščino (Eurostat, 2021a in Eurostat, 2021d). To zahteva več državnih subvencij, ki obremenjujejo državni proračun in črpajo sredstva iz drugih resorjev. Le-to vodi v zvišanje državnih obdavčitev, kar dodatno bremeni državljane in jih potisne pod prag revščine. V Evropi je prišlo do izginjanja srednjega razreda, saj vedno več državljanov živi v bogatejših gospodinjstvih z visokimi dohodki, ali v gospodinjstvih z nizkimi dohodki, ki potrebujejo državno finančno pomoč. Velik del tega je posledica slabe stanovanjske dostopnosti v prestolnicah, kamor se državljani preseljujejo v iskanju boljše zaposlitve, izobraževanja ali drugih pogojev. Ker fond stanovanj ni naraščal tako hitro kot prebivalstvo v mestih, je veliko državljanov prisiljenih živeti v neprimernih bivalnih razmerah, hkrati pa plačevati visoke tržne najemnine (Housing Europe, 2019; Inchauste, Karver, Kim in Jelil, 2018).

Namen magistrskega dela je izpostaviti problem stanovanjske dostopnosti, ki je bil dolgo spregledan, vendar se je izkazal za enega večjih problemov, s katerimi se sooča Evropa. Upam, da bo magistrsko delo koristno za vse, ki poskušajo izvedeti več o tej težavi ali najti najnovejše razpoložljive podatke in informacije. Menim, da je tema pomembna, saj se ljudje

po vsej Evropi soočajo s težavami povezanimi s stanovanjsko dostopnostjo, ki ima velik vpliv na njihovo življenje. Sedanje stanovanjske rešitve predstavljajo finančno breme za države in v primeru nadaljnjega naraščanja cen stanovanj, niso dolgoročno vzdržne. Zato ljudje in vlade potrebujejo uspešne dolgoročne rešitve tega problema.

V nalogi smo spoznali, da je cenovna dostopnost stanovanj subjektivna izkušnja in dojemanje vsakega posameznika. V svojem jedru je pristranska in jo je zato težko izmeriti. Teorija priznava pet različnih pristopov k opredelitvi in merjenju stanovanjske dostopnosti: relativnega, subjektivnega, pristop družinskega proračuna, pristop razmerja in pristop preostanka dohodka. Stanovanjsko dostopnost lahko gledamo tudi glede na: dostopnost nakupa, dostopnost odplačila in dohodkovna dostopnost. Na mednarodni ravni lahko najdemo kar nekaj indeksov, ki merijo cenovno dostopnost stanovanj, žal jih na ravni Evrope ali Evropske unije ni.

Stanovanjska dostopnost je kompleksen problem, za nastankom katerega se skrivajo številni med seboj povezani razlogi. Večina jih je sistemskih in gospodarske ter politične narave. Nekateri glavni razlogi za slabo dostopnost stanovanj so: pojav odkupa brez namena oddajanja, hitrejša rast cen stanovanj kot je rast plač, pomanjkanje subvencioniranih in socialnih stanovanj, pomanjkanje razpoložljivega zemljišča, pomanjkanje gradbenih dejavnosti, nedostopnost hipotek, nasprotovanje soseske, dvig tržnih najemnin, povečanje produktivnosti in urbanizacija.

Tako kot obstajajo mnogi razlogi za slabo dostopnost stanovanj, obstajajo tudi številne posledice, ki jih nizka stanovanjska dostopnost prinaša družbi. Večina je ekonomskih, socialnih in etičnih. Glavne posledice težav z dostopnostjo stanovanj so: vse večji razkorak med družbenimi razredi, povečanje vrednosti kapitala, zmanjšanje mobilnosti, neustrezni življenjski pogoji, prostorska neenakost in neenakost med mesti in podeželjem ter to, da mladi dlje živijo pri starših.

V naši raziskavi stanovanjske dostopnosti v prestolnicah evroobmočja v 2018 smo ugotovili, da so ljudje v povprečju za mesečne stanovanjske stroške porabili 32% svojega mesečnega čistega zaslužka. Prestolnice, kjer so prebivalci v povprečju porabili manj od povprečja evroobmočja in kjer so stanovanja najugodnejša, so Nikozija (Ciper), Bruselj (Belgija), Dunaj (Avstrija), Berlin (Nemčija), Luksemburg (Luksemburg), Amsterdam (Nizozemska), Helsinki (Finska) in Talin (Estonija). Prestolnice, kjer so stanovanja najmanj dostopna in so ljudje porabili več od povprečja evroobmočja, so Valletta (Malta), Lizbona (Portugalska), Pariz (Francija), Riga (Latvija), Bratislava (Slovaška), Vilna (Litva), Rim (Italija), Ljubljana (Slovenija), Madrid (Španija) in Dublin (Irska). Ugotovili smo tudi, da je nakup stanovanja ugodnejši od najema in da je družinam stanovanje manj dostopno kot posamezniku.

Rezultati naše raziskave cenovne dostopnosti stanovanj v Ljubljani od leta 2008 do 2019 so pokazali, da so Ljubljančani v povprečju za mesečne stroške stanovanja porabili manj kot 40% svojega mesečnega čistega dohodka. Stanovanje v Ljubljani je bilo najbolj dostopno v letu 2013, najmanj pa v letu 2008. Odstotek mesečnega čistega dohodka, porabljenega za mesečne stanovanjske stroške, se je zniževal od leta 2008 do leta 2013, nato pa se je začel povečevati vse do vključno leta 2019. Raziskava je pokazala tudi, da so stanovanja bolj dostopna družinam kot posamezniku, kar je nasprotno od tistega, kar je pokazala raziskava stanovanjske dostopnosti v prestolnicah evroobmočja. To kontradikcijo vidimo kot priložnost za nadaljnje raziskave.

Prav tako kot sam problem stanovanjske dostopnosti, so tudi rešitve zanj zapletene in sistemske. Kot glavne možne ukrepe za izboljšanje dostopnosti stanovanj prepoznavamo: ustvarjanje ugodnih pogojev za širitev ponudbe stanovanj, v prenehanju dajanja prednosti lastništvu pred najemom, spodbujanje ustvarjanja delovnih mest v manj razvitih regijah, izboljšanje zbiranja, spremljanja in objavljanja stanovanjskih podatkov, naložbe v subvencionirana in socialna stanovanja ter v prenehanju obravnave stanovanj kot sredstva za trgovanje.

Glede na raziskave, ki smo jih izvedli, dosežene rezultate in omejitve, s katerimi smo se soočali, smo na koncu izpostavili nekatere teme za morebitne nadaljnje raziskave in nadgradnjo dela v tej nalogi.

Appendix 2: Down payment and monthly annuity for mortgage loan (in EUR) by country for observed year

				Individual, 35 m^2			
Country	**Capital**	**Abbreviation**	**Year**	**Price**	**Down payment**	**Loan value**	**Monthly annuity**
Austria	Vienna	AT	2019	200,508	80,203	120,305	395.85
Belgium	Brussels	BE	2018	117,822	23,564	94,257	344.17
Cyprus	Nicosia	CY	2018	60,095	12,019	48,076	187.72
Estonia	Tallinn	EE	2018	69,529	10,429	59,100	236.29
Finland	Helsinki	FI	2019	246,888	49,378	197,510	611.07
France	Paris	FR	2017	325,054	45,508	279,546	967.46
Germany	Berlin	DE	2017	153,698	33,814	119,884	432.99
Greece	Athens	GR	2018	106,010	21,202	84,808	358.01
Ireland	Dublin	IE	2018	263,428	52,686	210,743	889.64
Italy	Rome	IT	2018	216,156	43,231	172,925	629.69
Latvia	Riga	LV	2018	65,734	6,573	59,161	243.72
Lithuania	Vilnius	LT	2018	71,540	14,308	57,232	217.89
Luxemburg	Luxemburg	LU	2017	279,353	55,871	223,482	797.28
Malta	Valletta	MT	2018	412,328	111,329	301,000	1,222.44
Netherlands	Amsterdam	NL	2017	226,293	45,259	181,034	706.86
Portugal	Lisbon	PT	2017	134,050	13,405	120,645	421.60
Slovakia	Bratislava	SK	2018	92,818	27,845	64,973	225.48
Slovenia	Ljubljana	SI	2018	127,715	51,086	76,629	300.39
Spain	Madrid	ES	2018	194,075	38,815	155,260	571.54
Eurozone		EZ		177,005	38,499	138,506	517.43

Adapted from Global Property Guide (2021); European Mortgage Federation (2018); European Mortgage Federation (2019); European Mortgage Federation (2020).

				Family, 85 m^2			
Country	**Capital**	**Abbreviation**	**Year**	**Price**	**Down payment**	**Loan value**	**Monthly annuity**
Austria	Vienna	AT	2019	486,948	194,779	292,169	961.36
Belgium	Brussels	BE	2018	286,138	57,228	228,911	835.83
Cyprus	Nicosia	CY	2018	145,945	29,189	116,756	455.88
Estonia	Tallinn	EE	2018	168,857	25,329	143,529	573.85
Finland	Helsinki	FI	2019	599,584	119,917	479,667	1,484.03
France	Paris	FR	2017	789,416	110,518	678,898	2,349.53
Germany	Berlin	DE	2017	373,267	82,119	291,148	1,051.56
Greece	Athens	GR	2018	257,453	51,491	205,962	869.46
Ireland	Dublin	IE	2018	639,755	127,951	511,804	2,160.55
Italy	Rome	IT	2018	524,949	104,990	419,960	1,529.25
Latvia	Riga	LV	2018	159,641	15,964	143,677	591.89
Lithuania	Vilnius	LT	2018	173,740	34,748	138,992	529.17
Luxemburg	Luxemburg	LU	2017	678,428	135,686	542,742	1,936.25
Malta	Valletta	MT	2018	1,001,369	270,370	730,999	2,968.77
Netherlands	Amsterdam	NL	2017	549,568	109,914	439,654	1,716.66
Portugal	Lisbon	PT	2017	325,550	32,555	292,995	1,023.89
Slovakia	Bratislava	SK	2018	225,415	67,625	157,791	547.60
Slovenia	Ljubljana	SI	2018	310,165	124,066	186,099	729.52
Spain	Madrid	ES	2018	471,325	94,265	377,060	1,388.04
Eurozone		EZ		429,869	93,497	336,373	1,256.62

Adapted from Global Property Guide (2021); European Mortgage Federation (2018); European Mortgage Federation (2019); European Mortgage Federation (2020).

Appendix 3: Down payment and monthly annuity for mortgage loan (in euros) for Ljubljana (Slovenia) from 2008 through 2019

	Individual, 45 m^2			
Year	**Price**	**Down payment**	**Loan value**	**Monthly annuity**
2008	123,975	64,467	59,508	385.18
2009	110,250	61,740	48,510	244.35
2010	110,700	65,313	45,387	199.78
2011	112,500	65,250	47,250	219.36
2012	106,650	71,456	35,195	155.50
2013	93,600	65,520	28,080	121.44
2014	90,900	60,903	29,997	129.89
2015	91,350	52,983	38,367	152.20
2016	98,100	58,860	39,240	151.60
2017	108,450	65,070	43,380	171.40
2018	124,650	73,544	51,107	200.34
2019	126,000	69,300	56,700	219.64

Adapted from Geodetic institute of Slovenia (2021); Bank of Slovenia (2021); European Mortgage Federation (2020).

	Family, 85 m^2			
Year	**Price**	**Down payment**	**Loan value**	**Monthly annuity**
2008	234,175	121,771	112,404	727.56
2009	208,250	116,620	91,630	461.56
2010	209,100	123,369	85,731	377.35
2011	212,500	123,250	89,250	414.34
2012	201,450	134,972	66,479	293.71
2013	176,800	123,760	53,040	229.38
2014	171,700	115,039	56,661	245.35
2015	172,550	100,079	72,471	287.48
2016	185,300	111,180	74,120	286.35
2017	204,850	122,910	81,940	323.76
2018	235,450	138,916	96,535	378.42
2019	238,000	130,900	107,100	414.87

Adapted from Geodetic institute of Slovenia (2021); Bank of Slovenia (2021); European Mortgage Federation (2020).