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How is housing financed?

Correlations of self-reliance, institutional system, life cycle savings and home ownership in Hungary

PhD theses

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I. Summary and relevance of my assigned research

In European comparison, Hungary has a high proportion of privately owned apartments for own use. A high proportion of the wealth of Hungarian households is invested in real estate. According to the European Central Bank[1], this ratio in Hungary is 85.7%, of which 62.6% is the value of inhabited real estate. In our country, private property is basically represented in 2 types of property, joint property in block of flats and private property in single-family houses. **This seems to be a given at a moment in time, but due to the about 30 years of experience behind me, I see it as a determined direction of development. In my work, I would like to explain the development of this high ownership ratio, its main reasons and characteristics. The peculiarity of my analysis is that, since the topic covers several areas, I create a multidimensional, comprehensive model.** As a starting point, it is important to emphasise that housing and home ownership are special "goods", occupying a special place in economics as well, but can also be analysed in the intersection of ethics, historical sciences, psychology, behavioural sciences, sociology, and engineering sciences. Thus, in my work I also stray into these fields and I strive to use their correlations relevant for me.

We can characterise a large part of the savings and wealth of domestic households based on real estate wealth (along the lines of the formation of wealth, its development, or even its territorial or age distribution), which, in addition to the statistically better quantifiable financial wealth, represents a serious explanatory power. Savings for real estate, wealth accumulated in real estate and the income spent on its maintenance reduce household income for consumption purposes, as well as the population's ability to finance other sectors of the national economy (enterprises, state). **The primary goal of my work is to examine the high rate of private ownership of apartments as a special economic good in Hungary. This is a novel topic of analysis, on the one hand, due to the macroeconomic significance of the motivations for savings for residential purposes, and on the other hand, due to the comprehensive, multi-level approach that I use.**

In my thesis booklet, I refer to the figures of my dissertation, as well as to its chapters for easier navigation.

In order to reveal the expected correlations, I connected the following different level approaches and investigation dimensions:

1.) Exploring the cultural, historical and economic aspects of domestic home ownership and self-reliance. My goal is to find out if there is a specific culturally defined Hungarian pattern, or if our behaviour can be traced back to more specific general domestic market or institutional reasons? In the examination of the cultural aspect, it is important to recognise, for example, the general ideas and principles related to ownership, savings, borrowing money and property transfers within the family. In this respect, my topic is well connected to the general goals of financial culture and self-reliance research, and even occupies a prominent place within it. I write about values, attitudes, and learned behavioural patterns, in which case it is possible to take stock based on objective measurements to a limited extent.

A possible way to research **domestic narratives related to housing and home ownership** is to collect and analyse current press articles. According to my experience, these have a profound effect on those who analyse daily domestic events with a lack of in-depth economic knowledge.

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[1] ECB (2020)

In my opinion, "narratives" that embody public thinking and hot topics play a significant role in influencing individual behaviour in this market.

2.) An examination of the development of our domestic institutions related to housing, home ownership, and housing loans, with an international perspective. My goal is to investigate the institutions of the housing systems in Hungary and to uncover the possible reasons for the high rate of home ownership. I analyse the domestic legal and institutional regulations of the past 30 years and their effects. Here I examine the extent to which the Hungarian institutional system differs from that of countries with better indicators than ours. **This part of my work will also be generally descriptive**: both the presentation of the cultural background and the sources about the institutions include the description and evaluation of the key concepts and the logical connections between the concepts, as well as the logical structures, and causal links.

3.) Analysis of the domestic macroeconomic framework: The study of the economic behaviour of households is one of the priority areas of economics. Part of my work is the examination of household savings, which is one of the central elements of economic research. Family savings can also be accumulated in financial and real assets (e.g. real estate). **Due to the high level of home ownership in Hungary, the high level of domestic wealth invested in real estate is important, which limits the use of the assets of the population for other purposes**. **In my opinion, due to the above, this change in whether the savings flow into financial or real assets cannot be explained simply as a portfolio decision process**, but is the result of the decisions and behaviour of several actors simultaneously.

4.) After that, in chapter 6, **I examine the changes in the number of apartments as physical units and the development of housing construction**: how the decades-long and effective state aid policy, as well as the observed lack of long-term institutional housing investments affect housing construction and the demand of the residential end-user market?

This is a quantitative analysis as well, here I would like to specifically explore domestic trends and their causes. My goal is to find explanations for developments that may differ from the underlying macroeconomic indicators, and to be able to explore the effects of the changing institutional system (forms of home ownership and use, support systems).

5.) I put strong emphasis on the applicability of "life cycle theories": in chapter 7, I analyse how the theory can be applied to the topic of self-reliance and housing, and whether these can be verified based on the available statistics? **Housing-related decisions are among the most important and most valuable economic and investment-related decisions of an individual (or rather certain families)**. The **transfer of wealth and income between generations** should also be emphasised, which falls within the scope of gifts and is thus not among the tools of classical economics. How does the – in international comparison – high rate of home ownership that occurred for the above-mentioned domestic, historical reasons, affect the accumulation of family wealth, its changes, and wealth inequality? It is an interesting research aspect to estimate the wealth amount of households invested in real estate by comparing the monetary wealth measured in national economic accounts and the monetary wealth measured based on surveys.

We have comprehensive, reliable statistical data to describe the economic processes mentioned in points C), D) and E). These include the areas of income, savings, financial assets, housing stock, its quality, age composition, housing construction, housing transactions, indicators of which are published by the National Bank of Hungary (MNB) and the Hungarian Central Statistical Office (KSH).

6.) As the conclusion of my work, in chapter 8, **I formulate insights and proposals regarding a (more) sustainable housing policy**, and summarise the lessons that can be drawn from the research. Our current housing subsidies and housing maintenance system faces serious challenges in the long term: the renewal rate is low, the existing housing stock is old, its energy efficiency is poor, and the maintenance is becoming increasingly expensive. In their access to housing, young people depend on state transfers, their cyclical nature and current form, as well as income transfers within the family.

The logical framework and structure of my analysis, influenced by institutional economics, is thus the following:

Levels of determination	Time frame of change	Formulation of recommendations
individual, family decisions	a few months	decisions described by the life cycle
macroeconomic indicators	1-8 years	housing loans, housing construction
institutional structure	1-30 years	institutional level recommendations
values, attitudes	100+ years	recognised cultural elements

I am convinced that this theoretical model of mine displays a logical hierarchy from the level of thoughts and emotions through institutions and specific macroeconomic development to individual (family) decisions. **I follow this mental "model" in my analysis** in a "bottom-up" approach, i.e. **moving from the foundations to the superstructure, looking for which level(s) are responsible for the high level of home ownership in Hungary**.

In my opinion, this kind of comprehensive analysis of the causes and effects of residential home ownership in Hungary, connecting cultural, historical, institutional, macroeconomic and individual life cycles, represents a novel approach, as a result of which I can provide a high-level overview of the processes of the development and maintenance of the current domestic situation depicted in a model, about some of its international aspects, as well as about the partly harmful consequences and effects of the domestic system that necessarily exist.

I formulated the following preliminary hypotheses as the basis of my research:

H1: The reason for the high rate of home ownership in Hungary is partly cultural, but the institutional system of domestic housing has supported the high rate of home ownership earlier and continues to maintain it.

H2: In the highly cyclical development of housing loans and housing construction experienced in the last 30 years, the driving force can be detected in the different forms of housing subsidies and the changes in their volume.

H3: Statistical data show the changes in the domestic family life cycle-based income, as well as real estate and financial assets.

I summarise the proof of these hypotheses at the end of chapters 3)-7) of my dissertation.

II. Description of the research, sources of the analyses performed, and their use

In my work, I look for correlations between the values, institutions, macroeconomic indicators and housing indicators related to domestic housing – I explained this in chapter 1. I am convinced that there are causal links between them, even if these are very difficult to prove. In his work, Herger[2] describes a remarkable model for explaining the development and advance state of the financial system, which is very close to the framework I have chosen.

Figure 1: *Path Diagram of Financial Development*
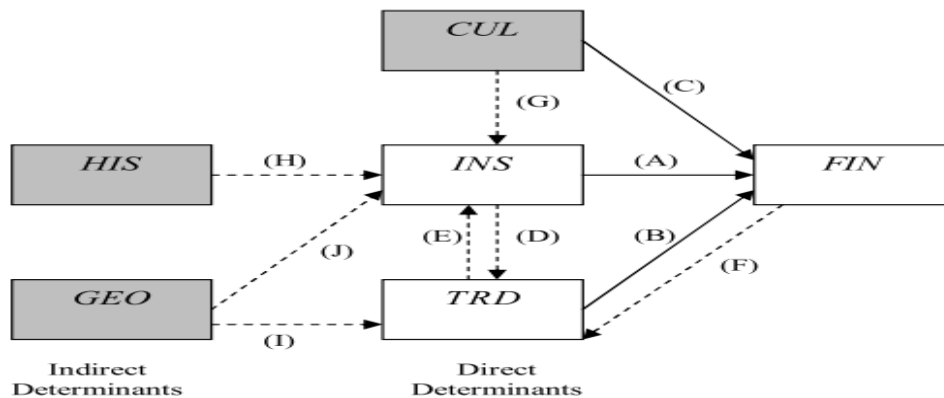
Abbreviations: CUL: Culture; HIS: History; GEO: Geography; INS: Institutions; TRD: Trade; FIN: Financial development

Figure 1: Path of economic development (Herger, 2008)

The analysis aspects I have chosen represent the following modification in this model: the upward arrow indicates the direction of the determination I am examining.

Finance   Macroeconomic development, housing construction, home loans

Institutions   Housing system institutions, forms of support, housing regimes

Culture, History   Underlying values, attitudes and history of our housing system

Figure 2: The logical structure of my research (with the categories of Herger, 2008)

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[2] Herger et al. (2008), p. 559

Literature on the historical and cultural determination of savings, lending, and housing

Ancient and classical philosophical literature left us with many useful ideas related to property, savings, loans, and housing that are still with us today. My goal is to examine what normative rules are formulated in these thousands of years old traditions regarding the role of property, long-term self-reliance, indebtedness, loans, support within the family, wealth transfer and the related economic behaviour, which are particularly important for my topic.

The **Bible** doubles as a significant economic text. It contains many important elements of classical economics, which were later analysed to great extent. In relation to property, it is very important that 2 of the 10 commandments refer to property[3], and several parables of Jesus in the New Testament are related to farming. One of the central questions of **Greek philosophy** is "moderation or hedonism", and the exploration of usefulness and the commandment of the good. "Economics, as a science, is clearly a representative of the hedonist school: it equates goodness with usefulness."[4] In the middle of the 13th century, Saint Thomas Aquinas places great emphasis on prudence among the seven main virtues, that is, competence, economical search for one's own usefulness, and "rationality" in the broadest sense.[5] The Scholastics also subjected interest to a careful analysis. Luther is more permissive in relation to lending and charging interest, and partly recognises the charging of interest. The above ancient and Christian biblical teachings are important to me not primarily as economic literature or as economic teachings (although they also had a documented impact on the thinking of A. Smith and J.S. Mill), but because over the millennia our general public thinking has been certainly deeply influenced by centuries-old Christian teachings as elements of sermons, so these form the moral foundations of our public thinking, and consequently these deep-seated value systems and beliefs are an important aspect for the decision-making of individuals and households.
Saving and self-reliance are positive acts recommended since the Old Testament; on the other hand, the collection of interest was considered a limited, forbidden and sinful behaviour until the Reformation. It is also important for me regarding the commodity nature of apartments from Augustine of Hippo that "**goods can be 'transferred' by free will not only in one but also in two ways: by sale or as a gift. Therefore, restricting 'transferability' to only buying and selling (that is, exchange) leaves giving personal and community gifts unexplained.**"[6]

An interesting term that goes beyond rationality, "life force" (animal spirit). appears in **Keynes**' teachings as well. "...**a large proportion of our positive activities depend more on spontaneous optimism than on moral, hedonistic or economic mathematical expectations**... However, individual initiative will only be satisfactory if sound calculation is supplemented and supported by life force"[7]. "...those who, when talking about psychological factors, question ... the extent to which people's behaviour is influenced by non-economic motivations ... the extent to which people are irrational or misguided"[8]. "So our place is somewhere in the middle. **We cannot surrender to the rational, explainable *homo-economicus*, nor can we give completely free rein to spiritual factors.**"[9]

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[3] Second book of Moses 20: 2-17
[4] Sedlacek (2012) 175., p. 177
[5] Sedlacek 2012., p. 197, citing McCloskey
[6] Mueller (2015), p. 91
[7] Keynes (1965), p. 273-274
[8] Sedlacek (2012), p. 362, citing the ideas of Akerlof G.A. and Shiller R.J.
[9] Sedlacek (2012), p. 371

The OECD[10] conducts international analyses and has a programme to measure and develop financial awareness, which Hungary also participates in. The 2020 survey covered 3 topics: **financial knowledge, behaviour, attitude** Hungary is at or slightly below the average of the 12 measured OECD countries.[11] We received a poor evaluation in the topics of long-term planning and actual economic behaviour.

According to Shiller[12], it is important to examine the narratives about everyday financial thinking, the functioning of markets, and the importance of the role of public opinion. He deals with naming **narratives**, with the creation and spread of interpretations about financial events, with the public beliefs and general community opinions that are linked to the phenomena of the economy. For me, the examination of narratives is important – and that's why I devote so much space to it in my work – because **I am convinced that in these narratives the behavioural lessons from our common cultural roots appear, on the other hand, through modern social tools (newspapers, email, Facebook...) its spread can be extremely effective and fast.**

Overview of the level of institutions

In order to analyse the reasons for the private ownership of housing, it is also necessary to analyse the institutional environment that also determines it. For this, we can use the tools of institutional economics. In my work, I analyse these essential elements. The "traditional" version of the institutional theory gained great popularity at the end of the 19th century, at the end beginning of the 20st century. In addition to the classic economic categories, new approaches were applied and they began to examine new concepts: the nature of the development process, the importance of behavioural patterns, the creation and role of institutions (these were attributed an influencing meaning), the complexity of the relationships between actors.

According to T. Veblen, production, distribution and consumption, which are at the centre of economics, should not be described based only on the narrow concept of "needs". For this, it is necessary to analyse e.g. also the principles of faith and conviction, the patterns of behaviour arising from gender, the influencing patterns of institutions, the spiritual rules and values prevailing in individual nations.

In the 2nd half of the 20th century, the new institutional economics (NIE) school came much closer to the neoclassical schools: the NIE disputes the essential assumptions of standard economics about the full information and complete rationality of market participants and about zero transaction costs. However, they emphatically examine e.g. the state, state institutions, contracts, legal environment, and the conclusions arising from the roles played (e.g. "agent – principal"). At the same time, the new school uses the established tools of classical economics.

D. North focused on examining the role of institutions. He interprets institutions broadly: for him, an institution is the framework within which human (economic) interactions take place, i.e. everything that motivates, surrounds and regulates the individual actor. On the basis of institutional economics, the internal interest and motivational structure of society, the political and economic institutions and their development represent the essential differences between the performances of the economies.

Economic and psychological works analysing human (imperfect) decisions support the essential role of culture, beliefs, patterns, and values. Although he is not fundamentally classified as a representative of institutional economics, H. A. Simon also formulated patterns

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[10] OECD (2018) (2019) (2020)
[11] OECD (2020), p. 15
[12] Shiller (2020)

that expand the decision-making behaviour of classical rational economic agents: "So the task was to replace the classical model with a model that describes how decisions can be made (or how decisions are actually made) when no one knows the consequences of each alternative...perfectly"[13].

According to the theory of Kahnemann and Tversky, the expected utility theory[14] systematically differs from the real ("real-world") decision-making behaviour of people. The utility used by "prospect theory" is not an absolute given, but depends on the subjective expectations of individuals"[15]. Regarding the factors (noise) that cause the inaccuracy of decisions, Kahneman[16] points out that "rules, formulas and algorithms are better than people when it comes to making predictions. Contrary to popular belief, this is not because the rules are more substantive, but rather because they are noise-free". **O. E. Williamson distinguished frequently repeated "ordinary" decisions from relationship-specific (rare, significant) decisions. Uncertainty and opportunism, as well as limited rationality, play a significant role in decisions**.

In determining economic performance, the new institutional economics deals with the levels of the institutions' Embeddedness – Institutional environment – Management structures – Resource allocation[17]. This is a bottom-up approach, moving from the basics to the superstructure, to specific, visible, measurable economic transactions. I cover these in chapters 2-7 in my dissertation.

Four of Hofstede's[18] cultural analysis dimensions (embeddedness) contain samples relevant to the topic I am investigating.

D. North, also emphasises the role of thought, behavioural patterns, and values: "Individuals have mental models for interpreting the world around them. These are partly determined by culture, which is created by the transmission of knowledge, values and norms passed down between generations, which are radically different in different ethnic groups and societies."[19]. From the analyses of the new institutional economics, it is relevant to me why smaller, larger or downright giant organisations are formed. In my case, this raises the issue of the organisational form of apartment and home ownership: starting with family-owned buildings (family houses) – as one extreme – through apartment buildings based on community ownership and through housing cooperatives we reach rented properties – as the other extreme –, where ownership is separated from use. The theory of property right examines access to goods. Classical economics discusses the exchange of physical goods, in the case of new institutional economics, access rights are at the centre. The asymmetric information situation, the gaps, distortions and uncertainties behind the contracts, a series of situations that can or cannot be enforced by the legal system also have an influence on real estate.

The theory of the new political economics initiated the analysis of the state, parties, voters, and state institutions with the tools of economics. A "special" exchange takes place between politicians and voters through promises and programmes. Voters "buy" politicians' promises, but they have very few tools to enforce them. Bowles[20] specifically looks for good motivational tools, those where the individual goals and motivation of the economic operator are not

[13] Simon (1982), p. 35
[14] EUT
[15] Heukelom (2007), p. 13
[16] Kahneman-Tversky (2021), p. 14
[17] ISNIE /International Society for New Institutional Economics/ conference 7, Közgazdasági Szemle 2004
[18] Hofstede (2011), p. 9-15
[19] North (1993)
[20] Bowles S. (2018)

weakened but strengthened by state intervention. Additional impulses from the political system are also very important for the housing market. The current government's policy of active family support spanning multiple parliamentary terms and encouraging childbearing is well known, which is partially implemented strongly through housing subsidies.

In this chapter, I also used my own 30 years of experience to characterise the development of the institutional system. Divided into stages, I analyse the transformation and development of the institutions of the housing and financing system in the decades that have passed since the mid-1980s, separately examining the observable effect of "path dependency". It is important that mass retail lending in our country does not have a long history. In contrast to the example of Germany and Austria, we can also say based on the MNB[21] that we do not have living experience spanning many generations or learned historical practice in relation to retail lending and borrowing.

Tools for the analysis of development of macroeconomics, housing construction and lending, and housing cycles

Housing construction, purchase, and lending cannot be separated from the current development, state and cycles of the macroeconomics, which is why an overview of this is essential for me as well. Bozsik[22] (2002) analysed the impact of several macroeconomic indicators on the evolution of housing loans and the housing market by comparing European countries. Kiss[23] examined the role of the housing market in monetary transmission for the following channels: interest rate channel, asset prices and wealth effect channel, credit channel. According to Mérő[24], by embedding the housing market model in the macroeconomic model, we can get a more accurate picture of the impact of the feedback mechanisms between lending, the housing market and the real economy.

We can use comprehensive, detailed and reliable statistical data to describe economic processes. The Hungarian Central Statistical Office (KSH) has detailed data on macroeconomic processes (GDP, prices, incomes, employment, housing market transactions...) and a detailed examination of housing[25] is also part of the statistical surveys of the past decades. Unfortunately, these contain limited age-based life cycle data, but include e.g. income data for given years. The MNB's statistics and regular reports cover in detail the following areas: income, savings, financial assets, housing loans, availability of housing, its quality, age composition, housing construction and housing transactions[26]. The MNB's reports (Financial stability; Housing market; Lending processes; Macroprudential)[27] contain detailed, regular analyses, updated with relevant topics at the time of publication. The databases are suitable for exploring and displaying further correlations when editing it further, so their use was justified for me as well. However, according to my knowledge, there is no accounting for real estate ownership and its

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[21] MNB (2018)
[22] Bozsik (2002)
[23] Kiss-Vadas (2006)
[24] Mérő-Vágó (2018), p. 1146-1147
[25] e.g.: What do we live in? (Microcensus 2016)
[26] see e.g. MNB Financial accounts of the national economy, e.g. here:
https://www.mnb.hu/statisztika/statisztikai-adatok-informaciok/adatok-idosorok)
https://www.mnb.hu/kiadvanyok/jelentesek (downloaded in November 2021)
[27] previously FHB, now Takarékbank (Magyar bankholding) also collects data on housing price trends

value based on macroeconomic accounts at the national economic level, the determination of this is based on survey, statistical counting and their comparison with macroeconomic data.

EU statistics are well structured and extensive[28]. Thus, these indicators (at least the financial ones) are also available for other EU member states, so they are well suited for international comparative analyses. The professional organisations of the representative bodies of the individual countries provide useful data on the regulatory framework (e.g. home savings and loan associations, mortgage banks). The release of data from the European Value Survey is significant; Hungary also participated in this survey.[29]

Analyses of savings and life cycle income

The term life cycle is used in several forms in modern technology and economic sciences. It is the concept of the family life cycle in psychology that brings us closer to the goal of my research, as it examines the different stages of becoming a family (finding a partner, marriage, families with small children, families with several children, children leaving the family home, old age…) and its phenomena. These family life cycle stages are associated with different income, wealth and economic needs, and goals. For me, the changes in savings (which can be interpreted as deferred or "negative" consumption), indebtedness and assets are the important factors. I examine economic behavioural characteristics related to family and individual life cycles, e.g. changes in income, savings, borrowing, monetary and real estate assets.

Classical economics regarded savings (which were typically the savings of the capitalist) as desirable and useful, as it represented the source of capital accumulation and thus growth. According to the Keynesian revolution, household demand is determined by income, and disposable income is reduced by savings. The examination of household savings and household income are thus linked, household consumption and household savings have consequently become complementary categories. According to Keynes, consumption is determined by current income (**absolute income hypothesis**), but according to his theory, households do not reduce their consumption proportionally to the decrease in earned income. Keynes distinguished certain motives for saving, e.g. precautionary motive (reserve), life cycle motive (coordinating the expected value of income and consumption), avarice motive, own resources development motive, bequest motive.

According to the **relative income hypothesis** developed by Duesenberry[30], household consumption also depends on previous income, and households compare the level of their savings and consumption to a selected, targeted reference group. With this, he also took T. Veblen's "leisure class" theory further. It is important to note that his theory addresses that consumers follow the behaviour of others, a kind of "narrative effect", which I will discuss in detail later. Friedman defines the relative income hypothesis as follows: "The relative income hypothesis assumes that the ratio of measured consumption to measured income depends on the consumer's relative position in the income distribution"[31].

[28] https://ec.europa.eu/eurostat/web/housing-price-statistics/overview
[29] EVS-WVS (2017)
[30] Duesenberry (1951)
[31] Friedman (1957 b), p. 158

Based on Friedman's[32] **permanent income hypothesis**, consumption does not depend on the current income, but rather on the longer-term average income, the so-called permanent income. Temporary income or "windfall income" is what fluctuates compared to the above. According to Friedman, the temporary income has no effect on consumption, it is reflected in the measured savings. Some of the income is also set aside by individuals on the basis of averaged medium- to long-term data to maintain a constant standard of living in order to "even out" consumption. Friedman talks about various motives for saving as well; the life expectancy of an individual, the end of their planned active age, and possible intentions to leave something to their heirs can be defined as variables. Wealth, including physical and intellectual wealth, also plays an important role in Friedman's mathematically based theory. In addition to income, the savings rate also depends on wealth.

The **life cycle hypothesis[33]** of Ando, Brumberg and Modigliani can be seen as an extension of Friedman's theory. According to their model, there are well-separable periods in an individual's life where the ratio of income to consumption fluctuates, but behind all of this lies the individual's intelligent approach to planning. The individual or the family can make an informed decision about how much they want to consume at different ages and to optimise for a full life cycle, thus using their resources efficiently. According to this theory, individuals and families take into account their entire planned life, the expected costs of raising children, the standard of living they want to achieve in old age, and decide how much they need to save or can spend now to achieve this.

Balestra[34] showed strong correlations between age and housing satisfaction based on OECD data. Based on Veblen's theory, Vastagh[35] defines 6 income/consumption groups based on their consumption expenditures using cluster analysis. Tóth[36] and Árvai examined the definition of financially relevant households and their willingness to get into debt, including the existence of liquidity-borrowing constraints using the permanent income hypothesis. "Meanwhile, the majority of the Hungarian population accepted 'saving' as virtue". The results of their study support the domestic relevance of the life cycle theory, and they confirm that there is a different consumption and saving behaviour of different age groups. The prediction of the permanent income hypothesis regarding the use of unexpected windfall income was confirmed, according to which the respondents would set aside a large part of any windfall income.

Mosolygó[37] also uses the life cycle theory in her dissertation, but her aim is to examine the effects of ageing on the national economy through the changes in savings, wealth and investment forms. "The peaks occur at different ages, the maximum of wealth can be reached at the time of retirement. For example, labour income is low in youth during the life cycle and then increases, while towards the end of the life cycle there is no labour income. Based on these, **the willingness to save also changes depending on the career path stage**: the propensity to save is low in youth and old age, while high in the middle of life." According to Hegedűs[38], more than 50 percent of the older parents interviewed helped their child to get an apartment in some way. According to this, the savings and income of half of first-time home buyers are supplemented by intergenerational transfer of wealth through parents. In his study, Medgyesi[39] also made findings supporting the life cycle theory based on the data from the TÁRKI Household Monitor surveys. **"In the case of bank loans, however, the role of age is decisive**...

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[32] Friedman (1957 a)
[33] Modigliani-Brumberg 1954, Ando-Modigliani 1963.
[34] Balestra-Sultan (2013)
[35] Vastagh (2013)
[36] Tóth-Árvai (2001), p. 1017
[37] Mosolygó (2011), p. 39
[38] Hegedűs-Somogyi (2004)
[39] Medgyesi (2016), p. 181-182

The role of needs is shown by the fact that, compared to single-person households, those living in a relationship and those with children are more likely to have a bank loan". KSH[40] also draws our attention to the effects of a high proportion of real estate owned by the elderly. In the housing survey based on data from 2015, the most important reasons for moving house can be interpreted and planned from a life cycle perspective. "**Upward mobility is mostly characteristic of families with children**; demands for a larger living space or a better living environment are usually formulated at this stage of life. The majority of singles, when they change apartments, move to a cheaper apartment than before". Among elderly single people, the proportion of those who moved to a cheaper apartment almost doubled. It is an interesting phenomenon that "...among the recent house moves, getting married and starting a relationship is the most common reason, the largest group of people planning to move are young people who want to become independent." "59% of households planning to move within three years are saving for housing... 12% of all households, i.e. about 480,000 households, have savings for housing." Life situations – that can be recorded statistically – which can be linked to the life cycle theory, are tangible, so these findings underpin the correctness of the life cycle-based approach, they reflect the turning points and decision situations of the typical household when it comes to management. Tárki's[41] research also interprets consumption at the level of households and examines savings and household assets – from the point of view of vulnerability. "**The best-known theory developed to explain the saving behaviour of households, the life cycle theory, highlights the important role of age.**" At the same time, the focus of their analysis is not on age, but on income and property distributions. The logic behind the HFCS[42] data was explained in detail by Simon[43]. Some of the data refer to averages, but e.g. in addition to the average and median values, the HFCS also provides the distribution of certain data by percentiles and age. The detailed data of the 2020 survey are not yet available; the MNB published the first summary results in March 2022[44] in this regard. In this way, we can rely on the results of the 2017 survey when it comes to the depth of the analysis. According to Simon[45], "The first comprehensive domestic household financial survey creates an opportunity to examine the income, consumption, financing and property situation of households in their context. **The size and quality of the recording makes it suitable for presenting the structure and distribution of household wealth, for which there was no data source until now**". According to Boldizsár[46], the proportion of households with real estate property in Hungary is the 2nd highest among the 22 countries participating in the survey. "In an international comparison, the **net wealth of Hungarian households** (taking financial assets and debts as well as real assets into account) is **relatively evenly distributed among households, which is mostly related to the relatively high property ownership**. ... For the poorer social strata, buying real estate is the most important form of saving". The MNB's[47] analysis about the comparison of the new HFCS data based on a 2020 household survey and the data of the national accounts is very interesting. The analysis carried out in my dissertation confirming the demonstrability of the financial life cycle of domestic households is based on the data of the above-mentioned 2017 surveys of the HFCS. KSH[48] also provides multi-dimensional data communication, e.g. also by age distribution. Unfortunately, these KSH age

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[40] KSH Miben élünk? (2016), p. 39; 42; 44-45
[41] Tárki (2014), p. 86
[42] ECB (2017)
[43] Simon-Valentiny (2016)
[44] MNB (2022 a)
[45] Simon-Valentiny (2016), p. 733
[46] Boldizsár et al. (2016), p. 123
[47] MNB (2022 a), p. 6
[48] KSH (2016)

groups are not formed the same way in terms of their number and age limits as the HFCS division, so they can only be partially compared directly.

III. Summary of my results, possibilities of the practical use
Results of the examination of the cultural background

Examining the cultural background was an extremely exciting process for me, as a result of which important findings can be made. I collected the relevant figures in the annex of the dissertation (Annex 2). As a summary of the processing of the literature, I highlight the following statements:

Of Hofstede's 6 dimensions, the values of **Individualism, Masculinity and the Avoidance of Uncertainty** are exceptionally high in our country.

According to Beugelsdijk[49], the **former post-Soviet states**

- have high individualism scores;
- among older people, the Joy value ("**enjoyment of life**") is low, this may be related to a "strict way of life";
- have the 4th lowest **Trust** value among the 5 examined country groups;
- half of national cultural differences can be attributed to the specific geographical location and history of each country;
- national cultural differences are quite persistent over a long period of time.

According to Breuer[50], **autonomy and harmony are the dominant values characteristic of Central and Eastern Europe**. Based on Fleck's[51] analysis

- the **Private Trust Index** reached a moderately low value (the 3rd from the bottom on the 8-point scale) in Hungary;
- in the case of the **Community Trust Index**, Hungary again achieved a moderately low value (3rd from the bottom on the 8-point scale);
- an increase in trust in community institutions by 1% reduces the need to hold liquid assets by an average of 0.8-3.4%, on the other hand, high household cash holdings of the Hungarian population may indicate extremely low trust in institutions;
- an increase in trust in other private individuals increases the purchase of apartments with a mortgage by 9.1-10.4% points, households with higher trust achieve a loan-to-value ratio (LTV) that is 4-6% points higher.

According to Németh[52], the "**order creates value dimension**" and the "**planners dimension**" are clearly the ones based on which someone is most likely to have a positive financial personality. The OECD[53] survey shows that

- in the **financial behaviour (behaviour)** category, we achieved significantly worse results (49.9) than the OECD average (59.2);

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[49] Beugelsdijk-Welzel (2018)
[50] Breuer-Salzmann (2012)
[51] Fleck-Monninger (2020)
[52] Németh et al. (2016.)
[53] OECD (2020)

- the **proportion of people with long-term financial goals is very low in our country** (35.2%), while the OECD average is 44.9%;
- the **proportion of active savers in Hungary is also low** (51.3%), the OECD average is 68.9.

My summary conclusion about the analysis of the cultural background is that there are studies that are relevant to the investigation and are available and there are dimensions and concepts from which we can infer the **domestic cultural characteristics, the importance of private property in international comparison, the acceptance of savings and borrowing, based on the background as well**. These show important international differences, **however, Hungary is not markedly different from neighbouring or nearby countries, and there is no clear separation between the concepts used**. However, the reason for the high home ownership rate in Hungary is partly cultural: **the moderately low degree of trust, the high level of individualism and the lack of long-term planning in our country should be highlighted.** Nevertheless, these cultural determinants **by no means imply measurable direct causal relationships** between cultural characteristics and financial behaviour or high levels of home ownership. **The explanatory power of culture can be mostly revealed within the scientific framework of financial culture, through the analysis of the concepts of knowledge, attitude and behaviour that are of paramount importance there (e.g. trust, long-term planning, order, foresight...); as well as the analysis of the narratives related to these concepts that appear in our daily lives.**

Results of the examination of the historical past, "path dependency"

An essential element of my research is the realisation that understanding our current institutions is not possible based on just a snapshot, so our current behavioural patterns and housing system cannot be understood without examining our economic history before the change of regime. We also need this for the following reasons:

- the past almost hundred years, which can be examined more thoroughly, brought with it several important forced breaks and changes, unfortunately we did not have a straight line and even domestic development at the level of institutions either;
- a significant part of the domestic housing stock was built before the regime change;
- it was then that the majority of housing stock, now predominantly block of flats, was created in bigger cities, making up a substantial part of domestic housing;
- the still dominantly high rate of private ownership of apartments was established during the regime change;
- and last but not least, our current behavioural patterns related to the ownership of apartments were also formed at this time.

Relying on the works of Hegedűs[54] and Kornai as well, after analysing the historical roots, the topic also leads us to the next chapter of my thesis, the chapter on examining the institutional system of the housing regime. In my brief review, I rely on Kornai's[55] much-cited[56] work. From

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[54] Hegedűs (2018)
[55] Kornai (1982)
[56] see: the thorough, comprehensive writing of Csaba L. (2018)

the point of view of my topic, the most important features of the Hungarian economic system before the regime change are as follows:

- Hungary did not even have a high proportion of rental housing before the Second World War; this was concentrated in a few larger cities;
- the nationalisation of housing remained limited during communism (e.g. villas, apartment buildings, block of flats);
- in the 1950s, more private construction work took place (family houses and I also include cooperatives) than public rented dwellings were built;
- almost all elements of the housing system (except perhaps the so called kaláka – work within a community for a member of the community on voluntary basis) were dominated by the state: building materials, lending, licensing, property acquisition, the state "took control" of the housing sector;
- in the 1970s, the largely rural, agriculture-based 2nd "economy", and the quasi-market solutions of the 80s gradually loosened the primacy of the state-municipal sector;
- private home ownership has become a kind of legal "way to acquire and protect wealth";
- the mass construction of rental housing (apartment houses and housing estates) has become characteristic since the Kádár consolidation (1960s-1980s) to alleviate the housing shortage in the cities;
- the range of grey and black transactions with rental rights, often based on bribes, has also been established in the rental housing sector (allocation of apartments, lease exchange, subletting...);
- a dual housing system emerged: the number of rental apartments in "tower blocks" increased in the cities, while privately owned family houses remained dominant in the countryside, with the help of the construction of these family houses, the housing situation improved significantly (on the outskirts of cities, in villages);
- by 1990, the housing shortage in Hungary was essentially resolved;
- these family and individual experiences, knowledge and beliefs collected over the decades still live with us today;
- the prosperity and support of the citizens is important to the state, and the citizens count on the state "aids", thus the state and private, family side of paternalism is formed.

Path dependency, the examination of our historical past definitely explains the high proportion of privately owned housing in Hungary. This form of ownership was dominant in our country before the Second World War, and paradoxically, it became one of the widespread, legal ways of accumulating wealth during state socialism in Hungary, which was reinforced by the support for the construction of single-family houses in the countryside in a centrally planned economy, as well as the rapid and almost complete privatisation of the short-lived urban block of flats form. Thus, I conclude that the institutional system of domestic housing already supported private property for own use earlier.

The formation and stages of today's institutional system of domestic housing

The current housing system (housing regime) was largely created after the change of regime. Examining this is therefore a very important goal for me as well. In the years of transition (1990-1995), we can observe the historical heritage of institutions and housing stocks, the

effects of macro-level economic policy decisions, and the simultaneous driving force of knowledge transfer in the slowly developing market economy.

In this time period, after the mass privatisation of housing that took place in the second half of the 1980s and during the Antall government, we can state that

- few rental apartments and few social rental apartments remained owned by the communities;
- in addition to high home ownership, the extent of renovations has decreased significantly;
- current housing burdens have increased significantly among new owners;
- due to high inflation and the reorganisation of the banking system, there was no room for retail lending.

The years before the turn of the millennium (from 1995) were characterised by the development of the institutional system (e.g. the rise of the retail business, the start of home savings and loan associations, credit institutions granting mortgage loans) and the start of retail lending. As a legislator, the state recognised that housing lending cannot be rebuilt without an effective institutional system, without the state's measures to support institutions, the market and citizens cannot overcome the disadvantages accumulated in the years and decades before the regime change. A noteworthy regulatory "hinge" of the 1990s was the increase in social policy support at the end of 1994, the purpose of which was to support the construction of new apartments for those with 3 or more children. In 1996-97, demand exploded, and for 2-3 years, many large-family households got access to new, but often poor-quality, poorly-situated, often unfinished apartments built on plots in declining regions. A purely social policy-based approach could not achieve a lasting upswing in terms of housing construction.

During this time period, "typically short-term, direct institutional interests were behind housing policy decisions"[57]. This social boom briefly raised the level of housing construction, which then declined again at the turn of the millennium. "In Hungary, between 1994 and 1998, the housing subsidy system caused a temporary boom in housing construction due to a regulatory error"[58]. The intensity of the competition of lending institutions was low, on the other hand, back office processes requiring a large amount of manual work (printing and signing of paper-based contracts, paper-based land registry collateral procedures) and the poor measurability of risks caused the low volumes. **At the starting point, in 2001, the housing loan stock did not exceed 2% of the GDP.** The housing policy after 2000 was strongly determined by active, conscious political decisions. During the administration of the Fidesz-FKGP government, elected in 1998, a turning point occurred in the housing policy in the early 2000s: the Government perceived that the macroeconomic indicators were improving and, with the Home Creation Programme launched in February 2000, set the goal of boosting retail home lending. The central element of the programme was government decree 12/2001 and one of the most profound measures of the plan was the launch of an interest rate subsidy, for which a double mortgage subsidy was created.

After the change of government in 2002, the examination of sustainability came to the fore, several researchers[59] deemed the system of interest rate subsidies unsustainable. According to Hegedűs' estimate, the share of housing subsidies within the GDP increased from 0.8 to 1.7% between 1998 and 2003.[60]

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[57] Hegedűs (2006)
[58] Augustyniak et al. (2019), p. 989
[59] e.g.: Városkutatás (2002)
[60] Hegedűs-Struyk (2006), p. 16

In 2002, the Hungarian Socialist Party considered the issue of housing to be extremely important at the programme level, when it declared in its programme that "150-180 thousand apartments will be built in four years, of which at least 25 thousand will be council rental apartments built with state support"[61]. Here, the construction of rental housing was emphasised as a goal. According to Hegedűs'[62] estimate, **housing subsidies quadrupled between 1998 (HUF 58.9 billion) and 2005 (HUF 239.3 billion). Within this, the rate of mortgage interest rate subsidies rose from 0 to 63%.** From 2003, the regulation mainly included restrictions in order to achieve sustainability. At the same time and contrary to this, in 2004, Ferenc Gyurcsány put forward the idea of interest rate tax that meant that banks had to pay 30-35 billion per year in 2005 and 2006.

In addition to the diverse, but fragmented, HUF-based support, from 2003-2004, a defining innovation "imported" by the banking system determined the following years of domestic home lending: foreign currency-based lending. The model of foreign currency-based lending came from Austria (loans based on CHF instead of EUR), and it first conquered the car loan and then the housing loan market in Hungary. "International literature also considers the difference between foreign and domestic interest rates to be the main reason for foreign currency lending"[63]. In the time period between 2004 and 2009, CHF interest rates were between 0.25% and 2.75%, EUR interest rates between 1.00 and 4.00%, and HUF interest rates between 6.00 and 12.00%[64]. Between 2002 and 2010, the household loan portfolio expanded more than fivefold, reaching HUF 11,000 billion. The economic policy after 2008 implemented essential changes in 3 main branches in order to finance housing. In my opinion, today's regulatory situation has developed as a result of these interactions, so it is advisable to examine them in the light of their interaction:

- Phasing out of foreign currency loans
- Strengthening macroeconomic and macroprudential foundations
- Distinctive re-regulation of the system of housing subsidies

In December 2014, the Minister of National Economy finally announced the government's goal of building 40,000 new apartments per year.

Agreeing with Hegedűs'[65] wording, "The form of the housing system (housing regime) must be derived from the economic policy model...The housing policy has room for manoeuvre within this, which is, however, influenced by the limited impact mechanisms of the housing policy instruments in addition to global factors." Housing policy cannot permanently overcome the macro social conditions. From the regime established after the 2008 crisis, it can be concluded that **the rebuilt housing support system focuses on the market-coordinated private housing sector and, within this, especially on the support for having children, and community housing forms (e.g. cooperative sector) or social housing have no weight in it. This has been a feature of domestic housing policy for about 15 years now.**

With the privatisation around the change of regime, private ownership became the dominant form; widely used alternative forms of home ownership have ceased to exist and have not been developed since then. The privately owned home for own use has become the main asset of families, the maintenance of which, however, involves significant

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[61] the MSZP's 2002 programme, cited by Mádi (2008)
[62] Hegedűs (2006)
[63] Bánfi (2000), p. 382
[64] based on the Central Bank's Announcements
[65] Hegedűs (2018), p. 103

expenses. Housing support for young families, access to private home ownership and central support for this became the main focus of housing policy. We saw that before and after the change of regime, the number of non-privately owned dwellings continued to decrease, which the housing policy only half-heartedly tried to slow down with social and rental housing programmes.

With this, together with what was explained in chapters 3) and 3.1 and chapter 4) of my dissertation, I see my hypothesis H1 as justified: The reason for the high rate of home ownership in Hungary has partly cultural roots, but the institutional system of domestic housing has supported the high rate of home ownership earlier and continues to maintain it.

Macroeconomic frameworks, analysis of their development and cycles

The examination of the macroeconomic environment served two important purposes for me: on the one hand, to reveal the main correlations affecting housing construction, and on the other hand, to analyse what causes its significant fluctuations, to what extent are these driven by the economic environment? For easier comparability, I present the figures within the chapter with the numbering used in the dissertation.

In Hungary, the credit market has undergone significant institutional development in the last 30 years, and especially after 2000. From that time on, we can say that a substantial housing loan market has developed. I present the effect of interest rates on the credit market in such a time frame using the central bank's base rate, knowing that these do not show the real, payable loan rates. Figure 16[66] of my dissertation shows well the significant interest rate fluctuations, even within a few years. In the past 30 years, apart from a few short time periods (2002-2003; 2005-2006), practically after 2013, the base interest rate was close to or below 5%/year. This interest rate can result in a market bank loan rate (+ commercial bank interest margin + credit risk premium), which already made an unsubsidised, affordable market loan rate possible. We have seen that in the time period 2002-2008 it was the arbitrage of interest rates that led to the explosion of FX lending. In addition to the level of loan interest rates, an important element is the volatility of interest rates, and in particular the fluctuation of this rate "experienced" by borrowers. A change in the interest rate affects the size of the instalment through the following variables:

- the remaining period of the entire term: in the case of annuity, the interest and principal share are in different proportions;
- the length of the interest period: due to the fixed interest rate;
- the remaining period of the fixed interest period: how long the capital debt can be repaid with instalments containing lower interest rates;
- the rate of repricing: how much the interest burden on the existing principal debt increases.

Even within the basically decreasing interest rate scenario until 2014, there were several small and large upward and downward movements, so until 2014 the borrowers could not even get used to stable, long-lasting interest rates. This happened for the first time after 2014. In the case of interest rates exceeding 5%, the increased interest rate within the repayment instalment significantly extends the repayment period. In my dissertation, in Figure 17, I examined the development of the GDP in euros, because this eliminates the fluctuation of the HUF exchange

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[66] Changes in the central bank's (MNB) prime rate 1990-2020 (own editing)

rate, thereby smoothing the development. On the other hand, the share of import in housing construction and renovation is high, so eliminating the exchange rate effect leads to a more accurate real value. It can be seen that, examined in this way, the level of GDP per capita increases monotonically with 2 short downturns. The MNB[67] also points out that the share of long-term investments among household savings is low. In addition to the approximately HUF 5,000 billion cash assets, only about HUF 10,000 billion are in bonds, and about HUF 7,500 bn. in shares that can be considered long-term, as well as life insurance and voluntary pension fund savings. The gap between financial assets and liabilities of households widens: the financial assets/GDP ratio gradually increased between 1990Q4 (55.7%) and 2021Q1 (145%). The change in the household liability/GDP ratio is more exciting: In Q4 of 1990, the ratio was 23%, which dropped to 8.4% by Q3 of 1998: it can be seen that, due to the lack of new lending, the old subsidised loan portfolio was quickly depleted. From this point until 2010Q2, the ratio rises continuously to 45.1%, which is the effect of the rise of foreign currency-based lending.

Fluctuations in domestic household lending and indebtedness can also be clearly observed in a European comparison: Until 2010, the development of the domestic loan stock was similar to the Czech and Austrian values (as we know, with an FX-based lending that is not sustainable using HUF as currency), then it fell significantly, and after 2018 it started to grow again.
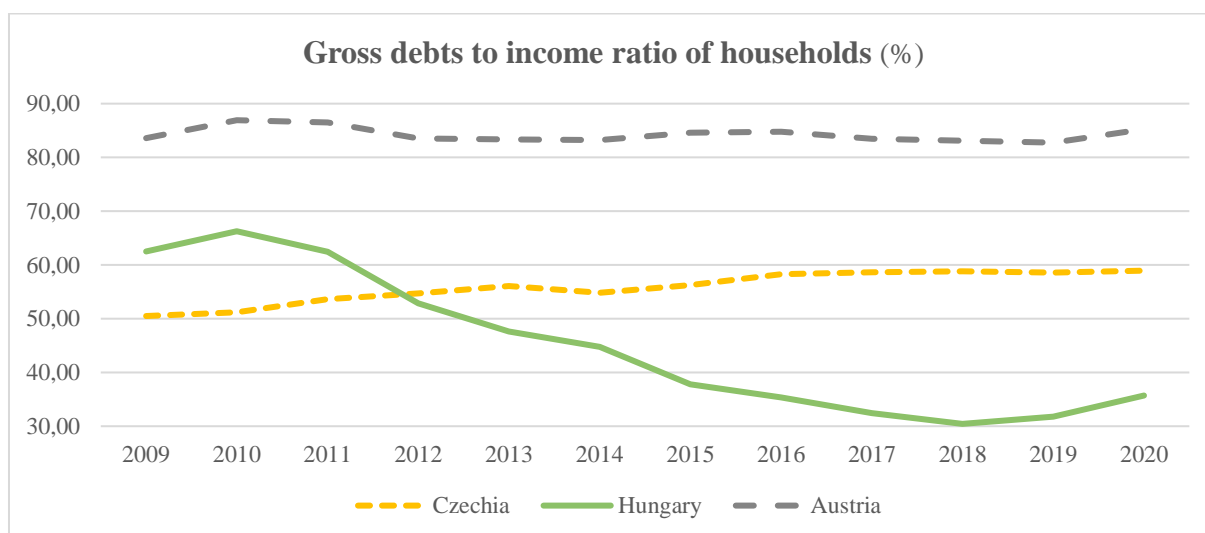
Figure 24: Changes in household debt and income in an international comparison 2009-2020 (Eurostat (2022b) TEC00104, own editing)

In another view[68], our country's housing loan stock to GDP ratio was still the lowest in Europe in 2020: 7.7% The average of the V4 countries is 20.6% (Czech Republic 23.6%), the average of the EU is 42.9% (Austria 30.3%). It can therefore be said that even with historical fluctuations, this indicator is low. In my opinion, among the reasons for this are the years of lost market lending due to high inflation, which even the often very generous subsidy regimes could not compensate for.

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[67] MNB (2021 c)
[68] Figure 25: Housing loan / GDP ratio in European Union countries 2020 Q2 (MNB (2020), own editing)

Since the regime change, there are fewer and fewer people living in one room. There is therefore no demographic pressure resulting from population growth, domestic urbanisation has slowed down, the number of empty apartments has reached 550,000, 12% of the housing stock. In my opinion, the issue of new apartments is not about quantity, but about quality. If we examine the age composition[69] of our quantitatively sufficient **housing stock**, the picture is sad: The age of the housing stock shows baffling fluctuations: according to the year of construction, the constructions years 1961-1990 represent 2.4 million apartments out of the 4.4 million housing stock. About 7% of the housing stock was built before 1919, and more than 2/3 (68.2%) were built before 1980. The largest number of flats – almost 1 million – were built between 1971 and 1980. These are over 40 years old and, based on the analysis in the previous chapters, only a very small amount of comprehensive renovation work was carried out (e.g. after 2002, within the framework of the "Tower Block Programme" linked to the governments of Medgyessy-Gyurcsány-Bajnai).

The **number of housing constructions and/or renovations** regularly poses a serious political dilemma: the numbers of housing constructions are available, the KSH regularly publishes them. According to a rule of thumb used by experts, the expected lifespan of the housing stock is 100 years, so in order to renew the same amount, it is advisable to build 1% of it anew every year. It is clear that the implementation of such a 100-year rotation cycle is already difficult. However, our situation is much more difficult if we want to determine the number of renovations carried out on the existing housing stock: there is no mandatory data provision for these, their quality, the "thoroughness" of their execution (is it just a wall painting or does it include insulation, doors and windows, mechanical parts) can only be estimated, and on the other hand, it can be approached from the point of view of sales revenue of the construction industry and trade in building materials through the various professional organisations.
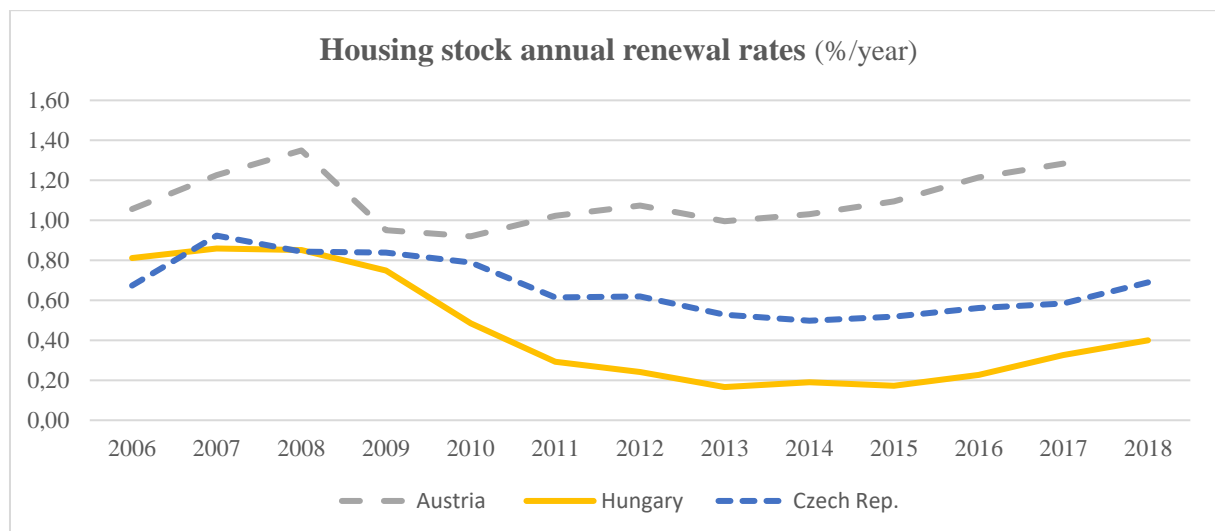
Figure 30: The renewal rate of the housing stock in an international comparison 2006-2018 (MNB (2019a), own editing)

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[69] Figure 28: The housing stock by type of ownership and year of construction 2016 (KSH 2.1.1., own editing)

The long-lasting cyclical nature[70] of the construction year of our housing stock has remained an essential feature of the past 20 years (in the previous 10 years, hardly any new apartments were built after the regime change): between 30,000 and 40,000 new apartments were built per year between 2002 and 2008, and also in connection with the FX crisis this decreased to 7-10 thousand per year, and then from 2018 it climbed back to around 20 thousand per year. The changes in the number of building permits are deceptive: although it rises or falls earlier than the number of constructions, it usually exceeds their real numbers. According to the latest data from the KSH[71], 19,898 apartments were built in 2021. The international comparison also shows that while Austria maintains the annual "rule of thumb" rate of 1% and the Czech Republic shows stable high results with a rate of 0.5% - 0.92%, in Hungary it fluctuates between values of 0,86% (2007) and 17% (2013 and 2015), which corresponds to a range of 500%. The energy classification of residential properties recorded by the Lechner Knowledge Center provides a good approximation of the general condition of the properties, taking into account a longer period (several years) and their quantity (hundreds of thousands of units). Based on this[72], the stock of domestic residential properties, based on a sample of more than 500,000 units, falls into the medium and low energy categories (CC-JJ). The median is in the FF category.

The impact of the previously described events is reflected in the **development of the entire housing loan portfolio**[73]:

- the interest rate subsidies that started in the early 2000s and increased;
- this upswing of CHF and EUR loans takes on an even stronger momentum from 2004;
- after 2008, the stock-increasing effect of the conversion into HUF can be seen due to the increased exchange rates,

then a fallback related to the conversion;

- around 2016, due to the favourable macroeconomic environment, the stock started to grow again.

In order to prove my first statement formulated in my hypothesis H2, I see it as confirmed that housing lending and housing construction have developed strongly cyclically in the past 30 years: we have seen significant, strong fluctuations – several hundred percent – in the short term, even within a few years. This is also true for construction, the number of transactions, the renewal rate, the volume of lending, and the changes in real estate prices. Fluctuations in the volume of lending to such an extent cannot be justified only by the changes in macroeconomic conditions; it certainly has an institutional and regulatory side. According to my assumption, the putative driving force of the fluctuation is the change in regulatory preferences, forms and intensity.

The effect of state subsidies on housing construction

The level of family support (this also includes housing subsidies provided as part of family support), increased from 3.5% of GDP in 2010 to 4.7% of GDP in 2017, and then

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[70] Figure 29: The number of issued housing construction permits and the number of newly built apartments handed over 2001-2020 (MNB (2020), own editing)
[71] https://www.ksh.hu/docs/hun/xftp/gyor/lak/lak2112.html
[72] Analysis prepared by Deloitte in possession of the author
[73] Figure 33: Changes in the stock of housing loans 2001-2020 (KSH 18.1.116., own editing)

decreased to 4.4% of it in 2019[74]**.** This means that the GDP ratio of family support increased by 34% between 2010 and 2017, while the GDP itself also increased significantly.

The lending volume reached unprecedented peaks in 2021, nominally 2021 became the best year of all time[75]. About 50% of the HUF 220-230 billion monthly loan disbursements are home loans, and the prenatal subsidised loan for married couples also accounts for a significant portion, i.e. HUF 40-60 billion. Personal loans and other loans make up the rest of the loans.

The actual amount of **housing subsidies related to housing construction**[76] increased between 2016 and 2021: from 150 billion in 2016 to HUF 250 billion in 2020. The appropriations are usually higher than the performance, so there is "no budget limit" for their payment. In 2021, the appropriation is in line with the performance value of the previous year.

Banai's[77] statement covers a larger period of time, so it points to even more important connections from the point of view of my topic:

- the number of housing constructions moves in line with the change in the amount of subsidies;
- the amount of housing subsidies fluctuates significantly between HUF 50 (2000) and 230 (2005) billion/year (2015: HUF 110 billion; 2018: HUF 190 billion);
- it can be seen that 3 types of support "replace each other" over time:
  a) the interest subsidy runs out between 2001-2018;
  b) later on, the support for home savings depositors increases (but this will also run out after its gradual terminations from 2018 onwards);
  c) after that, from 2015, the non-refundable government subsidy (CSOK) was introduced instead.

There are no statistical reports for renovations on the housing market, and the number of transactions does not indicate the degree of renewal (buying a higher-quality property instead of the old one), so we can monitor the development of the number of housing constructions. The number of constructions should basically depend on the changes in the macroeconomic conditions affecting it: After 2014, our economy was characterised by a stable, low interest rate environment, a strong loan supply, increasing employment and income.

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[74] Állami Számvevőszék (2021c) Figure 14
[75] finding examined in May 2022
[76] Figure 35: Monetary housing subsidies 2016-2021. (Állami Számvevőszék (2021a, 2021c), own editing)
[77] Figure 36: Changes in the amount of housing subsidies and the volume of construction (Banai et al. 2019)

Development of housing and underlying indicators (2000=100%)

Legend:
- Housing subsidies (appr.) HUF 2000=100%
- Home building td./y (KSH 2.3.9.) 2000=100%
- Disposable income of households HUF (B6n KSH) 2000=100%
- Net wealth of households HUF (MNB S.14) 2000=100%
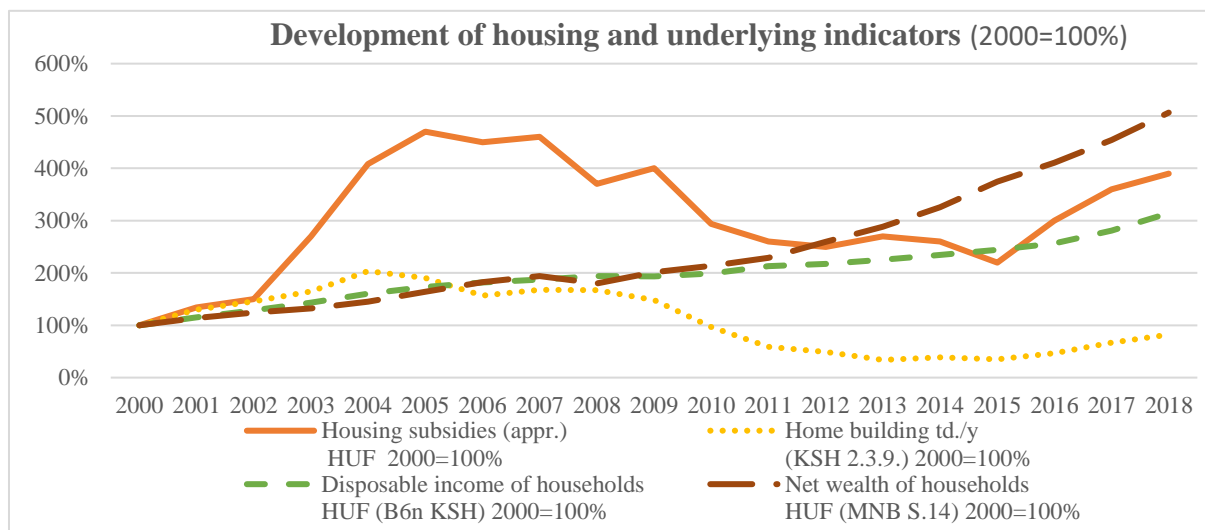
Figure 41: Changes in the indicators determining housing construction 2000-2018 (MNB, KSH, Banai et al. (2019), own editing)

We can see that both the disposable income and the net financial assets of households increased significantly, but this was not followed by a similar trend in the number of housing constructions, which decreased significantly between 2004 and 2013 (to 7,209), and then increased again from 2014.

Taken out of the context above, the changes in housing construction and housing subsidies are already remarkable: their curve moves in the same cycle and directions. I made a statistical calculation of correlation of the above data. **The result of the calculation is r=0.441+ (p=0,059), there is a tendentious, moderately strong positive correlation between the sum of housing subsidies and the number of housing constructions.** Further analysis of this may reveal the details, but when examining the strength of the correlation, it should be mentioned again that the timing of the disbursement of the subsidies and its actual real economic impact mechanism are significantly different in time depending on the form of the subsidies: the subsidy can precede it (e.g. "bauspar" home savings), it can be at the same time (CSOK lump sum capital subsidy), or can follow the actual housing market effect over time (prenatal subsidised loan for married couples).

Figure 43 of the dissertation shows the year-on-year development of housing subsidies and housing construction[78]. The rate of these changes (elasticity) shows that **the increase in support does not lead to a larger increase in housing construction afterwards**, only in 2007-2008 and after 2014. The latter means to me that, **under favourable macroeconomic conditions, the subsidies stimulate housing construction, but they are not able to trigger an additional multiplier effect.**

It is an essential connection that the goal of the current housing regime – the creation of a housing support system to promote/motivate having children – means a very large-scale intervention in the housing market with the involvement of significant funds. Frequent changes in the form and amount of subsidies, and the related regulatory impatience (demand for an immediate expected effect) led to heightened customer expectations and serious market

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[78] Figure 43: Year-on-year changes in housing construction and housing subsidies 2000-2018 (KSH, Banai et al. (2019), own editing)

fluctuations in recent cycles. Savings support, interest support, and capital support followed each other and exist side by side (e.g. CSOK, prenatal subsidised loan for married couples), all of which are determined by the expected goals of having children due to the housing subsidies. Family policy goals determine the tools of housing policy, all of which lead to the development of regulatory cycles. In the 2nd half of 2019, the prenatal subsidised loan for married couples[79] burst into the demand side of the housing market with its loan amount of HUF 471 billion and amounted to HUF 618 billion in 2020. As the "leading product" of housing loans, these subsidies pull the entire market with them: the share of CSOK-related loans[80] tripled in 5 years from 9.1% (2016Q1) to 28.4% (2021Q2).

The successive housing regimes generated frequent and profound content-related changes in the institutions of housing subsidies, as well as in the means and extent of the subsidies, both in the amount and in the impact mechanism. I include here the cessation of housing subsidies that were dominant in the 90s, and the spread of foreign currency-based lending from 2004, which appeared as a market and banking product innovation tolerated and accepted by the regulator. I examined the support systems of the years that have passed since then and found a causal relationship between the support and the demand for housing loans, as well as the price changes due to the rigidity of the supply. Consequently, I see my H2 hypothesis confirmed: "In the highly cyclical development of housing loans and housing construction experienced in the last 30 years, the driving force can be detected in the different forms of housing subsidies and the changes in their volume."

However, this does not mean that these forms of support are the only driving forces: of course, the characteristics and framework of the underlying macroeconomic environment cannot be disregarded, but without these subsidies the development of housing financing would certainly take place at a lower level and with smaller cycles.

Results of the analysis of life cycle-based income, financial and real estate assets

Regarding the relevant domestic researches analysed in my work, it can be said that they use approaches based on the life cycle theory, they consider it valid, existing, and to be further investigated. At the same time, none of the researches dealt with the possible relationship and causal correlations between life-cycle-based income and the formation of wealth and borrowing. Therefore, I will now analyse this in more detail based on the available data.

From the KSH data, we have data on the income of different age groups at a given survey point in time. The KSH age breakdowns are prepared for the following age groups: -25 / 25 – 54 / 55 – 64 / 65+ (4 age groups in total). By placing these next to each other year by year, an "average" curve is already formed, which enables general conclusions for the given age groups – and thus also for the average life cycle of individuals.

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[79] Figure 40: Quarterly transactions of households' housing loans and prenatal subsidised loans 2011-2021 (MNB (2022b), Figure16., own editing)
[80] Figure 38: The proportion of CSOK-related loans within housing loans 2016-2021 (MNB (2021d) Figure 41, own editing)

Based on the KSH data[81], the age-related income curve for each calendar year and the related age development are interesting to me. It is convincing that every year shows a similar pattern. According to the development of the life cycle, the typical similar characteristics of the per capita incomes in each year's data are clearly visible: Compared to the <25-year-olds, income increases until the age of 64, after which it stagnates or slightly decreases. The rate of growth is different in each year, but the shape of the curves is similar. The income of those over 64 here varies from year to year, there are years when it rises and years when it falls, and it stagnates on average. It is not important, which line belongs to which calender year, but it is important that in this representation

Income per capita by the age groups (<25 y=100%)
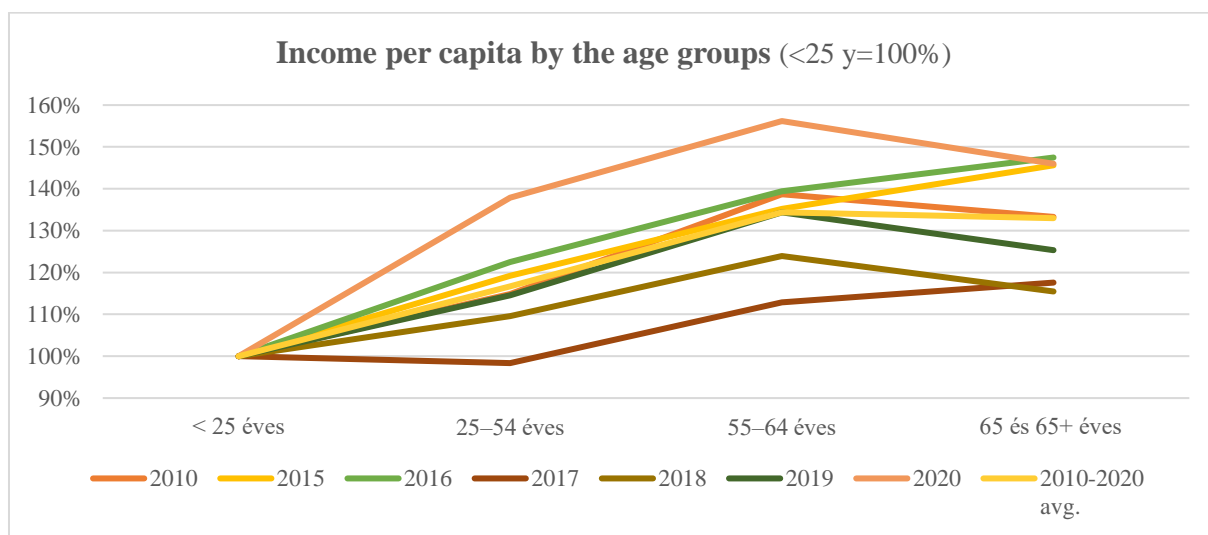
Figure 46 Income in per capita by the age of the reference person compared to other age groups 2010-2020 (KSH 14.1.1.9, own editing)

- the annual inflationary wage increase is eliminated (missing), since the starting value is 100% in each year's data;
- the "sample", which in this case is the income of the entire population, is similar;
- there are fluctuations between the individual years (presumably depending on the known macroeconomic reasons);
- here we can already see the incomes of the individual age groups independent of inflation and economic cycles, i.e. the independent changes of each curve in each life stage.

Another data source, the **ECB[82] HFCS survey**, provides data with a similar approach as the above KSH statistics. The survey was conducted in 2016-2017 collecting household data from a total of 91200 households using the same methods in 22 EU countries (although national specificities set several limits in this respect). Hungary also participated in this survey. A difference compared to the above data of the KSH is that the HFCS examines the income of the entire household, and although it provides the size of the households for the entire sample, it does not connect it with the age breakdown of individual family members, so the income and assets per person cannot be calculated from the data.

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[81] Figure 45: Income per capita of households by the age of the reference person 2010-2020 (KSH 14.1.1.9, own editing)

[82] ECB (2020)

The data of diagram I2[83] show that the **income of households** increases continuously until the age of 54 of the reference person (who is the main breadwinner). The rise in income on a purely life-cycle basis constitutes almost 1% here, without taking into account the differences in education, place of residence, or source of income.

The **distribution of wealth between real and financial assets** can be analysed using the medians published in the HFCS survey. The median value of net worth[84] reaches its maximum in the 45-54 age group, after which it decreases monotonically. When examining real estate assets, we get a life cycle curve similar to the ones above: A steady increase until age 54, then a slight decrease until age 64, and a stronger decrease until age 74 and beyond. This means that the observed households increase their real estate assets up to the age of 54 while raising children.
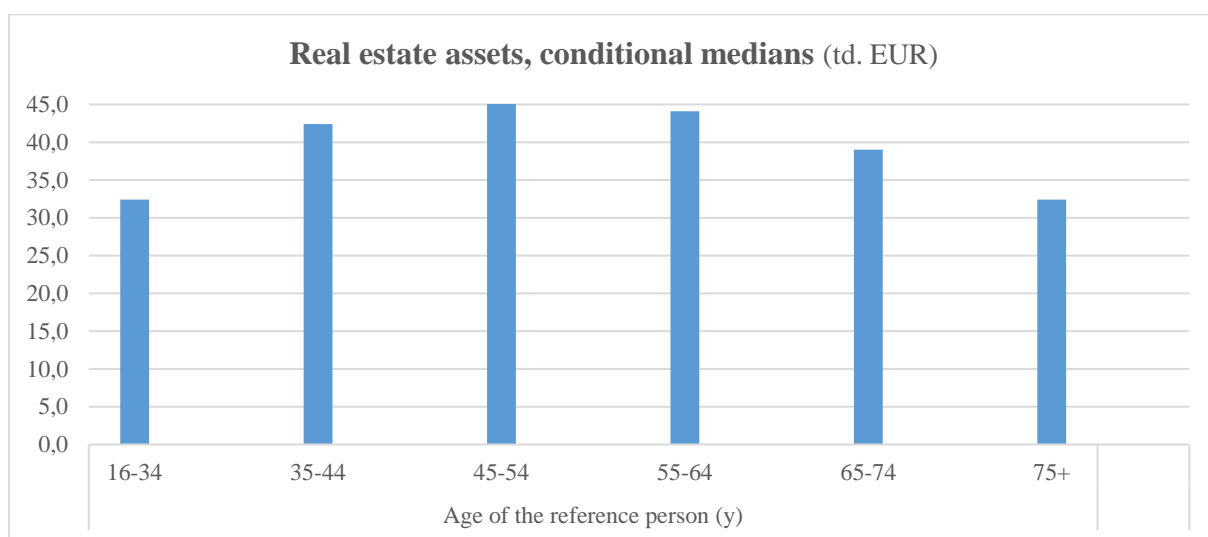
Figure 50: Real estate assets median by the age of the reference person 2017 (ECB (2020) B5, own editing)

A reason for the subsequent decrease may be the intergenerational transfer of wealth, gifting and leaving assets as inheritance[85].

The amount of real estate assets is also extremely important because of the "LTV[86]" ratio, so also from the point of view of one of the macroprudential regulatory instruments of creditworthiness. This life cycle distribution also means that the creditworthiness increases up to the age of 54 due to their real estate collateral and stagnates afterwards.

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[83] Figure 48: Annual gross household income by the age of the reference person 2017 (ECB (2020) I2, own editing)
[84] Figure 49: Median net asset of the household by the age of the reference person 2017 (ECB (2020) A3, own editing)
[85] see KSH (2016) findings
[86] Loan to Value

Ratio of households holding debt (%)
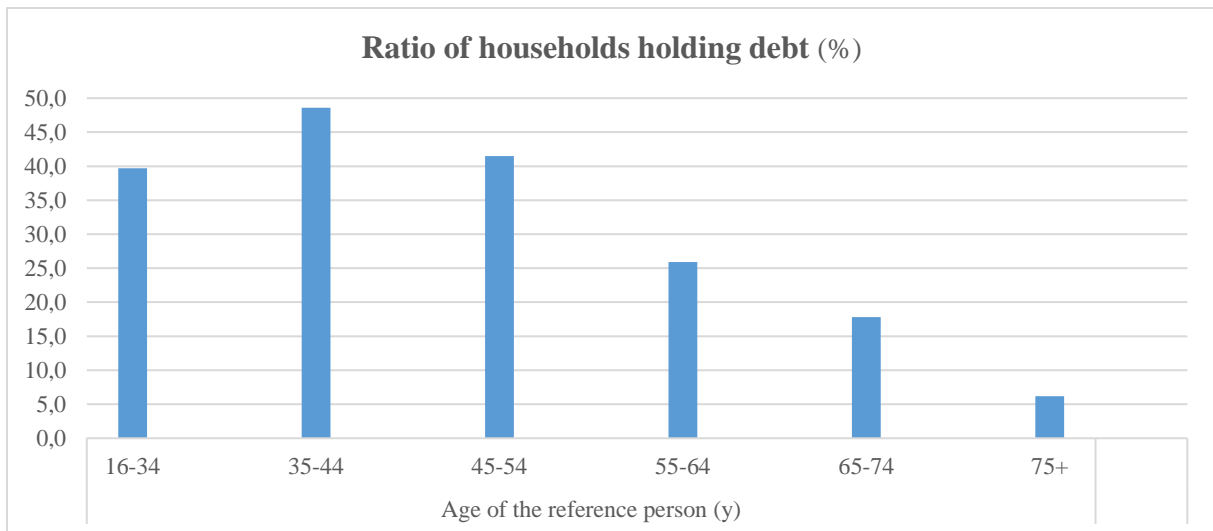
Figure 52: Ratio of households holding debt by age of the reference person (ECB (2020) E5, own editing)

The comparison of real assets and financial assets shows once again how important the role of real estate purchase and **real estate financing** is in the life of Hungarian households: the median for real estate assets is EUR 30-45 thousand in addition to the median for financial assets of EUR 0.8-1.4 thousand based on a survey of households. Summarised data of the 2017 domestic HFCS survey:

- incomes increase until the age of 45-54 and then decrease;
- the rate of borrowing between the ages of 35 and 44 is rising rapidly and is exceptionally high;
- by the age of 44, the real estate assets of households are cumulated with the same dynamics as borrowing;
- the net median wealth rises rapidly from a low level until the age of 54, then it slowly decreases: loans are repaid and wealth is passed on between generations.

Income, wealth and debt by age
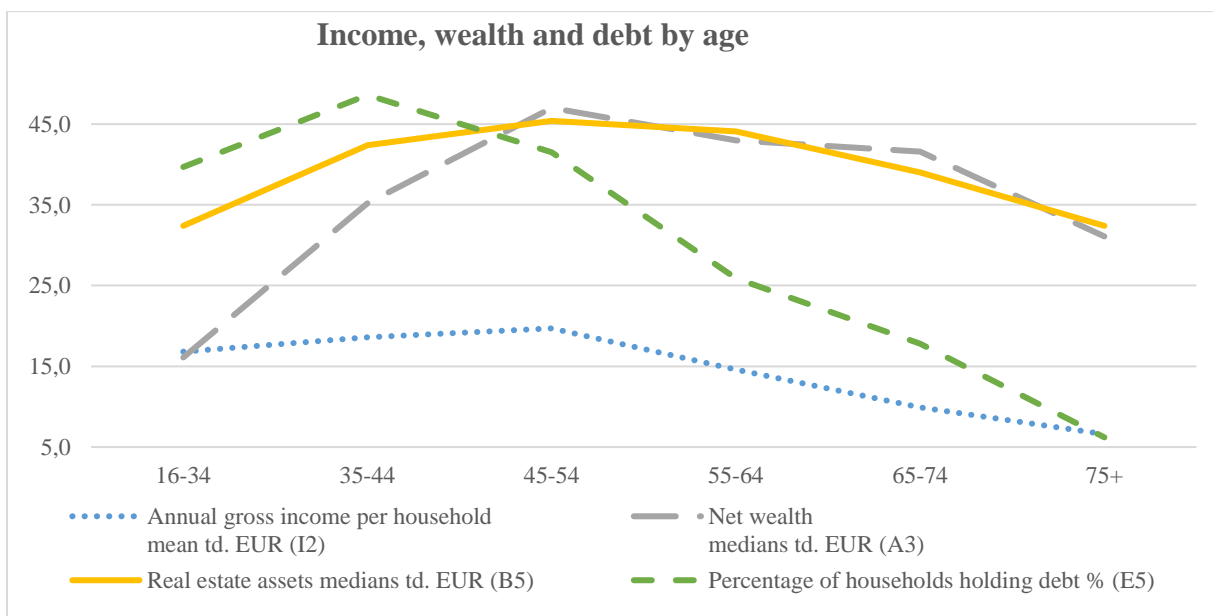
Figure 60: Development of income, assets and debt by age of the reference person 2017 (ECB (2020), own editing)

Based on the above, it can be concluded that

- the development and cumulation of life-cycle-based income and wealth (both monetary and real estate) can be demonstrated on statistical data;
- the statistical data prove that the generational wealth transfer within families takes place: the net and real estate wealth of the elderly decreases, while that of the young increases significantly;
- borrowing and the previously analysed role of state subsidies are essential in the cumulation of real estate assets;
- life-cycle-based income contributes to the higher level of indebtedness of young people through the ability to repay loans based on higher incomes.

In summary, the above data show strong income and wealth life cycle curves. This is manifested in the form of income that increases up to 54 years of age, an outstanding willingness to borrow in the case of young families (which is significantly supported by the family support system and the housing policy), assets that also increase with age until the age of 54, and in the case of the elderly, an outstanding ratio of financial assets. Like the KSH data, the life cycle theory can be described with the HFCS household data in terms of the development of household income and wealth and domestic household loans as well. I see my H3 hypothesis confirmed:"Statistical data show the changes in the domestic family life cycle-based income, as well as real estate and financial assets."

Summary, channels of impacts

Returning to the beginning of my dissertation, I summarise the model I have explored with a diagram of my own. It is, of course, essential that such a model, a mental construction, is the result of an abstraction process: as much as the comprehensible representation can be a virtue, it can also obscure details.
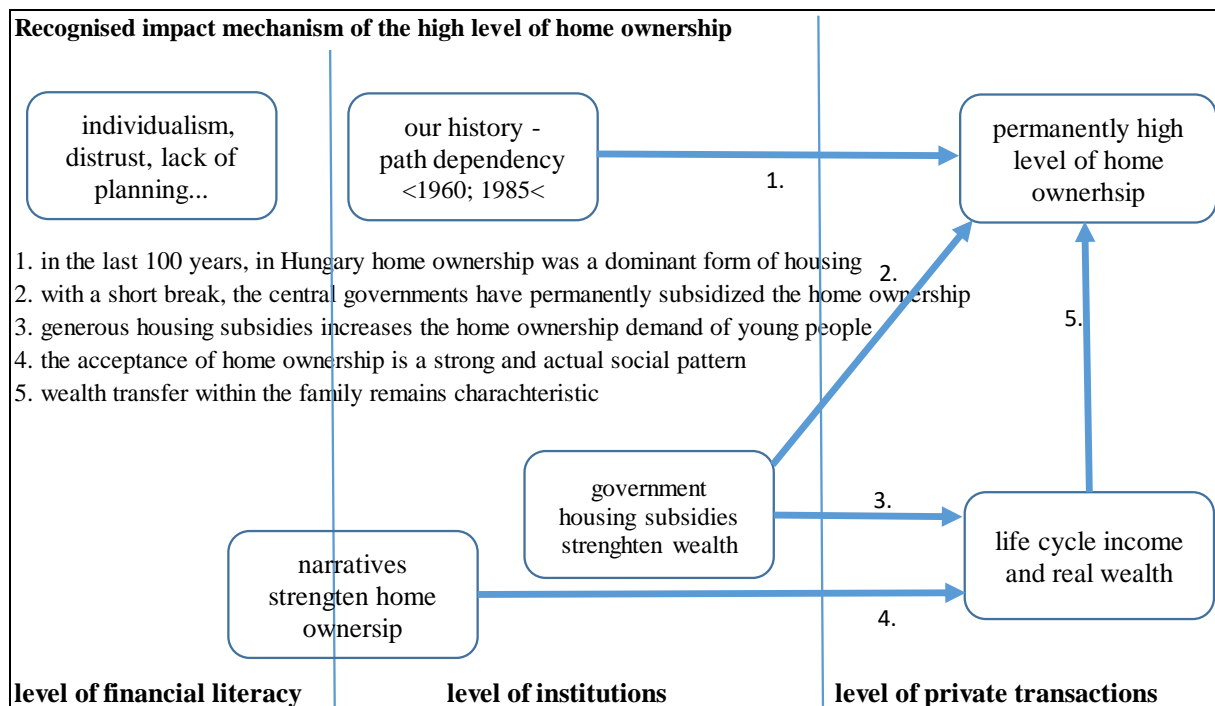
Figure 63: Factors impacting the development of high home ownership (own model)

In my opinion, the influence of culture exists, but it cannot be proven directly with today's tools of economics; however, a targeted examination of the elements of culture through the concepts of financial culture, as well as popular beliefs and narratives formed and nourished by the culture have an impact on and are important for public discourse and the press, or social media.

The existence and effects of state subsidies for housing are alive in us: the state has seen it as its task to support access to privately owned housing for the past 30 years, and the young generations growing up today also "expect" the existence of subsidies. State subsidies have a significant pro-cyclical effect on lending (CSOK, prenatal subsidised loan for married couples, Green Home Programme (ZOP)), and these are typically used by the state with adequate resources to stimulate the economy.

The period of stable low interest rates, which served as a basic condition for long-term lending, was regrettably short in the last 30 years, borrowers were not yet accustomed to this at the level of their expectations, so the dominant tool remained the following and use of state transfers for housing purposes.

The strong consequences of life-cycle income for life stages should be investigated to a greater extent within the framework of further research:

I. In the case of **young people** (on the "input" side of real estate ownership), there is no permanent and widespread institutional housing alternative to the acquisition of one's own flat, so young people are essentially forced to acquire a privately owned flat as soon as possible. In addition to family transfers (e.g. asset transfers to create self-reliance and income transfers to meet the income conditions of creditworthiness), access to state subsidies (wealth subsidy or interest subsidy) is also an essential condition.

II. In the case of **active adults with families in the middle of the life cycle**, it is important to examine the retention, maintenance and modernisation of acquired private property. It can be said that the acquired home ownership represents a very significant part of the family's wealth, to achieve this serious capital accumulation efforts were made. The maintenance and necessary modernisation of the outdated residential property stock (it is about 50 years old on average and as median) imposes significant financial burdens on the owners. In addition to all this, the dominant apartment building form in our country does not support possible renovations and modernisations.

III. The **special situation of the elderly at the "other end" of the life cycle should be examined**, because their high rate of home ownership also means unique, often difficult-to-manage burdens. The impact of the burdens of the elderly due to high home ownership should definitely be analysed. "The oldest age groups live in the highest proportion in apartments without modern conveniences."[87]

30 years after the regime change, with significant roundabout routes and cracks and tears behind us, I show several Achilles heels of the Hungarian housing policy. I place them in the conceptual logical framework outlined at the beginning of my work, specifying what type of change is required and, in my opinion, how long it would take to implement it. **The further research of these correlations can certainly lead us to further useful insights regarding the**

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[87] KSH (2014), p. 26

development of domestic housing, so in my opinion, their investigation deserves further efforts in the future.

A) Long-term healthy ratio of private property and rental housing:
Since the regime change, as we have seen, the number and proportion of market and social rental apartments has decreased significantly, practically self-owned apartments have become the exclusive form of housing in Hungary. As a result, the possibility to re-establish the diminished municipal and private rental housing sector, which has been lacking for 30 years, must be created, and its optimal size must be determined. There are two questions behind this: one is private property vs. rental; the other is the dilemma of market vs. social rental housing. There is a fundamental philosophical and socio-political dilemma behind private property vs. rental property. Moreover, these are problems that have been ongoing for many decades, with a correspondingly long solution time, so solutions are also necessary that span the political sides and the parliamentary system in which the rule of two parties alternates. In the case of institutional rental apartments, the following questions must be answered: which market players can embark on such task, under which regulations, what are the expected returns (which will determine the prices of rental apartments), and the institutional guarantees, for what period of time, how does this affect e.g. labour mobility.

B) Construction of new apartments versus renovation, modernisation:
We saw that majority of the domestic housing stock was built 50-60 years ago, and these are largely outdated, energy-wasting buildings. We know that the sources of our energy supply are increasingly uncertain, e.g. the uncertainties of Russian gas transport are becoming increasingly prevalent today, due to the war as well. About 800,000 to 1 million homes would need to be thoroughly renovated (including mechanical renewal, windows and doors, thermal insulation). These are partly masked by the location of low-quality apartments in rural areas, small villages – areas burdened by outward migration. What will happen to the existing housing stock, what are the possible goals and means of the necessary (energy) renovations? This includes the energy system improvement of the existing housing stock, and the target system of "green housing" that supports the "tip" of this, which is emphatically promoted by the MNB. More and more of us are working from home. The new functions of the apartments (workplace + school + living space) place completely new expectations on the existing housing stock, which increases its quality and maintenance costs even more.

C) Effects of a significantly changing macroeconomic-inflationary environment:
From the end of 2021, a markedly rising interest rate trend has defined our economy, the effect of which will also be felt on lending volumes. It is an exciting question, when will the budget limit of housing subsidies be tightened, and in this regard, when will a professional and policy-based debate on the sustainability of the effects expected from the subsidies, their effectiveness and expediency begin? There are several built-in deadlines in the support system today, so some of the currently existing supports will expire in 2022. Adaptation to higher market interest rates may take several months or even years, and the MNB is more optimistic about this today. It would be expedient to analyse that the subsidies have a fixed interest% depending on the goal to ensure the state' predictability.

D) Harmonisation of housing demand and supply, price trends:
"This resulted in today's unsustainable housing policy and real estate market situation, where well-intentioned family policy measures focused solely on stimulating demand resulted in

rampant real estate market inflation, with insufficient new housing supply."[88] We have seen that economic policy and support systems focused on supporting the demand of young families lead to price increases while the supply remains unchanged, and thus to increasingly difficult affordability: the lesson of all this is that an effective housing policy must achieve the appropriate expansion of the supply in addition to the politically dominated goals of demand support.

E) Coordination of the general economic and housing support cycles:
Recognising the need for a counter- (or anti-) cyclical housing policy is our urgent responsibility. This would certainly be suitable for reducing existing cyclical phenomena within lending and the construction industry. However, there is no consensus today between the political sides within the framework of the changing governments regarding its possible instruments, including the use of support instruments across political cycles: to what extent is the diversification of housing support instruments necessary, the "depth" of direction changes to be implemented by governments of different political orientations?

F) Coordination of the housing policy and other related development policies:
It is apparently the government's task to coordinate policies, but it is more than that. The history of the last 3 decades proves that e.g. financial housing subsidies, the development of the financial institutions that serve them, the creation of the conditions for the supply of housing, to this end the construction energy regulations, settlement planning regulations (e.g. the elimination of brown zones in larger cities, the construction situation of the agglomerations of Budapest and Lake Balaton), industrial and regional developments are all elements that affect each other. These elements currently indicate tension at several points.

G) Management of life cycles with support and market tools:

According to my analysis, domestic housing finance institutions do not (sufficiently) take into account the positive effects of life cycle income. Here I include the possibility of more effective consideration of life-cycle-based income, and this also includes the institutional and market solution to the dilemma of "relative" housing poverty of people with valuable real estates burdened with high utility bills, which problem has arisen for historical reasons mainly among the elderly living alone. MNB analyses a possible relaxation of the loan-to-value ratio to facilitate young people's access to their first home, and presents the relevant international comparison[89]. The emergence of loan programmes that support the situation of the elderly by supporting energy efficiency upgrades and the facilitation of barrier-free living is a task to be solved at the regulatory and institutional level.

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[88] Matolcsy (2020)
[89] MNB (2021b)

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