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Household Finance and Consumption Survey 2021: Results from Slovakia*

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Abstract

This report presents the main findings from the fourth wave of the Household Finance and Consumption Survey (HFCS) conducted in Slovakia in 2021. The survey provides a structural overview of information about household assets, liabilities, income and consumption, extended by indicators regarding financial literacy, labour market effects of the pandemic, and measures of household expectations. We find that median household net wealth stood at more than €97,000 in 2021, up from €70,000 in the previous survey wave in 2017. This rapid appreciation was mainly due to a remarkable increase in real estate prices over the considered period. Household assets remain substantially concentrated towards real estate, which account for nearly 80% of all household assets. Households continue to be conservative also in terms of financial assets, holding mainly risk-free deposits or low-yield savings accounts. Only 6% of households hold investment-based financial assets such as shares, bonds, or mutual funds. Relatively poor inclusion in financial markets is coupled with low levels of financial literacy of the Slovak population; however, we observe a slight improvement since 2014. While the level of household indebtedness increased substantially between 2017 and 2021, there was some moderation in debt burden indicators (such as LTV and DSTI ratios) mainly due to tighter borrower-based measures. Given the steep rise in value of owner-occupied housing and growth in labour income, both wealth and income inequality declined and hence ensured more equal distribution of economic resources across society.

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1. Introduction

This report presents the main findings of the Household Finance and Consumption Survey (HFCS) conducted in Slovakia in 2021. It is a part of a European-wide project, coordinated by the European Central Bank (ECB) and Eurosystem national central banks (NCBs). It highlights the main changes in household finances over time.

We collected detailed household-level microdata on household real and financial assets, liabilities, income and consumption, as well as detailed socio-economic and demographic variables. These microdata allow us to identify differences across household types and to assess and analyse distributional effects of economic policy measures. In other words, the survey helps us to better understand the structure of household wealth and to see its progress over time. While the survey is normally conducted every three years, the fieldwork for this wave had to be postponed from 2020 to 2021 because of the COVID-19 pandemic. Although the pandemic in general complicated the fieldwork and face-to-face interviews, it is important to stress that the overall quality of the Slovak HFCS has not been compromised. Further details of the survey collection are presented in Appendix A.

Between 2017 and 2021 household finances in Slovakia evolved in line with the general macroeconomic developments. These are the main takeaways from the fourth wave of the HFCS survey:[5]

- **Net household wealth increased substantially** between 2017 and 2021 (from €70,000 to €97,000 for the median, and from €104,000 to €126,000 for the mean). Solid growth of net wealth was observed even after accounting for inflation.
- **Growth in household wealth was substantially heterogeneous across different socio-economic and demographic groups**. The highest increase in net wealth between 2017 and 2021 was observed among young, low-income and/or low-wealth households with owner-occupied housing.
- **Higher net wealth was mainly driven by value appreciation of the household main residence** (HMR), on average close to 40% between 2017 and 2021. The average HMR ownership rate remained very high – at 90%.
- **High demand for housing was accompanied by an increase in household indebtedness**. The share of households with mortgage debt grew from nearly 21% in 2017 to more than 25% in 2021. During the same period, household non-mortgage debt participation dropped from more than 21% to less than 18%.
- **Favourable financing conditions made households to become less credit constrained**. The share of households that were fully or partially refused a loan almost halved (from 17% to just below 10%). Likewise, the share of households discouraged from taking credit or loan dropped from 5% to 4%.
- **Tighter borrower-based measures (BBM) contributed to moderation of debt burden indicators,** such as LTV and DSTI ratios.
- **Household asset portfolios remained highly concentrated**: in 2021, HMR accounted for the vast majority (on average more than 70%) of gross household wealth. The overall contribution of financial assets to gross wealth was modest (on average 11%).

[5] The results of the previous three waves are presented in Senaj and Zavadil (2012), Cupák and Strachotová (2015), and Jurašeková and Strachotová (2019).

- **Annual gross household income increased moderately between 2017 and 2021.** For the median household, it rose by 31% to €21,000 (18% in real terms). Incomes of the young households rose the fastest.
- **Wealth inequality, measured by the Gini index, fell from 54% to 46%**. The main drivers were broad-based higher valuation of real estate coupled with widespread home ownership. Even among the less wealthy half of all households, as many as 80% owned their housing. Therefore, the general uptrend in real estate prices made almost everyone wealthier and reduced overall inequality.
- **The most important shock faced by households during the COVID-19 crisis was a reduction in income while maintaining a job.** Almost one third of active households experienced this issue, mainly self-employed households, younger households, those working in contact intensive services and in manufacturing. On the other hand, there was an unprecedent increase in teleworking with 32% of employee work done from home during the pandemic.
- **Financial literacy improved by only a small margin.** A slow but gradual improvement was observed since the introduction of this module into the 2014 survey. However, only a small share of households could correctly answer all four test questions asked in the 2021 survey. Low financial literacy levels are one of the barriers for acquiring more sophisticated financial assets.
- **Findings on individual subjective well-being suggest that households were on average happier in 2021** compared with 2017, perhaps due mainly to households becoming wealthier and wealth being more equally distributed. Individual happiness scores also differed substantially across different household types and were impacted by the COVID-19 pandemic.
- **At the time of the survey, most households did not expect the value of their main residence to increase significantly.** Despite the prevalence of housing among total assets, most of the households expected their nominal value to grow by only 2-5%, while the actual figure turned out to be over 20%.

2. Household wealth, assets, income and consumption

2.1. Wealth

Median household net wealth[6] increased by 38% in nominal terms between 2017 and 2021 (from around €70,000 to almost €97,000). Even after adjusting for inflation, the growth of median household net wealth stood at 25% in real terms.

Household net wealth is, however, subject to significant differences across individual characteristics. Given that real estate prices rise steadily, homeowners tend to become

[6] Household net wealth is defined as the sum of real assets (value of real estate, vehicles, valuables, self-employed business) and financial assets (value of deposits and savings accounts, mutual funds, bonds, private non-self-employed business, shares, assets in managed accounts, money owed to the household, voluntary pensions and whole life insurance) less the sum of outstanding mortgage and non-mortgage debt.

increasingly wealthier than renter households. We can observe this divergence throughout the survey waves.

We observed considerable heterogeneity in the evolution of net wealth across the income distribution. Over the considered period, the low-income quintile (bottom 20%) of households recorded the highest gain in the value of their owner-occupied housing: a nominal increase of 70% and a real increase of 53%.

Household net wealth is also traditionally diverse across age, employment status and education. In line with life-cycle theory, wealth is gradually accumulated with age to a certain point and declining thereafter. One notable finding is that between 2017 and 2021, household net wealth grew the most among young households (aged 16 to 34) – by 112% in nominal terms.

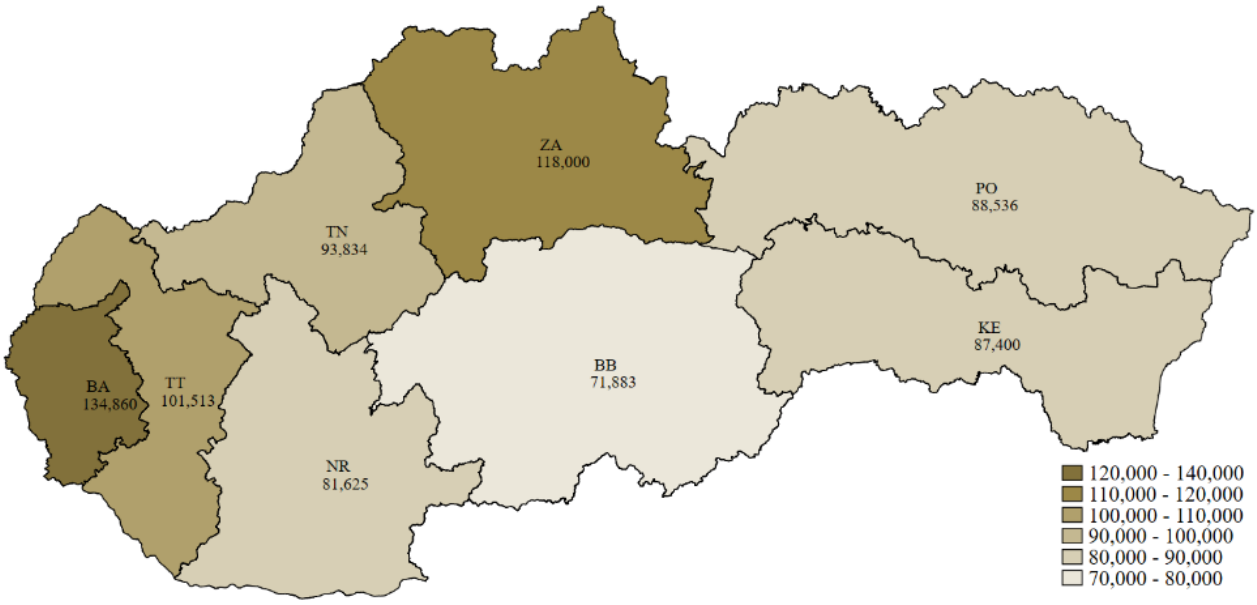
Generally, households with the highest net wealth are those where the reference person is self-employed and/or tertiary educated (Table 1). Furthermore, median household net wealth in Bratislava Region amounted to €135,000 in 2021, almost twice as high compared with the region of Banská Bystrica (Chart 1).

Table 1: Median household net wealth

Household characteristics	HFCS2 (2014)	HFCS3 (2017)	HFCS4 (2021)	Nominal difference 2017-2021	Real difference 2017-2021
Overall	50,316	70,302	96,959	38%	25%
Housing status					
Owner – outright	59,713	82,040	114,010	39%	26%
Owner with mortgage	49,184	57,676	89,442	55%	40%
Renter	2,743	2,242	5,500	145%	122%
Percentile of income					
Less than 20	29,759	36,918	62,374	69%	53%
20-39	43,958	57,002	86,043	51%	37%
40-59	44,132	61,010	88,462	45%	31%
60-79	65,321	88,622	113,216	28%	16%
80-100	82,024	127,270	147,106	16%	5%
Age of reference person					
16-34	31,115	33,635	71,468	112%	92%
35-44	51,658	66,988	83,814	25%	13%
45-54	64,129	80,004	105,886	32%	20%
55-64	56,173	95,045	128,733	35%	23%
65-74	49,630	70,587	100,765	43%	29%
75+	32,737	46,484	82,460	77%	60%
Work status of reference person					
Employee	55,765	70,580	97,275	38%	25%
Self-employed	70,544	117,961	130,178	10%	0%
Unemployed (other)	18,738	24,908	39,916	60%	45%
Retired	43,266	60,995	94,570	55%	40%
Education of reference person					
Primary or lower secondary	24,542	31,224	42,835	37%	24%
Upper secondary, non-tertiary	50,814	67,095	93,238	39%	26%
Tertiary education	74,068	101,892	134,490	32%	19%

Notes: Statistics are computed using survey weights and multiple imputed data. Age, employment status and education of the reference person are based on the Canberra definition. Values in column 6 are deflated by the respective headline HICP deflators. Sources: HFCS, and NBS.

Chart 1: Regional distribution of median household net wealth in 2021



Notes: Median household net wealth across the eight regions of Slovakia: BA (Bratislava), TT (Trnava), TN (Trenčín), Nitra (NR), ZA (Žilina), BB (Banská Bystrica), PO (Prešov), KE (Košice). Statistics are computed using survey weights and multiple imputed data.
Sources: HFCS, and NBS.

2.2. Assets

The asset structure of Slovak households did not change significantly between survey waves. Households mainly hold real assets, within which their holdings are concentrated in the household main residence. Other real assets reported by households include other real estate property, vehicles and, to a lesser extent, self-employed business wealth. The persistence of this asset structure combined with rapid growth of property prices is the main determinant of the increased value of total household assets between 2017 and 2021.

The HMR ownership rate remained high in 2021 and even gained a percentage point since the previous wave, reaching 90%. This high share holds across different income groups, household sizes and age groups. Even the lowest 20% income group and the younger age group (16-34 years) report a more than 80% share of home ownership. By contrast, the share of households owning other real estate property[7] in addition to owner-occupied housing, increased by a negligible 0.5 p.p., after surging from 19% to 28% between the second and third waves (Chart 2a).

The appreciation of real estate prices in the underlying period is well documented also in the survey data (Chart 2c). The median HMR value rose by more than 42% since the survey's previous wave. While households tend to undervalue the current price of their property, the appreciation between the last two waves is clearly visible also at the regional level (Chart 3).

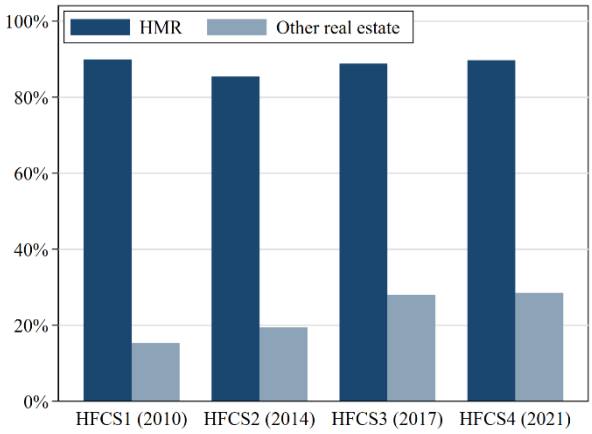
An even stronger increase has been observed in the median value of other real estate property, that increased by almost 75% between 2017 and 2021 (Chart 2c). The high appreciation of other real estate property was, however, driven mainly by their small nominals, rich variety of types and consequently large price heterogeneity. Investments were more concentrated in

[7] The term other real estate property covers a broad range of property types, including flats, houses, land, garages, cottages, industrial buildings, etc.

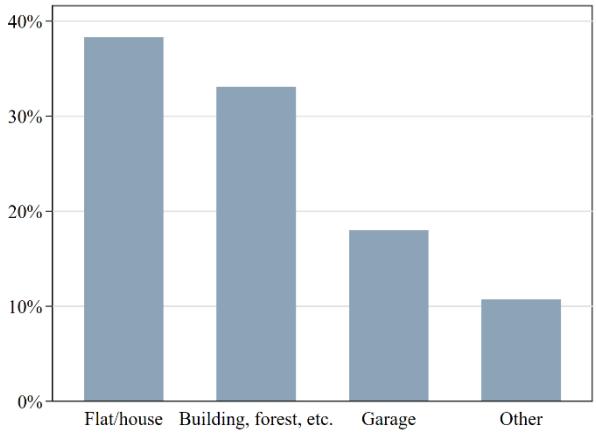
other flats and houses, gardens and land, and garages (Chart 2b). In general, ownership of second houses/flats were concentrated in the third and higher-income quintiles.

Chart 2: Ownership of real estate assets

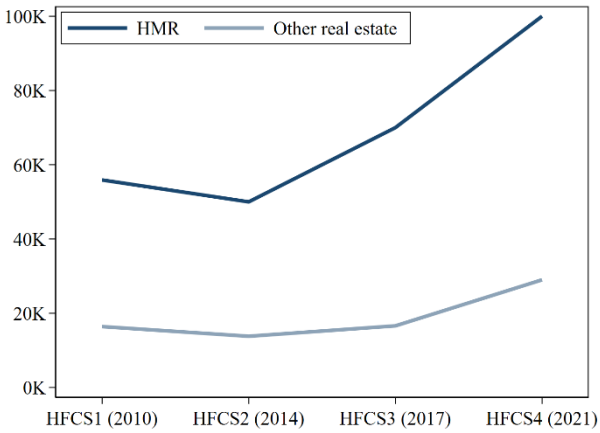
a) Share of households owning a main residence and other real estate assets



b) Second and other properties – share of the respective types (2021)

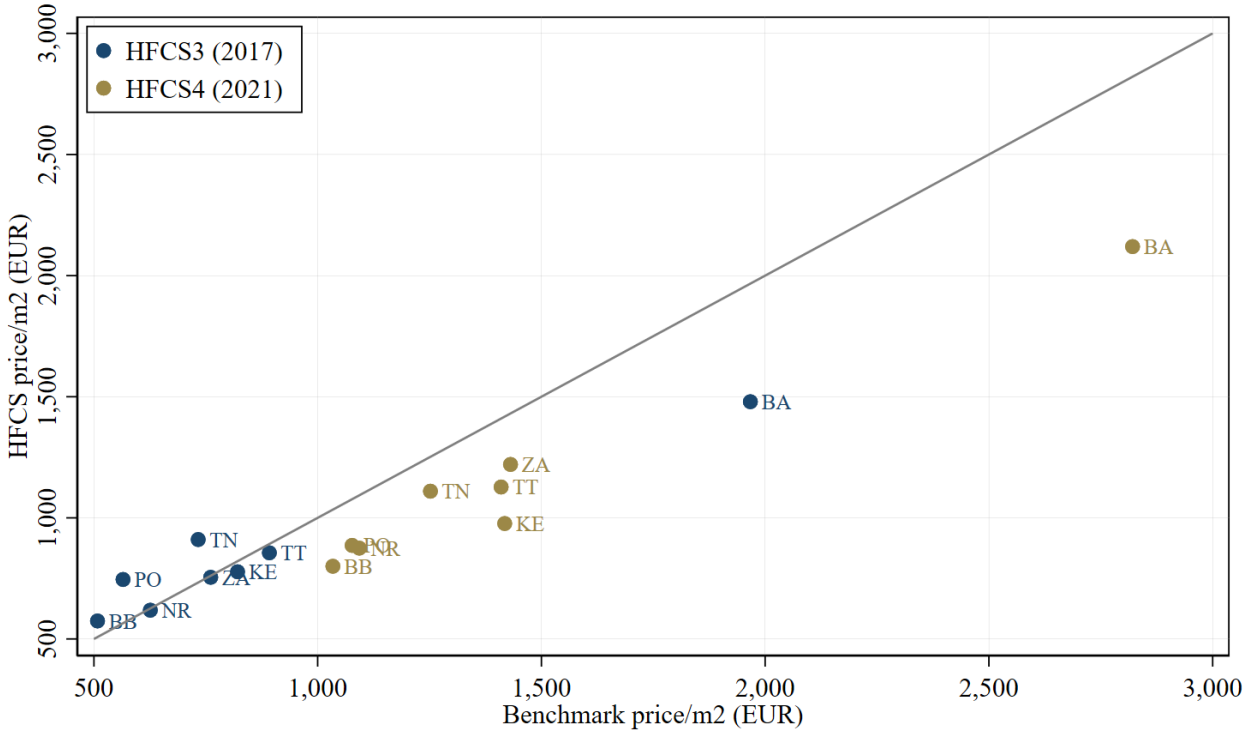


c) Median values of HMRs and other real assets



Notes: Statistics are computed using survey weights and multiple imputed data. Median values are reported conditional on holding the particular asset.
Sources: HFCS, and NBS.

Chart 3: Proximity of HMR price/m2 in the HFCS to the benchmark



Notes: Average values in the HFCS are computed using survey weights and multiple imputed data. Benchmark prices are computed using the adjusted official NBS methodology. Average prices per region are calculated as an arithmetic average of the underlying districts, instead of a weighted average.
Sources: HFCS and residential property prices database, NARKS, United Classifieds, and NBS.

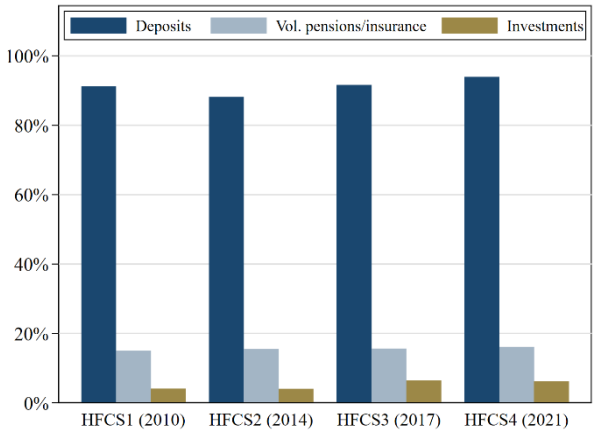
The ownership of financial assets did not change substantially between 2017 and 2021. On average, nine out of ten households own deposit or savings accounts. When it comes to less conservative financial assets, such as investments in bonds, shares and mutual funds, the situation is the opposite. In 2021 only around 16% of households had participated in voluntary pension schemes and whole life insurance. Even though riskier financial investments tend to produce better returns, barely 6% of Slovak households were participating in the financial market and investing in such assets (Chart 4a).

Although we observed a notable increase in the value of financial instruments between 2017 and 2021 (from €4,600 to €6,100), most of this increase could be attributed to the financial market soaring in value during the period. However, given the low levels and the volatile nature of these assets, the figures should be interpreted with caution.

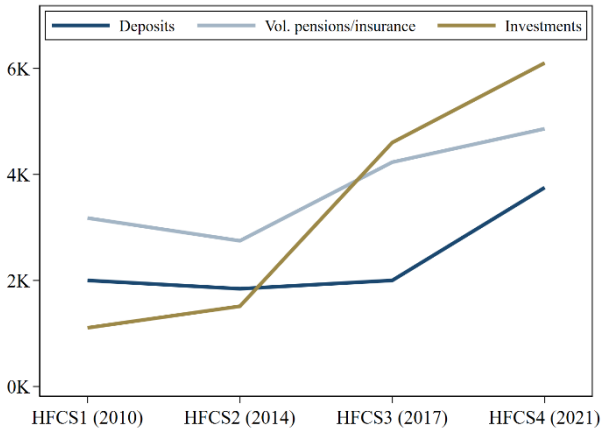
Participation in financial asset holdings differs somewhat across socio-economic groups of households. Interested readers are referred to additional tables available in the online appendix for more detailed information about the structure of financial asset ownership.

Chart 4: Ownership of financial assets

a) Share of households holding deposits and investment financial assets



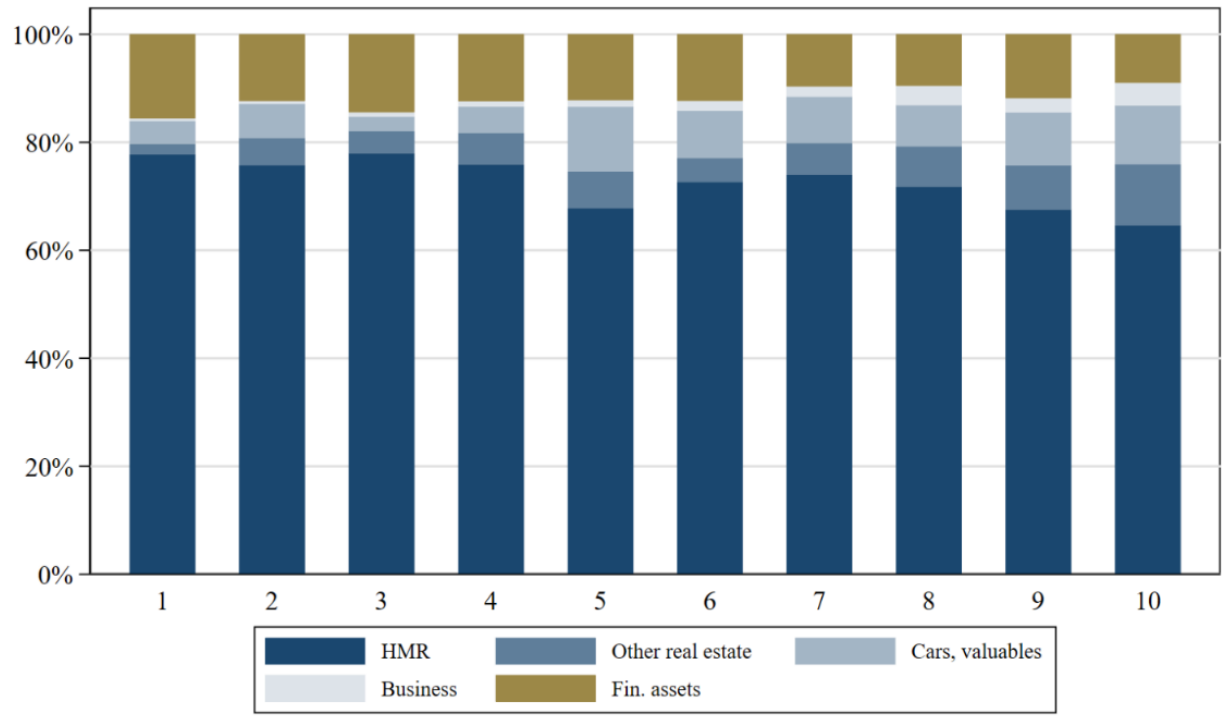
b) Median values of deposits and investment financial assets



Notes: Statistics are computed using survey weights and multiple imputed data. Median values are reported conditional on holding the particular asset. The category "investments" includes financial assets such as bonds, shares and mutual funds.
Sources: HFCS, and NBS.

All in all, the portfolios of Slovak households are largely under-diversified. Chart 5 provides an overview of the relative contribution of each asset class to total gross wealth across the distribution of gross annual household income.

Chart 5: Components of gross wealth across income distribution (2021)



Notes: Statistics are computed using survey weights and multiple imputed data. Financial assets comprise deposits, investment assets, insurance plans and pensions. Business assets refer to the value of self-employed business owned by households.
Sources: HFCS, and NBS.

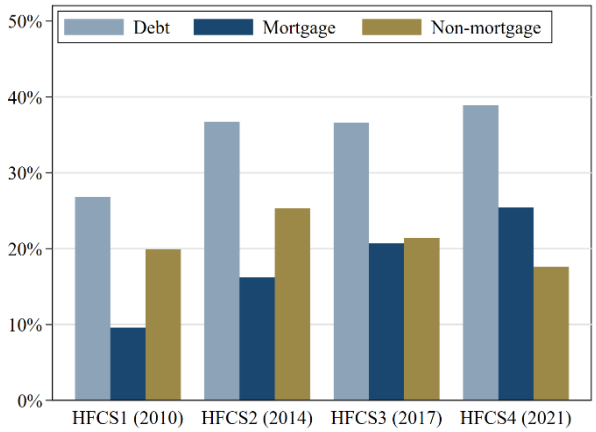
HMRs account for the vast majority (on average more than 70%) of gross household wealth. This share declines slightly across income distribution. The relative contributions of other real estate property, business assets, vehicles and valuables are mainly noticeable in the upper part of the income distribution. The overall contribution of financial assets to gross wealth is modest (on average 11%). This holds in particular for investment-based financial assets such as bonds, shares and mutual funds, which in 2021 made up barely 1% of all assets.

2.3. Indebtedness, debt burden and credit constraints

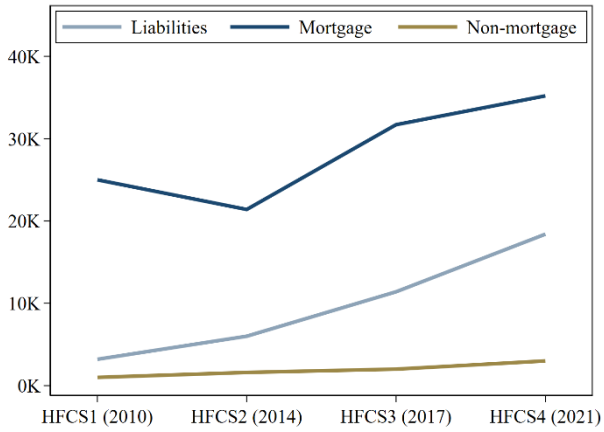
Household indebtedness remained on the rise between 2017 and 2021. The share of indebted households, i.e. households having at least one loan, increased by more than 2 p.p. to nearly 40% (Chart 6a). This development was driven mainly by mortgage-indebted households. Mortgage debt growth remained steady, and the share of mortgage-indebted households increased by about 5 p.p. between each survey wave, growing to more than 25% in 2021. By contrast, the share of households holding non-mortgage debt – mainly consumer credit – continued to decline. This was in line with official credit reporting figures, which showed consumer credit growth slowing down from 2014 and turning negative in 2020.

Chart 6: Household indebtedness

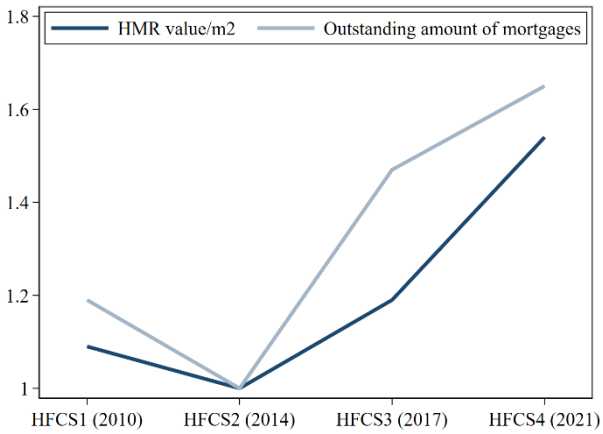
a) Share of indebted households



b) Median outstanding amount of loans



c) Evolution of loan volume vs house price (index, 2014=1)

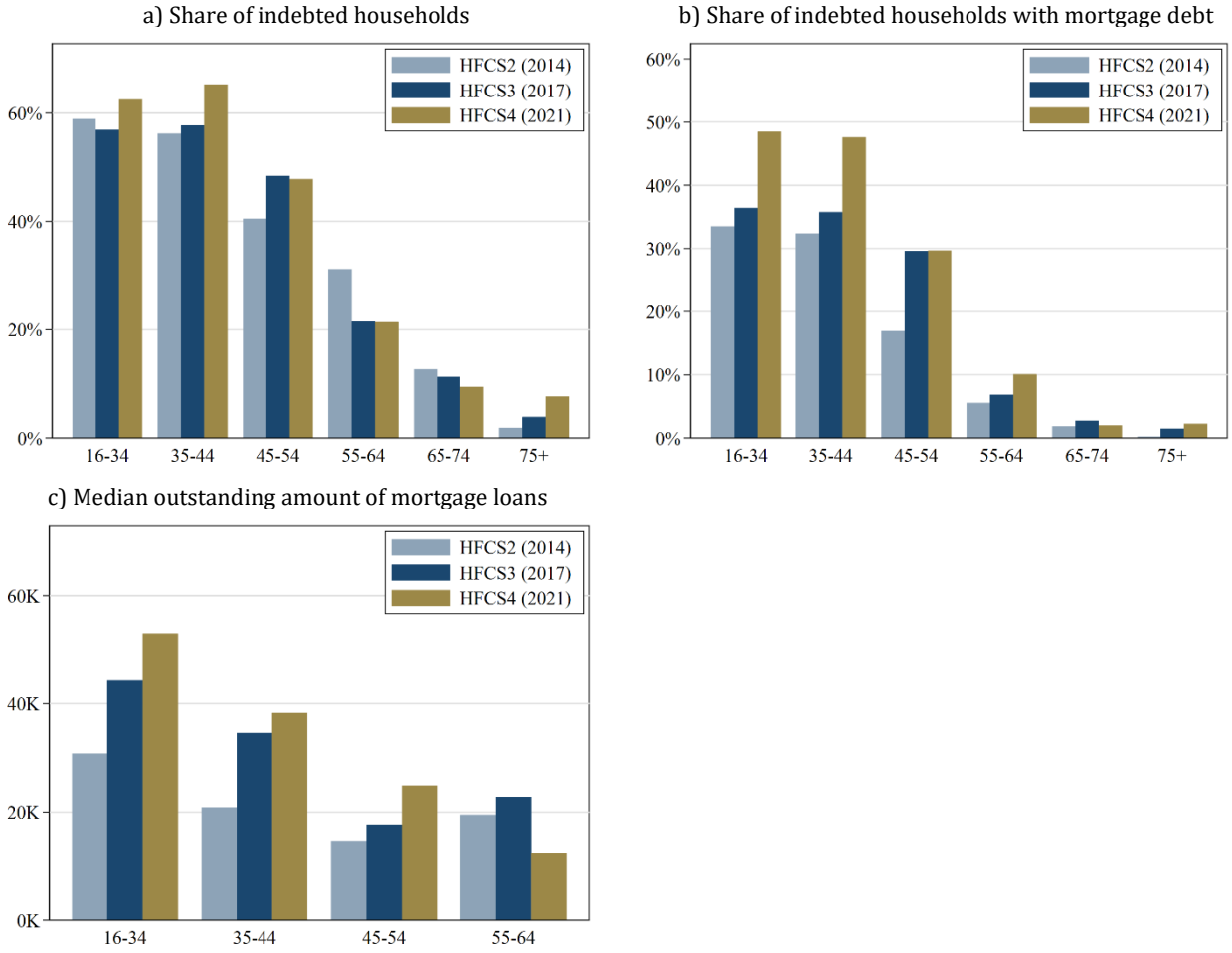


Notes: Statistics are computed using survey weights and multiple imputed data. Median values are reported conditional on holding the particular debt category.
Sources: HFCS, and NBS.

The volume of outstanding debt also increased between 2017 and 2021. The median outstanding amount climbed from €11,400 to €18,400 (Chart 6b). This reflected an increase in the median outstanding amount of mortgage debt (from €32,000 to €35,000[8]), as well as mortgage debt's increasing share in total debt (up from 89% to 93%). This growth in outstanding mortgage debt largely reflected house price growth between the third and fourth waves, although the house price growth was faster (Chart 6c).

In terms of age, the households taking on new debt between 2017 and 2021 were mainly younger age groups (16–34 and 35–44), with most of that growth driven by mortgages. The other age groups' share of indebtedness remained rather stable (Chart 7a). The only other age group with a higher share of indebted households was the oldest one (aged 75 and above), though their borrowing consisted mainly of consumer credit.

Chart 7: Household indebtedness by age group



Notes: Statistics are computed using survey weights and multiple imputed data. Age of the reference person is based on the Canberra definition. Median values are reported conditional on holding the particular debt category.
Sources: HFCS, and NBS.

The overall dynamics of indebtedness between the 2017 and 2021 surveys were driven mainly by mortgage loans. In the low interest rate environment, the share of indebted households in younger age groups accelerated by more than 10 p.p. to nearly 50%. Although the share of middle-aged households (aged 45–54) having mortgage debt did not change much, these

[8] This figure is largely in line with the median outstanding amount of mortgage loans available from the official supervisory statistics.

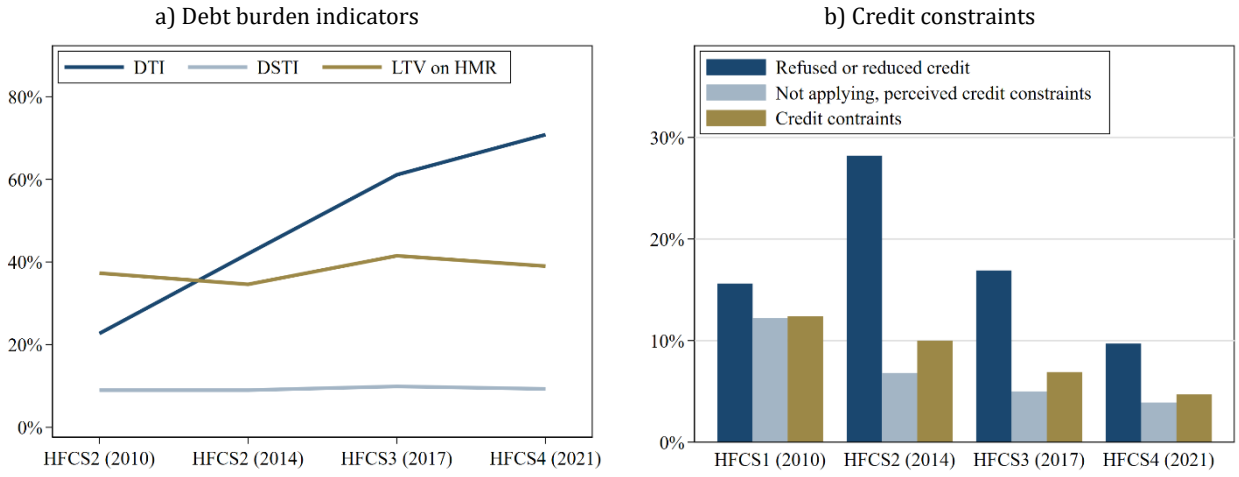
households seemed to take advantage of favourable credit conditions to refinance their mortgages. The outstanding amount of mortgage loans therefore increased also in this age group (Chart 7c). According to the survey, more than 30% of indebted households in the 45–54 age group refinanced their debt. This share increased also quite rapidly in the 35–44 age group.

The HFCS makes it possible to follow the evolution of different household indebtedness indicators, which are closely connected to macroprudential limits introduced by Národná banka Slovenska (NBS). These indicators include:

- the debt service-to-income (DSTI)[9] ratio, representing the amount of a household's debt service payments relative to monthly income;
- the debt-to-income (DTI) ratio, representing the total amount of a household's debt relative to annual income;
- the loan-to-value (LTV) ratio, representing the outstanding amount of a mortgage loan relative to the value of the underlying collateral, i.e. the real estate.

While the DTI ratio continued to rise between the 2017 and 2021 waves, as well as between the previous two waves, the median DSTI and LTV (on the household main residence) declined slightly (Chart 8a). In the case of the DSTI, this may stem both from stricter regulatory limits introduced by NBS and from decreasing mortgage rates (the average interest rate on mortgage loans was 4.69% in the second wave, 2.98% in the third wave and 1.74% in the fourth wave). The DSTI limit was introduced in 2015 at the level of 100% and was gradually tightened until 2020, when the upper limit was set at 60%. In the case of the LTV, limits were also tightened by NBS in several stages, from 100% in 2014 to basically 80% in 2019. The DTI limit currently stands at the level of eight, which caps the overall debt of a household at 800% of its annual income.

Chart 8: Debt burden and credit constraints



Notes: Statistics are computed using survey weights and multiple imputed data.
Sources: HFCS, and NBS.

[9] While the DSTI calculated from the HFCS survey and the official DSTI limits set by NBS are interrelated, the definition differs slightly. In the HFCS, the DSTI is calculated as the share of monthly instalments and monthly gross income. The official NBS limit uses net income less the subsistence minimum amount.

Despite tighter borrower-based measures, households felt substantially less credit constrained in the 2021 survey than in previous waves. The share of households that had a loan application rejected or received a lower loan than they applied for was the lowest across all HFCS waves (Chart 8b).

2.4. Income and consumption

Annual gross household income increased moderately between 2017 and 2021. For the median household, it rose by 31% to €21,000; for the mean household, by 16% to €23,600 (in nominal terms). The growth indicators presented in Table 2 indicate a relatively balanced distribution across socio-economic groups. Exceptional gross income growth (+47% to €23,000) was observed only in young households, which in effect closed the gap with the median income of other productive age groups.

Table 2: Median household gross income

Household characteristics	HFCS2 (2014)	HFCS3 (2017)	HFCS4 (2021)	Nominal difference 2017-2021	Real difference 2017-2021
Overall	13,133	16,019	20,976	31%	18%
Housing status					
Owner – outright	12,609	15,239	18,835	24%	12%
Owner with mortgage	17,894	20,995	26,319	25%	13%
Renter	10,398	11,728	14,152	21%	9%
Percentile of income					
Less than 20	3,926	5,543	6,780	22%	11%
20-39	8,288	10,690	13,846	30%	17%
40-59	13,164	16,022	20,993	31%	19%
60-79	18,570	22,635	29,064	28%	16%
80-100	28,801	36,311	43,142	19%	7%
Age of reference person					
16-34	13,727	15,723	23,176	47%	33%
35-44	17,120	19,031	24,649	30%	17%
45-54	18,401	22,419	27,165	21%	10%
55-64	13,665	19,021	23,524	24%	12%
65-74	6,805	9,398	11,453	22%	10%
75+	4,985	6,982	9,501	36%	23%
Work status of reference person					
Employee	16,780	19,484	25,360	30%	18%
Self-employed	19,023	24,510	29,321	20%	8%
Unemployed (other)	5,426	6,360	6,588	4%	-6%
Retired	6,147	9,012	11,059	23%	11%
Education of reference person					
Primary or lower secondary	4,995	6,077	8,466	39%	26%
Upper secondary, non-tertiary	13,163	15,788	20,011	27%	15%
Tertiary education	18,875	21,911	27,069	24%	12%

Notes: Statistics are computed using survey weights and multiple imputed data. Age, employment status and education of the reference person are based on the Canberra definition. Values in column 6 are deflated by the respective headline HICP deflators. Sources: HFCS, and NBS.

Homeowners with mortgage debt are more likely to have higher income than are outright homeowners (i.e. homeowners without a mortgage) and renters. This has been consistent across time, and the gross income of these household types has grown at about the same rate. Moreover, households with a self-employed reference person have persistently enjoyed well above average gross income; in 2021, however, their gross income growth rate was not as remarkable as before, since in this survey the self-employed were among the groups most negatively affected by the pandemic crisis. In 2021 the worst-off group by far were the households of unemployed reference persons, which since the previous wave saw only

a marginal adjustment in gross income and effectively an income slump in real terms. The low-skilled managed to enjoy solid growth of their gross income, which still, however, stood at just 40% of overall median gross income.

The value of the median household's annual food consumption rose by 14% between the third and fourth waves, representing a real increase of more than 3%. Households spending least on food saw the most significant increase; they include mainly renters, households at the bottom of the income distribution, the youngest and the oldest households, and households with no or primary education. On the other hand, no change in nominal terms was observed for households with an unemployed reference person.

Table 3: Median household annual consumption – food (at home or outside the home)

Household characteristics	HFCS2 (2014)	HFCS3 (2017)	HFCS4 (2021)	Nominal difference 2017-2021	Real difference 2017-2021
Overall	3,720	4,200	4,800	14%	3%
Housing status					
Owner – outright	3,624	4,080	4,800	18%	6%
Owner with mortgage	4,200	4,800	5,400	13%	2%
Renter	3,240	3,000	4,200	40%	27%
Percentile of income					
Less than 20	1,778	2,040	2,640	29%	17%
20-39	2,688	3,552	4,200	18%	7%
40-59	4,008	4,200	4,800	14%	3%
60-79	4,800	5,328	6,000	13%	2%
80-100	6,000	6,408	6,600	3%	-7%
Age of reference person					
16-34	3,960	3,761	4,824	28%	16%
35-44	4,368	4,800	5,400	13%	2%
45-54	4,800	4,800	5,424	13%	2%
55-64	3,612	4,320	5,198	20%	9%
65-74	2,484	3,120	3,600	15%	4%
75+	1,966	2,400	3,384	41%	28%
Work status of reference person					
Employee	4,320	4,440	5,400	22%	10%
Self-employed	4,584	5,400	6,000	11%	1%
Unemployed (other)	2,412	2,400	2,400	0%	-10%
Retired	2,453	3,000	3,600	20%	9%
Education of reference person					
No or primary education	1,937	2,400	3,132	31%	18%
Secondary education	3,768	4,200	4,800	14%	3%
Tertiary education	4,800	4,800	5,400	13%	2%

Notes: Statistics are computed using survey weights and multiple imputed data. Age, employment status and education of the reference person are based on the Canberra definition. Values in column 6 are deflated by the respective headline HICP deflators. Sources: HFCS, and NBS.

Households' total spending on consumer goods and services fell by almost 5% between 2017 and 2021. In the context of a substantial increase in income, consumer expenditure as a share of income fell from 54% to 40%.[10]

The share of households that were able to save increased by 8 pp to 40% between 2017 and 2021. However, households in the bottom 20% of the income and wealth distribution and renter households – precisely those households with the least ability to save – were slightly

[10] This concept of consumption covers all household expenditure (including food, utilities, etc.) except for consumer durables (e.g. cars, household appliances, etc.), rent, loan repayments, insurance, renovation, etc. Important to note is that it is a subjective estimate of HFCS households, hence it cannot be compared with the official national accounts statistics, which show a real increase in total household consumption of around 7% between 2017 and 2021.

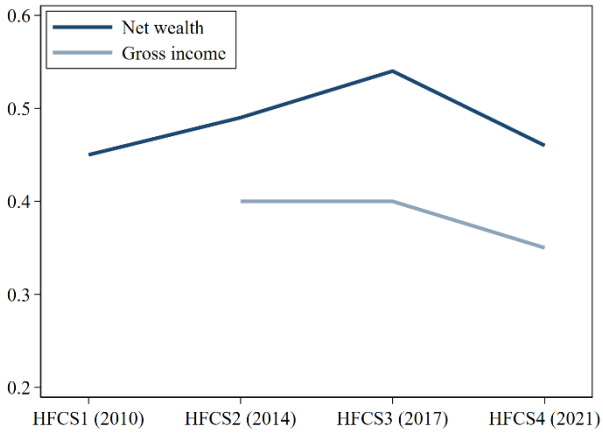
worse off in 2021 than in 2017. On the other hand, households with a mortgage were much more able to save. The share of these households that are able to save increased more rapidly (+15.6 percentage points, to 46.2%) compared with outright owners (+7.4 percentage points, to 40.8%). Thus, they managed to create a financial buffer for potential periods of mortgage repayment stress.

2.5. Wealth and income inequality

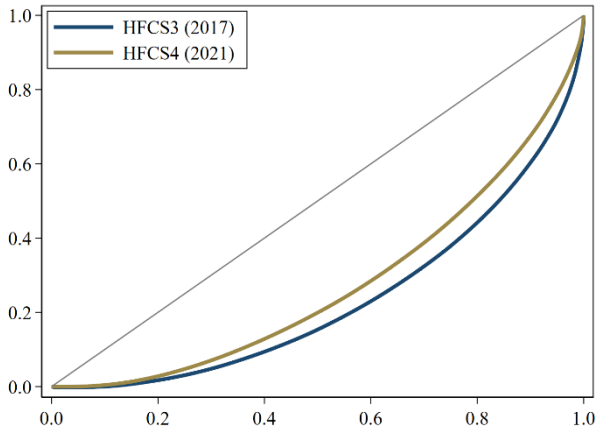
Inequality, as measured by the Gini index[11], as well as the Lorenz curve, declined significantly for both household net wealth and gross income between 2017 and 2021 (Chart 9). The decline in wealth inequality is largely due to the rapid appreciation of real assets (mainly HMR) among low-income households, as real assets are known to be the most equalising asset class.[12] At the same time, it is important to stress that the level of wealth inequality is likely to be underestimated, as wealth surveys often miss the upper right tail of the wealth distribution.[13]

Chart 9: Income and wealth inequality

a) Evolution of wealth and income inequality measured by Gini index



b) Fraction of net wealth held by *X* percent of households (Lorenz curve)



Notes: The presented results are based on multiple imputed data and survey weights.
Sources: HFCS, and NBS.

The overall decline in income inequality is consistent with trends observed in developed countries and documented in recent studies that include the COVID-19 pandemic period.[14] The observed decline in income inequality during this period can be attributed to various government support programmes and redistribution mechanisms.

[11] The Gini index is a measure of statistical dispersion that refers to income or wealth inequality.
[12] See, for example, Lindner (2015).
[13] For a more detailed discussion, see Vermeulen (2018).
[14] See, for example, Clark et al. (2021).

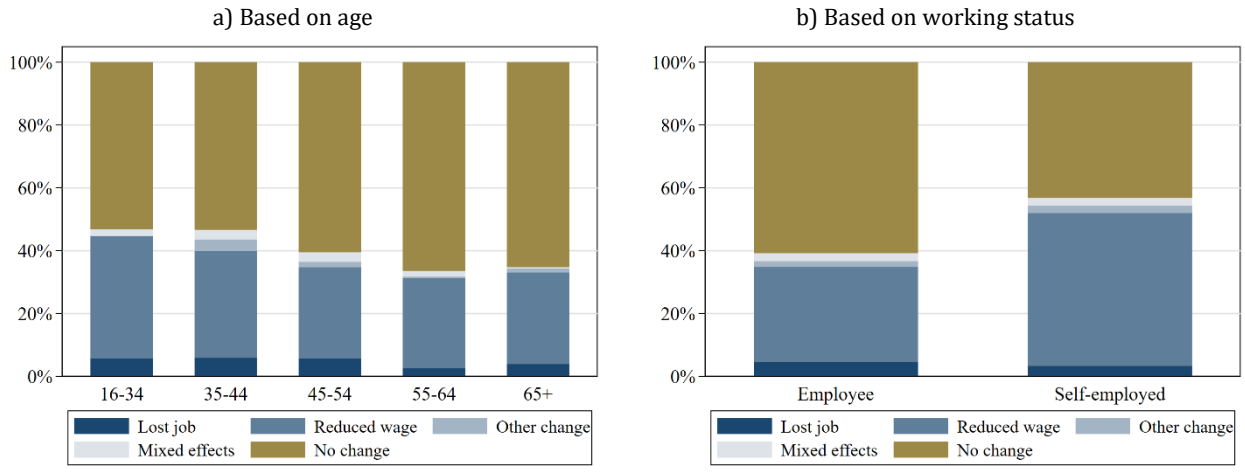
3. The COVID-19 pandemic and household finances

The official fieldwork date for the fourth wave of the survey had to be postponed because of the COVID-19 pandemic. This allowed us to include specific questions about the pandemic's impact on households' employment, financial and economic conditions, and prospects.

The main channel through which the pandemic affected households' economic and financial situation was the labour market. People faced shocks mainly in the form of job loss, business closure or temporary wage reduction. Wages were reduced for various reasons. Falling business sales may have translated into employees receiving less than 100% of their salary or into a decline in self-employment income. At the same time, wage reductions may or may not have been associated with a reduction in working hours. Hours may have been reduced by the employers (in response, for example, to reduced business operation) or for personal reasons (employees asking for reduced hours or leave in order to take care of children or relatives or because of their own illness or health problems).

A total of 41% of active households[15] reported that at least one household member had their participation in the labour market affected by at least one of the above-mentioned situations during the pandemic. Fully 32% of active households experienced a reduction in wages, with 16.8% being in a situation where they kept their job with a temporary reduction in wages, labour earnings or business income, and 11.5% having to stop working because of illness or a health problem. The share of households that included someone who during the pandemic had left their job, been laid off or closed their business was almost 7% (5% exclusively, i.e. with no other type of shock).

Chart 10: Changes in employment status and wages due to COVID



Notes: Statistics are based on survey weights and multiply imputed data. Age and employment status of the reference person are based on the Canberra definition.
Sources: HFCS, and NBS.

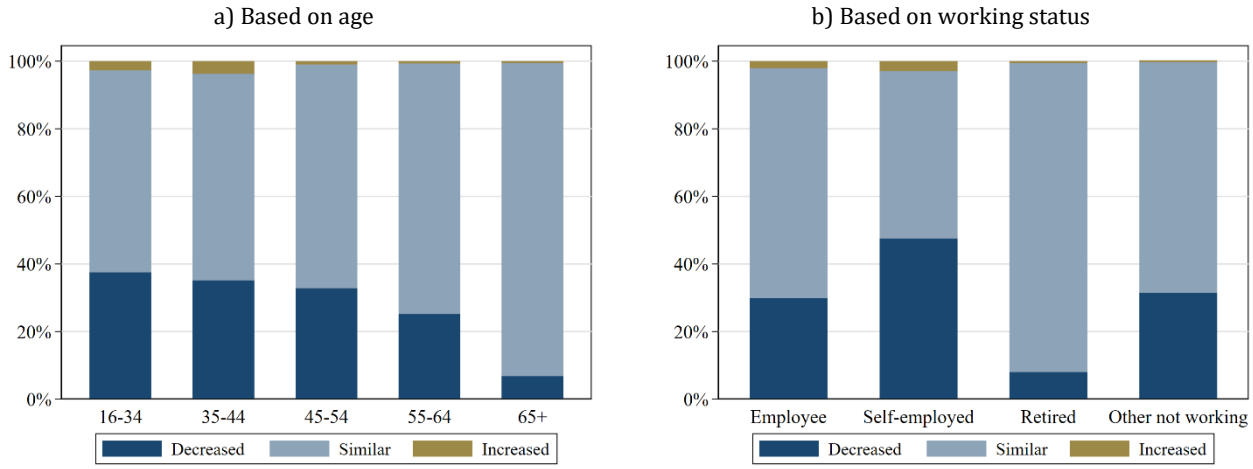
These shocks were heterogeneous across population subgroups (Chart 10). The data show that households with a self-employed reference person were the most affected: 57% of them had to

[15] Households with at least one economically active member: employed, unemployed or on maternity/ sick leave.

face some unfavourable situation in their working life, mostly a reduction in income (49%). The pandemic tended to affect younger rather than older working household members. Around 47% of households with a reference person aged 16-44 reported some negative impact on their work or wage. The share of households made jobless by the pandemic was also higher among younger households than among older ones. Looking at the sector of activity, households working in contact-intensive services[16] were heavily affected by the pandemic (42.5% were affected). At the same time, however, we observed a similar situation for households in the manufacturing sector.

Despite government measures aimed at mitigating the negative impact of the pandemic on their income, more than a quarter of households experienced a reduction in income (Chart 11). Since income reduction is highly correlated with a negative working life situation, this proportion was higher for specific subgroups mentioned above: self-employed households (48%), households aged 16-34 (38%) and 35-44 (35%), and households working in contact intensive services (36%) and manufacturing (33%).

Chart 11: Changes in income due to COVID

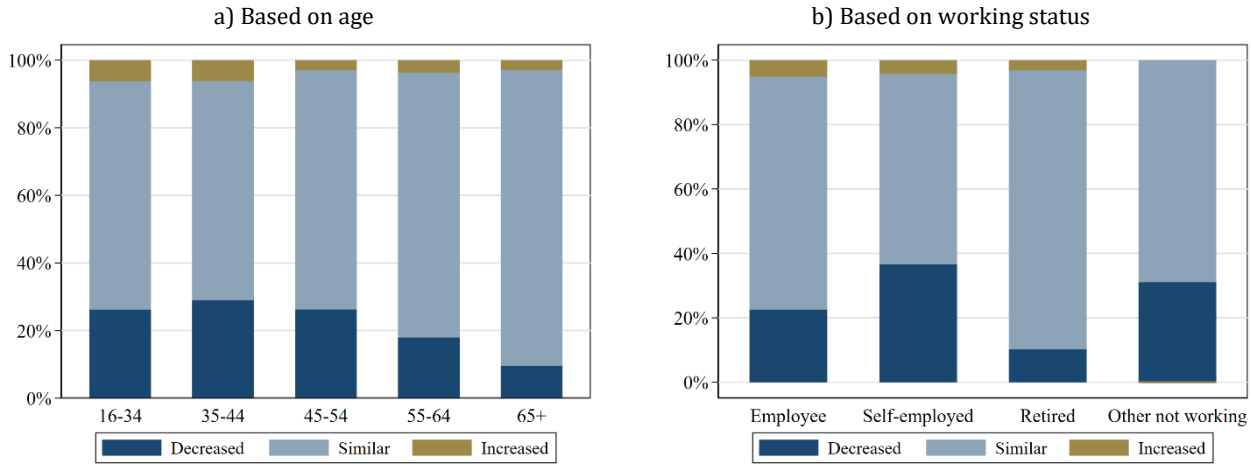


Notes: Statistics are based on survey weights and multiply imputed data. Age and employment status of the reference person are based on the Canberra definition.
Sources: HFCS, and NBS.

Most households reported that their financial wealth remained unaffected by COVID. However, about one-fifth reported a deterioration in financial wealth (Chart 12). Again, this was observed mainly in the self-employed (37%), households aged 16-54 (around 27%) and households working in contact-intensive services (28%). On the other hand, a small share of households reported an increase in their financial wealth due to the pandemic; these were mostly households in wealthier population subgroups: households in the top 20% of the wealth distribution (9%), households with tertiary education (8%) or households aged 16-44 (6%). In general, pensioner households were the least affected by COVID, with 87% of them reporting that their financial wealth had remained unaffected.

[16] NACE categories: I, G, N, H, R, S, T.

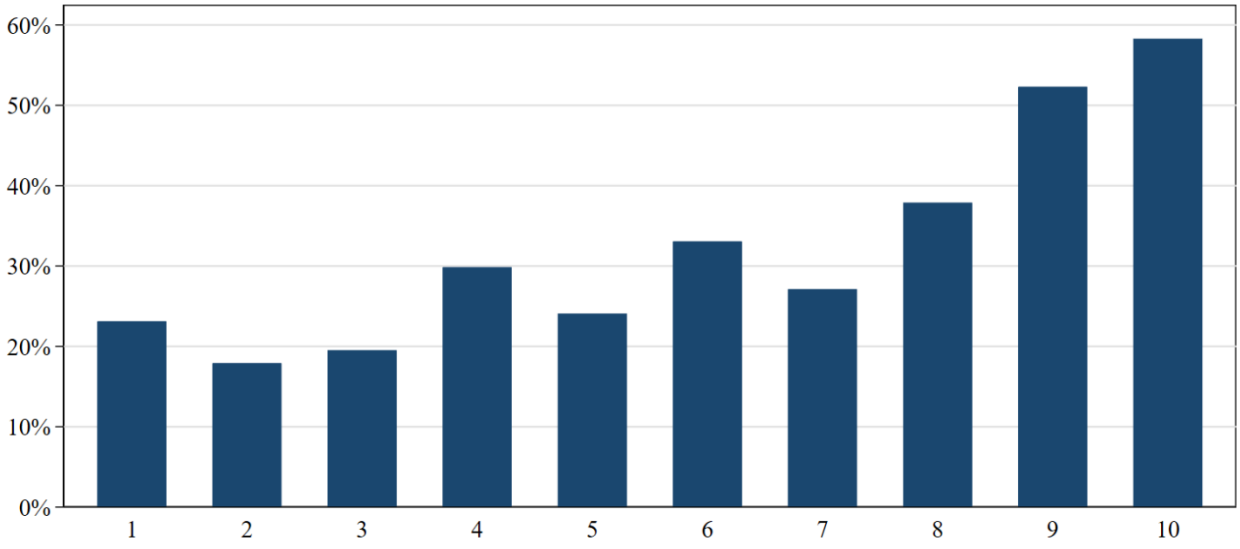
Chart 12: Changes in financial wealth due to COVID



Notes: Statistics are based on survey weights and multiply imputed data. Age and employment status of the reference person are based on the Canberra definition.
Sources: HFCS, and NBS.

One of the most significant changes in working life brought about by the pandemic was an upsurge in teleworking. Accordingly, the survey asked what proportion of work the reference person was able to do from home. In contrast to the pre-COVID period, when under 10% of employees worked from home regularly or at least sometimes,[17] the HFCS 2021 data show that during the pandemic around 32% of employee work was performed from home.[18] The share of teleworking ranged from around 20% for those with the lowest earnings to 58% for those at the top of the income distribution (Chart 13), illustrating that the higher the earnings, the greater the likelihood of working from home. In general, compared with unskilled workers, skilled workers earn more and have greater opportunity to work from home.

Chart 13: Share of telework across income distribution during COVID

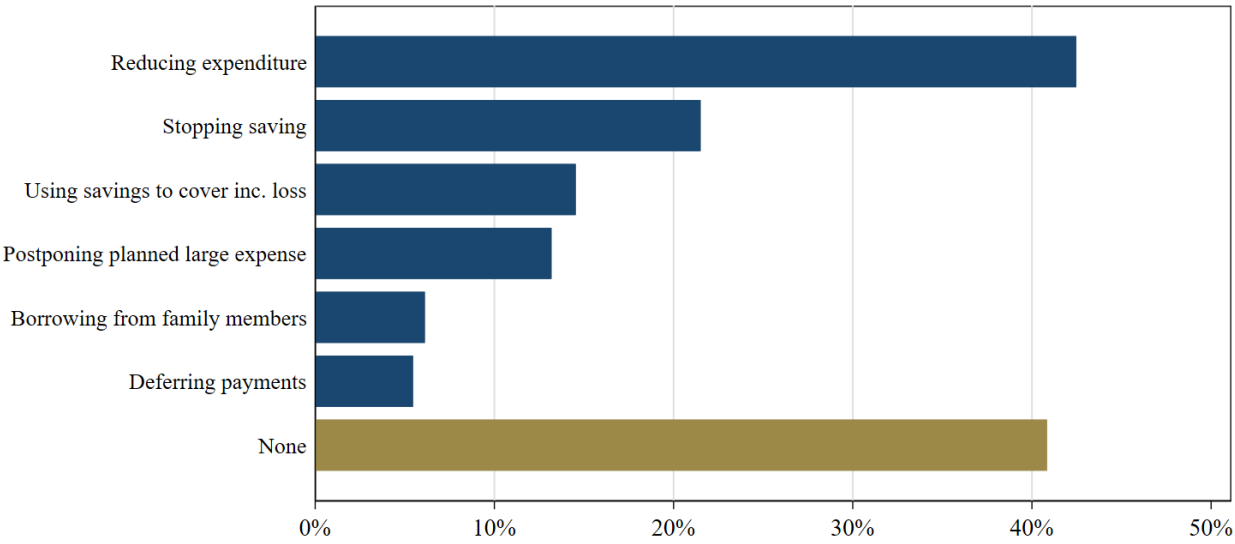


Notes: Statistics are based on survey weights. Percentile of income is based on the reference person's employment earnings.
Sources: HFCS, and NBS.

[17] Source: Eurostat Labour Force Survey.
[18] As we expected, this figure is slightly lower than our previous estimate of 35% (see Jurašeková, 2021), which was based on a methodology by Dingel & Nieman (2020) that assigns a share of work that can be done from home to each two-digit ISCO category.

Households responded to the pandemic in different ways, either by reducing expenditure or by finding a source of finance to replace lost income. The survey results suggest that households employed both approaches (Chart 14). Reducing expenditure on food, clothing and other consumer goods and services was the most common income-loss-coping strategy used by households (mostly by the bottom two income quintiles), with 42% of households following this course. The option of stopping saving was used around twice less frequently. Even less often, households dipped into their savings, postponed previously planned large expenses, borrowed from relatives or friends, or took advantage of the possibility of deferring loan repayments. On the other hand, 40% of households that experienced an income reduction due to the pandemic said they had not changed their financial behaviour.

Chart 14: How did households compensate for income loss?



Notes: Statistics are based on survey weights.
Sources: HFCS, and NBS.

As for the changes that households planned to make in order to prevent the pandemic crisis adversely affecting their economic and financial situation, 15% said they would maintain a larger financial buffer, while 83% said they were not planning any changes. A negligible share said they planned to switch to employment in a more secure sector or to better diversify their business.

4. Selected topics

In addition to the main indicators on assets, liabilities, income and consumption, the Slovak HFCS also includes several modules with questions on important topics such as financial literacy, subjective well-being, and economic expectations. This section reports on the main findings from these survey questions.

4.1. Financial literacy

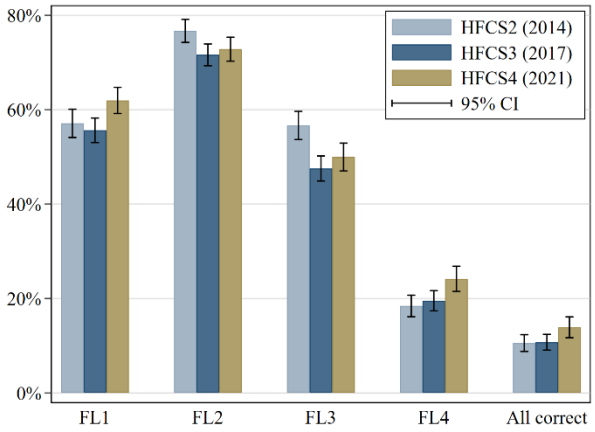
The HFCS in Slovakia monitors the level and development of financial literacy among households through a number of "ABC" questions typically used in the financial literacy literature.[19] The survey asks questions about the understanding of financial concepts such as interest rates, inflation, portfolio diversification and asset risk (Chart 15a).

Chart 15: Evolution of financial literacy (FL) over time

a) Definition of FL questions

FL1) Fixed interest rates: Of the following types of mortgages which one do you think will allow you from the start to fix both the amount and the number of instalments needed to pay off the loan?
(a) Floating-rate mortgage
(b) Fixed-rate mortgage
FL2) Inflation: Imagine leaving 1,000 euros in a current account that pays 1% interest and has no charges. Imagine also that prices increase by 2%. Do you think that if you withdraw the money in a year's time you will be able to buy the same amount of goods as if you spent the 1,000 euros today?
(a) Yes
(b) No, I will be able to buy less
(c) No, I will be able to buy more
FL3) Portfolio diversification: In your opinion, which of the following investment strategies entails a greater risk of losing money?
(a) Invest all savings in the securities issued by a single company
(b) Invest all savings in the securities issued by a wide range of unrelated companies
FL4) Risk: A company can obtain financing either issuing shares or bonds. In your opinion, which financial instrument entails a greater risk of losing money from the investor's point of view?
(a) Shares
(b) Bonds
(c) Equally risky
(d) I do not know the difference between bonds and shares

b) Distribution of answers to FL questions



Note: Average financial literacy scores together with 95% confidence intervals are computed using survey weights. Categories -1 (do not know) and -2 (no answer) are considered a wrong answer. FL1, FL2, FL3, and FL4 represent the share of households correctly answering the questions on interest rates, inflation, portfolio diversification, and asset risk, respectively. The share of households being able to answers all questions correctly is captured by category "All correct".
Sources: HFCS, and NBS.

Chart 15b presents the share of households who could correctly answer some of the financial literacy questions as well as the share of households able to answer all questions correctly.[20, 21] The main result suggests that financial literacy improved moderately between 2014 and 2021 with 16% of households being able to answer all questions correctly in 2021. However, these improvements seem not to be statistically significant as present by overlapping confidence intervals.

The results show that the share of households who understand the concept of interest rates gradually increased over the 2014–2021 period, from 57% to 62%. While inflation is the best understood concept among those covered by the financial literacy questions, the share of respondents who correctly answered this question edged down between 2014 and 2021, from 77% to 73%. The share of households who understand the concept of portfolio diversification dropped from 57% to 50%. Asset risk was the least understood of the concepts addressed, albeit the share of households answering the question correctly improved from 18% to 24%.

The rich HFCS data also reveal individual and household characteristics associated with financial literacy outcomes. As presented in Table 4, high financial literacy (proxied by all correct answers) positively correlates with household income, being a homeowner, having

[19] Lusardi and Mitchell (2014).
[20] Questions are answered by a reference person, that is, the household member most knowledgeable about financial matters.
[21] The calculated results differ slightly from the results presented in Jurašeková and Strachotová (2019) due to methodological differences in calculations.

a higher level of education, and being male. By contrast, financial literacy levels decline substantially with age.

Table 4: Financial literacy (FL) scores across household types (2021)

	Share of households with correct answers					
Household characteristics	**FL1**	**FL2**	**FL3**	**FL4**	**All correct**	**FL score**
Overall	62%	73%	50%	24%	14%	2.09
Percentile of income						
Bottom 20%	38%	53%	30%	12%	5%	1.33
20-40%	55%	71%	44%	17%	8%	1.87
40-60%	67%	74%	54%	24%	15%	2.19
60-80%	72%	79%	62%	32%	22%	2.46
80-100%	78%	87%	60%	36%	20%	2.60
Housing status						
Owner – outright	56%	71%	48%	22%	12%	1.97
Owner with mortgage	78%	81%	61%	31%	20%	2.52
Renter	60%	65%	39%	21%	12%	1.85
Gender of reference person						
Male	64%	76%	52%	26%	15%	2.17
Female	59%	68%	47%	21%	13%	1.96
Age of reference person						
16-34	70%	79%	56%	28%	17%	2.33
35-44	80%	84%	55%	30%	19%	2.49
45-54	47%	66%	44%	33%	13%	1.90
55-64	47%	64%	40%	17%	9%	1.69
65-74	51%	69%	44%	17%	10%	1.80
75+	35%	50%	29%	13%	6%	1.26
Education of reference person						
No or primary education	35%	47%	26%	7%	5%	1.15
Secondary education	60%	73%	47%	20%	11%	2.00
Tertiary education	78%	83%	66%	40%	24%	2.67

Notes: Average financial literacy scores are computed using survey weights. FL1, FL2, FL3, and FL4 represent the share of households correctly answering the questions on interest rates, inflation, portfolio diversification, and asset risk, respectively. The share of households able to answer all questions correctly is captured by the category "All correct". The last column shows the average financial literacy score (measured on a scale of 0-4); a higher score indicates higher financial literacy.
Sources: HFCS, and NBS.

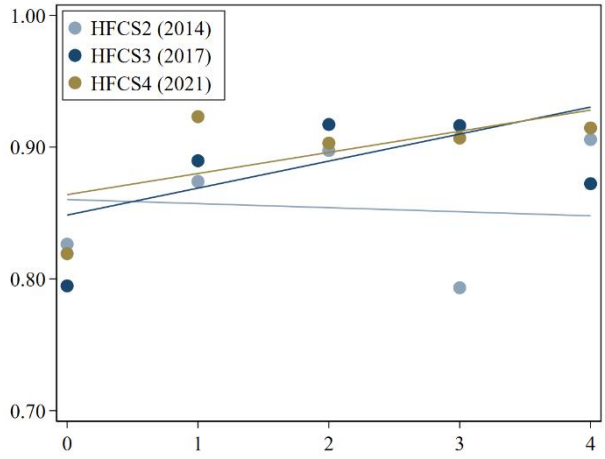
The importance of financial literacy as a key component of informed consumer choice and sound financial behaviour is widely recognised in the literature.[22] Financial literacy is crucial for households' investment behaviour and financial inclusion. With it, households are able to accumulate the wealth necessary to achieve long-term financial goals, such as financial security in retirement.

The degree of household inclusion in the financial market is associated with financial literacy. Chart 16 provides a snapshot of the correlations between financial literacy and two types of assets: ownership of the household main residence and ownership of financial investment assets (shares, bonds and mutual funds). While financial literacy is only weakly associated with the probability of owning an HMR, it correlates highly with the propensity to own investment financial assets. This confirms findings from empirical literature about the role of financial literacy in ensuring improved financial decisions that lead towards desirable financial outcomes in the long run.[23]

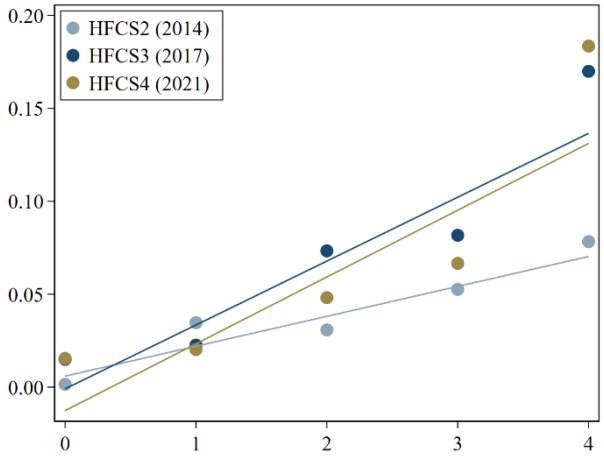
[22] See, for example, Lusardi and Mitchell (2014).
[23] See, for example, Cupak et al. (2022).

Chart 16: Financial literacy and asset ownership

a) Correlation of financial literacy and the probability of HMR ownership



b) Correlation of financial literacy and the probability of investment financial asset ownership



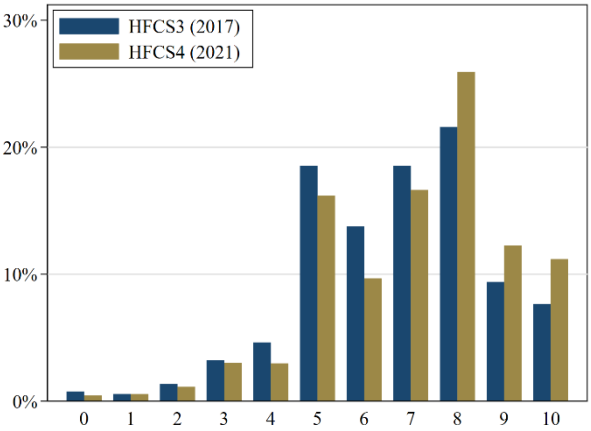
Notes: Binned scatter plots are created using survey weights and imputed data. Risky financial assets comprise shares, bonds and mutual funds. The financial literacy score is the sum of correct answers to questions, and it ranges between 0 and 4.
Sources: HFCS, and NBS.

4.2. Subjective well-being: 2017 vs 2021

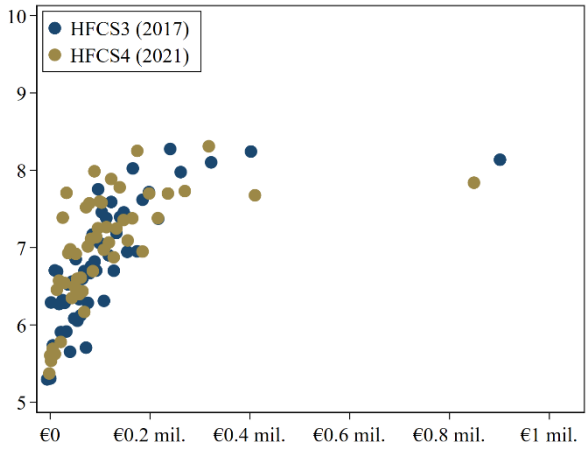
Happiness literature suggests that subjective well-being does not only depend on conventional determinants such as age, education, family status, etc., but also on the level of permanent economic resources such as wealth or assets.[24]

Chart 17: Distribution of life satisfaction scores

a) Distribution of life satisfaction score



b) Correlation of life satisfaction and household net wealth



Note: Binned scatter plots are created using survey weights. Life satisfaction score ranges between 0 and 10.
Sources: HFCS, and NBS.

[24] See D'Ambrosio et al. (2019).

The HFCS has monitored the subjective well-being[25] situation of the surveyed respondents since 2017, by asking the following question: *"On a scale from 0 to 10, how satisfied are you overall with your life? Where "zero" means totally dissatisfied and "10" means entirely satisfied*". The main result suggests that the distribution of the life satisfaction score has shifted to the right, meaning that surveyed households have become on average more satisfied with their lives (6.70 in 2017 vs 7.09 in 2021, Chart 17a).

Given the focus of the HFCS on wealth and assets, Chart 17b highlights the essentials of the relationship between life satisfaction and household net wealth. Two results stand out. Higher wealth is associated with higher life satisfaction, but there seems to be a certain saturation point after which the happiness level does not necessarily increase. This suggests diminishing returns to happiness from wealth.

Table 5 further outlines the distribution of subjective happiness scores across different household and individual characteristics and their main changes between 2017 and 2021. Some associations between general household characteristics and life satisfaction are conventional. Life satisfaction generally rises with the level of educational attainment and declines with age. When it comes to the effects of the COVID-19 pandemic, the impact of the crisis on reported happiness shows a clear pattern. Households where at least one family member lost his or her job due to the crisis report lower life satisfaction scores. However, disentangling the causal mechanisms is beyond the scope of these descriptive results.

Table 5: Life satisfaction scores across different household types (2017 vs 2021)

Household characteristics	HFCS3 (2017)	HFCS4 (2021)	Difference 2017-2021
Overall	6.70	7.09	6%
Housing status			
Owner – outright	6.67	6.92	4%
Owner with mortgage	7.05	7.87	12%
Renter	6.33	6.34	0%
Gender of reference person			
Male	6.87	7.24	5%
Female	6.37	6.85	8%
Age of reference person			
16-34	7.34	7.69	5%
35-44	7.04	7.55	7%
45-54	6.73	7.26	8%
55-64	6.56	6.85	4%
65-74	6.41	6.74	5%
75+	6.12	6.29	3%
Work status of reference person			
Employee	7.02	7.54	7%
Self-employed	7.38	7.65	4%
Unemployed (other)	5.50	5.62	2%
Retired	6.24	6.62	6%
Education of reference person			
Primary or lower secondary	5.66	5.75	2%
Upper secondary, non-tertiary	6.55	6.95	6%
Tertiary education	7.71	7.95	4%
COVID effects			
Lost job	*NA*	6.28	*NA*
Reduced wage	*NA*	7.28	*NA*
No effect	*NA*	7.36	*NA*

Notes: Average life satisfaction scores are computed using survey weights and multiple imputed data. Descriptive statistics labelled NA could not be computed owing to a lack of observations (fewer than 20 in the sample). Sources: HFCS, and NBS.

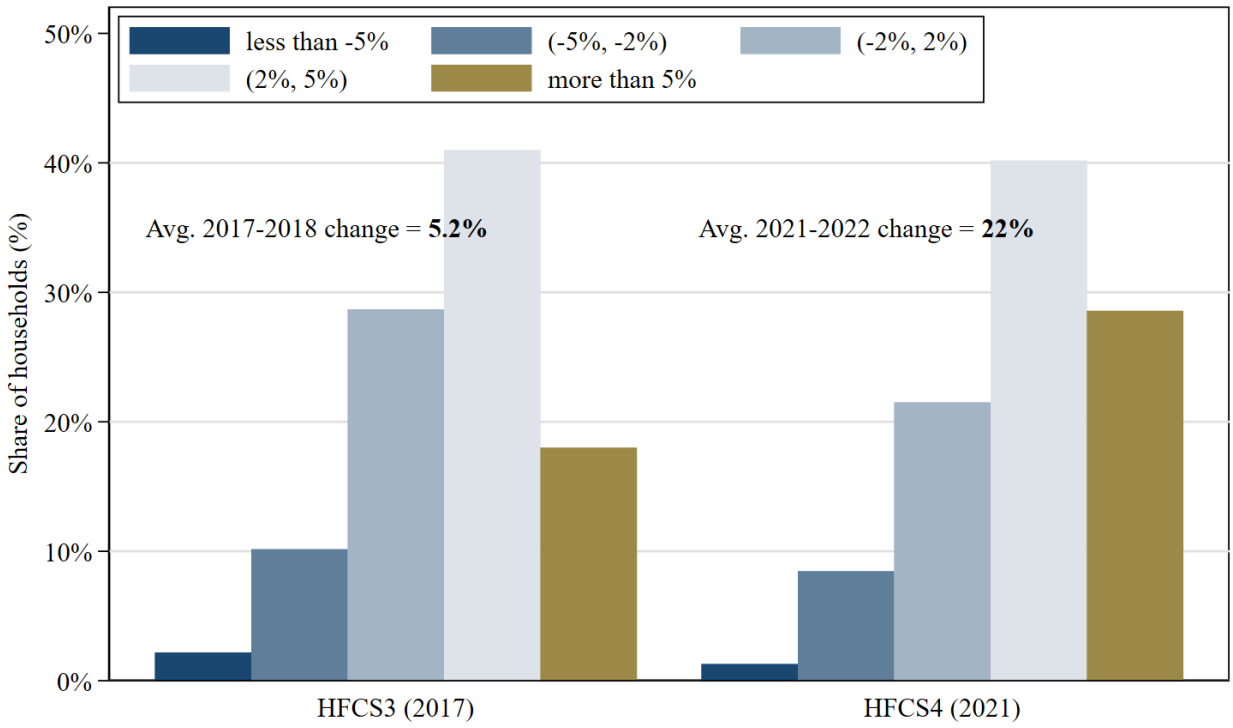
[25] Note that the terms "subjective well-being", "life satisfaction", and "happiness" are used interchangeably in the literature.

4.3. Household economic expectations[26]

The Slovak HFCS also includes a series of questions on households' economic expectations. On this question, respondents were asked, among other things, about their expectations for the movement of house prices over the next year. They were asked to assign probabilities to certain scenarios: prices would fall by more than 5%; prices would fall by between 5% and 2%; prices would change by between -2% and 2%; prices would rise by between 2% and 5%; and prices would rise by more than 5%.

We found that households are not particularly sensitive to what happens to the price of their property. As Chart 18 shows, in 2017 more than 40% of the surveyed households expected a modest (2–5%) increase in the price of their property over the next 12 months, and around 18% expected an increase of more than 5% (in fact, property prices rose on average by 5.2%[27]). Interestingly, while the distribution of expected price movement scenarios shifted to the right in 2021, still only 29% of households expected their property to increase in price by more than 5%. The actual average increase was 22%. This imbalance might be fully rational since households do not extract any benefit from the higher value of their owner-occupied housing.

Chart 18: One-year ahead expectations for house prices



Note: Descriptive statistics are computed using survey weights. Households were asked to assign probabilities to different house price movement (one-year ahead) scenarios. The aggregate year-on-year increase was 5.2% between 2017 and 2018, and 22% between 2021 and 2022.
Sources: HFCS, and NBS.

[26] The results in this part are based on an ongoing broader research project, entitled *"Inattention in household finance"*, by Andrej Cupak, Vladimír Novák, and Peter Tóth (all at Národná banka Slovenska).

[27] Official year-on-year house price changes for 2017-2018 and 2021-2022 are available at: https://nbs.sk/en/statistics/selected-macroeconomics-indicators/residential-property-prices/development-of-residential-property-prices-in-slovakia/.

If this, however, was the only explanation, then in the environment of a 90% share of owner-occupied housing, the incorrect assessment of house price inflation would be general and nearly balanced across different household characteristics. This, however, is not the case. We observed more of a U-shape in house price inflation expectations across respondent's age, and uneven observations across educational level and tenure status. Similarly, we found that better financial literacy results were associated with a lower imbalance between house price expectations and actual house price inflation (Table 6).

There could be several explanations for this result. Apparently, individuals and households only partially incorporate information on topics such as inflation statistics, because acquiring this information can be costly. This is consistent with the theory of rational inattention.[28] The level of (in)attention also tends to differ between different groups, highlighting the importance of cognitive skills.[29]

Table 6: One-year ahead expectations for house prices across different household types (2017 vs. 2021)

	Share of households expecting more than 5% increase in the property price in the next 12 months	
Household characteristics	**HFCS3 (2017)**	**HFCS4 (2021)**
Overall	18%	29%
Housing status		
Owner – outright	18%	28%
Owner with mortgage	19%	30%
Financial literacy of reference person		
Low	18%	25%
Medium	18%	29%
High	20%	34%
Gender of reference person		
Male	19%	28%
Female	16%	30%
Age of reference person		
16-34	17%	34%
35-44	24%	29%
45-54	18%	24%
55-64	15%	30%
65-74	16%	28%
75+	17%	31%
Work status of reference person		
Employee	20%	31%
Self-employed	16%	29%
Unemployed (other)	20%	13%
Retired	15%	28%
Education of reference person		
Primary or lower secondary	12%	21%
Upper secondary, non-tertiary	18%	27%
Tertiary education	20%	35%

Notes: Statistics are computed using survey weights.
Sources: HFCS, and NBS.

[28] See for example Carrol (2003).
[29] Maćkowiak et al. (2023).

5. Conclusions

We present findings based on data collected in the Household Finance and Consumption Survey in Slovakia in 2021 and compare them with those from the survey's previous waves.

Results suggest that Slovak households became wealthier but most of additional wealth comes from higher valuation of their owned housing. Due to a very high ownership rate of HMR, this has been the case across the board making young and low-income households the ultimate beneficiaries. As a consequence, wealth inequality significantly declined. Concentration of wealth in real-estates makes financial investments a less popular choice. Slovak households traditionally hold financial assets in low-risk bank deposits and only a fraction allocate their wealth into investment assets. On the background of favorable credit conditions mostly young households took on more mortgage debt. Overall debt burden has however stabilized, also thanks to active Macroprudential measures.

Numerous other findings about wealth, income, consumption, and debt suggest gradual structural changes towards what is conventional in advanced economies, others highlight some country-specific preferences rooted in the character of society. In addition to core HFCS questions, the report also presents novel findings about effects of the pandemic on the nature of work as well as findings from soft indicators such as financial literacy, subjective well-being, and household economic expectations.

We hope this snapshot of results will catch the attention of the HFCS data users and encourage them to conduct fruitful research beyond the simple descriptive statistics presented in this report.

Finally, we would like to thank the surveyed households for their willingness to participate in this complex survey to gather microdata on their financial situation. At the same time, we would like to encourage them to take part in the fifth wave of the HFCS in late 2023.

Please note that with the release of this statistical report, the HFCS 2021 database is officially available for non-commercial analytical and research purposes and can be accessed by following these instructions.

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Appendices

Appendix A: Survey procedures and statistical measures

The Household Finance and Consumption Survey (HFCS)
The HFCS is a joint triennial survey of the European System of Central Banks to collect comparable data on household assets, liabilities, income, and consumption. The project is coordinated by the European Central Bank's Household Finance and Consumption Network.[30]

The survey in Slovakia was conducted for the first time in 2010. Since 2014 Národná banka Slovenska (NBS) in cooperation with the Statistical Office of the Slovak Republic (SOSR) have conducted another three survey waves (in 2014, 2017 and 2021).

The fourth wave of the survey (in 2021) involved 2,174 respondent households out of a total of 3,887 households that were asked to participate. The survey covers private households except for population in institutions and the homeless.

The 2021 wave was conducted through personal interviews at the respondents' homes, with the interviewers recording the respondents' answers electronically using the Computer Assisted Personal Interviewing (CAPI) mode. The fieldwork lasted from July to October 2021.

The median duration of an interview was close to one hour, depending on the number of household members and the extent of assets and liabilities held by the household, making the HFCS a particularly comprehensive survey.

Questionnaire
The primary entity of the HFCS is the household, which is defined as a person living alone or in a group of individuals sharing common expenditures.

The questionnaire questions are answered by the household member who is best informed about financial matters. The first part of the questionnaire covers demographic information about each household member (age, gender, marital status, relationship to other household members, country of birth for the foreign born, etc.). The next sections deal with information collected at the household level. This range of questions cover the ownership of real assets (notably real estate property) and their (mortgage) financing, other liabilities, credit constraints, private business, financial assets, consumption and savings, intergenerational transfers, and gifts.

Questions in the third section of the questionnaire focus on individual household members aged 16 and older. They cover information about education, employment status, income sources, future pension plans and insurance policies.

[30] Further details about the survey and participating countries can be found at: https://www.ecb.europa.eu/stats/ecb_surveys/hfcs/html/index.en.html.

The questionnaire for the survey's fourth wave contains an additional special module on the effect of the COVID-19 pandemic on household employment, income, wealth and savings.

The HFCS also collects valuable information on various topics ranging from financial literacy, risk aversion, subjective well-being, and economic expectations.

The core of the questionnaire questions come from the ECB's HFCS manual, extended by the non-core questions and country specific modules. The core questionnaire is translated into the Slovak language and, prior to the fieldwork, it is cognitively tested by the SOSR to make it as understandable as possible for the survey respondents.

Sampling and weighting

Households were selected using probability sampling to ensure that the household sample was representative not only at the country level but also at the regional level. The population of Slovakia was stratified to eight regions corresponding to the NUTS III European level of classification. The initial (gross) sample included a five times higher proportion of high-income households because of a lower expected response rate among these households.

Individuals and households were assigned weights, calibrated according to parameters obtained from the up-to-date demography statistics and other relevant socio-economic characteristics at the individual level, whereas the household-level parameters were adjusted according to the estimates based on the 2011 Census results. The following calibration criteria were considered:

- the number of households in each region;
- the number of men and women within different (six) age brackets in each region;
- the breakdown of the population by economic activity (number of employed, self-employed, unemployed, and retired persons in each region).

Table A.1: Main features of the HFCS in Slovakia

	HFCS1 (2010)	HFCS2 (2014)	HFCS3 (2017)	HFCS4 (2021)
Fieldwork	September - December	February - April	February - April	July- October
Reference year for income	2009	2013	2016	2020
Gross sample	2,057	4,202	4,017	3,887
Net sample	2,057	2,136	2,179	2,174
Probabilistic sampling	x	✓	✓	✓
Oversampling of the wealthy	x	✓	✓	✓
Inflation adjustment factor (previous wave)	1.000	1.094	1.005	1.105
Panel component	x	x	✓	✓
Panel design	x	x	Pure panel	Pure panel

Note: The reference time for asset and liability values is the time of the interview.
Sources: HFCS, and NBS.

Data processing and imputations

After completion of the fieldwork, the data were processed and edited to remove any errors and inconsistencies. There are situations where survey participants may not know the answer or do not want to provide information on difficult or sensitive questions, such as the value of assets. Correction for missing answers (item non-response) for key variables related to assets, liabilities, consumption, and income is made by imputing the missing values. HFCS imputes missing values using state-of-the-art methodology: Multiple Imputations by Chained Equations

(see HFCN, 2020, Chapter 6). As a result, the final dataset contains data with five implicates and, importantly, also a set of shadow variables (flag variables) indicating whether an individual observation was recorded as collected, edited, estimated, or imputed. Note that the multiple imputed nature of data (Little and Rubin, 2019) should be considered in any empirical analysis using the HFCS dataset.

Variance estimation
HFCS is a sample-based survey and therefore the estimates are subject to sampling errors. In order to accurately estimate these sampling errors, 1,000 replicate weights are produced. Details about all the caveats and techniques to be considered in order to properly analyse the HFCS data are presented in the Methodological Report for the 2017 wave (HFCN, 2020, Chapter 7).

Appendix B: HFCS detailed statistical tables

Online appendix provides a comprehensive set of tables that offer detailed information about the data presented in the main sections of this report. In addition to the results presented in each subsection, the appendix tables include further breakdowns by various categories, such as region, household size, tenure status, income and wealth quintiles, age groups, employment status, and educational attainment. These tables include participation rates in particular asset classes, their median and mean values (conditional on participation), and the share of each category in the total value, thus allowing for a more nuanced understanding of the data. The appendix tables are a valuable resource for those seeking a deeper understanding of the information presented in the main sections.

The Appendix B tables presenting the results of the fourth wave of the HFCS contain the following aspects:

Participation rate
The rate indicates how many households own a particular item (of assets, liabilities, income, etc.) as a percentage of the population.

Conditional median value in euro of a particular item for participating households
The median is the middle value of a given (sorted) variable such that half of the participating households owns less and half owns more than the middle. The median (unlike the mean) is not affected by extreme values and is therefore a better indicator of the value for a "typical" household.

Conditional mean value in euro of a particular item for participating households
The mean is obtained by summing up values of a given variable and dividing it by the number of participating households. Since the distribution of income and wealth is quite uneven (long tailed) and the mean is influenced by extreme values, the difference between the values of median and mean gives us an indication of the degree of skewness of the distribution.

Quintiles
The five equally numerous groups into which the ordered observations are divided. Each quintile represents 20% of the observations.

Income quintile groups

These groups are computed on the basis of the total gross income attributed to each household. (The Slovak HFCS does not use the concept of equivalised income in the tables presented.) The first quintile represents the 20% of the population with the lowest income; the fifth quintile, the 20% of the population with the highest income. With division into quintiles, the 20% of the population with middle income can be identified – in the third quintile.

Net wealth quintile groups

These groups are calculated on the basis of the total net wealth attributed to each household. The first quintile represents the 20% of the population with the lowest wealth; the fifth quintile, the 20% of the population with the highest wealth. With division into quintiles, the 20% of the population with middle wealth can be identified – in the third quintile.

UN/Canberra definition of the reference person

UN/Canberra definition is applied to HFCS results, especially for breakdowns based on age, gender, education, work status. The household reference person is uniquely determined by applying sequentially the following steps: household type (one of the partners in a de facto or registered marriage with, then without dependent children, lone parent with children, the person with the highest income, and finally the eldest person).

Net wealth

The difference between the value of the total assets and total liabilities (debt) held by the household at the time of the interview.

Total assets

The household's real assets and financial assets.

Real assets

The household's main residence (for owners), other real estate property, vehicles (not including leased vehicles), valuables, and self-employed business wealth.

Household main residence (HMR)

The dwelling in which the household spends most of the year. A household is a homeowner if it is the legal owner of its main residence. An owner is an "**owner – outright"** if the household main residence is not the collateral for a mortgage loan. An owner is an "**owner with mortgage"** if the household main residence is collateral for the household's mortgage loan. A household is a "**renter"** if the HMR is rented from the legal owner. The status "other" means that the household is using the HMR freely.

Financial assets

Include the following: deposits (sight accounts and savings accounts); mutual funds; voluntary private pension plans and whole life insurance policies; bonds; publicly traded shares; assets in managed accounts; money owed to the household as a private loan;, private non-self-employed business; and other financial assets.

This survey does not cover cash held by households. Investments in the third and second pension pillars are defined as investments in occupational pension schemes.

Total liabilities (debt)

Include the following: the outstanding amount of the household's mortgage on the household main residence and mortgages on other real estate property; the outstanding amount of debt on credit cards, credit lines and bank overdrafts; and the outstanding amounts of unsecured loans (covering loans from commercial providers and private loans). The HFCS does not cover households' liabilities for car leases.

Total gross household income

Total gross income received in 2020, comprising the following: employee income; self-employment income; income from public pensions; income from private and occupational pensions; income from unemployment benefits; rental income; income from financial investments; income from social transfers other than unemployment benefits; regular private transfers; and regular income from other sources.

Consumption

Includes expenditure on the following in the last 12 months: food (at home or outside the home); utilities; holidays; and consumer goods and services.

Savings/dissavings

Represent the monthly amount in euro that the household can put aside (in a typical month in the last six months) or the amount that the household lacks to cover monthly expenditure.