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Household portfolios in Türkiye: Results from the household finance and consumption survey[☆]

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ABSTRACT

This paper analyzes the distribution of household portfolios in Türkiye using a fresh data set, the Central Bank of the Republic of Türkiye – Household Finance and Consumption Survey. The empirical analysis concentrates on the motives behind household saving preferences and the distribution of household portfolios. Moreover, the financial situation of households in Türkiye is compared with Euro area countries. First, we find that income and household characteristics are among the leading determinants of households' portfolio choices in Türkiye. Second, we reveal that households' portfolios are under-diversified, since they own relatively small amounts of financial wealth and hold a few types of financial assets. Furthermore, risky asset categories such as shares of publicly traded companies are rarely included among them. Third, households are more likely to invest in financial assets as their income increases, but the share of financial assets in total wealth remains subdued as household income increases, since at that point real estate wealth becomes dominant. Finally, we discover that households are more likely to be in debt in Türkiye compared to households from the Euro area. Additionally, they are more likely to accumulate non-collateralized debt and also private debt, which is owed to friends and relatives to be repaid. However, the percentage of households with mortgage debt and the share of mortgage debt in total household liabilities are smaller in Türkiye, suggesting that many households have to rely on their own funds or private loans to purchase homes. As a result, we can argue that households need to be encouraged to invest a larger share of their wealth in financial assets to raise household savings and to deepen financial markets in Türkiye.

1. Introduction

This paper analyzes the distribution of households' portfolios using a fresh data set from the Central Bank of the Republic of Türkiye (CBRT) – Household Finance and Consumption Survey (HFCS).¹ In particular, we investigate the relationship between households' portfolio choices, homeownership status and housing wealth levels. If households decide to save a portion of their disposable income, then they also choose to which financial instrument they will channel their savings

simultaneously. Thus, households' saving and investment decisions are directly reflected in their portfolio choices. However, households' portfolio choices also depend on their homeownership status and housing wealth levels apart from their income levels and social and demographic characteristics. In this context, the availability of this novel dataset provides us a unique opportunity to examine the effects of households' homeownership status and housing wealth levels on the amount and the types of financial assets and liabilities that they accumulate over their life-times.²

^{*} The views expressed in this working paper are those of the authors and do not necessarily represent the official views of the Central Bank of the Republic of Türkiye (CBRT). Peer review under responsibility of the Central Bank of the Republic of Turkey.

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¹ Please see [Betti et al. \(2022\)](#) for more information about the CBRT-HFCS.

² According to the TURKSTAT Institutional Sector Accounts, the ratio of domestic savings to GDP increased from 21.9% in 2009 to 30.3% in 2021. Moreover, the ratio of household savings to gross household disposable income was realized at 11.4% in 2021, which was 10.5% in 2009. The ratio of household savings increased up to 15.4% in 2018, but despite the increase in the domestic saving ratio over time, the Turkish economy still generates current account deficits. Domestic savings are still not adequate to finance total investments. <https://data.tuik.gov.tr/Bulten/Index?p=Institutional-Sector-Accounts-2021-45684>.

The existing literature about households' portfolios and their saving behavior mainly concentrates on advanced economies such as Banks et al. (2002) for the UK and the US, Dynan et al. (2004) for the US, Iwaisako (2009) for Japan and Barasinska et al. (2012) for Germany. In addition, Guiso et al. (2002) includes several empirical chapters that analyze household portfolios in the US, the UK, Italy, Germany and the Netherlands. At the same time, there is an extensive literature on the Turkish economy about household consumption and saving behavior using both aggregate data from National Income Accounts and micro data sources such as Household Budget Surveys (HBS) produced by the Turkish Statistical Institute (TURKSTAT). Moreover, previous empirical research about the Turkish economy cover a wide range of topics from income and poverty dynamics, income and wealth inequality and minimum wage (Dayoğlu and Demir Şeker, 2015; Torul and Öztunalı, 2018; Tamkoç and Torul, 2020). Furthermore, there are many empirical studies that search for the determinants of private and household savings (Aktaş et al., 2012; Ceritoğlu, 2013; Ceritoğlu and Eren, 2014; Cilasun and Kırdar, 2015, Metin-Özcan et al., 2003, 2012). In general, previous empirical studies using micro data from the HBS find that household savings increase parallel to household income and also with age, education level and labor force status of the household head. At the same time, Ceritoğlu (2018) investigates consumption smoothing and risk-sharing among birth-year cohorts using micro data from the HBS between 2003 and 2016. He notices that aggregate consumption tracks aggregate income closely, even though the volatility of consumption is lower than the volatility of income. He finds that there is imperfect consumption risk-sharing between birth-year cohorts in Türkiye, since the growth of cohort consumption is positively and significantly associated with both the growth of cohort income and the growth of aggregate consumption.

Nevertheless, the distribution of household portfolios has not been investigated sufficiently for the Turkish economy before due to lack of data. To the best of our knowledge, Temel Nalın (2013) analyzes households' portfolio choices using micro data from the HBS between 2002 and 2006. However, the HBS do not provide information about households' financial assets and liabilities and the majority of households report that they do not save at all. For that reason, Temel Nalın (2013) is only able to estimate logit and multinomial logit models using discrete choice variables based on households' responses to survey questions about saving preferences. In the absence of detailed data on household financial assets and liabilities, Ceritoğlu (2020a) analyzes the determinants of homeownership and housing wealth in Türkiye using micro data from the HBS between 2003 and 2016. Ceritoğlu (2020a) finds that the permanent income elasticity of housing demand is statistically significant at 26%. However, the price elasticity and interest rate elasticity of housing demand are not found statistically significant in the empirical analysis, which might be due to the short time dimension of the data set. Therefore, he concluded that income is the main determinant of homeownership and housing wealth.

We contribute to the literature by the analysis of household portfolios using a fresh data set, which has not been available so far in the existing household surveys for Türkiye. The CBRT-HFCS closes an important data gap by providing detailed information on households' financial assets and liabilities. Another contribution of the study is to enable additional comparable information on household wealth with Euro area countries. We compare the financial situation of households in Türkiye with selected European countries in this paper. Our initial analysis reveals that real assets and specifically housing wealth and vehicles represent a larger share of total assets compared to financial assets in Türkiye with respect to the Euro area. Another important finding is that the fraction of indebted households is higher, while households' ability to save is significantly lower in Türkiye. It is worth noting that the possibility of saving remains low even in the upper quintiles of household net wealth and income. Moreover, the percentage of households with mortgage debt and the share of mortgage debt in total household liabilities are smaller in Türkiye, suggesting that many

households have to rely on their own funds or private loans to purchase homes.

Our econometric results using micro data from the CBRT-HFCS confirms the findings of previous studies in this field. First, we find that income and net wealth are among the leading determinants of households' portfolio choices in Türkiye. Second, we reveal that households' portfolios are under-diversified, since they own relatively small amounts of financial wealth and hold a few types of financial assets. Furthermore, risky asset categories such as shares of publicly traded companies are rarely included among them. Third, households are more likely to invest in financial assets as their income increases, but the share of financial assets in total wealth remains subdued as household income increases, since at that point real estate wealth becomes dominant. Finally, we discover that households are more likely to be in debt in Türkiye compared to households from the Euro area. Additionally, they are more likely to accumulate non-collateralized debt and also private debt, which is owed to friends and relatives to be repaid. As a result, we can argue that households need to be encouraged to invest a larger share of their wealth in financial assets to raise household savings and to deepen the financial markets in Türkiye.

The outline of the paper is as follows: Section 2 explains the data set in detail. Section 3 compares and contrasts the key findings for the Turkish economy from the CBRT-HFCS with the Euro Area. Section 4 presents the econometric results on the distribution and the determinants of household portfolios in Türkiye. Section 5 concludes this paper with a brief summary of our empirical findings.

2. Data

The CBRT-HFCS was realized by using the European Union (EU) Instrument for Pre-accession II (IPA-II) and the CBRT funds jointly. It is actually based on the Eurosystem's Household Finance and Consumption Survey (ECB-HFCS), which has been conducted with the supervision of the European Central Bank (ECB) for participating countries in several waves. The CBRT-HFCS is carried out to establish a new framework to perform academic research and to develop policy proposals about how to raise household savings in Türkiye by benefiting from a novel data set.

The CBRT-HFCS collects data on assets and liabilities, income, consumption and credit constraints of Turkish households, which is conducted in line with the ECB-HFCS. The distinguishing feature of the HFCS is that it collects a comparable micro-level information on household balance sheets in Eurosystem countries (19 euro-area countries as well as Croatia, Poland and Hungary).³ The data is collected in an ex-ante harmonized way. Particularly, Eurosystem HFCS countries follow a similar design for the survey with a common questionnaire up to country specific adjustments. Besides, all countries create derived survey variables based on a set of common definitions enabling comparability across countries (Bover et al., 2016a). The first wave of the CBRT-HFCS is not an exception in terms of the design and questionnaire, thereby providing additional information from a new country

³ https://www.ecb.europa.eu/pub/economic-research/research-networks/html/researcher_hfcn.en.html.

to the ECB-HFCS. Yet, it embraces country-specific texture as other countries.

The CBRT-HFCS data provides information about the distribution of household portfolio as well as the distribution of debt, income and wealth across households from various social and demographic groups (Betti et al., 2022).⁴ So, it is important in terms of better understanding the monetary transmission mechanism and financial stability. The CBRT-HFCS data also helps in understanding individual responses to macroeconomic shocks, policies and institutional changes (ECB, 2009). Another value added of the CBRT-HFCS is its design. In the CBRT-HFCS, wealthy households are oversampled based on the unit house prices at the neighborhood level (Ceritoğlu and Sevinç, 2020). Oversampling is a common approach applied in many wealth surveys like the ECB-HFCS. This enables us to better capture the balance sheet of the top tail of wealth distribution, which is new to household surveys held by TURKSTAT.

In order to have a better insight in the CBRT-HFCS data, we compare key aggregates obtained from the data with the ones that are nationally available from various sources. For this purpose, we look at both similar household surveys and aggregate data sources, which are produced by TURKSTAT. At this point, it is necessary to mention that sample selection from the National Address Database (NAD) using the two-stage stratified cluster method was performed by TURKSTAT. Moreover, calibration is conducted and sampling weights are calculated by TURKSTAT. Thus, the CBRT-HFCS data is expected to be consistent with micro data from TURKSTAT surveys about age distribution, gender, education levels and geographical locations of households (Table A2). Starting with the population structure, we find that the age distribution of the population from the CBRT-HFCS is very close to the Address Based Population Registration System (ABPRS) figures. According to the ABPRS, the median age was 32.4 in 2019, while it was measured as 32 in the CBRT-HFCS. Similarly, homeownership rate was estimated at 56.8% in 2019 in the HBS, while it was measured as 58.3% in the CBRT-HFCS (Fig. 1).

The CBRT-HFCS data is also compared with the TURKSTAT Survey of Income and Living Conditions (SILC), which is the main data source of income, poverty, and living conditions in Türkiye. Particularly, we observe that average household disposable income is 62,042 TRY in the CBRT-HFCS, which is 14% higher than the average household disposable income obtained from SILC.⁵ Besides, the CBRT-HFCS data suggests that income distribution is more uneven in Türkiye than indicated by previous TURKSTAT surveys. While top 10% share of the highest income group is 29.1% when SILC data is used, it becomes 36.7% when the CBRT-HFCS is used. The larger share of income received by the highest income groups for the CBRT-HFCS compared to the SILC remain relevant if one considers the top 5% share. Moreover, the Gini coefficient of household income is 0.411 for the SILC data, yet it is 0.517 for the CBRT-HFCS data. It is thought that this is a result of oversampling wealthy households in the sampling design. Moreover, household debt figures

⁴ The CBRT-HFCS is conducted between September 2019 and February 2020 at 81 provinces. This is a nationally representative survey of 12,302 households, while data is produced for 26 geographic regions at NUTS2 level. The CBRT-HFCS consists of nine sections on demographics, real assets, liabilities and credit constraints, private businesses and financial assets, employment, pensions and insurance policies, income, intergeneration transfers and consumption. There are 201 core (all commonly used questions in the ECB-HFCS) and 13 non-core (selective questions in the ECB-HFCS) questions in the CBRT-HFCS. It also includes 4 follow-up questions about outstanding housing debt as well as 4 questions on the distribution of households' financial assets, participation in Islamic banking services, minimum wage and formal employment, which are unique to the CBRT-HFCS questionnaire. The distribution of the number of core, non-core and additional questions are listed in Table A1.

⁵ Annual household disposable income includes imputed rent, but income transfers outside of the family are excluded. 2018 SILC data refers to 2017 period. It is inflated to 2019 values by using consumer prices inflation.

from the CBRT-HFCS are compared with aggregate data from the Banking Regulatory and Supervision Agency (BRSA). Our empirical observations indicate that credit debt figures from the CBRT-HFCS and BRSA figures are very close to each other (Table A3).

Finally, the interview is carried out with the reference person in the household, who is considered as the most financially knowledgeable person (FKP) among household members.⁶ According to CBRT-HFCS data, FKP is more likely to be male, middle-aged, married, employed and to generate positive income (Table A4). FKP is also more likely to be a university graduate than the rest of the individuals in the sample. Moreover, FKP is the highest income-earner in 65.8% of households in the sample.

3. Comparisons with the Eurosystem HFCS

In this section we compare some key features of the CBRT-HFCS with the ECB-HFCS. Differences in the structure of household assets and liabilities as well as general features of household finances are affected by demographic characteristics, the scale of income and wealth of the family as well as broad features of the market economy where household saving and financial investment decisions are taken. Thence, we start with contrasting Türkiye with the ECB-HFCS figures along these dimensions. While income statistics are available from other surveys, the CBRT-HFCS offers a unique source to compare participation in financial and real markets, the composition of household portfolios, wealth distribution and its degree of inequality, and indicators of financial fragility between Türkiye and the ECB-HFCS.

First of all, it is necessary to bear in mind that there are important social and demographic differences between Türkiye and Euro area countries, which might be reflected in household portfolios. Türkiye has a much younger population, a larger household size and more concentrated wealth than the Euro average. Table 1 shows that Turkish respondents have also lower education and lower labor market participation but also a lower share of retired people. Households size is considerably smaller in the Euro area, which features a 34.6% share of single households compared to 15.8% in Türkiye. While in the Euro area the proportion of respondents with secondary education is 40.6% and the proportion with tertiary education is 28.9%, in Türkiye the two proportions are 29.5% and 18.8%, respectively.

3.1. Assets and liabilities: levels, ownership and composition

Our empirical analysis shows that Turkish households have lower average annual income, assets and liabilities than the average Euro-area households as expected (Table 2).⁷ In particular, total assets of the median household in Türkiye are 17.6% of the corresponding household in the Euro-area. Median financial liabilities in Türkiye are also much lower than in the ECB-HFCS, and so is net wealth.⁸ Clearly, differences in wealth and income levels reflect primarily differences in the stage of economic development. But, they are also partly affected by the much younger age of the average Turkish households and by the fact that older households are typically wealthier.

⁶ A family member who plays a greater role than the rest of them in at least one important issue is selected as the FKP. Bringing income into the family or gender is not the main criteria in the selection of the FKP. He/she does not have to be the highest income earner in the family, but he/she is responsible for managing household portfolios. Moreover, the characteristics of FKP play an important role on household consumption and saving decisions.

⁷ We use end of 2019 exchange rate for comparisons.

⁸ Euro area includes 22 countries based on the results of Household Finance and Consumption Survey Wave (2017). Despite HFCS provides comparable data for these countries, there are country-level differences in methodology. Hence, mean/median values for the monetary variables should be interpreted with caution.

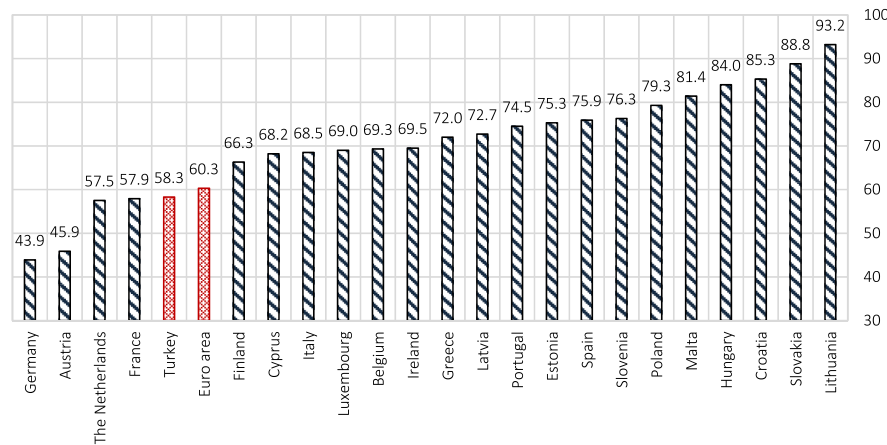


Fig. 1. Homeownership rate (%).

Source: CBRT-HFCS, ECB-HFCS.

Table 1
Population structure.

		Euro area	Türkiye
Household size	1	34.6	15.8
	2	31.6	20.8
	3	15.4	19.6
	4	12.9	19.9
	5+	5.5	23.8
Housing status	Owners – outright	39.8	49.5
	Owners – with mortgage	20.5	8.8
	Renters/other	39.7	41.7
Age of respondent	16–34	14.1	34.5
	35–44	16.9	23.0
	45–54	20.3	16.4
	55–64	18.3	13.7
	65–74	14.8	9.3
	75+	15.5	3.2
Work status of respondent	Employed ⁽¹⁾	58.7	53.1
	Retired	30.1	19.3
	Other not working	11.2	27.6
Education of respondents	Basic or no education	30.4	51.6
	Secondary	40.6	29.5
	Tertiary	28.9	18.8
	DK/NA	0.1	0.03
Total Population		100.0	100.0

⁽¹⁾ Employed refers to individual “doing regular work for pay/self-employed/working in family business” or “on sick/maternity/other leave (except holidays), planning to return to work.”

Source: CBRT-HFCS, ECB-HFCS.

Table 2
Income, assets and liabilities levels (Thousands euro).

	Medians		Means	
	Euro area	Türkiye	Euro area	Türkiye
Income ⁽¹⁾	31.0	5.8	42.3	8.6
Total assets	131.3	23.1	259.4	38.7
Total liabilities	29.5	3.3	72.2	11.2
Net wealth	99.4	16.2	229.2	30.4

⁽¹⁾ Income is defined as gross income in the HFCS and net income in Türkiye.

Source: CBRT-HFCS, ECB-HFCS.

Looking at asset ownership, the wealth gap between households in Türkiye and in the ECB-HFCS is contained if we focus on ownership of real assets: 91.2% of ECB-HFCS households own some type of real asset; the corresponding figure is 81.4% among households in Türkiye (Table 3). Yet, the homeownership rate among households in Türkiye is

Table 3
Percentage of households holding real and financial assets (%).

	Euro area	Türkiye
Real assets		
Has real assets	91.2	81.4
Has HMR ⁽¹⁾	60.3	58.3
Has other real estate property	24.8	14.4
Has vehicles	76.3	59.1
Has self-employment business wealth	10.7	0.5
Has real estate wealth ⁽²⁾	64.7	60.3
Financial assets		
Has financial assets	97.7	80.6
Has deposits	97.6	71.5
Has mutual funds	10.2	<0.1
Has bonds	3.2	<0.1
Has shares (publicly traded)	8.6	<0.1
Has money owed to households	7.5	29.0
Has voluntary pensions/whole life insurance	28.4	8.9
Has other types of financial assets	7.7	0.3

⁽¹⁾ Household’s main residence (HMR).

⁽²⁾ Includes HMR and other real estate property wealth.

Source: CBRT-HFCS, ECB-HFCS.

close to the Euro area average, though it lags behind most of the European countries (Fig. 1). We also notice that the Euro area average reflects the relatively low ownership rate of Austria, Germany, the Netherlands and France that also carry a large weight in terms of population size, while the relatively small countries feature the highest rates.

The difference in assets ownership between Euro area and Türkiye is relatively large for financial assets. The ownership rate of a generic financial asset is 97.7% in the Euro area, while it is 17 percentage points lower in Türkiye. However, while ownership of relatively unsophisticated financial instruments such as bank deposits is relatively common in the Turkish economy (71.5% own deposits in Türkiye vis a vis 97.6% in the Euro-area), ownership of more sophisticated financial investment instruments such as bonds, mutual funds and stocks is virtually absent in Türkiye. Although ownership of retirement instruments (voluntary pension funds and whole life insurance) is also more limited in Türkiye, almost 10% of households invest in these assets. Interestingly, almost one-third of Turkish households hold claims vis-a-vis other households against an average of 7.5% in the Euro area. These are loans made to relatives or friends that are expected to be paid back and are typically more common in economies with more informal financial systems. Differences in real assets ownership between Türkiye and Euro-area are sizeable for vehicles (59.1% in Türkiye versus 76.3% in Euro area) and particularly for business wealth (0.5% in Türkiye compared to 10.7% in

Euro area).

Even in the countries with the most developed financial system, the average household invests most of its wealth in real assets. This feature holds in Türkiye as well, though aggregate total assets allocation is more tilted towards real assets in Türkiye (the share is 87.7%, Table 4) than in the ECB-HFCS (80.9% share, Table 4). Interestingly the share of wealth in the main residence in total real assets is the same in Türkiye as in the ECB-HFCS (60.7% compared to 60.2%) and so are the proportions of the other components of real assets, except for the value of business wealth which amounts to 10.6% among ECB-HFCS households and only 1.5% in Türkiye.

The financial portfolio is heavily tilted towards deposits in both Türkiye and the ECB-HFCS (49.6% and 43.7% share of financial wealth respectively). However, as for financial assets ownership, the share of listed stocks, mutual funds and bonds is negligible in Türkiye, but it is sizeable with 22% in the ECB-HFCS. Turkish households replace investments in financial instruments with claims on lending to friends, relatives and other households, which amount to 33.1% of their financial wealth. In Türkiye, the share of financial assets in pension or life insurance is relatively important (14.2% of financial assets), though smaller than for the average Euro area household (23.2%, Table 4).⁹

The liability side of the household balance sheet shows also interesting differences between Türkiye and the ECB-HFCS. Debt ownership in general is even more widespread among Turkish households than among ECB-HFCS households (53.8% compared to 41.9%, Table 5). But while 23.5% of the ECB-HFCS households report to have a mortgage, only 9% of households in Türkiye do so. Since homeownership rates in Türkiye are quite close to those prevailing in the Euro-area, the large gap in mortgage ownership cannot be due to a lower preference for homeownership among Turkish households. Rather, it must reflect different arrangements to finance home purchases, relying either on own funds or on informal loans from relatives and friends.

Lastly, as Table 5 documents, 51.7% of Turkish households have non-mortgage debt. The corresponding figure is only 27.2% among Euro area

Table 4
Composition of real and financial wealth (%).

	Euro area	Türkiye
Share of total wealth		
Share of total real assets in total wealth	80.9	87.7
Share of total financial assets in total wealth	19.1	12.3
Share of real assets ⁽¹⁾		
Value of household's main residence	60.2	60.7
Value of other real estate property	23.4	20.4
Value of household's vehicles	3.6	14.5
Valuables	2.2	3.0
Value of self-employment businesses	10.6	1.5
Share of financial assets ⁽¹⁾		
Deposits	43.7	49.6
Mutual funds	10.7	N
Bonds	3.2	N
Shares, publicly traded	8.0	N
Money owed to households	2.3	33.1
Voluntary pensions/whole life insurance	23.2	14.2
Other types of financial assets	8.9	2.7

Source: CBRT-HFCS, ECB-HFCS⁽¹⁾ The sum of sub-items might not make 100% due to rounding. Also, the sum of the shares of mutual funds, bonds and shares of publicly traded companies make a negligible amount around 0.5% for Türkiye.

⁹ The CBRT Financial Accounts data indicate that deposit accounts constitute approximately 73% of total household financial assets in 2021. However, the CBRT Financial Accounts do not include data on money owed to households, which is sizeable in Türkiye. When money owed to households item is excluded, the share of deposit accounts in total household financial assets is measured at around 74.1% in the CBRT-HFCS, which is actually close to the CBRT Financial Accounts data.

Table 5
Debt ownership (%).

	Euro area	Türkiye
Has debt	41.9	53.8
Has mortgage debt	23.5	9.0
Has HMR debt	20.5	8.8
Has other property mortgage	4.7	0.7
Has non-mortgage debt	27.2	51.7

Source: CBRT-HFCS, ECB-HFCS

households. This figure includes consumer, employer, and installment loans, but excludes private loans.

3.2. Income and wealth distribution

Table 6 reports percentiles of gross income, net wealth and financial wealth levels in Türkiye and in the ECB-HFCS. Needless to say, reflecting the documented differences in income and wealth levels (see Table 2), the ECB-HFCS households have higher income and wealth at all percentiles. What differs is the distribution of both income and wealth, which is more unequal in Türkiye than in the ECB-HFCS, particularly at the bottom of the distribution. Indeed, the 20th income percentile is almost half¹⁰ of the median income in the Euro area but less than 35% in Türkiye; the corresponding figures for net wealth are 7.5% and 0.6%, respectively.

Table 7 presents different measures of wealth inequality. The Gini coefficient of the net wealth distribution is 0.695 in the ECB-HFCS, while it scores at 0.773 in Türkiye, marking a relevant difference of 0.078. Besides, the richest households are holding more of total wealth in the country. In particular, the richest top 10% (top 5%) of households are holding 55.3% (42%) of total wealth in Türkiye, while this share is 51.9% (38.1%) for ECB-HFCS countries. As we can see in Table 6, the poorest households are gaining very small amounts of wealth compared to the richest households in Türkiye. However, this is not the case for the households in the middle of wealth distribution. For instance, ratio of P80/P50 is 3 for Türkiye, whereas this ratio is a bit higher 3.2 for ECB-HFCS countries.

Table 8 compares age and the median wealth profile of households from Türkiye and Euro-area countries. Again, reflecting the difference in average wealth, ECB-HFCS households' wealth is higher than that of Turkish families in all age groups. However, the wealth gap is much lower among young households and grows larger as they age (Table A5). The ratio between median wealth in Türkiye and the ECB-HFCS households is 24% of the median, but it is 66% among households

Table 6
Income and wealth distribution (Thousands euro, mean).

	Gross income		Net wealth		Financial wealth	
	Euro area	Türkiye ⁽¹⁾	Euro area	Türkiye	Euro area	Türkiye
Mean	42.3	8.6	229.2	30.4	50.7	5.6
P10	10.0	0.6	1.0	<0.1	0.3	<0.1
P20	15.2	2.0	7.5	<0.1	1.1	0.1
P30	20.1	3.5	23.9	3.5	3.0	0.2
P40	25.2	4.6	56.6	9.1	6.0	0.3
P50	31.0	5.8	99.4	16.2	10.3	0.6
P60	38.5	7.5	153.4	24.6	18.1	1.3
P70	47.3	9.4	218.8	34.9	31.0	2.9
P80	60.1	12.6	318.6	49.1	55.7	6.3
P90	83.5	18.5	525.0	75.8	113.7	14.2

⁽¹⁾ Net income.

Source: CBRT-HFCS, ECB-HFCS

¹⁰ The ratio is calculated as P50/P20.

Table 7
Summary measures of wealth inequality.

	Euro area	Türkiye
Top 5% share	38.1	42.0
Top 10% share	51.9	55.3
50–90% share	42.8	42.8
Ratio of p80/p50	3.2	3.0
Ratio of p90/p50	5.3	4.7
Gini coefficient	0.695	0.773
Atkinson (e = 1)	0.726	0.488
Theil Index	0.959	1.307

Source: CBRT-HFCS, ECB-HFCS

Table 8
Age net wealth profiles (median wealth).

	Euro area (Thousands Euros)	Türkiye (Thousands Euros)	Türkiye/Euro area Ratio
	(1)	(2)	(3 = 2/1)
16-34 (1)	14.2	9.4	0.66
35-44	70.2	14.5	0.21
45-54	129.2	18.1	0.14
55-64	166.4	22.9	0.14
65-74	166.5	24.8	0.15
75+	114.2	23.8	0.21

Source: CBRT-HFCS, ECB-HFCS ⁽¹⁾ For Türkiye the first age class includes people in the age bracket 15–34.

younger than 35 and only 14% for households in the age group 55–64 (Table 8, column 3). This is the age preceding retirement when household wealth typically reaches its peak value.

This pattern is consistent with a steeper wealth profile in the ECB-HFCS countries compared to Türkiye as documented in Fig. 2, which shows the net wealth median profile over the lifecycles, setting to 1 the median wealth in the youngest age group 16–34. The figure shows that Euro-area households accumulate wealth faster than households in Türkiye, and also suggests that they decumulate wealth faster after retirement.

The faster wealth accumulation among ECB-HFCS households may also reflect a higher saving capacity. The proportion of households, who report that they spend less than their income and thus, have a capacity to save is only 11% in Türkiye, but this ratio is 41.3% in the Euro area countries (Fig. 3).¹¹ A limited ability to accumulate wealth seems to be a feature that is quite independent of the household position in the income distribution. Positive saving capacity only increases slightly with household income (Fig. 4). In contrast, high-income households in Euro-area report a much higher capacity to make positive savings and thus, accumulate wealth. The picture remains similar if we analyze wealth groups instead of income groups. These features are consistent with the steeper age-wealth profile accumulation in Fig. 2.

3.3. Households' saving preferences and their financial fragility

We conclude this section by comparing the saving motives of

¹¹ In the CBRT-HFCS in the question HI0600 households are asked to report whether their regular expenses were higher than income or just about the same as their income or they spent less than their income putting aside from any purchases of assets in the last 12 months?.

households in Türkiye with households from the Euro area countries using micro data from the CBRT-HFCS and the ECB-HFCS, respectively. Both surveys elicit self-reported information on the importance of saving motives.¹² The CBRT-HFCS has introduced “*saving for health expenditures*” as an additional motive, which could be considered as saving for unexpected health shocks. Thus, a possible comparison between the two surveys is to lump together “*saving for unexpected events*” and “*saving for health expenditures*” in the CBRT-HFCS. Because multiple answers are possible (*up to three*), the sum of each column in Table 9 exceeds one. The comparison is interesting in light of the different demographic structure and the different institutions in the Euro-area and in Türkiye.

European households report “*provision for unexpected events*” as the main reason for saving (64.7%). There is a similar pattern in Türkiye, where 62.4% of households report saving either for health expenditures (35.8%) or to provide for unexpected events (26.6%). Saving for the “*education of children*” is the second most important motive in both surveys (27.9% in ECB-HFCS and 36.4% in CBRT-HFCS). Saving for home purchases and bequests are also similar, with about 10% of households reporting them as the main reasons for saving.

However, there are also noticeable differences. In particular, saving for retirement seems much more important in Euro-area (47.4%) than in Türkiye (23.3%), possibly reflecting a greater reliance on the family for old-age support in Türkiye and more awareness of the importance to accumulate wealth during the working life to provide for retirement consumption in Euro-area.

Moreover, as documented above, the average Euro-area country and Türkiye differ in their saving capacity. Needless to say, a greater ability to save among Euro-area households reflects also greater financial robustness of them: households that can save regularly to pile up precautionary saving buffers, raising their resilience to real and financial shocks. At first look, Turkish households look more financially fragile. Table 10 shows several additional indicators of other financial fragility for Turkish and the ECB-HFCS households. However, Turkish households hold significantly lower levels of liquid assets and, conditional on having debt, they are less fragile than the average Euro-area household. Their debt-to-assets ratio is 21.5% compared to 25.5% in the ECB-HFCS sample and debt-to-income ratio is equally lower (63.5% compared to 70.3%).

Turkish households appear also to be better collateralized, as measured by the significantly lower loan to value ratio of the main residence (17.7% compared to 44.6% among the ECB-HFCS). At the same time, their capacity to save is lower and their chances of getting financial assistance from friends or relatives are lower compared to households from the Euro area. It is also striking that the ratio of net liquid assets to annual income is very close to zero according to Turkish households' financial statements.¹³ It is possible that households under-reported their financial assets in the CBRT-HFCS, but this empirical observation also implies that households are severely liquidity-constrained in Türkiye.

¹² The listed categories: home purchase, other major purchases (other residences, vehicles, furniture, etc.), set up a private business or finance investments in an existing business, invest in financial assets, provide for unexpected events, pay off debts, provide for old-age, travels/holidays, education/support of children or grandchildren, be-quests, and to take advantage of state subsidies.

¹³ Unfortunately, households' participation rates in risky assets and the portfolio shares of risky assets in total financial wealth are also negligible in Türkiye. There could a number of reasons for this empirical observation. First, it is possible that participants did not respond to these questions accurately as in many household surveys. Second, the CBRT-HFCS data indicate that majority of households are not capable of making savings. Thus, most households never had an opportunity to invest in risky financial assets that offer high returns. Finally, considering the prevalence of background risks such as unemployment risk and liquidity constraints that households suffer from, they might have channeled their savings to safe assets such as real estate and deposit accounts.

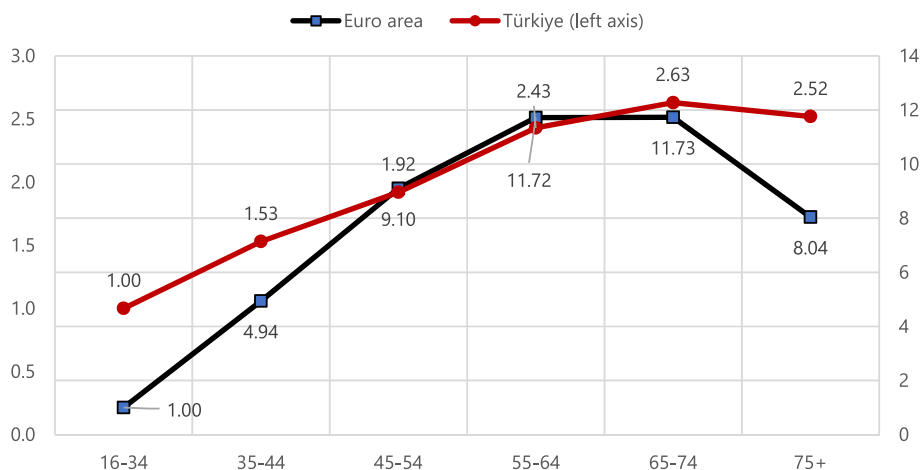


Fig. 2. Age Median Net Wealth Profiles (Index = 1 for age 16–34) ⁽¹⁾.
⁽¹⁾ For Türkiye the first age class includes people in the age bracket 15–34.
 Source: CBRT-HFCS, ECB-HFCS.

▣ The possibility of saving

▣ The opportunity to receive financial assistance from family or friends

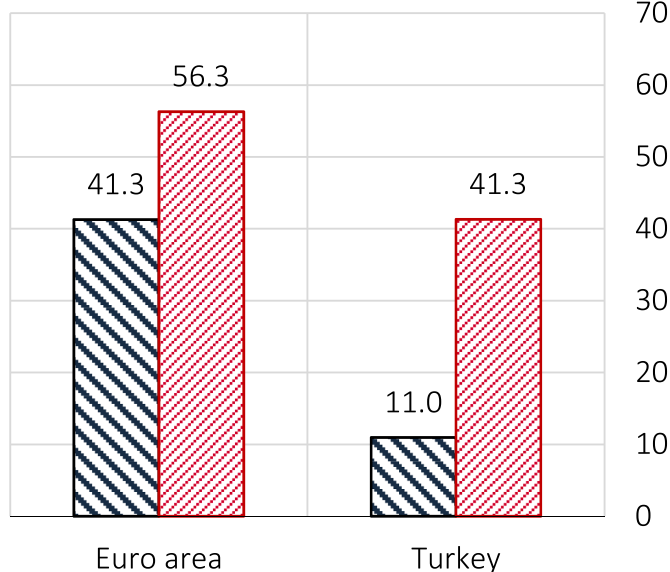


Fig. 3. The possibility of saving (%).
 Source: CBRT-HFCS, ECB-HFCS

4. Determinants of household portfolios in Türkiye

There is an extensive literature on household portfolio choice in the presence of homeownership and housing wealth *i.e.* Grossman and Laroque (1990), Cocco (2005), Flavin and Nakagawa (2008), Chetty et al. (2017) and Iwaisako et al. (2022). Another strain of the literature is concerned with households’ portfolio choices with respect to their wealth under risk and uncertainty. Gollier (2002) develops several empirically testable hypotheses for the dynamically optimal portfolio strategy by using micro data on household portfolios. Wealthy households invest a larger share of their wealth in risky assets under decreasing relative risk aversion. In particular, households with riskier human capital and households that are more likely to be liquidity constrained in the future will invest less in risky assets. All of these

▣ Euro area ▣ Turkey

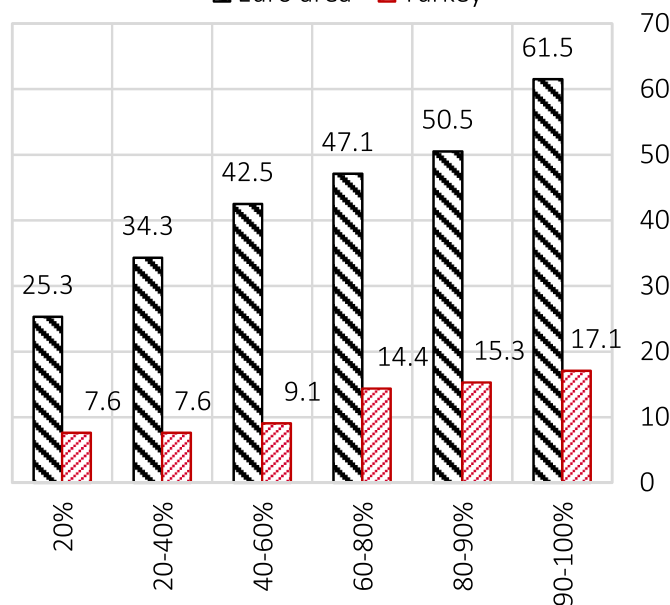


Fig. 4. The possibility of saving by income groups (%).
 Source: CBRT-HFCS, ECB-HFCS

propositions appear quite intuitive and relevant for the Turkish economy. However, data limitations restricted the scope of empirical analysis for the Turkish economy in the past. Hence, we will try to shed light on these issues depending on the richness of micro data from the CBRT-HFCS in the next sub-sections.

In this section, we analyze the distribution of household portfolios over real and financial assets. Moreover, we search for the underlying reasons behind having debt and holding different types of debt. In addition, we analyze the impact of homeownership and housing wealth on the share of financial assets in total household wealth following Flavin and Yamashita (2002) and (2011). At this point, we mainly concentrate on homeownership, but we also consider participation in Islamic finance, receiving inheritance and the ability to save for the case of Türkiye. Finally, we investigate the situation of credit constrained households using this fresh data set.

The empirical specifications are presented in equations below (1–3). Real asset ownership, the natural logarithm of monetary value of real

Table 9
Comparing main savings motives in the euro area and Türkiye⁽¹⁾.

	Euro area	Türkiye
Purchase own home	15.5%	11.3%
Other major purchases (other residences, vehicles, furniture, etc.)	24.0%	9.9%
Set up a private business or finance investments in an existing business	2.1%	8.5%
Invest in financial assets	6.3%	9.6%
Provision for unexpected events	64.7%	26.6%
Paying off debts	12.6%	10.5%
Old-age provision	47.4%	23.3%
Travels/holidays	28.8%	25.0%
Education/support of children or grandchildren or other relatives	27.9%	36.4%
Bequests	10.7%	13.7%
Taking advantage of state subsidies (for example, a subsidy to building society savings)	4.6%	1.2%
Other	13.6%	0.8%
Health expenditures ⁽²⁾	NA	35.8%

⁽¹⁾ The table reports the fraction of respondents (in percent) mentioning the main reasons for saving. Multiple answers are allowed.

Source: CBRT-HFCS, ECB-HFCS

Table 10
Indicators of financial fragility.

	Euro area	Türkiye
Debt to asset ratio of indebted households	25.5	21.5
Debt to income ratio of indebted households	70.3	63.5
Loan to value ratio of main residence ⁽¹⁾	44.6	17.7
Net liquid assets as a fraction of annual gross income ⁽²⁾	17.1	0.2
Regular expenses less than income	41.3	11.0
Ability to get financial assistance from friends or relatives	56.3	41.3

⁽²⁾ Income is defined as gross income in the HFCN and net income in Türkiye. Net liquid assets equal to sum of deposits, mutual funds, bonds, value of non-self-employment business and shares (publicly traded) minus sum of outstanding balance of credit line/overdraft and credit card debt.

Source: CBRT-HFCS, ECB-HFCS⁽¹⁾ Ratio between outstanding amount of HMR mortgage and current value of the HMR.

assets and the share of real assets in total household wealth are regressed on income (I) and wealth (W) categories and social and demographic variables (Z) such as age and education level of the household head and family size, respectively. For this purpose, a dummy variable a is created, which is 1 for households that have a real asset such as a house or a car, but 0 otherwise (9). Here h denotes households, while c denotes income and wealth quintiles.

$$a_h = \alpha + \beta_I I_c + \beta_W W_c + \beta_Z Z_h + u_h \rightarrow \quad (1)$$

In a similar manner, a dummy variable d is created, which is 1 for households that have debt and 0 otherwise. Indebtedness is regressed on income and wealth categories, social and demographic variables and homeownership (2). Moreover, a dummy variable f is created, which is 1 for households that have financial assets and 0 otherwise. Financial asset ownership is regressed on homeownership along with income and wealth categories and social and demographic variables (3). Alternatively, a dummy variable for credit constrained households is formed and analyzed with the same approach as in equation (11).

$$d_h = \alpha + \beta_I I_c + \beta_W W_c + \beta_Z Z_h + \text{homeownership}_h + v_h \rightarrow \quad (2)$$

$$f_h = \alpha + \beta_I I_c + \beta_W W_c + \beta_Z Z_h + \text{housing_wealth}_h + v_h \rightarrow \quad (3)$$

According to Flavin and Yamashita (2002 and 2011), the household aims to maximize the return on financial assets based on housing wealth to net wealth ratio, expected returns on real and financial assets and his/her degree of risk-aversion (7). Previously, Yamashita (2003)

analyzed the relationship between owner-occupied housing and investment in risky financial assets using the 1989 wave of the Survey of Consumer Finances (SCF) for the US economy. His empirical findings show that there is a significant relationship between housing investment and the distribution of household portfolios. In particular, households with a high housing wealth to net wealth ratio hold a lower proportion of their financial wealth in risky assets. Although, his empirical findings provide empirical evidence in favor of the model developed by Flavin and Yamashita (2002), the model cannot explain the heterogeneity in the distribution of household portfolios completely.

Hence, our aim is to present empirical evidence on the Turkish households' portfolio choices and reveal the link between household characteristics and their choices. As presented above, real assets represent a larger share of total assets compared to financial assets in Türkiye than in the Euro area. Another important finding is that the fraction of households with positive debt is higher in Türkiye compared to the Euro area. Deposit accounts are the most preferred option among financial instruments, while households' ability to save is significantly lower in Türkiye. We also demonstrate that Turkish households are less financially fragile than the Euro-area households. Based on these prior findings, we here focus on assets ownership, household indebtedness as well as financial constraints of the Turkish households.

4.1. The probability of holding real assets, real asset levels and shares

We above present how Turkish households allocate their asset holdings and show that real assets make up the majority of the total assets (87.7%, Table 4). Thence, we derive the determinants of real assets participation, the value of the real portfolio shares of asset holdings and the value of real assets. We apply OLS, logit and tobit regressions for these categories. In particular, we run logit regression for real assets ownership (dummy variable equals to 1 if the household holds real assets) (extensive margin) and OLS regression for the logarithm of the value of real assets owned by the household (intensive margin). Since the share of real assets is a limited variable, ranges from 0 to 1, we fit a tobit model, where the outcome variable is censored, for this category (Tobin, 1958). In these regressions, we include various variables at both household level and individual level, which corresponds to information about FKP. Individual-level variables are education,¹⁴ age¹⁵ and employment (dummy variable takes 1 if the FKP is employed and 0 otherwise). Household-level variables include household size, and dummy variables for: (i) being among the oversampled wealthy households, (ii) use of Islamic Banking services, and (iii) receiving inheritance. We address the potential endogeneity problem between the independent and explanatory variables by introducing categorical dummy variables such as income quintiles to the econometric estimations as previously done in the literature by Arrondel et al. (2016). All estimations use household weights resulting in population estimates. Moreover, all estimates take the imputation structure into account and standard errors are based on 100 replicate weights. The regression results are reported in Table 11.¹⁶

Column 1 of Table 11 presents the average marginal effects from the logit regression for the real asset ownership in Türkiye. We find that the probability of holding any kind of real assets increases with educational attainment of the FKP. Particularly, tertiary education (university or over) graduates have more than two times higher probability compared

¹⁴ Education is categorized by the level of education effectively completed.

¹⁵ Age categories correspond, respectively, to FKP aged between 15 and 34 years, between 35 and 44, between 45 and 54, 55 and 64, 65 and 74 years and 75 years or more.

¹⁶ Since HMR constitutes a significant proportion of assets (60.7% of real assets and 53.2% of total assets), we exclude value of HMR in real asset regressions as robustness. Estimation results which are presented in Table A6 are similar to the results when we do not exclude HMR from real assets.

Table 11
Regression results for real assets.

	Real Assets Ownership ⁽¹⁾	Log of Real Assets	Share of Real Assets
	(1)	(2)	(3)
Educational attainment			
Secondary School	0.022 (0.017)	0.111** (0.054)	0.039* (0.020)
High school	0.076*** (0.015)	0.195*** (0.052)	0.066*** (0.020)
Tertiary education	0.164*** (0.014)	0.514*** (0.061)	0.051*** (0.019)
Age			
35-44	0.131*** (0.014)	0.199*** (0.047)	0.137*** (0.016)
45-54	0.181*** (0.014)	0.486*** (0.054)	0.204*** (0.018)
55-64	0.196*** (0.016)	0.763*** (0.061)	0.199*** (0.025)
65-74	0.242*** (0.016)	0.935*** (0.079)	0.264*** (0.028)
75 and over	0.234*** (0.023)	1.050*** (0.103)	0.227*** (0.040)
Oversampled households	-0.006 (0.014)	0.197*** (0.049)	0.035 (0.023)
Household size			
Two	0.104*** (0.016)	0.474*** (0.059)	0.176*** (0.019)
Three	0.149*** (0.017)	0.604*** (0.065)	0.211*** (0.022)
Four	0.181*** (0.019)	0.666*** (0.069)	0.239*** (0.022)
Five or more	0.207*** (0.017)	0.827*** (0.069)	0.250*** (0.025)
Income quintiles			
20-40%	0.045*** (0.017)	0.026 (0.057)	-0.045** (0.023)
40-60%	0.054*** (0.017)	-0.005 (0.048)	-0.055** (0.022)
60-80%	0.093*** (0.016)	0.113* (0.059)	-0.032 (0.021)
80-100%	0.111*** (0.019)	0.370*** (0.069)	-0.041** (0.021)
Employed ⁽²⁾	0.011 (0.011)	-0.081 (0.044)	-0.040*** (0.015)
Use of Islamic Banking	0.082*** (0.020)	-0.028 (0.097)	-0.035 (0.027)
Inherited ⁽³⁾	0.146*** (0.017)	0.502*** (0.087)	0.101*** (0.020)
Constant	-	10.861*** (0.106)	0.448*** (0.042)
Number of Observations	12,293	9921	11,557

Notes: Regression results are of logit in Column (1), of OLS in Column (2), and of tobit in Column (3). Regional dummies at NUTS 1 level are included. Reference categories are “less than secondary education” for education, “18-34 aged group” for age, and “first quintile” for income quintiles. ***p < 0.01, **p < 0.05, *p < 0.1 ⁽¹⁾ Coefficients are the average marginal effects from a logit. ⁽²⁾ Refers to dummy, taking value of 1 if the FKP is employed. ⁽³⁾ Refers to dummy, taking value of 1 the household receives any gift or inheritance.

to the high school graduates. Furthermore, real asset ownership tends to have a quadratic relationship with age, *i.e.*, increases up to a certain level, and decreases slightly thereafter. This profile is related to the fact that households tend to accumulate real wealth until retirement, and decumulate it at older ages (Fig. 2). Table 11, Column 1, shows that real asset ownership is independent of the employment status of FKP in the household. Similarly, Arrondel et al. (2016) find that employment status, except self-employment, has little power for the asset participation decision in the Euro area. Furthermore, we find statistically significant effects on the real asset ownership of household-level variables. Column 1 of Table 11 shows that the probability of real asset ownership increases

with household size and the use of Islamic Banking services. The real assets participation also increases with income in Türkiye. Bover et al. (2016b) also presents similar relationship between income, wealth and asset participation for the Euro area. This is consistent with the inter-temporal portfolio models with fixed costs (Arrondel et al., 2016). In fact, households with the highest income level demand less risky assets with fixed participation costs. Besides, we find that households receiving any kind of inheritance in the CBRT-HFCS are more likely to have some kind of real assets.

The estimation results for the logarithmic value of real assets (intensive margin) are presented in Table 11, Column 2. The findings are similar to those we get for the real asset ownership (Table 11 Column 1). In particular, the value of real wealth is positively related with age, education, household size, being oversampled and receiving inheritances. Again, employment status of the FKP does not significantly affect the real assets value. On the other hand, we find that the value of real assets is negatively correlated with the use of Islamic Banking services, but this relationship is not statistically significant. Moreover, except the highest income quintile, the household position in the income distribution is not related to the value of real assets. This might result from the fact that income is correlated with other variables in the regression. As an indicator for future income, education for instance, is highly correlated with total household income (Costa and Farinha, 2012).

Column 3 of Table 11 shows the estimation results for the share of real assets in household portfolio. We find that educational attainment increases the portfolio share, but only high school graduates have greater tendency to invest in the real assets compared to primary school graduates. Since higher educated persons are better informed about different types of assets and hence better able to take the advantage of investment opportunities, they tend to have more diversified portfolio with lesser share of real assets (Guiso et al., 2002). Similarly, Table 11, Column 3, shows that portfolio share of real assets decreases with income, but this relationship is not strong. Arrondel et al. (2016) find a similar relation between the share of risky assets and net wealth quintiles in some Euro area countries. Table 11, Column 3, shows that the portfolio share of real assets increases with the household size, receiving inheritances. However, families with an employed household head, have a higher share of financial assets in their portfolio.

4.2. The probability of holding debt and debt components

We above present the relationship between household characteristics, real asset ownership, and the value of real assets. On the liability side of the household balance sheet, we observe that debt ownership is higher in Türkiye compared to the ECB-HFCS average (53.8% compared to 41.9%, Table 5). Moreover, there are differences in terms of the type of debt held by the households. Notwithstanding close rates of home ownership, mortgage debt is less prevalent with only 9% in Türkiye compared to 23.5% in the Euro area (Table 5). Therefore, we analyze the probability of owning debt not only for any type, but also for mortgage and non-mortgage debt. Similar to the regressions for asset ownership, we run logit regressions for this purpose. In addition to the individual and household level variables, we include inheritances as a determinant of borrowing for the asset side of the household portfolio. Again, all estimations take imputation structure into account and household weights resulting in population estimates. Standard errors are based on 100 replicate weights. The regression results, which are presented in Table 12 refer to average marginal effects derived from the logit models.

Table 12, Column 1, shows the estimation results for the probability of borrowing in any kind. Column 2 and Column 3 of the Table present the results for mortgage and non-mortgage debts, respectively. As far as age is concerned, the probability of owning any debt (Table 12, Column 1) increases until mid-life and decreases thereafter. This is consistent with the fact that establishing a household at younger ages with relatively low income requires more funding (Beer and Schürz, 2007).

Table 12
Average marginal effects for debt types.

	Debt (1)	Mortgage (2)	Non-mortgage (3)
Educational attainment			
Secondary School	−0.089*** (0.016)	−0.023*** (0.007)	−0.087*** (0.017)
High school	−0.161*** (0.014)	0.048*** (0.007)	−0.178*** (0.015)
Tertiary education	0.091*** (0.017)	0.122*** (0.010)	0.073*** (0.017)
Age			
35–44	0.215*** (0.013)	0.052*** (0.008)	0.216*** (0.013)
45–54	0.273*** (0.018)	0.031*** (0.009)	0.277*** (0.018)
55–64	0.162*** (0.018)	−0.013 (0.010)	0.179*** (0.019)
65–74	−0.084*** (0.026)	−0.058*** (0.010)	−0.063** (0.026)
75 and over	−0.227*** (0.044)	−0.029 (0.026)	−0.231*** (0.043)
Oversampled households	0.012 (0.018)	0.006 (0.011)	0.013 (0.019)
Household size			
Two	0.191*** (0.016)	0.024*** (0.008)	0.184*** (0.015)
Three	0.329*** (0.017)	0.041*** (0.009)	0.313*** (0.016)
Four	0.441*** (0.019)	0.069*** (0.009)	0.432*** (0.018)
Five or more	0.584*** (0.020)	0.102*** (0.011)	0.579*** (0.021)
Income quintiles			
20–40%	−0.008 (0.016)	0.016** (0.007)	−0.008 (0.016)
40–60%	−0.000 (0.016)	0.035*** (0.009)	−0.008 (0.016)
60–80%	0.019 (0.015)	0.062*** (0.008)	0.005 (0.016)
80–100%	0.029* (0.017)	0.086*** (0.008)	0.013 (0.018)
Homeownership			
Employed ⁽¹⁾	−0.049*** (0.010)	0.147*** (0.005)	−0.088*** (0.010)
Having children aged			
0–6	0.050*** (0.014)	0.025*** (0.007)	0.057*** (0.014)
7–14	0.069*** (0.013)	0.025*** (0.007)	0.061*** (0.014)
15–17	0.013 (0.018)	0.018* (0.010)	0.009 (0.018)
Inherited ⁽²⁾	0.104*** (0.029)	−0.011 (0.011)	0.098*** (0.032)
Number of Observations	12,293	12,293	12,293

Notes: Regression results are of logit. Regional dummies at NUTS 1 level are included. Reference categories are “less than secondary education” for education, “18–34 aged group” for age, “without children” for number of children and “first quintile” for income quintiles. ***p < 0.01, **p < 0.05, *p < 0.1 ⁽¹⁾ Refers to dummy, taking value of 1 if the FKP is employed. ⁽²⁾ Refers to dummy, taking value of 1 the household receives any gift or inheritance.

Furthermore, age-indebtedness relationship is valid when the types of mortgage and non-mortgage debt holdings are considered (Table 12, Columns 2 and 3). Similar patterns are observed by Bover et al. (2016b) for the Euro area countries. Moreover, household participation in debt market for mortgages are greater for better educated households (Table 12, Column 2). Costa and Farinha (2012) also find that the participation rates increases with education for the mortgage debt, but do not significantly vary for the non-mortgage debts in Austria. However, Table 12, Column 3, shows a non-linear relationship between

education and non-mortgage debt for the Turkish households, possibly reflecting that decision on non-mortgage debt are less dependent on the accumulated value of future income (Costa and Farinha, 2012).

In all regressions, we find that the household participation in the debt market increases with household size. Besides, having young children increases demand for both mortgage and non-mortgage debt. Particularly, young children at school age (aged 7–14) has the highest impact on non-mortgage debts mainly because these households need borrowing for education purposes. Moreover, Table 12 shows that mortgage debt is higher for home-owners compared to non-owners as expected (Column 2), but the non-mortgage debts do not significantly differ according to the homeownership status (Column 3). This is related to the large share of private debts in non-mortgage debts. In fact, private debts constitute 32.1% of the non-mortgage debt and only 5.1% of the indebted households declare “purchase of the main residence” as the main motive for the private debts. Furthermore, Table 12 shows that the probability of household debts increases with income only for the mortgage debts (Column 2). Table 12 also shows that the household participation in debt market, except for the mortgage debt, is higher for the households with an employed reference person. This is also valid for households that acquired inheritances (Table 12, Column 3). An inheritance may cause demand for loans¹⁷ to increase, for instance, the possibility of building a home arises when a piece of land is inherited (Beer and Schürz, 2007).

Finally, the empirical findings in this paper are consistent with previous studies in the literature about the Turkish economy. In particular, the possibility of real asset ownership, which includes homeownership, and the possibility of having outstanding housing debt increase with the age of the FKB at a decreasing rate, family size and household income as in Ceritoğlu (2020a). However, we find that the possibility of real asset ownership and the possibility of having outstanding housing debt increase with the education level of the FKB contrary to the findings of Ceritoğlu (2020a). In a similar manner, as shown in Fig. 4, the possibility of saving increases with the education level of the FKB and household income, which is consistent with previous empirical studies in this field despite the analyzed time-period and data sources are different (Aktaş et al., 2012; Ceritoğlu, 2013; Ceritoğlu and Eren, 2014; Cilasun and Kırdar, 2015).

4.3. The probability of holding financial assets, financial asset levels and financial constraints

The CBRT-HFCS data shows that assets ownership in Türkiye is lower compared to the Euro area with a greater differential for financial assets. However, while holdings of unsophisticated and safe financial instruments are relatively common, holdings of more sophisticated and risky financial investment instruments are virtually absent in Türkiye. Thence, we analyze the probability of household holdings of financial assets and their value without dividing as risky and safe instruments. We can gather information about households’ participation rates in financial markets and the distribution of their financial assets from additional questions, specifically designed for the Turkish economy. However, our empirical analysis is restricted to households’ participation rates in the financial markets and does not extend to the analysis of the portfolio shares of risky assets due to lack of sufficient data. As a result, we were not able to analyze the relationship between households’ risk preferences as in Gollier (2002) or the distribution of their portfolios by grouping financial assets in separate categories as in Barasinska et al. (2012).

¹⁷ We estimate the same model for the probability of holding each non-mortgage debt (credit line/over draft, credit card, private and non-private non-collateralized debt) separately (Table A7). We observe that demand for loans is higher for inherited households compared to non-inherited households for each debt type except for private debts.

According to the CBRT-HFCS, Turkish households are less likely to save compared to the Euro area. Another prominent feature of the CBRT-HFCS's findings is the financial constraints of Turkish households. Because there is a rich literature on the determinants of saving decisions based on TURKSTAT household surveys (Ceritoğlu, 2020b; İpek and Sekmen, 2016; Ceritoğlu and Eren, 2014; Aktaş et al., 2012; Ceritoğlu, 2013), here we focus on how the individual and household level characteristics are related with financial constraints based on the CBRT-HFCS. The CBRT-HFCS includes three questions read as follows:

HC1310¹⁸: In the last three years, has any lender or creditor turned down any request you [or someone in your household] made for credit, or not given you as much credit as you applied for?

1. Yes, turned down
2. Yes, not given as much credit
3. No

HC1320¹⁹: (Were you/was your household) later able to obtain the amount requested on all such loans? (Yes/No).

HC1400: In the last three years, did you (or another member of your household) consider applying for a loan or credit but then decided not to, thinking that the application would be rejected? (Yes/No).

Based on these survey questions, we derive a broadly-defined credit constraint dummy variable that takes the value of 1 if the household is either turned down or the household is discouraged to apply for a credit (i.e. either answer “1. Yes, turned down” or “2. Yes, not given as much credit” to HC1310; answer “Yes” to HC1320; answer “Yes” to HC1400) and 0 otherwise. Actually, we apply the credit constrained household definition of the ECB-HFCS. We run logit estimates for financial asset participation and credit constraints, and run OLS regression for the value of financial assets. All estimations include household weights resulting in population estimates. We also take the imputation structure into account and standard errors are based on 100 replicate weights. The regression results are reported in Table 13.²⁰ As a robustness check, we generated narrowly-defined alternative credit constraint dummy variables using the survey questions separately. However, the econometric results are very similar to those that are presented in Table 13.

Table 13, Column 1, shows the average marginal effects from the logit model for financial assets participation. We find that the likelihood of holding financial assets of any type is greater for the tertiary education graduates compared to less than secondary school graduates. Similarly, old-age groups (75 years old and over) are more likely to have financial wealth compared to younger groups. Yet, middle-age groups are less likely to have financial assets compared to the youngest group. This might result from the fact that financial wealth is mostly comprised of safe financial instruments like deposits so that age is less relevant for the financial asset ownership. Similar to real assets, financial assets ownership increases with households' position in income distribution (Table 11, Column 1). This is also in line with the relation between financial assets ownership and income in the Euro area countries as found by Arrondel et al. (2016). We also find that household size reduces the participation of households in financial markets, probably because relatively crowded households have to meet certain type of expenses like education of kids, and thereby are less likely to take financial risks. Moreover, we find that the employment status of the FKP and preference

¹⁸ This question is asked to households who applied for any credit in the last three years.

¹⁹ This question is asked to households whose credit application is rejected totally or partially (i.e. if HC1310 = yes turned down, or yes, not given as much credit).

²⁰ Credit constrained households can be identified only if they applied for credit in the last three years. As a result of that the number of observations in the regression, which is presented in column (3) in Table 13 is significantly smaller than the rest of the regressions.

Table 13
Regression results for financial assets.

	Financial Assets Ownership ⁽¹⁾	Log of Financial Assets	Credit Constraint ⁽¹⁾
	(1)	(2)	(3)
Educational attainment			
Secondary School	−0.040** (0.016)	0.291** (0.147)	0.010 (0.007)
High school	−0.024* (0.013)	−0.005 (0.115)	0.010 (0.006)
Tertiary education	0.050*** (0.014)	1.324*** (0.120)	0.014 (0.010)
Age			
35-44	−0.023* (0.013)	0.142 (0.091)	0.000 (0.005)
45-54	−0.045*** (0.014)	−0.188 (0.139)	0.001 (0.007)
55-64	−0.025 (0.017)	−0.442*** (0.148)	−0.001 (0.011)
65-74	0.012 (0.018)	−0.846*** (0.216)	−0.002 (0.012)
75 and over	0.069*** (0.019)	−0.702** (0.281)	−0.018*** (0.006)
Oversampled households	−0.027 (0.020)	0.059 (0.144)	−0.007 (0.007)
Household size			
Two	−0.031** (0.013)	−0.124 (0.127)	0.010** (0.004)
Three	−0.047*** (0.013)	−0.175 (0.124)	0.014*** (0.004)
Four	−0.038** (0.015)	−0.315** (0.131)	0.038*** (0.008)
Five or more	−0.026 (0.016)	−0.291* (0.151)	0.027*** (0.006)
Net wealth quintiles			
20–40%	–	–	−0.015** (0.006)
40–60%	–	–	−0.003 (0.007)
60–80%	–	–	−0.017*** (0.006)
80–100%	–	–	0.002 (0.009)
Income quintiles			
20–40%	0.057*** (0.015)	−0.166 (0.159)	−0.005 (0.008)
40–60%	0.071*** (0.016)	0.001 (0.162)	−0.008 (0.007)
60–80%	0.081*** (0.015)	0.271 (0.165)	−0.010 (0.007)
80–100%	0.115*** (0.015)	0.551*** (0.164)	0.001 (0.008)
Homeownership	–	–	−0.017*** (0.006)
Employed ⁽²⁾	0.014 (0.011)	0.275** (0.111)	0.003 (0.005)
Use of Islamic Banking	0.019 (0.022)	1.180*** (0.162)	0.017 (0.011)
Able to save ⁽³⁾	0.036** (0.015)	−0.156 (0.142)	−0.018*** (0.004)
Housing wealth share quintiles ⁽⁴⁾			
20–40%	0.055** (0.022)	2.723*** (0.366)	–
40–60%	0.053*** (0.011)	1.982*** (0.125)	–
60–80%	−0.015 (0.012)	0.675*** (0.108)	–
80–100%	−0.122*** (0.015)	−0.305** (0.121)	–
Number of Observations	12,293	9863	12,293

Notes: Regression results are of logit in Columns (1) and (3), and are of OLS in Column (2). Regional dummies at NUTS 1 level are included. Reference categories are “less than secondary education” for education, “18–34 aged group” for age, and “first quintile” for the net wealth and income quintiles. ***p < 0.01,

** $p < 0.05$, * $p < 0.1$ ⁽¹⁾ Coefficients are the average marginal effects from a logit. ⁽²⁾ Refers to dummy, taking value of 1 if the is employed. ⁽³⁾ Refers to dummy, taking value of 1 if the household reports expenses less than income. ⁽⁴⁾ Share of housing wealth in total assets.

of households towards Islamic Banking do not significantly related with the participation of household in financial markets. On the other hand, households who are able to save have higher tendency to hold financial assets as expected. Table 13, Column 2, shows the OLS results for the value of financial wealth of Turkish households. These results are very similar to the results from the financial assets participation estimates in Table 13, Column 1. As mentioned, Turkish households mostly prefer to invest their savings in real estate rather than other safe assets included in financial wealth.

The econometric results indicate that financial asset ownership and the size of financial assets increase with the share of housing wealth in total assets at a decreasing rate (Table 13, Columns 1 and 2).²¹ The possibility of financial asset ownership is significantly higher for households from the second and the third quintiles compared to households from the first quintile, whereas the possibility of financial asset ownership is lower for households from the highest quintile. Similarly, we find that the size of financial assets is higher among households from the second and the third quintiles compared to households from the first quintile, but the size of financial assets is found to be lower for households from the highest quintile when other things being equal. Apparently, stronger housing demand has a crowding-out effect on financial asset ownership. Being a homeowner raises the possibility of having outstanding housing debt, but it reduces the possibility of having non-collateralized debt (Table 12). Hence, it is plausible that when households make mortgaged house purchases, then their opportunities to invest in financial assets are significantly diminished. Thus, our empirical findings are similar to those of Yamashita (2003). However, we are not able to analyze the effects of homeownership and housing wealth on risky financial assets due to the small number of observations in the sample set.

As a robustness check, if we include homeownership in the econometric estimations instead of housing wealth share quintiles, then we discover that homeownership decreases the probability of holding financial assets significantly.²² Thus, our empirical findings are in line with the premises of the theoretical model developed by Flavin and Yamashita (2002 and 2011). Housing constitutes a significant portion of the Turkish households' wealth and they tend to channel their savings to real estate rather than other safe assets like deposit accounts. This might be another reason for this negative relationship between the financial asset ownership and homeownership implied by the CBRT-HFCS.

Table 13, Column 3, shows the average marginal effects from the logit regression estimates of the credit constrained households. We first find that old individuals (75 years old and over) are less likely to be credit constrained compared to the youngest group (15-34-year-old) as expected. This is related with the accumulation of wealth over the life cycle. In fact, old households have more financial capacity to get any kind of credit, since they acquire more assets with higher income. We also find that the likelihood of being credit constrained reduces with the net wealth of the households, but it increases with household size. Since real assets such as HMR can be used as a collateral, thus wealthier households are expected to easily access to credit. On the other hand, we do not find any significant relation between other explanatory variables and the credit constraints of the households, expect for the ability to save when we regard the widest definition of credit constraint dummy variable. As a result, households that have a capacity to save are also less

likely to be credit constrained as expected.

5. Conclusion

From a theoretical point of view, households' saving decisions and portfolio choices are directly linked. Purchasing own home is one of the main saving motives of households in Türkiye according to micro data both from the CBRT-HFCS and the HBS. Moreover, our empirical analysis indicates that housing investment plays a prominent role in their portfolio choices. In particular, households are more likely to have mortgage debt rather than investing in risky financial assets. Home-owners are less likely to own financial assets and, conditional on having financial assets, home-owners are more likely to have smaller amounts of financial savings. We interpret these empirical findings as households prioritizing homeownership over high returns from risky financial analysis. We think it is plausible that households refrain from investing in risky financial assets, since they accumulate financial assets to purchase their own homes as an end goal. Thus, homeownership is also likely to affect both the timing and the composition of investments in financial instruments over the life cycle of individuals.

According to the findings of the CBRT-HFCS, real assets and in particular housing wealth represents a larger share of total assets compared to financial assets in Türkiye than in the Euro area. Another important finding is that fraction of households with positive debt is higher in Türkiye compared to the Euro area. However, the fraction of households with mortgage debt and the share of mortgage debt in total household liabilities is smaller in Türkiye, suggesting that many households rely on their own funds or private loans to purchase homes.

Deposit account ownership is the most preferred saving option among financial investment instruments both in Türkiye and in the Euro area. However, households' ability to save is significantly lower in Türkiye compared to the Euro area. It is worth noting that the possibility of saving remains low even in the upper quintiles of net wealth and total household income. Moreover, inequality measures indicate that wealth distribution is more uneven than income distribution in Türkiye. Inequality measures also suggest that wealth distribution is more unequal in Türkiye than the Euro area.

As a policy proposal, we can argue that households need to be encouraged to invest a larger share of their wealth in financial assets to raise household savings and, more generally, to deepen financial markets in Türkiye. As a caveat, we must be cautious in interpreting the empirical findings from the CBRT-HFCS, since it is a single cross-sectional data set, which is from the first wave of a survey eliciting financial wealth in the country. Moreover, we must mention that the fieldwork took place between September 2019 and February 2020 prior to the emergence of the Covid-19 pandemic. It is highly probable that the economic crisis succeeding the Covid-19 pandemic changed the distribution of households' portfolios. In particular, it is reasonable to expect that household debt levels increased significantly, especially among low-income groups.

Finally, according to micro data from the HBS and SILC homeownership ratio is decreasing over time for all age groups and birth-year cohorts especially in metropolitan areas despite record-breaking house sales almost every year. At the same time, we observe that the percentage of households that own more than one property increases consistently over time. Therefore, we are concerned that wealth inequality in Türkiye will deteriorate further in the next years, especially when we consider that house prices continue to rise at a swift pace and housing wealth generally constitutes the largest component of household wealth.

²¹ Housing wealth is proxied by the current value of HMR, which is acquired from the survey question DA1110 and the share of housing wealth is calculated by taking its ratio to total assets, which is acquired from the survey question DA3001. Finally, housing wealth share quintiles are calculated by using population weights.

²² We also include a dummy for real assets ownership and real wealth quintiles in financial asset regressions. Estimation results, presented in Table A8, show that both probability of having financial assets and the amount of financial wealth increase with real wealth.

Appendix 1. CBRT-HFCS Tables

Table A1
The Number of Questions in the CBRT-HFCS

		Core Questions	Non-Core Questions	Additional Questions
1.	Demographics (Household listing)	9	4	–
2.	Real assets and their financing	60	1	4
3.	Other liabilities and credit constraints	27	1	–
4.	Private businesses and financial assets	34	1	2
5.	Employment	12	5	2
6.	Pensions and insurance policies	16	1	–
7.	Income	24	–	–
8.	Intergeneration transfers as gifts	8	–	–
9.	Consumption	11	–	–
	Total	201	13	8

Table A2
Age Distribution of Population (2019, %) ⁽¹⁾

	ABPRS		
	Total	Men	Women
Total	100.00	100.00	100.00
0-14	23.10	23.63	22.57
15-64	67.82	68.37	67.26
65 +	9.08	8.00	10.17
	CBRT-HFCS		
	Total	Men	Women
Total	100.00	100.00	100.00
0-14	23.75	24.45	23.06
15-64	67.04	67.39	66.68
65 +	9.21	8.16	10.26

Source: TURKSTAT ABPRS, CBRT-HFCS

⁽¹⁾ Individual sampling weights are used in the calculations.

Table A3
Comparisons of Household Debt from the CBRT-HFCS with Official Data

	CBRT-HFCS		BRSA ⁽¹⁾	
	(million TRY)	(%)	(million TRY)	(%)
Mortgage	182,210	33.6	199,145	40.4
Non-private non-collateralized ⁽²⁾	319,490	58.9	267,420	54.2
Credit card	40,623 ⁽³⁾	7.5	26,484 ⁽⁴⁾	5.4
Total	542,323	100.0	493,049	100.0

Source: BRSA, CBRT-HFCS ⁽¹⁾ BRSA data refers to December 2019.

⁽²⁾ CBRT-HFCS data includes non-collateralized loans like car loans, consumer loans, installment loans, employer loans etc. BRSA data includes consumer loans for vehicles and personal finance. In CBRT-HFCS car loans are categorized in non-collateralized loans unlike BRSA data.

⁽³⁾ CBRT-HFCS data refers to the outstanding amount of debt accruing interest.

⁽⁴⁾ BRSA banking data refers to credit card debt unpaid and accruing interest.

Table A4
Descriptive Statistics ⁽¹⁾

All Individuals					
	Number of Obs.	Mean	Std. Dev.	Min.	Max.
Male	38,034	49.9%	50.0%	0.0%	100.0%
Age	38,034	33.6	21.3	0.0	115.0
University	38,034	11.0%	31.2%	0.0%	100.0%
Married	38,034	49.6%	50.0%	0.0%	100.0%
Employed	30,152	41.4%	49.2%	0.0%	100.0%
Positive income	38,034	40.8%	49.1%	0.0%	100.0%
Financially Knowledgeable Persons					
	Number of Obs.	Mean	Std. Dev.	Min.	Max.
Male	12,302	60.6%	48.9%	0.0%	100.0%
Age	12,302	43.5	15.8	18.0	95.0
University	12,302	18.8%	39.1%	0.0%	100.0%

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Table A4 (continued)

All Individuals					
Married	12,302	67.3%	46.9%	0.0%	100.0%
Employed	12,297	53.2%	49.9%	0.0%	100.0%
Positive income	12,302	71.6%	45.1%	0.0%	100.0%

Source: CBRT-HFCS ⁽¹⁾ Individual sampling weights are used in the calculations.

Table A5
Income and Wealth Inequality for Türkiye

	Income	Net Wealth
Share of %1 (%)	8.3	22.3
Share of %5 (%)	24.0	42.0
Share of %10 (%)	36.7	55.3
Relative mean deviation	0.370	0.542
Coefficient of variation	1.267	3.713
Standard deviation of logs	1.207	2.088
Gini coefficient	0.517	0.773
Mehran measure	0.675	1.014
Theil index (GE(a), a = 1)	0.514	1.307
Mean Log Deviation (GE(a), a = 0)	0.511	0.803
Atkinson (e = 1)	0.389	0.488

Source: CBRT-HFCS

Table A6
Regression Results for Real Assets excluding HMR

	Real Assets Ownership ⁽¹⁾	Log of Real Assets	Share of Real Assets
	(1)	(2)	(3)
Educational attainment			
Secondary School	0.072*** (0.016)	0.179*** (0.066)	0.131*** (0.025)
High school	0.155*** (0.016)	0.270*** (0.061)	0.204*** (0.024)
Tertiary education	0.304*** (0.015)	0.767*** (0.068)	0.223*** (0.022)
Age			
35-44	0.153*** (0.013)	0.231*** (0.052)	0.179*** (0.018)
45-54	0.178*** (0.018)	0.496*** (0.059)	0.236*** (0.026)
55-64	0.168*** (0.018)	0.691*** (0.066)	0.209*** (0.030)
65-74	0.105*** (0.021)	0.841*** (0.106)	0.057 (0.038)
75 and over	0.025 (0.036)	0.996*** (0.188)	-0.120* (0.061)
Oversampled households	0.004 (0.020)	0.265*** (0.051)	0.062** (0.031)
Household size			
Two	0.133*** (0.019)	0.349*** (0.069)	0.256*** (0.029)
Three	0.192*** (0.020)	0.387*** (0.071)	0.298*** (0.028)
Four	0.233*** (0.023)	0.518*** (0.079)	0.351*** (0.031)
Five or more	0.294*** (0.019)	0.717*** (0.080)	0.422*** (0.030)
Income quintiles			
20-40%	0.050*** (0.017)	-0.005 (0.069)	-0.033 (0.029)
40-60%	0.082*** (0.018)	0.115* (0.061)	-0.009 (0.031)
60-80%	0.131*** (0.016)	0.196*** (0.062)	0.023 (0.027)
80-100%	0.152*** (0.020)	0.535*** (0.069)	-0.010 (0.027)
Employed ⁽²⁾	0.034*** (0.013)	0.187*** (0.041)	0.003 (0.020)
Use of Islamic Banking	0.100*** (0.030)	0.247*** (0.087)	-0.024 (0.034)
Inherited ⁽³⁾	0.130*** (0.025)	0.458*** (0.115)	0.096*** (0.035)

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Table A6 (continued)

	Real Assets Ownership ⁽¹⁾	Log of Real Assets	Share of Real Assets
	(1)	(2)	(3)
Constant	–	9.457*** (0.122)	0.032 (0.052)
Number of Observations	12,293	8274	11,094

Notes: Real assets excludes value of HMR. Regression results are of logit in Column (1), of OLS in Column (2), and of tobit in Column (3). Regional dummies at NUTS 1 level are included. Reference categories are “less than secondary education” for education, “18–34 aged group” for age, and “first quintile” for income quintiles. ***p < 0.01, **p < 0.05, *p < 0.1 ⁽¹⁾ Coefficients are the average marginal effects from a logit. ⁽²⁾ Refers to dummy, taking value of 1 if the FKP is employed. ⁽³⁾ Refers to dummy, taking value of 1 if the household receives any gift or inheritance.

Table A7
Average Marginal Effects by Debt Types

	Credit line/overdraft debt	Credit card debt	Non-collateralized debt ⁽¹⁾
	(1)	(2)	(3)
Educational attainment			
Secondary School	0.022** (0.011)	–0.019 (0.013)	0.042*** (0.013)
High school	0.012 (0.011)	–0.025 (0.013)	–0.013 (0.012)
Higher education	0.207*** (0.014)	0.053*** (0.015)	0.154*** (0.017)
Age			
35-44	0.140*** (0.012)	0.042*** (0.012)	0.169*** (0.014)
45-54	0.193*** (0.016)	0.060*** (0.014)	0.266*** (0.016)
55-64	0.141*** (0.016)	0.011 (0.015)	0.225*** (0.016)
65-74	–0.026** (0.013)	–0.010 (0.024)	0.044** (0.021)
75 and over	–0.101*** (0.011)	–0.061 (0.031)	–0.094** (0.044)
Oversampled households	0.002 (0.012)	–0.002 (0.017)	–0.005 (0.015)
Household size			
Two	0.071*** (0.009)	0.043*** (0.008)	0.079*** (0.010)
Three	0.138*** (0.008)	0.072*** (0.008)	0.159*** (0.013)
Four	0.202*** (0.012)	0.121*** (0.012)	0.264*** (0.017)
Five or more	0.288*** (0.016)	0.161*** (0.016)	0.366*** (0.019)
Income quintiles			
20–40%	–0.016 (0.013)	0.029** (0.013)	–0.007 (0.016)
40–60%	0.005 (0.013)	0.028** (0.011)	–0.001 (0.016)
60–80%	0.017 (0.014)	0.052*** (0.013)	–0.010 (0.017)
80–100%	0.028* (0.015)	0.058*** (0.013)	–0.007 (0.019)
Homeownership	–0.127*** (0.008)	–0.020** (0.009)	0.019* (0.010)
Employed ⁽²⁾	0.006 (0.010)	0.029** (0.011)	0.040*** (0.011)
Having children aged			
0-6	0.030*** (0.010)	0.019* (0.010)	0.044*** (0.012)
7-14	0.027** (0.013)	–0.006 (0.010)	0.016 (0.013)
15-17	0.003 (0.012)	–0.001 (0.014)	0.025 (0.017)
Inherited ⁽³⁾	0.030* (0.017)	0.114*** (0.032)	0.082*** (0.027)
Number of Observations	12,293	12,293	12,293

Notes: Regression results are of logit. Regional dummies at NUTS 1 level are included. Reference categories are “less than secondary education” for education, “18–34 aged group” for age, “without children” for number of children and “first quintile” for income quintiles. ***p < 0.01, **p < 0.05, *p < 0.1 ⁽¹⁾ Excludes private debts. ⁽²⁾ Refers to dummy, taking value of 1 if the FKP is employed. ⁽³⁾ Refers to dummy, taking value of 1 if the household receives any gift or inheritance.

Table A8
Regression Results for Financial Assets

	Financial Assets Ownership ⁽¹⁾	Log of Financial Assets	Financial Assets Ownership ⁽¹⁾	Log of Financial Assets
	(1)	(2)	(3)	(4)
Educational attainment				
Secondary School	-0.051*** (0.019)	0.272* (0.153)	-0.053*** (0.019)	0.238 (0.153)
High school	0.002 (0.015)	-0.089 (0.123)	-0.000 (0.015)	-0.144 (0.121)
Tertiary education	0.109*** (0.015)	1.464*** (0.132)	0.103*** (0.015)	1.343*** (0.133)
Age				
35-44	-0.012 (0.015)	0.160 (0.100)	-0.015 (0.015)	0.132 (0.101)
45-54	-0.017 (0.016)	-0.054 (0.143)	-0.025 (0.016)	-0.140 (0.144)
55-64	0.016 (0.018)	-0.217 (0.148)	0.002 (0.018)	-0.363** (0.152)
65-74	0.050*** (0.019)	-0.664*** (0.212)	0.035* (0.020)	-0.848*** (0.215)
75 and over	0.108*** (0.023)	-0.529* (0.298)	0.096*** (0.023)	-0.714** (0.297)
Oversampled households	-0.039* (0.023)	0.007 (0.149)	-0.042* (0.023)	-0.025 (0.148)
Household size				
Two	-0.037** (0.017)	-0.016 (0.124)	-0.043*** (0.016)	-0.103 (0.126)
Three	-0.044*** (0.016)	0.024 (0.122)	-0.053*** (0.016)	-0.087 (0.123)
Four	-0.018 (0.015)	-0.164 (0.130)	-0.029* (0.015)	-0.305** (0.133)
Five or more	0.012 (0.017)	0.010 (0.155)	0.000 (0.016)	-0.167 (0.163)
Income quintiles				
20-40%	0.092*** (0.018)	-0.152 (0.163)	0.089*** (0.017)	-0.149 (0.163)
40-60%	0.117*** (0.017)	0.049 (0.168)	0.115*** (0.016)	0.059 (0.168)
60-80%	0.133*** (0.018)	0.365** (0.169)	0.129*** (0.017)	0.359** (0.171)
80-100%	0.172*** (0.018)	0.768*** (0.168)	0.164*** (0.018)	0.707*** (0.171)
Employed ⁽²⁾	0.036*** (0.011)	0.379*** (0.113)	0.038*** (0.011)	0.396*** (0.114)
Use of Islamic Banking	0.054** (0.022)	1.368*** (0.151)	0.053** (0.022)	1.352*** (0.152)
Able to save ⁽³⁾	0.031* (0.018)	-0.189 (0.137)	0.032* (0.018)	-0.200 (0.139)
Real asset ownership	0.075*** (0.013)	0.961*** (0.117)	-	-
Real asset quintiles				
20-40%	-	-	0.040** (0.016)	0.546*** (0.139)
40-60%	-	-	0.084*** (0.014)	0.767*** (0.147)
60-80%	-	-	0.104*** (0.015)	1.075*** (0.139)
80-100%	-	-	0.126*** (0.014)	1.466*** (0.152)
Number of Observations	12,293	9863	12,293	9863

Notes: Regression results are of logit in Columns (1) and (3), and are of OLS in Column (2). Regional dummies at NUTS 1 level are included. Reference categories are “less than secondary education” for education, “18-34 aged group” for age, and “first quintile” for the net wealth and income quintiles. ***p < 0.01, **p < 0.05, *p < 0.1 ⁽¹⁾ Coefficients are the average marginal effects from a logit. ⁽²⁾ Refers to dummy, taking value of 1 if the is employed. ⁽³⁾ Refers to dummy, taking value of 1 if the household reports expenses less than income.

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