Portuguese Household Finance and Consumption Survey: results for 2017 and comparison with the previous waves

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Abstract
This article analyses the main results of the 2017 Portuguese Household Finance and Consumption Survey and compares them with the results of the 2010 and 2013 waves. In 2017, the median value of net wealth (i.e., the difference between total assets and total debts) of households living in Portugal was 74.8 thousand euros. In 2017, the median net wealth was higher in real terms than in 2013, but remained lower than in 2010. The analysis in this article suggests that in the period between 2010 and 2017 there were no major changes in the degree of inequality of net wealth in Portugal. However, by household groups, some differentiation in net wealth changes has taken place in this period.
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Introduction

The Portuguese Household Finance and Consumption Survey (ISFF, the Portuguese acronym for *Inquérito à Situação Financeira das Famílias*), conducted by Banco de Portugal and Statistics Portugal, collects detailed information on wealth, debt and income of households living in Portugal. This survey also collects data on consumption and savings, demographic and social aspects, as well as attitudes and expectations. The data of the third wave of ISFF were collected in 2017 and released in November 2019. The first two waves were conducted in 2010 and 2013[1].

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1. The ISFF is part of the European project Household Finance and Consumption Survey (HFCS), an initiative of the Eurosystem, in order to collect household level data with harmonized definitions and methodologies among participating countries (HFCN, 2013a, 2016a). The results

The main results of the ISFF 2017 were co-released, first-hand, by Banco de Portugal and Statistics Portugal in a press release available in the ISFF page at the Banco de Portugal website[2]. This article presents a more detailed analysis of net wealth per household and its components (real assets, financial assets and debt) and compares the results of 2017 with those of previous waves.

The analysis of the distributions of the variables related to the financial situation of households in the period covered by the three waves of the survey is particularly interesting given that this is a period of significant adjustment of the Portuguese economy. Between 2010 and 2013 Portugal faced a severe recession, in the context of the euro area sovereign debt crisis and of the Financial Assistance Programme implemented in Portugal. Employment and household disposable income declined and consumer confidence deteriorated. Consumption decreased and household saving rate increased, partly reflecting the large increase in uncertainty (Banco de Portugal, 2016). These developments in savings, together with the reduction in housing investment, led to a recovery in households' financing capacity. Indebted households benefited from lower interest rates, but access to new credit became tighter and household debt declined. In this context, prices in the housing market fell. Between 2013 and 2017 economic activity recovered, with a significant increase in employment and consumer confidence. Consumption, especially durable goods consumption, recovered and the household's saving rate declined. New loans for house purchase and consumer credit started to increase, staying below the pre-crisis levels in the case of housing credit. The reduction in household debt continued over this period and the debt service continued to benefit from lower interest rates. Stronger demand and more favourable financing conditions contributed to a recovery in the housing market.

The next section characterizes the distribution of net wealth and shows how it has evolved between 2010 and 2017. It also presents a set of inequality indicators and the distribution of wealth by groups of households. The following section describes the composition of net wealth considering the households as a whole. Subsequent sections analyse the participation rates and values of real assets, financial assets and debt conditional on participation. The analysis is broken down by type of asset, type of debt and household group. In the case of debt, developments in the indebtedness ratios and in the indicators related to credit demand and credit constraints are also analysed. The last section presents the conclusions.

for the euro area as a whole are at first hand released by the ECB. The data for the 2017 wave have not yet been released (HFCN, 2013b, 2016b).

2. This page contains a broad set of information about ISFF, including a description of the methodological aspects.

Net wealth distribution

According to the ISFF data, the mean net wealth per household stood at 162.3 thousand euros in 2017 (Table 1)[3,4]. The median value, which is less affected by extreme values, was 74.8 thousand euros in the same year, i.e., less than half of the mean[5]. In real terms, mean net wealth increased between 2013 and 2017, reversing the reduction between 2010 and 2013. The median value also decreased between 2010 and 2013 and increased between 2013 and 2017, but remained in 2017 lower than 2010.

Indicators of inequality

The large difference between the median and the mean net wealth shows the high inequality of the distribution of this variable. This evidence, which is not specific to the Portuguese case, is driven by a highly skewed distribution of assets and by the fact that a large proportion of households do not have debt (Costa, 2016). Several factors contribute to the inequality of the distribution of net wealth, such as the fact that saving rates tend to increase with the level of wealth (Alves and Cardoso, 2010; Banco de Portugal, 2016) and that households with higher levels of wealth are able to have more diversified asset portfolios with different levels of risk and therefore higher expected returns (Fagereng *et al.*, 2016)[6].

Table 1 includes a set of other indicators often used to measure inequality of the net wealth distribution. The figures shown are broadly in line with those recorded for the euro area average (HFCN, 2016b). In 2017, the group of 10% of households with the highest net wealth in Portugal held about 54% of total net wealth, while the group of 50% of households with the

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3. The ISFF includes data for 4004, 6207 and 5924 households with complete interviews in the first, second and third waves, respectively. The results presented in this article refer to extrapolated values for the population, i.e., they were obtained from the weighted answers of each sample household, using as weights the number of households in the population with similar characteristics. When analysing the results, the uncertainty underlying the production of the survey data was taken into account by testing the equality of the statistics presented in this article. These tests use standard errors that reflect the uncertainty underlying the imputation process of missing answers and also the sample selection. The formula for calculating these standard errors can be found in the note on how to use the ISFF database available in the "ISFF Database" tab of the ISFF page.

4. The main concepts used in this article can be found in the Appendix.

5. The median value corresponds to the 50th percentile of a distribution. The percentiles divide the population in ascending order of the data into 100 equal parts (e.g., a median net wealth of 74.8 thousand euros means that 50 per cent of the households living in Portugal have a net wealth below that value).

6. These factors also contribute to a greater inequality of net wealth in relation to income and of income in relation to consumption (Costa, 2016). In Portugal, in the most recent period, the smoothing mechanisms of consumption against temporary shocks in income may also have contributed to the lower inequality of consumption in relation to income (Alves *et al.*, 2020).

	ISFF 2010	ISFF 2013	ISFF 2017	Change		
				2010-13	2013-17	2010-17
Net wealth						
Mean (EUR, thousands)	172.8	143.3	162.3	-17**	13*	-6
Median (EUR, thousands)	86.1	68.0	74.8	-21***	10**	-13***
Gini coeficient of net wealth (%)	66.0	68.4	67.9	2,5	-0,5	2
Percentage of total net wealth held by:						
Top 10% net wealth group	51.6	53.0	53.9	1,5	0,8	2,3
Bottom 50% net wealth group	8.7	7.2	8.1	-1,5*	0,9	-0,6
40% of households between the percentiles 50 and 90	39.7	39.8	38.0	0,1	-1,8	-1,7
Percentile ratios						
P75/P25	7.7	9.8	7.7	2,1*	-2,1*	0
P90/P10	197.9	701.9	365.3	504*	-336.6	167.4*
P90/P50	3.9	4.2	4.3	0,3	0,1	0,4

TABLE 1. Net wealth and inequality indicators.

Notes: The values of 2010 and 2013 were adjusted for inflation. The Gini coefficient measures the concentration of the distribution of a given variable, variating between zero, in the case of minimal concentration (for instance, when all households have the same net wealth) and 100, in the case of maximal concentration (for instance, when a single household holds all the net wealth). ***, ** and * indicate that the test on the equality of the statistics obtained between the different waves of the survey is rejected at 1%, 5% and 10%, respectively.

lowest net wealth had about 8%. The net wealth of the household in the 90th percentile of this variable was 4.3 times higher than that of the household corresponding to the 50th percentile and 365.3 times higher than that of the household corresponding to the 10th percentile.

As mentioned, the mean net wealth returned in 2017 to a level close to that of 2010. The median, also increased in the period between 2013 and 2017, but remained below the level of 2010. These distinct developments suggest a slight increase in the inequality of net wealth distribution between 2010 and 2017. In fact, most inequality indicators increased between 2010 and 2013 and had a slight reduction between 2013 and 2017, remaining in 2017 higher than in 2010. Nevertheless, in most cases it is not possible to reject the equality of the values of the different periods. One exception is the ratio between the 90th and 10th percentiles, which increased between 2010 and 2013 and remained higher in 2017 than in 2010. By contrast, the ratio between the 75th and the 25th percentiles increased between 2010 and 2013, but reversed this movement between 2013 and 2017. These examples show that measuring changes in inequality is very sensitive to the type of indicator used. Overall, the various indicators suggest that over the period 2010-2017 there were no major changes in the degree of net wealth inequality in Portugal.

Net wealth by groups of households

The ISFF data allow to characterize the net wealth distribution of households with different demographic and socioeconomic attributes. In this article, the analysis focuses mainly on household groups that differ in the following dimensions: level of net wealth, level of income and age of the reference person[7]. When analysing the results it is important to keep in mind that households can move from one group to another between different moments in time. In the case of age, this immediately reflects the ageing of individuals and, in the case of income and wealth, depends on the developments in the financial situation of households across time. These transitions may have been particularly relevant in the period under review given the significant adjustment in the Portuguese economy.

In 2017, the median value of net wealth ranged from less than a thousand euros in the lowest class of net wealth (i.e., in bottom 20% net wealth group) to more than 500 thousand euros in the highest class (i.e., in top 10% net wealth group) (Table 2). As mentioned above, median net wealth increased in real terms between 2013 and 2017, after falling over the previous three years. These developments were common to most classes of net wealth. In 2017, the median net wealth was in all classes below the 2010 level, but the difference in values is only significant in classes of net wealth below the 80th percentile.

Household wealth and income are positively related. Several factors contribute to this evidence. On the one hand, households with higher income are more likely to save, thus accumulating higher levels of wealth. On the other hand, households with a higher level of wealth tend to earn higher income from asset ownership. The ISFF data reflect this positive correlation. In fact, although in each class of income there are households belonging to all classes of wealth, the proportion of households with low wealth is higher in the lower income classes and the proportion of households with high wealth is higher in the higher income classes. (Figure 1). In 2017, the median value of net wealth was 33 thousand euros in the bottom 20% income group and almost 300 thousand euros in the top 10% income group (Table 2).

In contrast to wealth classes, when households are grouped by income classes, the reduction in net wealth between 2010 and 2013 and its increase between 2013 and 2017 is not common to all classes. Between 2010 and 2013, the reduction in net wealth was particularly marked in the lowest income class and in the 60th to 90th percentile classes. Between 2013 and 2017, the increase in net wealth is only statistically significant in the highest income class. In 2017, net wealth values do not appear to be very different from 2010 in most groups. The exception is the lowest income group, which had in 2017 a lower net wealth than the households in this group in 2010. By age

7. In Costa (2016) this analysis is also carried out in detail for households that differ by the number of household members and by the educational level or labour status of the reference person. The results of the three ISFF waves with all these breakdowns are available in the tables provided in the ISFF page. For some variables, the results of ISFF 2013 shown in Costa (2016) differ from those included in this article and those on the ISFF page, due to revisions in data resulting from methodological changes.

	Median (EUR, thousands)			Change (%)		
	ISFF 2010	ISFF 2013	ISFF 2017	2010-13	2013-17	2010-17
Total	86.1	68.0	74.8	-21***	10**	-13***
Net wealth percentile						
<=20	1.7	0.4	0.9	-76***	118**	-47*
20-40	38.3	25.0	33.0	-35***	32**	-14
40-60	86.2	68.0	74.8	-21***	10**	-13***
60-80	157.7	128.5	136.6	-19***	6	-13***
80-90	264.5	221.5	247.4	-16***	12**	-6
>90	553.6	446.0	516.1	-19**	16**	-7
Income percentile						
<=20	46.3	23.5	33.0	-49***	40	-29**
20-40	58.1	56.5	51.2	-3	-9	-12
40-60	77.4	68.1	64.8	-12	-5	-16
60-80	98.9	77.6	91.2	-22**	18	-8
80-90	151.4	114.6	135.2	-24**	18	-11
>90	260.8	217.7	291.6	-17	34***	12
Age of the reference person						
<35	32.7	21.5	14.1	-34	-34	-57**
35-44	73.8	60.9	62.6	-17	3	-15
45-54	109.2	72.8	86.3	-33***	19*	-21**
55-64	128.4	101.1	94.6	-21**	-6	-26***
65-74	88.4	89.2	87.8	1	-2	-1
>=75	68.9	66.6	79.7	-3	20	16

TABLE 2. Median net wealth, by household characteristics.

Notes: The values of 2010 and 2013 were adjusted for inflation. ***, ** and * indicate that the test on the equality of the statistics obtained between the different waves of the survey is rejected at 1%, 5% and 10%, respectively.

of the reference person, net wealth follows a pattern according to the life-cycle theory, increasing until retirement and falling thereafter (Table 2). The increase in early life is steeper than the decrease in older age groups, which renders a higher level of net wealth in households whose reference person is older than in those whose reference person is younger. This might be due to the fact that households with older individuals maintain wealth in order to leave inheritances and for precautionary reasons, due to uncertainty about the evolution of their financial situation and health.

In 2017, the median net wealth ranged between around 14 thousand euros for households whose reference person is younger, and around 95 thousand euros for households whose reference person is between 55 and 64 years old. Thus, net wealth shows a lower degree of heterogeneity by age groups than by income classes. In fact, the composition by net wealth classes is relatively similar in most age groups (Figure 2). The largest difference is observed in households whose reference person is under 35 years old. In this group the share of households with low net wealth is much higher than in the remaining groups.

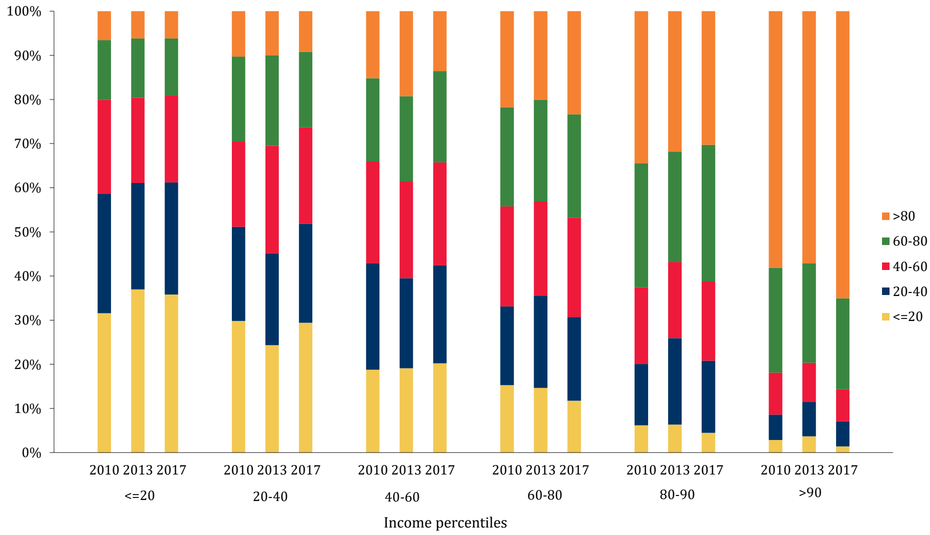

FIGURE 1: Percentage of households belonging to different net wealth classes, by income class.

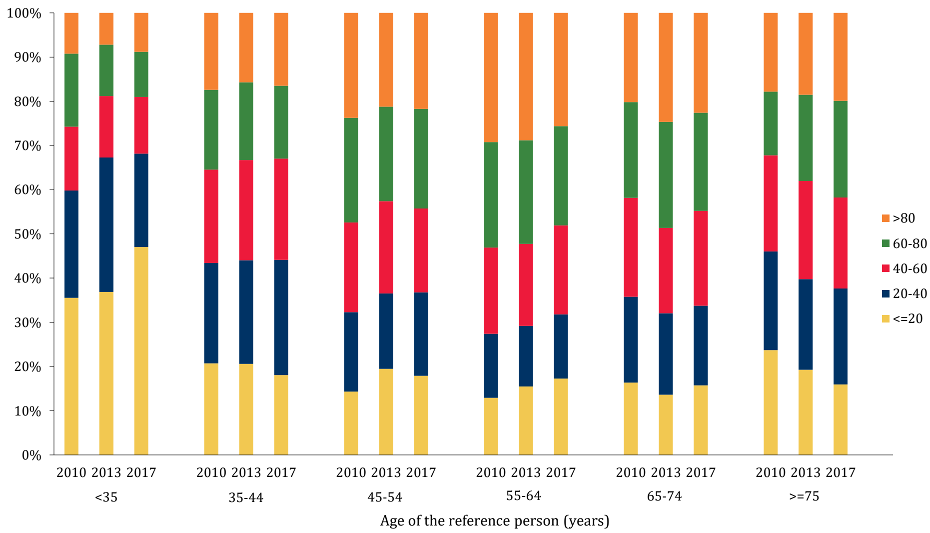

FIGURE 2: Percentage of households belonging to different net wealth classes, by age group.

As with income classes, the reduction in net wealth between 2010 and 2013 and its increase between 2013 and 2017 did not occur in all age groups. In 2017, households whose reference person is under 35 or between the ages of 45 and

64 had a lower net wealth than households in these groups in 2010. In the remaining groups, differences are not statistically significant.

Net wealth composition

In 2017, the mean net wealth of 162.3 thousand euros corresponds to 186.4 thousand euros in assets deducted by 24.1 thousand euros of debt (Table 3). Of the total assets, about 88% were real assets and about 12% corresponded to financial assets.

The reduction in mean net wealth between 2010 and 2013 was due to a reduction in the value of assets, mainly real assets, as debt also declined significantly. Between 2013 and 2017, debt fell again contributing to the increase in net wealth. During this period, the mean values of real and financial assets increased. However, the differences between the 2013 and 2017 values are not statistically significant.

The mean values of assets and debt of Table 3 were calculated considering all households living in Portugal, regardless of whether or not they had any assets or debt. One of the advantages of the ISFF data over macroeconomic data is that it enables to quantify the number of households that have certain assets and debts, as well as the value per household of these assets and debts by considering only those households that own them. The next sections analyse this information. In the analysis of the total value of each type of assets and debts, both the median and mean values are used, in order to illustrate the skewness of each variable. By household groups, given the smaller number of observations, the analysis focuses only on median values, so as to minimize the impact of extreme values that may not be representative of the groups in question.

	Mean (EUR, thousands)			Change (%)		
	ISFF 2010	ISFF 2013	ISFF 2017	2010-13	2013-17	2010-17
Net wealth	172.8	143.3	162.3	-17**	13*	-6
Total assets	205.9	172.5	186.4	-16***	8	-9*
Real assets	182.0	150.9	163.4	-17***	8	-10*
Financial assets	23.9	21.6	22.9	-9	6	-4
Debt	33.1	29.2	24.1	-12***	-17***	-27***

TABLE 3. Households net wealth, assets and debt, mean values considering all households.

Note: The values of 2010 and 2013 were adjusted for inflation. ***, ** and * indicate that the test on the equality of the statistics obtained between the different waves of the survey is rejected at 1%, 5% and 10%, respectively.

Assets: participation rates and values conditional on participation

Real assets

In 2017 about 91% of households had real assets (Table 4). The median and mean values of these assets for the households that held them were about 100 thousand euros and 180 thousand euros, respectively.

Among real assets, the main residence and motor vehicles are the most frequent assets. In 2017, both the main residence and motor vehicles are owned by about 75% of all the households. Other real estate properties, self-employment businesses and other valuables are owned by around 30%, 14% and 11% of households, respectively. These data confirm that Portugal is

	Real assets	Main residence	Other real estate properties	Self-employment business	Vehicles	Valuables
	Participation in assets (%)					
ISFF 2010	91.5	76.0	29.1	9.3	73.5	8.0
ISFF 2013	90.0	74.7	30.3	12.7	73.3	9.6
ISFF 2017	90.7	74.5	29.2	14.1	74.6	11.0
	Change (p.p.)					
2010-13	-2*	-1	1	3***	0	2
2013-17	1	0	-1	1	1	1
2010-17	-1	-1	0	5***	1	3***
	Median value of assets conditional on participation (EUR, thousands)					
ISFF 2010	113.6	109.4	71.5	54.7	6.1	2.7
ISFF 2013	101.1	92.5	50.7	15.8	5.1	5.1
ISFF 2017	100.2	99.7	50.0	23.7	5.0	1.5
	Change (%)					
2010-13	-11***	-15***	-29***	-71***	-16**	85**
2013-17	-1	8**	-1	50	-1	-70***
2010-17	-12***	-9***	-30***	-57***	-17**	-44
	Mean value of assets conditional on participation (EUR, thousands)					
ISFF 2010	198.9	133.1	159.3	265.5	10.9	22.8
ISFF 2013	167.7	109.9	115.9	201.0	8.4	21.5
ISFF 2017	180.1	119.2	121.4	219.9	9.6	8.7
	Change (%)					
2010-13	-16**	-17***	-27**	-24	-23***	-6
2013-17	7	8***	5	9	14***	-60***
2010-17	-9*	-10***	-24***	-17	-12***	-62***

TABLE 4. Real assets participation, median and mean values, by asset type.

Note: The values of 2010 and 2013 were adjusted for inflation. ***, ** and * indicate that the test on the equality of the statistics obtained between the different waves of the survey is rejected at 1%, 5% and 10%, respectively.

among the euro area countries where the percentage of homeowners is higher. (HFCN, 2016b)[8]

The real asset with the highest median value is the main residence (around 100 thousand euros in 2017), followed by other real estate properties and self-employment businesses (50 thousand euros and around 24 thousand euros, respectively, in 2017). Motor vehicles and other valuables naturally have significantly lower median values (5 thousand euros and 1.5 thousand euros, respectively, in 2017).

As noted, the median is an indicator less affected by extreme values than the mean. Due to the positive skewness of the assets distribution, the mean is higher than the median for all types of assets. Among the main assets, the difference between the two values is much wider in self-employment businesses and, to a lesser extent, in other real estate properties, than in the main residence. The self-employment businesses even have a mean value much higher than the main residence. This is due to the fact that these assets are more heterogeneous and more concentrated in wealthier families than the main residence. The top 10% net wealth group owns about 30% of the total value of households' main residences, about 70% of the value of other real estate properties and about 90% of the value of self-employment businesses.

The only significant change in the participation rates of the main types of real assets was the increase in the percentage of households with businesses between 2010 and 2013. This may reflect the fact that some individuals who have lost their jobs have started self-employed activities. The percentage of households with businesses is still higher in 2017 than in 2010 both when all households are considered as well as in most wealth, income and age groups[9]. The participation rate in real estate assets did not have significant changes for households as a whole but is in 2017 lower than in 2010 for some specific groups. In the case of the main residence, the percentage of owners decreased in the lowest wealth and income classes and for households whose reference person is under 35 years old. These developments might have been caused by tighter borrowing conditions and, in the most recent period, also by the rise in real estate prices.

8. According to data from the 2013/14 HFCS wave, in the euro area 60% of households owned the main residence and 24% owned other real estate properties. The real estate ownership rates are very heterogeneous across countries and the aggregate euro area figure is pushed downwards by larger countries. For example, the homeownership rate was below 60% only in Germany, France, the Netherlands and Austria. Differences between countries largely reflect institutional factors (for example, in the Portuguese case, the absence for several decades of an effective housing rental market).

9. The data by net wealth classes, income classes and age groups analysed in this section can be found in the annex to this review - Additional tables for the article "Portuguese Household Finance and Consumption Survey: results for 2017 and comparison with the previous waves" – which is available here.

The median value of real assets decreased between 2010 and 2013. This reduction was seen in most classes of wealth, income and age and was common to the main types of real assets. The context of a severe recession, which resulted in a reduction in real estate prices, contributed to these developments. Between 2013 and 2017, changes in the value of assets were more heterogeneous. The median value of the main residence increased, in line with the recovery in real estate prices. The median value of most other real assets did not change significantly. By groups of households, the median value of total real assets increased in all net wealth classes and most income classes, but the increase is only statistically significant in groups with net wealth above the 40^{th} percentile. By age group, it is worth noting a reduction in the median value of real assets in households whose reference person is younger, what partly reflects the aforementioned reduction in the percentage of households owning the main residence.

Financial assets

In 2017, around 97% of households had financial assets and their median and mean values were around 5 thousand euros and 24 thousand euros, respectively (Table 5). These values are significantly lower than those of real assets, which explains the fact that, although the participation in financial assets is higher, their weight in total household assets is much lower.

The high participation of households in financial assets is driven by the fact that almost all households have sight accounts. According to the ISFF 2017, savings accounts are held by almost half of households, voluntary pension schemes by about 13%, tradable assets (mutual funds, debt securities and quoted shares) by around 6% and other financial assets by 9% of households. The predominance of deposits in household financial assets is common to other euro area countries, although it is more noticeable in Portugal than in most other countries. (HFCN, 2016b).

Savings accounts are the financial asset with the highest median value (10 thousand euros) and sight accounts are the asset with the lowest value (around one thousand euros). However, the mean of tradable assets is close to the mean of savings accounts (almost 30 thousand euros), partly reflecting the fact that the former are more concentrated in wealthier households. The top 10% net wealth group holds about 50% of the total value of savings accounts and about 80% of the total value of tradable assets.

Participation in sight accounts increased between 2010 and 2013 and remained unchanged in subsequent years. Savings accounts participation rate also increased between 2010 and 2013, but this change was partly reversed between 2013 and 2017. This latter development may have been caused by the reduction in the remuneration of savings accounts, which had increased in the period of the crisis, partly due to the need of retail funding by banks. Participation in other financial assets also decreased between 2013

	Financial assets	Sight accounts	Savings accounts	Tradable assets	Voluntary pension schemes	Other
	Participation in assets (%)					
ISFF 2010	95.0	93.7	44.8	7.5	16.1	9.2
ISFF 2013	96.3	95.6	48.3	8.1	17.2	10.5
ISFF 2017	96.6	96.0	46.5	6.4	13.2	9.0
	Change (p.p.)					
2010-13	1**	2***	4**	1	1	1
2013-17	0	0	-2	-2**	-4***	-2*
2010-17	2***	2***	2	-1	-3***	0
	Median value of assets conditional on participation (EUR, thousands)					
ISFF 2010	5.4	1.1	10.9	7.9	5.5	5.5
ISFF 2013	5.1	1.0	11.3	5.0	3.8	5.1
ISFF 2017	4.6	1.1	10.0	5.7	4.0	5.0
	Change (%)					
2010-13	-6	-7	3	-37	-31*	-7
2013-17	-10	4	-11	15	5	-1
2010-17	-15*	-3	-9	-27	-28*	-9
	Mean value of assets conditional on participation (EUR, thousands)					
ISFF 2010	25.1	3.2	30.1	38.2	17.1	19.3
ISFF 2013	22.5	2.6	26.1	19.3	11.4	29.0
ISFF 2017	23.8	4.2	28.7	29.8	11.0	24.0
	Change (%)					
2010-13	-11	-20	-13	-50	-33	50
2013-17	6	67***	10	55**	-4	-17
2010-17	-5	33***	-5	-22	-36***	24

TABLE 5. Financial assets participation, median and mean values, by asset type.

Note: The values of 2010 and 2013 were adjusted for inflation. ***, ** and * indicate that the test on the equality of the statistics obtained between the different waves of the survey is rejected at 1%, 5% and 10%, respectively.

and 2017. These changes in participation in different types of financial assets were broadly common across household groups (although in most cases the changes are not statistically significant).

The median value of financial assets decreased between 2010 and 2017. By asset type, the only significant change in median values was a reduction in the amount invested in voluntary pension schemes between 2010 and 2013. The mean values of both sight accounts and tradable assets increased significantly between 2013 and 2017. This different evolution of the mean and median values is due to an increase in the higher amounts invested in these assets. As a matter of fact, by household groups, the increase in the median value of sight accounts took place in the top net wealth and income classes and that of tradable assets in the top net wealth class. In the lower classes of net wealth and income, the median value of all financial assets fell between 2010 and 2013 and remained in 2017 at a lower level than in 2010.

Debt

Participation rates and values conditional on participation

In 2017, around 46% of households living in Portugal had debt. (Table 6). The share of mortgages of the main residence (i.e., loans using the main residence as collateral) on total debt were above 80%. This very high share is due to both a high participation rate (over 30% of households) and a high value (median and mean in 2017 of around 50 thousand euros and 62 thousand euros, respectively). Mortgages on other properties also have a high value (median and mean of around 50 thousand euros and 73 thousand euros, respectively) but are much less frequent (only 4% of households have this type of debt). The second most common type of debt is non-mortgage loans, which in 2017 were held by about 18% of households and had a median value of around 4 thousand euros. About 9% of households had credit lines, overdrafts or credit cards debts, with a median value of 500 euros. In Portugal, the percentage of households with non-mortgage debt is lower than in the euro area average, but the percentage of households with mortgages is higher, which implies a higher median value of total debt per household. (HFCN, 2016b).

The percentage of indebted households did not change significantly between 2010 and 2017. There was, however, a recomposition of debt, with a reduction in the percentage of households with mortgages and an increase in the percentage of households with non-mortgage debt. Participation in non-mortgage debt increased from 13.4% in 2010 to 17.9% in 2017. This increase took place mainly between 2010 and 2013 and was relatively widespread across household groups. In the case of mortgages, the reduction in participation was more gradual and less widespread. Between 2010 and 2017, the participation rate in main residence mortgages dropped from 34% to about 32% and, in mortgages of other properties, from 5.7% to 4%. The reduction in the participation in main residence mortgages is statistically significant for households with income between the 40th and 60th percentiles and for the youngest households. In mortgages on other properties, there are statistically significant reductions in the two lowest income classes and in the 55-64 age group.

Considering the households with debt, debt decreased between 2010 and 2013 and again between 2013 and 2017. The median value decreased from about 60 thousand euros in 2010 to 35 thousand euros in 2017 and the mean from about 72 thousand euros to about 53 thousand euros.

By net wealth classes, the decrease in the debt median value was more concentrated in the first period in higher wealth classes and in the second

	Total	Main residence mortgage	Other property mortgages	Non-mortgage loans	Credit lines, overdrafts and credit cards
	Participation in debt (%)				
ISFF 2010	46.2	34.0	5.7	13.4	8.9
ISFF 2013	45.9	32.7	3.7	17.3	8.8
ISFF 2017	45.7	31.8	4.0	17.9	8.6
	Change (p.p.)				
2010-13	0	-1	-2***	4***	0
2013-17	0	-1	0	1	0
2010-17	-1	-2*	-2***	4***	0
	Median value of debt conditional on participation (EUR, thousands)				
ISFF 2010	59.4	68.5	72.6	5.5	1.1
ISFF 2013	49.2	64.6	59.7	4.1	0.7
ISFF 2017	35.0	50.3	49.7	4.4	0.5
	Change (%)				
2010-13	-17***	-6	-18*	-26**	-38***
2013-17	-29***	-22***	-17	9	-19
2010-17	-41***	-27***	-32***	-19*	-50***
	Mean value of debt conditional on participation (EUR, thousands)				
ISFF 2010	71.6	78.2	87.3	9.4	3.7
ISFF 2013	63.7	73.7	84.6	10.4	2.6
ISFF 2017	52.8	61.8	72.6	8.0	1.2
	Change (%)				
2010-13	-11***	-6	-3	11	-30
2013-17	-17***	-16***	-14	-23***	-52***
2010-17	-26***	-21***	-17	-15	-66**

TABLE 6. Debt participation, median and mean values, by debt type.

Note: The values of 2010 and 2013 were adjusted for inflation. ***, ** and * indicate that the test on the equality of the statistics obtained between the different waves of the survey is rejected at 1%, 5% and 10%, respectively.

period in lower wealth classes. When analysing these changes it is important to keep in mind that the composition of household groups changes over time and that these changes may be especially relevant in the case of net wealth given the leverage effect. This effect means that when the value of assets declines, households with higher debt (more leveraged) have more significant reductions in net wealth than the others, and that the opposite happens when the value of assets increases. Therefore, given the reduction in the value of real assets between 2010 and 2013 and its increase in the subsequent period, there may have been a shift of the most indebted households to lower classes of net wealth in the first period and to higher classes in the second period.

The debt decline between 2010 and 2017 was widespread across income classes. Between 2010 and 2013, the reduction occurred mainly at the bottom of the distribution and between 2013 and 2017 at the top. In the first period, these developments may have resulted, from a decline in demand for credit by households and tighter lending conditions by banks. In the second period, the decline in the debt values may partially reflect early repayments of mortgage loans by households in a context of the low level of deposit interest rates and an increase in the differential between loan and deposit interest rates (Banco de Portugal, 2018).

By age, debt had a significant reduction in the household groups whose reference person is under 55 years old, with the reduction in the two youngest classes occurring mainly between 2013 and 2017. The reduction in debt value of households whose reference person is under 35 years old, partly reflects the lower percentage of households with main residence mortgages.

Between 2010 and 2017, the reduction in median values was common to all types of debt. In non-mortgages loans, the reduction occurred between 2010 and 2013. In main residence mortgages, the reduction occurred mainly in the most recent period. In the case of mortgages on other properties, the reduction occurred gradually in both periods.

The median values of mortgages are lower in 2017 than in 2010, in nearly all household groups. Differences are, however, statistically significant in only a few subgroups: as regards main residence mortgages, in wealth and income classes below the 80th percentile and in age groups below 55 years old; in the case of other properties mortgages, in higher wealth and income classes, and in the 55-64 age group.

Indebtedness ratios

Compared with macroeconomic data, ISFF data has the advantage of enabling the computation of indebtedness ratios considering only the households that hold some form debt (Costa and Farinha, 2012). These indicators are important to evaluate the impact of debt on households' financial situation, as well as on the economy as a whole. When facing high indebtedness situations, households have a higher probability of default, as well as a higher probability of facing liquidity constraints, which may amplify the reaction of consumption to income fluctuations (Costa, 2012).

Between 2010 and 2017, both the debt-service income ratio, which measures the households' capacity to serve their debt in the short-term, and the debt-income ratio, which assesses the debt burden in a longer perspective, had significant reductions (the median values of these ratios declined from 20.3% to 14.4% and from 224.4% to 132.6%, respectively) (Table 7). To this evolution has contributed, throughout the whole period, the reduction of the outstanding amount of debt per household referred previously and, between 2013 and 2017, also the increase in income, largely associated to the recovery in

	Debt-service income ratio	Debt-income ratio	Debt-asset ratio
	Median values for the indebted households (%)		
ISFF 2010	20.3	224.4	34.0
ISFF 2013	16.8	198.5	37.8
ISFF 2017	14.4	132.6	31.5
	Change (p.p.)		
2010-13	-3***	-26**	4*
2013-17	-2***	-66***	-6***
2010-17	-6***	-92***	-3

TABLE 7. Debt burden indicators.

Note: ***, ** and * indicate that the test on the equality of the statistics obtained between the different waves of the survey is rejected at 1%, 5% and 10%, respectively.

employment and wages[10]. The debt-service income ratio also benefited from the reduction of the EURIBOR interest rates, in a context in which the ECB has kept an accommodative monetary policy along the whole period. The median value of the debt-asset ratio, which measures the households' degree of solvency in a long term perspective (it measures the households' capability of paying their debt, based on the sale of their assets) was 31.5% in 2017, a value that is not significantly different from the one observed in 2010. The reduction of the value of assets between 2010 and 2013 contributed to the increase in debt-asset ratio in this period. This change was reverted between 2013 and 2017.

The favourable evolution of the debt-service and debt-income ratios, between 2010 and 2017, was common to the majority of both net wealth and income classes. By age group, these ratios also recorded a generalized reduction, but the values of 2017 are not statistically different from the ones of 2010 for most of the groups above 54 years old. The debt-asset ratio decreased in some of the upper classes of net wealth and income, while in the remaining classes the values of 2010 and 2017 are not significantly different.

Credit demand and credit constraints

The ISFF has a set of qualitative questions that aim to assess the households' credit demand and credit constraints, in the three years before the interview.

According to the ISFF 2017, 19.6% of the households applied for credit (Table 8). This percentage is lower in the two lowest income classes than in

10. According to the ISFF, the income per household decreased between the first two waves of the survey and increased in the third wave.

	Applications for credit (% of total households)	Refusals [a] (% of households that applied)	Perceived credit constraints (% of total households)	Credit constratins (% of total households)
ISFF 2010	23.4	14.2	4.1	6.0
ISFF 2013	14.4	13.3	5.7	7.1
ISFF 2017	19.6	8.2	5.6	6.9
	Change (p.p.)			
2010-13	-9***	-1	2**	1
2013-17	5***	-5**	0	0
2010-17	-4***	-6***	2**	1

TABLE 8. Applications for credit and credit constraints.

Notes: The values of 2010 and 2013 were adjusted for inflation. ***, ** and * indicate that the test on the equality of the statistics obtained between the different waves of the survey is rejected at 1%, 5% and 10%, respectively. (a) Includes households with refused loan applications or only partially satisfied.

the remaining classes, decreases with the age of the reference person and it is higher in the lower net wealth classes than in the higher net wealth classes. Among the households that applied for credit, 8.2% had loan applications refused or partially satisfied . Additionally, 5.6% of the households did not apply for credit, although they wanted to get a loan, because they considered that their loan applications would have been rejected.

A household is considered to face credit constraints whenever the household would like to have credit but is not able to get it (regardless of having applied for credit or not). The percentage of households with credit constraints was 6.9% in 2017, reaching values above 10% for the households in the lowest net wealth class and for the households whose reference person has less than 45 years old. In the period 2010-2017, the percentage of households with credit constraints does not have statistically significant changes when all households are considered, but increases in the lowest income class and in the age group 35-44 years old. The households' perceived credit constraints increased significantly between 2010 and 2013 (from 4.1% to 5.7%) and remained relatively stable between 2013 and 2017 (5.6%). Among the credit constrained households, the share of those who did not have refused loan applications but have perceived credit constraints has increased from approximately 50% in 2010, to approximately 75% in 2013 and 2017.

The percentage of households that applied for credit has decreased from 23.4% in 2010 to 14.4% in 2013, and recovered partially in 2017, to 19.6%. By household groups, the percentage of households that applied for credit in 2017 is lower than in 2010 in the highest net wealth classes, in the highest income class and in those whose reference person has less than 35 years old.

The decline in applications is partially due to changes in the perceived credit constraints mentioned earlier. As a whole, the percentage of households that applied for credit or wanted credit, but did not apply decreased from 25.5% in 2010, to 18.7% in 2013 and increased to 23.4% in 2017. This evolution suggests that the "unconstrained credit demand", i.e., not conditioned by perceptions about the banks' behaviour, decreased from 2010 to 2013 and recovered in 2017 to a value close to 2010. Therefore, the relative stability of the percentage of households with credit constraints, between 2010 and 2013, seems to be in part the result of a decrease in the percentage of households that wanted credit, in a context of the high uncertainty in the economy.

Conclusions

According to the ISFF, in 2017 each household in Portugal had on average 186.4 thousand euros in assets and 24.1 thousand euros in debt, which rendered a net wealth per household of 162.3 thousand euros. The median value of net wealth, which is least affected by extreme values, stood at 74.8 euros. The fact that the median value is almost half of the mean value reflects the high inequality that usually characterizes the distribution of wealth.

Real estate assets account for a large share of households wealth in Portugal. About 75% of households own their main residence and about 30% own other properties. The main residence is the asset with the highest median value. In the case of financial assets, sight accounts are the only asset held by nearly all households and savings accounts are the asset with the highest median value. In total, around 46% of the households have debt and about 32% of the households have mortgages on the main residence, which is the most common type of debt.

In real terms, mean net wealth increased between 2013 and 2017, reversing the reduction observed between 2010 and 2013. The median value also decreased between 2010 and 2013 and increased between 2013 and 2017, but remained in 2017 lower than in 2010. The opposite direction of the changes in the net wealth in the two sub-periods was determined by a distinct evolution of the value of assets, especially real assets, as debt decreased in both sub-periods. Between 2010 and 2013, the median value of the main types of real assets declined. Between 2013 and 2017, the median value of the main residence increased, in line with the recovery in real estate prices, but the values of the remaining assets did not change significantly.

The median value of debt for indebted households declined markedly between 2010 and 2017, and this reduction was common across types of debt. Mortgages declined in both sub-periods, while for the remaining liabilities the decline was concentrated in the period between 2010 and 2013. The decrease in total household debt also reflected a change in the composition by type of debt. Although the percentage of indebted households remained broadly stable between 2010 and 2017, the percentage of households with mortgages declined and the percentage of households with other type of debt increased.

Between 2010 and 2017 there were no major changes in the degree of inequality of net wealth in Portugal. However, by household groups, some differentiation in net wealth changes has taken place in this period. Analysis by household groups shows that in 2017 the median net wealth was lower than in 2010, in most wealth classes below the 80^{th} percentile, in the lowest income class and in households whose reference person is under 35 years old or between 45 and 64 years old. The decline of wealth in these groups essentially reflected the reduction in the values of real and financial assets. In households whose reference person is under 35 years old, as well as in those in the lowest wealth and income classes, the percentage of households owning the main residence has decreased, contributing to the lower value of real assets held by these household groups. In the youngest age group, participation in main residence mortgages also declined. These developments might have been caused by tighter borrowing conditions and, in the most recent period, also by the rise in real estate prices.

Overall, between 2010 and 2013, for indebted households, the debt reduction was more concentrated in households in the lower income classes. In contrast, between 2013 and 2017, the reduction in households' debt was observed in households with higher incomes. This pattern may have resulted, in the first period, from a lower demand for credit by households and tighter borrowing conditions by banks. The ISFF data suggest that between 2010 and 2013, the percentage of households demanding credit declined, both effectively and due to the increase of perceived credit constraints. Between 2013 and 2017, the debt reduction, in a context of the low level of deposit interest rates and an increase in the differential between loan and deposit interest rates, may partly reflect the existence of incentives for early repayments by households with financial the capacity to do so.

The reduction in the outstanding amounts of loans, together with the decrease in money market interest rates and, in the most recent period, the rise in income, have led to a substantial reduction in the median of the debt-income ratio and debt-service income ratio between 2010 and 2017. These developments were common across most classes of net wealth and income and to the age groups below 54 years. The median value of the debt-asset ratio increased between 2010 and 2013 and decreased between 2013 and 2017, returning to a value close to the one of 2010. Changes in this ratio were due to fluctuations in opposite directions in the asset values, in particular in real estate.

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Appendix: Definitions

Household: group of people who live together in the same private dwelling and share expenditures, including the joint provision of the essentials of living, regardless of family ties.

Reference person: selected amongst household members according to the Canberra definition (United Nations, 2011). In most cases it corresponds to the major income earner.

Net wealth: Difference between the value of all real and financial assets and the value of total debt at the time of the interview.

Real assets: value of the household main residence, other real estate properties, vehicles, self-employment businesses and other valuables owned by the household[11].

Self-employment businesses: value of the participation of the household in non-publicly traded businesses, in which any household member works as self-employed or has an active role in running the business.

Financial assets: value of the sight deposits, savings deposits (including savings certificates and treasury certificates), financial tradable assets (investment funds, debt securities and quoted shares), voluntary pension plans and other financial assets.

Other financial assets: all of the remaining financial assets, including, for instance, the value of participations in unquoted businesses, in which any household member participates only as an investor and money owed to the household as private loans.

Total debt: outstanding amount of all debts, which includes loans having real estate properties as collateral, non-mortgage loans, bank overdrafts, credit lines and credit card debts.

Household income: includes all types of income received by any household member. Corresponds to the gross income (i.e., income before the payment of taxes and mandatory retirement contributions by the workers) received in the civil year before the interview.

11. This definition of real assets in not in line with the European System of National Accounts, because it includes vehicles and participation in businesses.