Financial situation of the households in Portugal: an analysis based on the HFCS 2013

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Abstract

According to the Household Finance and Consumption Survey from 2013, the median value of the net wealth (i.e., the difference between the value of assets and liabilities) of the Portuguese households is around 71 thousand euros, which means that 50 per cent of the households have a lower level of net wealth. The top 10 per cent of households in terms of net wealth hold slightly more than 50 per cent of total net wealth, illustrating the high inequality of the net wealth distribution. For most households real estate has a dominant weight in their assets: 75 per cent of the households are owners of the main residence and about 30 per cent have loans using it as collateral. As compared to the first wave of the survey conducted in 2010, the value of real estate properties declined, contributing to a decrease in the value of household assets. The effect on net wealth was, however, mitigated by a reduction in the debt outstanding amounts. The degree of household indebtedness, measured by the ratio of debt to income or to assets, remained very high for a significant percentage of households. The decline in the Euribor rates contributed, however, to a reduction in the weight of the debt service on income. (JEL: C83, D10)

Introduction

This article presents the results of the second wave of the Portuguese Household Finance and Consumption Survey (HFCS, ISFF by its Portuguese acronym), which was conducted in 2013. The HFCS is the only statistical source in Portugal that permits relating assets, debt, income, consumption, demographic and socio-economic aspects as well as information about expectations and attitudes at the household level. This survey is part of a project promoted by the Eurosystem in order to collect comparable microeconomic data on the financial situation of households, and in particular on wealth among the euro area countries.¹

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^{1.} The ECB web page includes a wide range of information about the HFCS. The results for the euro area of the first wave of the survey were published by the ECB in 2013 (HFCN (2013a)

The HFCS methodology follows the principles agreed by participating countries but the implementation of the survey is decentralized at the national level. In Portugal, the survey is conducted by Banco de Portugal and Statistics Portugal. The main methodological aspects of the Portuguese HFCS are described in Appendix A. One important methodological characteristic is the sampling design. The sample is representative of the households living in Portugal and has a component that oversamples wealthy households. This sampling strategy is commonly used in wealth surveys and aims to obtain more efficient estimates of wealth given its highly asymmetric distribution in the population. The first wave of the Portuguese HFCS was conducted in 2010 and the third wave will be conducted in 2017. The results of the first wave for Portugal are described in Costa and Farinha (2012b).

As discussed in the next section, the HFCS data permits the analysis of the distributions of variables that affect the financial situation of households across different groups of households. This article focuses on these distributions. While it includes some data about income and consumption, the analysis focuses primarily on distributions of net wealth and its components (i.e. real assets, financial assets and debt), as it is for these variables that HFCS has a higher value added, when compared with other existing household surveys in Portugal. The article begins by describing the distributions of the main economic aggregates by household type obtained with HFCS 2013. Subsequently, the main characteristics of the distributions of net wealth and its components will be compared with those obtained with the HFCS 2010. Finally, given the high indebtedness level of the Portuguese households, data from two HFCS waves on debt burden, demand for credit, and credit constraints will also be compared. In the period between the HFCS 2010 and the HFCS 2013 significant changes occurred in the macroeconomic situation in Portugal, with negative impacts on the aggregate financial situation of the households. This makes the comparison of the two waves results particularly interesting.

Benefits and limitations of HFCS data

The HFCS data is very useful to study the behaviour of households, for example, in areas related to saving and consumption decisions, portfolio allocations, participation in debt, and liquidity constraints. This type of data can also be used to assess the impact of macroeconomic shocks or policy changes on different type of households. Additionally, the HFCS data contributes to a better understanding of the behaviour of macroeconomic

and HFCN (2013b)) and for the second wave will be published over the coming months (HFCN (2016a) and HFCN (2016b)).

aggregates, as it allows the identification of the groups of households where these aggregates are concentrated. Indeed, the ownership of certain assets, such businesses or sophisticated and risky financial products, are typically concentrated in a small number of households whose behaviour can dominate the aggregate evolution. In addition, as the recent financial crisis illustrated, information on the heterogeneity of the financial situation of households and, in particular, on the degree of indebtedness is essential to assess the extent to which debt accumulation in aggregate terms originates risks to financial stability and ultimately to the growth of economic activity.

The comparison of the aggregated HFCS data with the macroeconomic data from the National Accounts should be done with caution given the conceptual differences between the two sources and the measurement errors associated with both sets of information. A detailed analysis of the comparability issues is outside the scope of this article. Nonetheless, there are some general aspects which are important to refer here. In terms of concepts, one important difference stems from the fact that the HFCS refers to households, while the majority of macroeconomic data also includes Nonprofit Institutions Serving Households. In terms of methodology, National Accounts have the advantage of using a comprehensive set of sources, many of which cover the whole population. However, for some items information on households is scarce and partly obtained as the residual of available data on the whole economy and other sectors. The HFCS has the advantage of collecting all information directly from the households in a coherent manner. Nevertheless, like any other survey, the HFCS is subject to reporting errors by households, which are difficult to identify and correct after the data collection. In particular, households' reluctance to reveal monetary values even when all the requirements regarding the confidentiality of data are provided for, can lead to underestimation of monetary values. In addition, although in the HFCS the wealthy households are oversampled (Appendix A), it is possible that a significant part of wealth, in particular of financial wealth, is not captured by the survey since it is concentrated in very few households which may not be part of the sample. In fact, in the Portuguese HFCS, as in many other wealth surveys, the amount of financial wealth is much lower than the Financial Accounts values, even for items which are relatively comparable between the two sources. For non-mortgage debt, the available data also suggest some underestimation of the HFCS values.

The above limitations directly affect the calculation of the levels but to a much lesser extent the distributions of the variables as well as the correlations between them. Thus the HFCS data should be primarily used for the purpose for which it was collected, i.e. for a microeconomic analysis of households' behaviour. As mentioned above, from a purely statistical point of view, this type of data is useful to infer the distribution of the variables in the population but does not substitute macroeconomic data to obtain the levels for the different economic aggregates.

Distributions of net wealth, income and consumption

The net wealth of a household is the difference between the value of its assets and its debts.² The HFCS data does not cover the accumulated rights over public and occupational pensions. As this type of asset is generally distributed more evenly than private wealth, its exclusion can lead to some overestimation of inequality in the wealth distribution.

Figure 1 compares the distributions of net wealth, income and consumption of non-durable goods and services obtained with the HFCS 2013 data for the Portuguese population.³ These distributions show that net wealth is much more unequally distributed between households than income and that income is more unequally distributed than consumption. The top 10 per cent of households in terms of net wealth hold slightly more than 50 per cent of total net wealth. In the case of income and consumption, the top 10 per cent of households hold, respectively, slightly over 30 per cent and about 25 per cent of the total of these variables in the population. The Gini indexes for the net wealth, income and consumption stand at 68 percent, 44 per cent and 32 percent, respectively.

The higher inequality of wealth as compared to income and of income compared to consumption is consistent with the empirical evidence that shows that the saving rate increases with both income and wealth levels (Banco de Portugal (2016)). This behaviour can be reconciled with economic theory, for example, when the utility function of individuals depends on deviations of consumption from a basket of basic goods or when savings are a luxury good. The high positive skewness of net wealth may also be related with the fact that wealthier households can have more diversified portfolios with higher expected returns. Regarding the net wealth components, inequality is significantly higher in the case of financial wealth than real wealth (Figure 2). Debt also has a very skewed distribution which is driven by the fact that more than 50 per cent of households do not have any debt.

The high inequality in the distribution of the main economic aggregates, in particular of wealth and its components, means the behaviour of these variables is largely determined by a subset of households. The HFCS data enables identifying in which household types these aggregates are concentrated. The remainder of this section describes the distribution of these aggregates by demographic and socioeconomic characteristics of the households. In order to better understand the distributions of real wealth, financial wealth and debt, the analysis will cover both participation rates and

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^{2.} Appendix B defines the HFCS variables used in this section.

^{3.} All the statistics presented in this article were calculated using the final sample weights, which means that they are representative of households living in Portugal.



FIGURE 1: Distributions of net wealth, income and consumption: HFCS 2013.



FIGURE 2: Distributions of net wealth and its components: HFCS 2013.

their median values conditional on participation, for the different assets and liabilities. The article focus on median values because they are less sensitive to extreme values than the mean and thus are a better indicator of the typical household. Households will be characterized by their levels of net wealth and income, size, and the age, education level and work status of the reference person. The reference person was selected among the household members in accordance with the definition of Canberra, corresponding roughly to the highest income earner in the household (Appendix B).

Net wealth

The mean net wealth of Portuguese households in the second quarter of 2013 was 156 thousand euros (Table 1). The median was less than half this amount (71.2 thousand euros), illustrating its uneven distribution in the population. For the bottom net wealth quintile (i.e., for the 20 per cent of households with the lowest net wealth), the median value is about 500 euros, while for wealthiest 10 per cent it is more than 600 thousand euros.

In line with the life cycle theory, net wealth increases with the age of the reference person until retirement and falls thereafter. The increase in early life is more pronounced than the reduction in old age. Thus, net wealth is higher for households whose reference person belongs to the highest age classes than for households whose reference person is in the lowest age classes. The fact that older individuals hold wealth to leave as inheritances as well as for precautionary motives (due not only to the macroeconomic uncertainty but also to the uncertainty around the moment of death) might contribute to this age profile of net wealth. The data also shows the usual positive correlation between net wealth and income. Among other factors, this reflects the higher ability to save of households with higher income as well as the increase in income associated with the ownership of assets. As expected, net wealth increases with the education level (which is related to permanent income), more markedly for households whose reference person has tertiary education. By work status, net wealth is highest for households with a self-employed reference persons and lowest for households whose reference person is neither working nor retired. In terms of household size, net wealth reaches a maximum level for households with four members and declines for larger households, although it remains higher than for singlemember households. By income, net wealth, work status and education classes there is generally a positive correlation between the levels of net wealth and its components, i.e., the groups of households with the highest net wealth levels are also those with highest levels of real wealth, financial wealth, and debt. In the case of age, the pattern is slightly different mainly because debt levels peaks at younger ages.

	% of	Net w	vealth	Annual	income	Annual consur durable good	nption of non- s and services
	nousenoids	Median	Mean	Median	Mean	Median	Mean
Total	100.0	71.2	156.0	15.4	21.5	8.4	10.0
Income percentile							
<=20	20.0	24.6	70.3	5.6	5.2	4.8	5.1
20-40	20.0	57.6	103.1	10.3	10.4	7.2	7.2
40-60	20.0	71.0	135.1	15.4	15.6	8.9	9.3
60-80	20.0	82.6	158.2	23.4	23.7	10.8	11.4
80-90	10.0	121.8	218.8	35.2	35.8	12.1	13.7
>90	10.0	240.4	408.3	57.9	70.1	18.0	19.9
Age							
<35	11.2	24.1	78.9	16.2	20.6	8.4	9.2
35-44	20.8	63.8	131.6	18.8	23.8	9.6	11.0
45-54	20.1	75.2	162.1	19.0	24.9	9.4	10.9
55-64	18.0	104.2	195.3	16.5	23.9	9.2	10.9
65-74	15.2	92.1	187.6	12.7	18.7	8.4	9.5
>=75	14.7	71.7	160.0	8.7	14.6	6.0	7.1
Work status							
Employee	45.5	62.3	115.9	20.0	25.8	9.6	11.3
Self-employed	10.8	188.2	411.6	22.5	34.6	10.1	11.8
Unemployed	8.3	21.1	86.4	10.0	11.8	6.5	7.4
Retired	31.2	79.8	152.4	11.4	15.4	7.2	8.6
Other not working	4.3	27.9	99.2	5.3	7.8	5.4	6.0
Education							
Lower than secondary	69.4	62.2	131.4	12.7	16.3	7.7	8.3
Secondary	13.7	66.6	144.5	20.1	24.8	9.6	11.2
Tertiary	16.9	131.7	265.7	33.9	40.3	13.2	15.6
Household size							
One	20.0	42.7	120.2	7.6	11.3	5.0	6.1
Two	32.0	78.2	164.6	13.8	19.7	8.4	9.1
Three	24.6	76.9	150.7	19.7	24.3	9.6	11.0
Four	16.3	84.6	180.8	22.2	29.7	11.3	13.3
Five and more	7.1	67.3	178.6	23.9	30.5	12.0	13.5
Net wealth percentile							
<=20	20.0	0.5	-2.0	10.4	12.7	6.4	7.3
20-40	20.0	25.6	26.8	13.9	16.9	7.5	8.4
40-60	20.0	71.3	72.3	14.8	18.3	8.4	9.4
60-80	20.0	139.1	142.6	17.9	24.5	9.6	10.7
80-90	10.0	262.4	267.7	23.6	30.2	11.2	12.8
>90	10.0	629.1	813.9	29.9	40.7	12.0	15.1

TABLE 1. Net wealth, gross income and consumption, by household characteristics: HFCS 2013.

Unit: Thousand, EUR.

Real assets

According to HFCS 2013, real assets account for more than 85 per cent of gross households' wealth (Table 2). The very high share of real wealth is common to all households groups, dropping only slightly with income and education levels.

	Share of to	otal assets		S	hare of real asset	ts			S	hare of financia	al assets	
	Real assets	Financial assets	Main residence	Other real estate properties	Self- employment business	Vehicles	Valuables	Sight accounts	Saving accounts	Tradable assets	Voluntary pensions schemes	Other
Total	88.0	12.0	49.8	29.9	15.4	3.7	1.3	10.8	56.0	6.9	12.7	13.6
Income percentile												
<=20	90.5	9.5	59.0	35.2	3.3	2.1	0.4	17.3	60.8	3.2	5.4	13.3
20-40	88.5	11.5	55.0	36.0	5.1	2.8	1.0	10.6	66.3	2.1	7.3	13.8
40-60	89.0	11.0	52.9	31.8	10.9	3.6	0.9	11.3	55.2	5.0	14.1	14.4
60-80	88.9	11.1	51.4	28.1	15.1	4.2	1.2	12.3	61.6	4.0	12.3	9.8
80-90	88.3	11.7	49.1	23.7	21.9	4.4	0.9	11.5	50.6	5.1	17.2	15.6
>90	85.4	14.6	41.2	28.8	23.8	4.0	2.2	8.1	50.7	13.0	13.5	14.5
Age												
<35	89.4	10.6	55.2	22.8	14.9	6.1	0.9	16.0	53.4	10.2	14.8	5.6
35-44	90.2	9.8	54.7	16.3	23.7	4.6	0.8	12.1	53.7	5.7	20.6	7.9
45-54	87.5	12.5	52.6	24.7	16.9	4.3	1.5	9.0	43.2	6.7	17.5	23.6
55-64	87.3	12.7	48.3	30.4	15.6	3.8	1.9	9.9	49.9	8.9	13.3	18.0
65-74	87.1	12.9	45.1	40.3	11.1	2.6	0.9	11.4	68.5	5.5	5.5	9.2
>=75	86.2	13.8	41.4	53.1	3.3	1.0	1.1	10.3	74.0	5.8	2.1	7.7
Work status												
Employee	87.9	12.1	63.5	22.8	6.6	5.5	1.7	12.1	53.7	6.9	17.9	9.3
Self-employed	90.1	9.9	28.2	24.8	43.7	2.6	0.8	8.0	38.4	7.7	15.8	30.1
Unemployed	90.2	9.8	57.0	32.8	4.3	4.1	1.8	13.7	50.0	4.9	10.5	20.9
Retired	85.6	14.4	50.6	44.1	1.9	2.4	1.0	10.8	72.8	6.2	4.9	5.3
Other not working	87.3	12.7	50.0	47.1	-0.3	1.9	1.4	11.7	48.4	11.0	1.0	28.0
Education												
Lower than secondary	89.1	10.9	49.2	34.9	11.8	3.3	0.9	11.8	61.5	3.4	11.2	12.1
Secondary	88.7	11.3	57.7	19.2	17.6	4.7	0.9	11.4	49.9	11.0	15.0	12.8
Tertiary	85.5	14.5	47.2	25.6	21.0	4.1	2.1	9.4	50.8	10.2	13.8	15.9
Household size												
One	88.9	11.1	42.5	40.9	13.6	1.8	1.3	12.3	62.8	7.0	9.1	8.8
Two	87.5	12.5	48.2	35.2	12.5	3.2	0.9	11.9	65.4	6.3	8.1	8.2
Three	87.8	12.2	54.0	23.5	16.3	4.8	1.5	10.6	52.3	5.7	15.2	16.2
Four	88.4	11.6	54.1	20.9	19.0	4.4	1.5	9.1	48.0	9.3	19.4	14.3
Five and more	87.7	12.3	45.4	31.7	17.2	4.6	1.2	9.0	39.4	7.1	12.4	32.1
Net wealth percentile												
<=20	92.0	8.0	75.3	13.7	-0.2	10.9	0.3	47.7	27.6	1.3	10.2	13.2
20-40	89.4	10.6	82.5	5.2	4.2	7.6	0.6	22.4	57.2	1.2	10.0	9.2
40-60	87.6	12.4	83.7	8.4	1.3	5.8	0.8	17.8	62.2	3.8	9.8	6.5
60-80	85.9	14.1	75.8	13.2	4.6	5.1	1.3	11.3	65.0	3.2	13.6	6.8
80-90	85.3	14.7	59.4	27.5	8.1	3.9	1.1	9.0	63.0	6.3	16.1	5.7
>90	89.4	10.6	22.9	46.4	27.4	1.8	1.5	6.5	47.0	11.1	11.8	23.6

TABLE 2. Gross wealth composition, by asset type and household characteristics: HFCS 2013. Unit: Per cent

The main residence is the most important asset held by households, with a share of around 50 per cent of total real wealth. Other real estate properties are the second most important real asset, having a share of about 30 per cent in real wealth. Self-employment businesses represent about 15 per cent and motor vehicles about 4 per cent.

The overriding importance of the main residence in wealth is common to most household types. However, its share on real assets declines with income, age as well as for the highest net wealth classes. The share of the other real estate properties is more heterogeneous across different household types, increasing with age and also in households with higher net wealth levels. For households in the highest class of net wealth this is the most important asset, followed by self-employment businesses. By age, the importance of businesses is higher for households whose reference person is younger, declining particularly after retirement. As expected, by work status, businesses are more important for households with self-employed reference persons.

Around 75 per cent of Portuguese households own their main residence, around 30 per cent are owners of other real estate properties, and around 13 per cent are owners of self-employment businesses (Table 3). The median values of these assets for the households that own them are 90 thousand euros, 60 thousand euros and 50 thousand euros, respectively. Motor vehicles are the second most common real asset, held by more than 70 per cent of the households, but its median value is only 5 thousand euros. In Portugal, participation in real estate properties is higher, but its weight on the real wealth is similar, when compared to the euro area.

By household groups, the participation rates and the median values of the different real assets generally follow a pattern similar to the evolution of the total wealth, i.e., increase with income and net wealth and achieve higher values for households whose reference person has an higher level of education or is self-employed. By age, the percentage of homeowners reaches its highest value already by the second youngest age group, while participation in other real estate properties increases until after retirement. The median value of the main residence decreases with the age of the reference person, probably reflecting the fact that younger households own more recently constructed, higher value properties.

-			Participation	in assets (in %)			Me	dian value of a	ssets conditiona	al on participation	(thousand, El	IR)
	Any real asset	Main residence	Other real estate properties	Self- employment business	Vehicles	Valuables	All real assets	Main residence	Other real estate properties	Self- employment business	Vehicles	Valuables
Total	90.0	74.7	30.3	12.7	73.3	9.6	101.9	91.3	62.2	49.0	5.0	5.0
Income percentile												
<=20	74.0	60.6	19.8	3.2	39.2	4.0	52.2	51.1	19.7	5.8	1.5	1.0
20-40	86.8	66.8	26.6	7.0	64.8	6.9	70.9	70.9	25.8	12.7	2.0	1.4
40-60	93.7	76.1	28.8	11.8	80.3	8.9	97.0	88.0	63.2	19.4	4.0	2.8
60-80	96.3	78.7	30.1	13.4	89.2	11.1	112.4	100.0	73.5	28.0	5.5	4.8
80-90	99.1	89.0	38.4	25.2	92.7	11.6	162.5	120.0	80.9	77.2	9.2	6.1
>90	99.2	93.7	54.5	30.7	93.2	22.6	268.4	151.0	121.0	127.1	15.0	14.0
Age												
<35	84.3	54.9	16.0	11.0	78.7	7.5	97.8	107.5	58.2	54.1	5.2	2.8
35-44	94.8	79.7	22.8	16.8	86.5	7.5	115.0	100.0	71.0	57.8	6.1	5.0
45-54	90.6	76.1	30.3	17.0	80.3	11.4	107.1	98.7	51.4	27.5	5.5	5.5
55-64	91.3	78.8	34.4	14.9	78.8	11.2	110.7	98.0	75.9	65.5	5.0	6.4
65-74	91.2	79.2	41.9	9.0	67.5	9.7	90.2	75.0	62.3	43.8	3.0	3.1
>=75	83.8	71.2	35.0	3.2	40.0	9.7	73.0	62.4	52.0	5.0	1.5	4.7
Work status												
Employee	93.1	76.0	24.6	7.4	85.0	9.4	105.2	100.0	60.0	23.0	6.0	5.0
Self-employed	98.9	84.3	51.5	78.0	88.8	12.0	221.4	113.5	96.1	53.0	7.5	9.3
Unemployed	75.4	54.3	14.0	2.6	63.6	7.7	74.7	87.3	59.0	69.5	4.1	2.5
Retired	88.0	76.7	36.4	2.0	58.8	10.4	83.7	70.2	52.3	29.8	2.5	3.6
Other not working	77.3	61.7	24.6	1.1	33.4	3.0	59.5	54.9	68.8	5.0	1.5	28.9
Education												
Lower than secondary	87.9	71.9	29.8	10.8	67.4	7.9	85.0	76.8	50.0	46.2	3.9	3.0
Secondary	91.5	77.5	24.0	14.2	84.2	9.3	117.2	102.3	68.0	50.0	6.1	3.9
Tertiary	97.5	84.1	37.5	18.9	88.6	17.0	174.5	138.5	117.0	54.0	10.0	10.0
Household size												
One	79.0	62.9	25.8	4.2	39.3	8.4	71.8	66.9	66.4	17.0	2.5	2.5
Two	91.5	77.0	34.0	10.8	74.1	8.5	100.0	83.3	50.0	29.5	3.0	5.0
Three	94.6	77.6	30.2	14.3	89.0	10.9	110.0	99.9	60.0	41.2	5.2	4.1
Four	94.8	83.2	28.4	21.2	87.0	12.4	130.5	106.2	75.0	64.1	7.3	5.8
Five and more	87.3	67.9	31.2	19.8	79.4	7.0	118.8	100.0	93.5	47.8	6.0	18.0
Net wealth percentile												
<=20	55.3	18.9	3.6	3.0	47.0	2.9	3.4	70.0	73.0	0.0	2.0	0.8
20-40	95.2	75.4	15.7	5.8	70.1	5.7	39.6	50.0	8.3	4.7	4.9	1.8
40-60	99.5	91.0	24.0	7.7	76.1	8.2	75.3	70.9	17.7	5.1	4.4	1.2
60-80	100.0	95.5	37.5	13.1	85.9	12.3	133.7	100.3	46.9	21.8	5.9	4.8
80-90	100.0	93.6	59.5	22.5	88.7	14.5	248.9	150.0	103.5	58.1	8.3	6.5
>90	100.0	92.0	82.1	45.0	86.0	23.6	610.1	162.0	320.1	319.3	10.2	21.2

TABLE 3. Real assets participation and median values, by asset type and household characteristics: HFCS 2013.

Financial assets

Deposits are the most important financial asset (Table 2). Sight and saving deposits account, respectively, for around 11 per cent and 56 per cent of total financial wealth. Tradable assets (quoted shares, debt securities and mutual funds) represent about 7 per cent, voluntary pensions about 13 per cent, and other financial assets about 14 per cent.⁴ Compared with the euro area, deposits represent a much higher share of financial wealth of households in Portugal.

Saving deposits are the most important asset in the financial wealth for all kinds of households, except those that are in the lowest net wealth class, for which sight deposits have a dominant weight. The share of total deposits is higher for lower income and net wealth classes and for households with older and lower educated reference persons. As expected, tradable assets, which typically are associated with a higher risk and are more sophisticated financially, represent a lower share of these households' financial wealth. By net wealth classes, the share of tradable assets increases from around 1 per cent in the case of the poorest households to around 10 per cent for the wealthiest ones. The importance of voluntary pensions is higher for households in intermediate classes of income and net wealth and for those whose reference person is younger than retirement age or have completed at least secondary education.

As expected, after sight deposits (held by 96 per cent of households), saving deposits are the most frequent type of financial asset, owned by about 50 per cent of the households (Table 4). Around 17 per cent of the households have voluntary pension plans and only 8 per cent hold tradable assets. Saving deposits are the financial asset with the highest median value (about 11 thousand euros). The median values of tradable assets, voluntary pension or other assets are around 5 thousand euros. The median value of sight deposits is 1 thousand euros.

^{4.} The other financial assets mainly include unquoted shares of corporations in which the household members have a role solely as investors and money owed to the household (Appendix B).

	Participation in assets (in %)						Median value of assets conditional on participation (thousand, EUR)					
	Any financial asset	Sight accounts	Saving accounts	Tradable assets	Voluntary pensions schemes	Other	All financial assets	Sight accounts	Saving accounts	Tradable assets	Voluntary pensions schemes	Other
Total	96.3	95.6	48.3	8.1	17.2	10.5	5.1	1.0	11.1	4.9	4.9	5.0
Income percentile												
<=20	88.0	87.0	26.5	1.3	4.4	6.5	1.1	0.5	10.0	8.5	2.4	3.9
20-40	96.7	95.2	42.9	1.3	7.8	7.9	2.4	0.6	10.0	1.4	2.8	2.8
40-60	97.9	97.5	46.9	5.8	14.3	11.7	4.3	0.9	10.0	3.3	3.4	4.4
60-80	99.1	98.5	55.8	8.6	22.8	10.9	6.7	1.2	10.4	2.3	3.2	4.7
80-90	99.6	99.6	65.6	13.7	31.3	13.4	12.7	1.9	10.2	4.5	4.2	8.1
>90	100.0	100.0	73.5	33.4	42.1	18.2	32.0	3.0	24.7	6.4	9.9	8.6
Age												
<35	97.2	97.1	45.1	7.0	22.4	9.2	2.5	0.7	5.0	10.0	1.8	2.3
35-44	98.7	98.5	52.9	10.2	27.2	13.5	5.0	0.9	7.7	2.3	3.4	4.0
45-54	97.4	97.0	43.5	8.1	20.7	12.4	4.7	1.0	12.0	5.5	5.0	4.9
55-64	96.6	96.2	47.7	9.8	17.7	11.3	6.4	1.0	14.9	5.1	9.0	9.1
65-74	96.6	95.1	50.9	7.2	8.6	7.5	6.0	1.2	17.8	5.0	6.0	7.4
>=75	90.0	88.3	48.8	4.7	2.5	6.9	6.8	1.0	19.9	2.4	13.8	5.8
Work status												
Employee	99.1	98.8	50.5	9.6	24.8	11.2	4.8	1.0	9.9	4.0	3.4	3.0
Self-employed	98.4	98.3	51.3	12.3	24.2	19.7	10.6	2.0	14.5	5.3	10.0	14.6
Unemployed	91.6	91.0	30.4	3.4	10.3	11.0	1.2	0.4	6.1	5.5	4.2	4.0
Retired	94.4	92.9	51.4	6.3	7.5	7.0	6.8	1.1	16.6	3.7	6.0	5.6
Other not working	84.2	83.6	29.6	3.8	2.6	5.8	1.3	0.5	9.8	28.2	5.0	40.6
Education												
Lower than secondary	94.9	94.1	42.7	4.3	10.6	9.1	3.3	0.8	10.4	4.6	4.4	4.8
Secondary	98.9	98.0	53.7	10.3	25.9	12.7	6.6	1.0	10.0	4.2	3.1	4.0
Tertiary	99.8	99.8	66.9	21.8	36.9	14.8	16.8	2.0	15.5	5.0	6.0	5.0
Household size												
One	92.0	91.0	39.1	5.0	10.3	7.6	2.9	0.7	10.8	2.2	4.6	4.4
Two	96.9	95.9	50.9	7.1	14.5	9.5	6.8	1.0	14.6	3.1	3.4	3.1
Three	98.0	97.8	52.3	9.7	22.2	12.5	5.8	1.0	10.0	5.0	4.6	5.0
Four	98.3	97.9	50.6	10.9	22.6	12.4	5.2	1.0	9.9	3.4	7.7	6.2
Five and more	95.2	94.4	43.8	9.4	18.7	12.4	3.9	0.9	14.0	6.9	6.7	9.1
Net wealth percentile												
<=20	90.1	89.6	15.6	1.3	5.2	4.3	0.4	0.3	2.0	0.5	1.2	1.0
20-40	95.2	93.9	42.5	3.0	14.6	9.6	3.1	0.8	6.0	0.7	2.3	3.3
40-60	97.7	97.3	52.7	5.3	15.5	9.5	6.0	1.0	9.8	4.6	3.7	3.8
60-80	99.4	98.6	61.2	8.7	20.4	11.3	12.0	1.5	17.9	4.3	5.6	5.0
80-90	99.2	99.2	68.2	17.5	29.6	14.0	26.1	2.0	25.3	5.0	8.9	5.1
>90	99.2	98.1	70.9	26.9	30.9	22.0	40.7	3.0	30.9	7.2	14.6	15.0

TABLE 4. Financial assets participation and median values, by asset type and household characteristics: HFCS 2013.

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Similarly to the real assets, both participation rates and conditional median values of the financial assets in general increase with the level of net wealth and income. In most cases, participation rates are highest when the reference person is 35-44 years old. However, these households are not the ones with the highest median values. While for deposits the median value increases with age, for tradable assets it reaches the highest level in households with younger reference persons and in the cases of voluntary pensions and other financial assets is to a large extent determined by the money owed to the household. As referred in Appendix A, the HFCS 2013 includes information about the part of this money that is owed by businesses owned by any household member. This type of asset represents about 4 per cent of total financial wealth, but makes up 12 per cent on the financial wealth of households who owned businesses.

Debt

Mortgages on the main residence represent slightly more than 80 per cent of total household debt (Table 5). The dominant weight of mortgages is common to all household groups. Nevertheless, for households with older, self-employed or retired reference persons mortgage debt is slightly less important than for the remaining households. The share of the mortgages on other real estate properties is more heterogeneous across households, in line with what happens with the ownership of these properties. This type of mortgages is more important for households with higher levels of income and net wealth and for those with self-employed reference persons. Nonmortgage debt has a higher share on the debt when the reference person has a lower education level, is not working nor unemployed, or is older. While the share of non-mortgage loans is higher for lower-income households, in the case of credit cards, credit lines and bank overdrafts, there appears to be no relationship with income.

About 45 per cent of Portuguese households had some type of debt in the second quarter of 2013, with a median of 48.5 thousand euros (Table 6). The percentage of indebted households in Portugal is identical to that in the euro area, but the median value of debt is higher, reflecting the higher participation in mortgages.

	HMR mortgage	Other property mortgages	Non-mortgage loans	Credit lines, overdrafts and credit cards
Total	82.4	10.6	6.2	0.8
Income percentile				
<=20	86.3	6.2	6.7	0.8
20-40	84.8	1.6	12.6	1.1
40-60	83.1	7.6	8.4	0.9
60-80	84.5	8.5	6.4	0.6
80-90	86.8	8.5	4.2	0.6
>90	75.6	19.1	4.4	0.9
Age				
<35	81.2	14.3	3.9	0.6
35-44	85.7	9.6	4.4	0.3
45-54	82.9	10.5	5.7	0.8
55-64	78.4	7.4	11.7	2.6
65-74	53.3	10.9	33.9	2.0
>=75	37.2	22.8	31.6	8.5
Work status				
Employee	87.3	7.7	4.5	0.5
Self-employed	67.7	23.0	7.8	1.5
Unemployed	82.0	8.4	8.3	1.3
Retired	66.0	9.1	23.3	1.7
Other not working	79.0	0.1	19.6	1.3
Education				
Lower than secondary	81.9	7.3	9.8	1.1
Secondary	87.4	7.6	4.6	0.5
Tertiary	80.1	15.5	3.7	0.7
Household size				
One	85.6	5.3	7.2	1.8
Two	77.6	15.1	6.3	1.0
Three	82.6	9.8	7.0	0.7
Four	85.3	9.9	4.3	0.4
Five and more	80.7	10.6	7.7	0.9
Net wealth percentile				
<=20	75.1	9.0	14.8	1.1
20-40	86.3	9.7	3.4	0.6
40-60	90.5	5.1	4.1	0.3
60-80	84.3	9.8	5.3	0.6
80-90	81.1	15.1	3.4	0.5
>90	69.6	20.0	8.5	1.9

TABLE 5.	Debt composition, by debt type and household characteristics: H	HFCS 2013.
Unit: Per o	cent	

	Participation in debt (in %)					Median value of the outstanding debt conditional on participation (thousand, EUR)				
Total	Any debt	HMR mortgage	Other property mortgages	Non-mortgage loans	Credit lines, overdrafts and credit cards	All debt	HMR mortgage	Other property mortgages	Non-mortgage loans	Credit lines, overdrafts and credit cards
Total	45.9	32.7	37	173	8.8	48 5	63.7	58.8	4.0	0.7
Income percentile	45.7	52.7	5.7	17.5	0.0	40.5	05.7	50.0	4.0	0.7
<=20	21.6	11.1	0.6	10.8	4.1	9.9	41.9	43.3	1.6	0.5
20-40	30.4	16.8	0.3	14.8	6.0	12.2	39.5	54.0	3.0	0.5
40-60	49.4	35.1	3.4	19.8	9.0	45.6	58.7	37.3	5.3	0.8
60-80	58.8	42.6	5.2	22.0	12.3	53.6	65.1	62.8	4.3	0.6
80-90	69.1	57.3	6.5	20.1	13.3	73.6	80.4	70.2	5.0	0.7
>90	69.4	58.4	11.2	18.2	11.7	80.4	86.8	70.2	8.7	1.1
Age										
<35	65.1	45.0	2.8	25.7	12.4	76.8	89.9	83.4	3.8	0.5
35-44	75.5	61.6	7.7	25.8	11.8	68.7	72.8	65.0	5.6	0.5
45-54	60.2	44.3	4.8	20.9	11.8	39.3	49.5	61.1	3.8	0.8
55-64	41.4	26.1	2.6	17.1	9.1	19.7	35.1	32.3	3.6	0.8
65-74	17.1	7.1	1.9	8.7	4.1	9.1	24.6	27.8	7.0	1.0
>=75	4.9	0.8	0.2	3.1	2.0	4.2	32.0	151.2	3.0	2.1
Work status										
Employee	67.6	52.7	5.0	23.8	12.0	56.5	68.3	63.0	4.3	0.5
Self-employed	55.8	40.0	8.3	18.7	11.1	59.6	72.4	62.6	9.7	1.5
Unemployed	45.3	22.2	2.0	23.2	9.8	12.4	60.5	54.6	1.6	0.5
Retired	15.5	7.4	1.1	6.9	4.0	8.9	21.1	18.7	3.3	0.9
Other not working	11.6	5.3	0.0	8.8	1.0	10.8	52.7	0.0	2.9	0.8
Education										
Lower than secondary	36.1	22.6	2.2	16.5	6.8	25.3	48.0	31.8	3.7	0.6
Secondary	68.8	55.0	5.2	21.7	15.8	60.6	69.2	63.6	5.0	0.7
Tertiary	67.3	55.8	8.4	16.9	11.2	84.7	89.9	74.3	5.7	0.7
Household size										
One	26.3	35.4	1.2	10.4	8.2	31.0	59.9	28.0	3.0	0.5
Two	32.8	32.6	1.9	12.3	6.7	35.4	56.0	43.1	3.6	0.5
Three	58.9	37.2	5.4	21.9	10.1	54.4	66.6	63.0	6.9	10
Four	70.1	16.8	69	24.4	10.0	56.6	65.0	53.6	42	0.8
Five and more	59.4	460.1	5.1	26.8	12.6	49.2	69.2	83.7	5.0	0.5
Net wealth percentile	0,111	10011	011	20.0	1210		07.2	0017	0.0	010
<=20	377	15.8	18	24.4	9.6	20.2	85.1	90.0	3.4	0.6
20-40	54.0	43.3	3.0	17.6	11.7	62.3	70.9	66.4	3.0	0.6
40-60	50.0	40.5	2.6	16.9	71	47.4	493	50.4	3.0	0.6
60-80	433	33.1	2.0	14.6	73	40.7	55.2	51.0	6.4	0.6
80-90	44.6	31.9	7.8	12.5	85	435	57.2	44.7	4.2	0.8
50.50	44.3	295	9.4	13.5	7.9	43.5	74.4	50 4	11.2	2.4
- 10	44.5	29.3	7.4	13.5	1.7	02.0	/4.4	30.4	11.3	2.4

TABLE 6. Debt participation and median values, by debt type and household characteristics: HFCS 2013.

The percentage of indebted households and the median amount of debt increases with income and is higher for households whose reference person is working, younger than 45 years old, or has a higher level of education. This behaviour is largely determined by mortgages. Participation in non-mortgage debt is also higher in young age groups. Its value does not seem to change monotonically with age, in the case of non-mortgage loans, and increases with age, in the case of credit cards, credit lines and bank overdrafts. By income, participation in non-mortgage debt reaches the maximum level in the intermediate classes, although the median value increases with income, as in the case of mortgages. By work status, the incidence of non-mortgage debt is higher not only in households whose reference person is working, as in the case of mortgages, but also in the case of unemployment. The median value of non-mortgage debt is higher in households with self-employed reference persons.

Income

In 2012, according to HFCS 2013, the annual mean and median gross income of the Portuguese households were, respectively, 21.5 thousand euros and 15.4 thousand euros (Table 1). In the 20 per cent of households with the lowest incomes, the median was lower than 6 thousand euros, and in the 10 per cent households with the highest incomes was around 58 thousand.

Income increases with the age of the reference person until the 45-54 age group, and subsequently declines. Contrary to what happens to the net wealth, income is higher in lowest age group than in the highest group. This result holds when one takes into account the household composition, i.e., when measuring the income per equivalent adult. As expected, household income increases with the education level of the reference person and is higher when the reference person is working and in particular when they are self-employed.

In aggregate terms, income from employment is the main source of income (representing around 70 per cent of the total households income), and particularly income earned by employees (around 55 per cent of the total). The second main source of income is public pensions (around 20 per cent of the total). The share of the different income sources changes with the households' financial situation. The income earned by employees is slightly more important for households in the three lowest wealth classes than in the three highest (Figure 3). By contrast, the share of self-employment income is higher for the wealthy households. In these households, income from real estate, financial assets, and businesses also have a significantly higher weight.

The HFCS includes some qualitative questions for assessing whether households had some negative shocks to their income or labour market situation in the years preceding the interview. According to the HFCS, in 2013 about 45 per cent of the households considered that the previous



FIGURE 3: Income composition: HFCS 2013.

year income was lower than in a normal year. This percentage is above 50 per cent in the highest income classes, as well as in households whose reference person is unemployed, self-employed, has an intermediate age, or a higher level of education. Among the reference persons that have worked (at least at some point in time) in the three years prior to the HFCS 2013, the percentage that declared to have had a reduction in labour income increases with income, while the percentage declaring to have lost the job declines with income (Figure 4). This data suggests, that in the three years preceding the survey, lower income households were relatively more affected by rising unemployment and higher income households by reductions in labour income.⁵

Consumption

Data on consumption is less comprehensive than in the cases of wealth and income and is collected in a more aggregated way, focusing on the

^{5.} The percentage of households whose reference person declared to have lost the job also declines with the education level. This suggests the higher incidence of job loss situations at lower income percentiles is not being determined by a movement to lower income percentiles of the households whose reference person have lost the job.



FIGURE 4: Unfavourable evolution of job conditions: HFCS 2013.

Note: Percentage of households whose reference person has lost the job or had a reduction of labour income in the 3 years prior to the HFCS 2013, among the total number of households in which the reference person has worked at some point during this period.

consumption of non-durable goods and services.⁶ According to the HFCS 2013, the mean value of the regular annual expenditures on non-durable goods and services is 10 thousand euros and the median 8.4 thousand euros (Table 1).

The mean and median values of consumption increase with net wealth, the level of education, and more significantly with income. By work status, consumption reaches the highest values in households whose reference person is working and by age in the 35-44 years old group. The consumption per equivalent adult has a similar pattern, although with a smaller dispersion by household type. Additionally, by age it reaches the maximum value in the class of 55-64 years old. The consumption items collected in HFCS vary by type of household in an identical fashion to the total consumption. Nevertheless, the share of both food at home and of utilities declines with income, while the share of food outside home and of the other expenses in non-durable goods and services increases (Figure 5).

^{6.} The HFCS does not provide an estimate of consumption as accurate as that obtained in the household expenditure surveys, where this is collected in a far more disaggregated way.



FIGURE 5: Composition of consumption: HFCS 2013.

Macroeconomic developments in the period 2010-13

In the remaining sections of the article the results of HFCS 2013 will be compared to the ones of the HFCS 2010. Prior to this analysis it is important to briefly describe the macroeconomic framework of the Portuguese economy in the period between the first two waves of HFCS.

Throughout 2010 and early 2011, Portugal was severely hit by the increase in risk aversion associated with the European sovereign debt crisis. The conditions of access to the international financial markets deteriorated significantly and the country requested an Economic and Financial Assistance Programme in May 2011, which ended in June 2014. This programme involved the implementation of a series of measures to correct the imbalances prevailing in the balance sheets of the private and public sectors and the removal of some roadblocks to potential growth. Many of the economic measures implemented in the period between the two survey waves had a direct negative impact on the financial situation of households, involving, for example, income reductions for public servants and retirees, increases in income and consumption taxes, and reduction in unemployment benefits.

During this period the Portuguese economy went through a deep recession linked to a downward adjustment of domestic demand. In a context of declining disposable income, increasing unemployment, and a sharp drop in consumer confidence, private consumption fell significantly and the household saving rate broke from the downward trend registered since the beginning of euro area (Banco de Portugal (2016)).

The increased risk perception, in a context where banks faced financing difficulties and the need to restructure their balance sheets, has also resulted in a deterioration of household financing conditions. Interest rate spreads on new bank loans increased significantly and the total value of new loans declined.

Indebted households, especially those with mortgages, however benefited from the reduction in Euribor interest rates in a context of the accommodative monetary policy implemented by the ECB. Finally, the financial situation of households has also been affected by the reduction in the real estate prices and of higher risk financial assets.

Changes in the distribution of net wealth in the period 2010-13

This section compares the main results obtained in the HFCS 2013 and in HFCS 2010.⁷ In order for this analysis to be conducted in real terms, the HFCS 2010 data has been adjusted by inflation.⁸

The comparison of the results between the two waves should be performed and interpreted with caution. First, when comparing results for groups of households it is important to note the existence of composition effects. Groups' composition changes over time and these changes may have been particularly pronounced in the period under analysis, given the macroeconomic developments mentioned in the previous section. For example, the change in the income of households whose reference person is unemployed reflects the evolution of the income of households whose reference person was unemployed in 2010 and still unemployed in 2013, as well as the change in the type of households with unemployed reference persons. Secondly, it is important to take into account the uncertainty surrounding the production of the survey data. Thus in the comparisons of the main results the standard errors of the statistics are taken into account and a greater focus is given to cases where the equality of the values obtained with the two waves of the survey is statistically rejected.⁹

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^{7.} The data of the first wave differs slightly from the one previously released due to a revision of weights incorporating more updated information (Appendix A).

^{8.} All HFCS 2010 values have been increased by 7.9 percent, which corresponds to the change in the consumer prices in the period 2009-12, i.e., between the reference periods for income. The inflation in the period from the second quarter of 2010 to the second quarter of 2013, i.e. between the reference periods for assets and liabilities, is very close to this value.

^{9.} The standard errors take into account uncertainty due to the sampling and to the imputation process. As explained in the Annex 1 of Costa and Farinha (2012b) the standard errors were calculated using the five implicates as well as the one thousand replicate weights which are part of HFCS database.

	Mee	dian	Me	ean
	HFCS 2010	HFCS 2013	HFCS 2010	HFCS 2013
Net wealth	85.0	71.2***	170.4	156
	(3.2)	(2.4)	(8.9)	(5.7)
Gross wealth	114.3	103.9***	203.0	184.8*
	(2.7)	(2.3)	(8.9)	(5.7)
Real wealth	103.9	90.8***	179.5	162.5*
	(3.2)	(2.3)	(7.9)	(5.3)
Financial wealth	4.4	4.5	23.5	22.2
	(0.3)	(0.4)	(1.5)	(0.9)
Debt	0.0	0.0	32.6	28.8***
	-	-	(0.3)	(0.2)
Income	16.6	15.4***	23.3	21.5**
	(0.4)	(0.2)	(0.5)	(0.5)

TABLE 7. Main aggregates: HFCS 2010 vs HFCS 2013.

Unit: Thousand, EUR.

Notes: The HFCS 2010 values are adjusted by the consumer prices changes between the two waves of the survey. The values in parenthesis are the standard errors. ***, ** and * indicate that the test on the equality of the HFCS 2010 and HFCS 2013 statistics is rejected at 1 per cent, 5 per cent and 10 per cent, respectively.

According to HFCS, the median net wealth of Portuguese households had a reduction in real terms in the period between the second quarter of 2010 and the second quarter of 2013 (Table 7). The decline is not statistically significant for the mean. In fact, the decline in the mean real wealth seems to have been compensated by the decline in debt, in a context of no significant changes on financial wealth. The mean and median values of income declined in real terms between the two waves. Overall, these developments are in line with the macroeconomic data available for income, financial wealth and debt. The National Accounts do not provide data for non-financial assets but the reduction in real estate prices and in housing investment observed during this period suggests a decline in real wealth in line with HFCS data.

The median net wealth fell for households' classes with net wealth lower than the 80th percentile, remained relatively stable for households with net wealth between the 80th and 90th percentiles and increased for the wealthiest 10 per cent households (Table 8).¹⁰ This developments suggest an increase in net wealth inequality in the period between the two waves. The share of net wealth held by the half households with lower net wealth, decreased from 8.7 per cent to 7.1 per cent, while for the wealthiest 10 per cent increased from 51.6

^{10.} These results are robust to the exclusion of the households that belong to the sub-sample that intends to oversample the wealthiest households and thus are not being determined by the change in the oversampling method described in Appendix A.

	Mee	dian	Mean			
	HFCS 2010	HFCS 2013	HFCS 2010	HFCS 2013		
Net wealth percentile						
<=20	1.7	0.5***	1.4	-2***		
20-40	(0.4)	(0.1)	(0.8)	(0.7)		
	37.7	25.6***	36.7	26.8***		
40-60	(3.4)	(1.7)	(2.4)	(1.7)		
	85.0	71.3***	85.2	72.3***		
60-80	(3.2)	(2.4)	(3.2)	(2.4)		
	155.5	139.1**	158.0	142.6**		
80-90	(6.1)	(4.5)	(5.2)	(4.1)		
	260.9	262.4	265.3	267.7		
>90	(10.8)	(9.8)	(9.1)	(10.7)		
	545.9	629.1*	878.1	813.9		
	(40.6)	(29.6)	(76.8)	(43.7)		

TABLE 8. Net wealth: HFCS 2010 vs HFCS 2013.

Unit: Thousand, EUR.

Notes: The HFCS 2010 values are adjusted by the consumer prices changes between the two waves of the survey. The values in parenthesis are the standard errors. ***, ** and * indicate that the test on the equality of the HFCS 2010 and HFCS 2013 statistics is rejected at 1 per cent, 5 per cent and 10 per cent, respectively.

per cent to 52.1 per cent. In line with this evolution, the Gini index increased slightly from 66 per cent, to 67.8 per cent.

This moderate increase in net wealth inequality mainly reflects the evolution of real wealth and debt (Table 9). For households owning real assets, the median real wealth declined for the households with net wealth lower than the 80th percentile and this decline is statistically significant between the 20th and 80th percentiles. In the case of debt, while in the three lowest net wealth classes participation remained constant or increased, in the three highest there was a significant reduction in the percentage of households with debts. In addition, although the median values of debt declined for all net wealth classes, these reductions are not statistically significant for households with net wealth lower than the 60th percentile. For financial wealth, the only significant change is a decline in the median value for the 20 per cent poorest households.

The decline in the aggregate real wealth was determined by a slight reduction in participation and mainly by a decrease in the value of these assets. In the case of financial wealth, participation increased slightly but the median value did not changed significantly. Regarding debt, the aggregate reduction stems mainly from a decrease in debt values. The percentage of indebted households has remained relatively stable at around 46 per cent.

	Real	assets	Financi	al assets	De	ebt
	HFCS 2010	HFCS 2013	HFCS 2010	HFCS 2013	HFCS 2010	HFCS 2013
		F	Participation in a	ssets or debt (%	b)	
Net wealth percentile						
<=20	61.1	55.3	88.1	90.1	34.3	37.7
	(2.2)	(2.7)	(1.5)	(1.5)	(2.6)	(2.5)
20-40	97.3	95.2	94.8	95.2	45.7	54**
	(1)	(1.1)	(1.1)	(1)	(2.7)	(2.2)
40-60	99.5	99.5	95.1	97.7*	47.4	50
	(0.5)	(0.5)	(1.3)	(0.8)	(2.9)	(2.4)
60-80	99.8	100	97.8	99.4	50.0	43.3*
	(0.4)	(0.3)	(1.1)	(0.5)	(3)	(2.1)
80-90	100.0	100	98.8	99.2	55.9	44.6**
	(1)	(0.6)	(1.3)	(0.9)	(3.9)	(3.5)
>90	100.0	100	99.6	99.2	51.6	44.3*
	(0.8)	(0.4)	(0.9)	(0.7)	(3.3)	(2.7)
Total	91.5	90*	95.0	96.3**	46.2	45.9
	(0.5)	(0.6)	(0.5)	(0.4)	(0.9)	(0.8)
	Media	n value of assets	s or debt conditi	onal on participa	ation (EUR, thou	sands)
Net wealth percentile						
<=20	5.3	3.4	0.8	0.4***	35.5	20.2
	(0.8)	(0.9)	(0.1)	(0.1)	(16.9)	(12.4)
20-40	49.4	39.6*	2.9	3.1	66.2	62.3
	(4.1)	(4.1)	(0.5)	(0.5)	(6.5)	(4.9)
40-60	89.9	75.3***	5.5	6	46.0	42.4
	(3.9)	(2.8)	(0.8)	(0.8)	(4.8)	(3.3)
60-80	161.9	133.7***	10.5	12	53.5	40.7**
	(6.3)	(5)	(1.1)	(1.8)	(5.1)	(3.3)
80-90	254.7	248.9	26.0	26.1	65.8	43.5
	(10.9)	(11.3)	(4.4)	(2.9)	(14.7)	(7)
>90	531.1	610.1	47.5	40.7	83.5	62*
	(35.6)	(32.9)	(7.3)	(6.7)	(10.1)	(6.1)
Total	112.0	101.9***	5.4	5.1	58.6	48.5***
	(2.5)	(1.8)	(0.4)	(0.4)	(2.7)	(1.7)

TABLE 9. Real wealth, financial wealth and debt, participation and median values: HFCS 2010 vs HFCS 2013

Notes: The HFCS 2010 values are adjusted by the consumer prices changes between the two waves of the survey. The values in parenthesis are the standard errors. ***, ** and * indicate that the test on the equality of the HFCS 2010 and HFCS 2013 statistics is rejected at 1 per cent, 5 per cent and 10 per cent, respectively.

In the remainder of this section, data on the different types of assets and liabilities is compared to understand the changes underlying these aggregate figures.

For most assets types, participation rates did not changed much in the period 2010-13 (Table 10). The main changes are an increase in the percentage of households with businesses and in the percentage of households with deposits. These trends hold across most household types.

		Main	Other real	Self-		
	Real assets	main	estate	employment	Vehicles	Valuables
		residence	properties	business		
		Particip	oation in assets	; (in %)		
HFCS 2010	91.5	76.0	29.1	9.3	73.5	8.0
	(0.5)	(1.1)	(1.1)	(0.7)	(0.8)	(0.8)
HFCS 2013	90*	74.7	30.3	12.7***	73.3	9.6
	(0.6)	(0.8)	(0.9)	(0.6)	(0.8)	(0.7)
	Median value	of assets con	ditional on par	ticipation (thousan	d, EUR)	
HFCS 2010	112.0	107.9	70.5	54.0	6.0	2.7
	(2.5)	(0.9)	(5.7)	(5.9)	(0.5)	(0.8)
HFCS 2013	101.9***	91.3***	62.2	49	5**	5**
	(1.8)	(2.8)	(5.4)	(8.7)	(0)	(0.6)
	Financial assets	Sight accounts	Saving accounts	Tradable assets	Voluntary pensions schemes	Other
		Particip	oation in assets	; (in %)		
HFCS 2010	95.0	93.7	44.8	7.5	16.1	9.2
	(0.5)	(0.6)	(1.1)	(0.6)	(0.9)	(0.6)
HFCS 2013	96.3**	95.6***	48.3**	8.1	17.2	10.5
	(0.4)	(0.4)	(1)	(0.5)	(0.7)	(0.6)
	Median value	of assets con	ditional on par	ticipation (thousan	d, EUR)	
HFCS 2010	5.4	1.1	10.8	7.8	5.4	5.4
	(0.4)	(0.1)	(1)	(2.2)	(0.8)	(0.8)
HFCS 2013	5.1	1	11.1	4.9	4.9	5
	(0.4)	(0)	(0.9)	(0.7)	(0.5)	(0.5)

TABLE 10. Real wealth and financial wealth, participation and median values, by asset type: HFCS 2010 vs HFCS 2013.

Notes: The HFCS 2010 values are adjusted by the consumer prices changes between the two waves of the survey. The values in parenthesis are the standard errors. ***, ** and * indicate that the test on the equality of the HFCS 2010 and HFCS 2013 statistics is rejected at 1 per cent, 5 per cent and 10 per cent, respectively.

For the main asset types, with the exception of saving deposits, the median values are lower in 2013 than in 2010. However, when taking into account the uncertainty associated with this data, only in the cases of the main residence and vehicles are the changes statistically significant. The decrease in the median values of the main residence and vehicles are common to most types of households. These developments reflect, in the case of the main residence, the decline in house prices and, in the case of vehicles, probably their depreciation in a context where vehicle purchases recorded sharp falls. For other real estate properties and businesses, the median values changes are more heterogeneous across household groups. Its increase for the wealthiest households contributed to the more favourable evolution in the real wealth of these households.

As stated previously, the total percentage of indebted households remained broadly stable. There is however a differentiated evolution by debt type, with participation in mortgages on other real estate properties declining

	Total	HMR mortgage	Other property mortgages	Non-mortgage loans	Credit lines, overdrafts and credit cards
		Part	icipation in debt (in %)	
HFCS 2010	46.2	34.0	5.7	13.4	8.9
	(0.9)	(0.9)	(0.5)	(0.9)	(0.7)
HFCS 2013	45.9	32.7	3.7***	17.3***	8.8
	(0.8)	(0.7)	(0.3)	(0.7)	(0.5)
	Median v	alue of the outstanding	debt conditional on p	articipation (thousand,	EUR)
HFCS 2010	58.6	67.6	71.6	5.4	1.1
	(2.7)	(2.7)	(5.2)	(0.5)	(0.1)
HFCS 2013	48.5***	63.7	58.8*	4**	0.7***
	(1.7)	(2.2)	(5.7)	(0.4)	(0.1)

TABLE 11. Debt participation and median values by debt type: HFCS 2010 vs HFCS 2013.

Notes: The HFCS 2010 values are adjusted by the consumer prices changes between the two waves of the survey. The values in parenthesis are the standard errors. ***, ** and * indicate that the test on the equality of the HFCS 2010 and HFCS 2013 statistics is rejected at 1 per cent, 5 per cent and 10 per cent, respectively.

and participation in non-mortgage loans increasing (Table 11). Both trends are common to the majority of the different household types. However, by net wealth the reduction in the percentage of households with mortgages on other real estate properties was determined by the three highest classes. Participation of these wealthy households in main residence mortgages also declined, which is not observed for the lowest net wealth groups. These trends have contributed to the heterogeneous evolution of debt participation by net wealth classes referred above.

Among indebted households, the median amount of debt declined as compared to 2010. This reduction is common to all types of debt and is statistically significant in case of mortgages on other real estate properties, non-mortgage loans as well for debts associated with credit cards, credit lines and bank overdrafts. These debt types recorded reductions in median values for most households.

The HFCS includes the date on which loans have been granted. This information is useful to supplement the previous analysis on the participation rates. In the three years prior to the HFCS 2013, the number of households taking off new mortgage loans was higher in the highest wealth classes than in the lowest classes (Figure 6). Additionally, the share of households with high net wealth levels on the total number of households with new mortgage loans increased noticeably when compared to the HFCS 2010. For non-mortgage loans, the HFCS 2010 does not include information about the year of the contracts. However, among the households with non-mortgage loans in the three years prior to HFCS 2013, the share of households in the lowest wealth classes is slightly smaller than among all households that hold this type of



FIGURE 6: Composition of households with new mortgage loans: HFCS 2010 vs HFCS 2013.

Note: The new mortgage loans correspond to loans granted in the period 2007-10 in the case of the HFCS 2010 and in the period 2010-13 in the case of the HFCS 2013.

loans in 2013 (Figure 7). Thus, in general, the data suggests that, in the period between the two waves, the percentage of households with a more fragile financial situation taking off new loans has not been greater than in the past.

There is therefore no evidence that new loans have contributed to the evolution referred to above for the participation rates in debt. The reduction of participation in debt in the higher net wealth classes and their relative stability in lower net wealth classes, might have reflected alternatively the fact that among the households with a better financial situation, total loan reimbursements were more frequent or a change in household composition by net wealth classes. In fact, the decline in the real estate values leads to a more negative evolution of net wealth for leveraged households as compared to the remaining ones. This effect might have contributed to a change in the composition of the highest net wealth classes in favour of households with lower participation in debt.



FIGURE 7: Composition of households with non-mortgage loans: Any loan vs new loans: HFCS 2013.

Note: The new mortgage loans correspond to loans granted in the period 2010-13.

Debt burden and vulnerabilities

In this section the HFCS data is used to analyse the degree of households' indebtedness and the burden of the debt service on income. With household level data it is possible to restrict the analysis to the indebted households and to identify the groups in which debt contributes more to a vulnerable financial situation. This analysis is important not only from the point of view of financial stability but also for the general macroeconomic analysis. Households with very high indebtedness levels and for whom debt service has a large weight on their income have a higher probability of defaulting and release fewer resources to be invested. Additionally, they are more likely to face liquidity constraints, which might lead to an excessive sensitivity of consumption to current income, hampering the efficient allocation of resources over time.

To evaluate the burden of debt on households' financial situation three indicators will be used: the debt service to income ratio, the debt to income ratio and the debt to assets ratio. The debt service ratio measures the ability of households to fulfil the short-term debt obligations, i.e., paying the loan instalments over a given period using only the income earned in that period.

	Debt-service income ratio	Debt-income ratio	Debt-asset ratio		
Median levels, for the indebted households (per cent)					
HFCS 2010	20.3	224.4	34.0		
	(0.5)	(8.7)	(1.5)		
HFCS 2013	16.8***	198.5**	37.8		
	(0.5)	(8.2)	(1.8)		
	Percentage of indebted hous	seholds with ratios higher	than:		
	40%	300%	75%		
HFCS 2010	17.3	39.6	17.9		
	(1.4)	(1.7)	(1.5)		
HFCS 2013	12.3***	36.4	22.2**		
	(1)	(1.3)	(1.3)		

TABLE 12. Debt burden: HFCS 2010 vs HFCS 2013.

Note: The values in parenthesis are the standard errors. ***, ** and * indicate that the test on the equality of the HFCS 2010 and HFCS 2013 statistics is rejected at 1 per cent, 5 per cent and 10 per cent, respectively.

The debt to income ratio measures the household ability to pay off the debt based on annual income. This indicator is analogous to the debt ratios to GDP or to disposable income usually calculated with macroeconomic data. Finally, the debt to assets ratio is an indicator of household's solvency, meaning the percentage of assets the household would have to liquidate in order to be able to repay the entire debt. As in Costa and Farinha (2012a), to identify most vulnerable households, three threshold levels will be used: 40 per cent for the debt service to income ratio, 300 per cent for the debt to income ratio and 75 per cent for the debt to assets ratio.

In 2013, for the group of indebted households, the median debt service to income ratio stood at 16.8 per cent and the share of households with this ratio exceeding 40 per cent was around 12 per cent (Table 12). The heterogeneity by type of household is however very high. While in the lowest income class about half of the households are above the 40 per cent threshold, in the highest income class only about 2 per cent of households are in this situation. Compared to 2010, both the debt service ratio and the percentage of households with this ratio very high declined, in spite of the income reduction. This development has largely been determined by the reduction in Euribor rates, which are linked to about 90 per cent of mortgage loans in Portugal. The improvement in the debt service to income ratio was common to all classes of households, with the exception of those with unemployed reference persons. In these households the median ratio remained at about 20 per cent and the percentage of households with a ratio above 40 per cent increased from 23 per cent to 30 per cent.

The median debt to income ratio was around 200 per cent in 2013, showing a slight decrease compared to 2010. Despite this positive development, more

than a third of the indebted households still have ratios above 300 per cent. The incidence of households with very high levels of debt as compared to income is particularly high for the lowest income and wealth classes, and, reflecting the age profile of the main residence mortgages, for households with younger reference persons. In the two lowest age groups, about 50 per cent of the households have a ratio greater than 300 per cent.

In 2013, the median debt to assets ratio stood at around 38 per cent and was higher than 75 per cent for one fifth of the indebted households. In the lower income class and in households with younger or unemployed reference persons this situation is common to almost 40 per cent of the households. The percentage of households with this ratio high showed an increase as compared to 2010. The unfavourable development in the assets values and, in particular, in real assets contributed to this trend.

The percentage of indebted households with the three ratios above the critical values remained between 2010 and 2013 at around 4 per cent. The highest incidence of households in this situation occurs in the lowest income class (16.2 per cent), in the lowest age group (9.6 per cent), when the reference person is unemployed (10.4 per cent), in households with one adult and children (12 per cent) and in households in the lowest net wealth class (17.1 per cent).

In the HFCS households are asked if they have had late or missed payments on loan instalments in the twelve months prior to the survey. In line with the conclusions reached for HFCS 2010 in Costa (2012), in households reporting default on debt payments, the existence of very high debt ratios (especially, debt service to income ratio higher than 40 per cent) or some negative shock to their financial situation is more frequent than in households not reporting default (Figure 8).

Credit demand and credit constraints

In the three years prior to 2013, about 14 per cent of Portuguese households have applied for credit and, of those who made these requests, about 13 per cent saw their applications refused (Table 13). In addition, about 6 per cent of the households gave up applying for credit because they anticipated the request would be refused. If we define a household to be credit constrained when at least one of the above situations occur, about 7 per cent of the Portuguese households were credit constrained in 2013.

The incidence of credit constraints reaches maximum values (of about 13 per cent) for households with lower levels of net wealth, as well as when the reference person is younger or unemployed. Among the indebted households, credit constraints are more frequent for households with very high debt ratios or debt service to income ratios. Compared to 2010, although there was a slight increase in the percentage of households that anticipated refusals of



FIGURE 8: Negative shocks and debt burden among households with and without defaults: HFCS 2013.

Notes: The bars for households with default (no default) represent the percentage of households, who had been subject to a negative shock or with high debt burdens, on the total number of households with (without) late or missed payments on loans in the 12 months prior to the interview. The negative shocks are the following: income in the previous year below normal; last 12 months regular expenses above normal; deterioration of the situation at work (for example, job loss or reduction in income) in the three years prior to the survey, for any household member working at some point in time during this period.

	Applications for credit	Refusals	Perceived credit constraints	Credit constraints
	(% of total	(% of househols that	(% of total	(% of total
	households)	applied)	households)	households)
HFCS 2010	23.4	14.2	4.1	6.0
	(0.9)	(1.6)	(0.5)	(0.6)
HFCS 2013	14.4***	13.3	5.7**	7.1
	(0.7)	(1.7)	(0.5)	(0.5)

TABLE 13. Applications for credit and credit constraints: HFCS 2010 vs HFCS 2013.

Note: The values in parenthesis are the standard errors. ***, ** and * indicate that the test on the equality of the HFCS 2010 and HFCS 2013 statistics is rejected at 1 per cent, 5 per cent and 10 per cent, respectively.

their loan applications, credit constraints have not increased significantly. The main change in this period has been a reduction in the percentage of



FIGURE 9: Households that applied for credit and shocks on income or expenses: HFCS 2010 vs HFCS 2013.

Note: The Yes (No) bars represent the percentage of households that applied for credit in the last three years among the total number of households that had (did not have) income below normal in the previous year or regular expenses higher than normal in the last 12 months.

households applying for credit. This decrease compared to 2010 was also observed when one considers not only the households who have applied, but also those that gave up applying due to perceived credit constraints. This data suggests demand for credit had an important role in explaining the reduction in the amount of credit granted. The decrease in demand was widespread in almost all household types, but was more pronounced in households with higher levels of income and wealth, as well as in households whose reference person is younger, has a higher level of education or is working. Among the households with income below normal or expenses above normal, the incidence of loan applications is higher than for the remaining households. This suggests that, despite the high uncertainty prevailing and the increase in precautionary savings, households have continued during this period to seek to smooth consumption using credit (Figure 9).

Conclusions

The results of the second wave of HFCS confirm the patterns of the distributions of wealth, income and consumption by household types identified with the first wave data. Net wealth is higher for households that also have higher levels of income and when the reference person is in the age class before retirement, has a higher education level or is a self-employed. Real estate has a dominant weight in the wealth of most households. About 75 per cent of Portuguese households own their main residence and about 30 per cent are owners of other real estate properties. Deposits are the most important financial asset for all household types, representing more than 65 per cent of total financial wealth. Participation in more risky financial assets is far more heterogeneous, increasing much more sharply with income and net wealth, than participation in deposits. Financial wealth is more unevenly distributed than real wealth. Debt also has a very skewed distribution, reflecting the fact that around 55 per cent of households in Portugal have no debt. The most frequent type of debt are mortgages on the main residence and the second type loans not using real estate properties as collateral (respectively, about 30 and 17 per cent of households have these types of debt). The share of nonmortgage loans on total debt is higher for households with lower income levels, than for in the one with higher incomes.

In the second quarter of 2013, the mean net wealth of households was around 160 thousand euros, while the median stood at less than half of this amount. Compared to 2010, the median net wealth declined slightly in real terms. The change in the mean net wealth was not significant. In fact the decrease in non-financial wealth seems to has been offset by a reduction in the mean levels of debt, while financial wealth remained broadly constant. The decline in real wealth was to a large extent determined by a decrease in the value of the main residence, which was broadly based across the different household types. The reduction in the amount of debt held by households seems to have been largely the result of the normal process of loans amortizations, in a context where the new loans granted declined. The HFCS data suggests the reduction in demand for credit by households has had an important role in explaining the decline in the loans granted during the period 2010-13.

The percentage of total net wealth held by the households in the bottom of the net wealth distribution in 2013 was slightly smaller, than the percentage of net wealth held by the same type of households in 2010. This change was to a large extent driven by a decline in the real wealth of the households in the lowest net wealth classes in 2013 as compared to the ones that were in the same classes in 2010. In addition, households in the upper net wealth classes in 2013 held less debt than households that were in these groups in 2010. The HFCS data suggests that in the period between 2010 and 2013, the percentage of households with new loans was less concentrated than in the past in households with a more fragile financial situation. In these conditions, the decline in the debt concentration on the wealthiest households might have resulted from a change in the composition of households that are in the top wealth classes in favour of households with lower debt levels or from the fact that households with a better financial situation have made higher total loan repayments than the remaining ones.

In the period 2010-13, the debt service to income ratio declined for most household types. Given the decline in income, the favourable evolution of the debt-service ratio is to a large extent explained by the decline in the Euribor interest rates. The levels of debt compared to income remained however very high for more than a third of the indebted households. In addition, the percentage of households with very high debt levels relative to the value of assets increased, reflecting the reduction in the value of real wealth. Households with lower levels of income or net wealth, composed by an adult and children, as well as those whose reference person is younger or unemployed are the ones for which debt has a higher burden on the financial situation.

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Appendix A: Methodological issues

This appendix presents the main methodological aspects of HFCS and some indicators on the sample and the response rate. A special focus is given to the changes introduced in second wave which impacted the questionnaire, the sample design and the weighting. The methodological features of HFCS are described in more detail in Costa and Farinha (2012b). In addition, a comparison of the methodology of Portuguese HFCS with the other surveys participating in this project can be found in HFCN (2013a) e HFCN (2016a) for the first and second waves, respectively.

A.1. Questionnaire

Table A.1 includes the reference units and reference periods for the nine main sections of the questionnaire. The fieldwork period for the first and the second wave took place during the second quarters of 2010 and 2013, which means these are the reference periods for assets and liabilities.¹¹ The references periods for income are 2009 in the HFCS 2010 and 2012 in the HFCS 2013.

In order to maintain comparability of data, only minor changes were introduced in the second wave questionnaire. The main changes consisted in the introduction of some new questions. In case of loans renegotiations, households are now asked about the reasons for such renegotiations and on whether these were associated with difficulties in paying the loan instalments. In addition, non-mortgage loans were broken down into loans from relatives or friends and other loans. For the latter, the date at which the loan was taken is now collected, similarly to what already occurred with mortgage loans. In case of late or missed payments on loan instalments, households are now asked about the type of loan in which these situations have occurred. In the case of businesses, the year the household began to participate and the volume of sales in the previous year (i.e. in 2012) are now collected. Regarding financial assets, households began to be asked about the ownership of deposits in a currency other than the euro and on the existence of some financial assets deposited abroad. In addition, money owed to the household was broken down into loans made to businesses owned by the household and into other receivables. In the labour market section, individuals who are not working at the time of the interview but have worked previously, are now questioned about the year they stopped being employed and about the job they had for most of their active life. Finally, for vehicles some questions were introduced about its purchase in the past 12 months.

^{11.} Strictly speaking a small percentage of interviews in the HFCS 2013 were made in early July 2013.

Reference unit	Reference period
Individual	Time of the interview
Household	Time of the interview
Household	Time of the interview
Household	Time of the interview
Individual (age >=16)	Time of the interview
Individual (age >=16)	Time of the interview
Individual (age >=16) and Household	Last calendar year
Household	-
Household	Typical month
	Reference unit Individual Household Household Individual (age >=16) Individual (age >=16) Individual (age >=16) Mousehold Household Household

TABLE A.1. HFCS Questionnaire.

A.2. Sample design

The sample design of HFCS aims to obtain representative data of households living in Portugal and of the wealth held by these households. Since much of the wealth, and in particular the financial wealth, is concentrated in a relatively small number of households, a part of the HFCS sample is designed with the objective of picking up wealthy households. The HFCS gross sample is composed by 8000 private dwellings used as main residences: 4000 selected in order to be representative of the population in Portugal (with the geographical criteria usually used in the household surveys conducted by Statistics Portugal), and 4000 selected in order to oversample the wealthy. As compared to the first wave, some changes were introduced in the sample design due to a change in the sampling frame used by Statistics Portugal in the household surveys. In the first wave, the sampling frame consisted of a sample extracted from the 2001 Census (Master Sample) and the sub sample of the wealthy consisted in dwellings from the metropolitan areas of Lisbon and Oporto, regions where the available evidence pointed to a higher probability of finding wealthy households. For the HFCS 2013, the sampling frame changed to the National Dwellings Register, in line with what happened with other household surveys conducted by Statistics Portugal. As compared to the Master Sample, this new sampling frame has the advantage of including all the private dwellings used as main residences in Portugal and of including more updated information, since it was built from the Census 2011 data. In addition, the National Dwellings Register includes information about the size of the dwellings, which, according to the data of HFCS 2010, is more correlated with household wealth than the geographical location. Taking this into account, in the HFCS 2013, the sub sample of the wealthy consisted in dwellings bigger than certain limits in square meters set by region based on HFCS 2010 data.

A.3. Data processing

After collection, the data were extensively analysed. Whenever possible the errors and inconsistencies detected were corrected. Additionally, the answers considered implausible were dropped. Since non-response to survey questions (item non-response) are in many cases related to the characteristics of the households, the existence of missing data may bias the conclusions draw with the data. Thus, after the data editing, the missing answers for the main variables (which are mainly due to answers of "Don't know" or "No answer" by the households) were imputed through a multiple stochastic imputation model. The imputation originates five imputed values (replicates) for every missing value, taking into account the uncertainty associated with the imputation process. Finally, the data were anonymised in order to ensure that households or individuals participating in the survey cannot be identified based on the answers given.

A.4. Weighting

Because the HFCS sample is not a simple random sample (i.e., the probability of selection differs among elements of the population), to calculate population statistics it is necessary to use weights that represent the number of households in the population that are similar to each household in the sample. As described in Costa and Farinha (2012b), the HFCS weights besides reflecting the likelihood of each household being selected for the gross sample, are corrected for the unit non-response (i.e., by the fact that not all selected households have participated in the survey), and calibrated to align the distributions of some variables in the sample with their distributions in the population. In HFCS 2013, the variables used in the calibration model were the sex and age group, the size of the households, the number of households by region and the outstanding amount of mortgage loans by region. This calibration method differs from the one used in the first wave because it now includes the outstanding amount of households mortgage debt and more age classes.

In order to minimize the impact of the above methodological changes in the comparability of data between the two waves, the HFCS 2010 weights and their replicates were recalculated. In this revision the more updated estimations for the population in 2010, which became available after the release of Census 2011, were used. Additionally, the calibration model was changed to be in line with the one used in the second wave. The HFCS 2010 data presented in this article incorporate this revision of weights, differing so slightly from the data previously disclosed.

	HFCS 2010	HFCS 2013	Change (% or p.p.)
Response behav	iour		
(In number of sample units)			
Gross sample	8000	8000	0
Net sample	4404	6207	41
Non-response			
Non-contacted	1343	565	-44
Refusals	711	371	-71
Other reasons for non-response	375	154	-66
Not eligible	1122	675	-41
Unknown eligibility	45	28	-38
(In percentage)			
Response rate (net sample/eligible)	64	85	21
Refusal rate (refusals/eligible)	10	5	-5
Cooperation rate (net sample/contacted)	80	92	12
Contact rate (contacted/eligible)	80	92	12
Elibility rate (eligible/gross sample)	86	92	6
Oversampling			
% of HH in the net sample with net-wealth higher than:			

-	-		
p90 of net-wealth in the population	10.9	15.6	-
p95 of net-wealth in the population	5.7	7.4	-
p99 of net-wealth in the population	1.2	2.0	-

TABLE A.2. Sample outcome statistics.

Notes: In the eligible households are included a share of the sample units for which eligibility is unknown. The contacted sample units include the households in the net sample as well as the sample units that were contacted but have not participated in the survey because of refusals and other reasons for non-response. The other reasons for non-response include for instance cases of non-response due to illness or incapacities.

A.5. Indicators on the sample and response rate

The final database of the second wave includes 6207 households, compared with 4404 households in the first wave (Table A.2). The update of the sampling frame has contributed to this very significant increase in the net sample. In fact, there was a significant decline in the number dwellings that were not eligible (namely, because of not being main residences).

In addition to the increases in the eligibility rate, there was also a very sharp increase in response rate. This was mainly the result of a reduction in the number of households non-contacted (because of being absent) and in the number of households who refused to participate in the survey. The response rate increased from 64 per cent in the first wave, to 85 per cent in the second wave, standing in both waves at very high levels, as compared with those of other countries participating in this project.

Another aspect that is important to evaluate is the degree of oversampling of the wealthy households. In the second wave, the percentage of households in the net sample with net wealth higher than the percentiles 90th and 99th of the net wealth in the population, stood respectively at 15.6 per cent and 2.0 percent (10.9 per cent and 1.2 per cent in the first wave). The improvement in these indicators suggests a greater efficiency of the new oversampling methodology. These values remain, however, well below those obtained in surveys of countries where administrative data on income or wealth of individuals is used to oversample the wealthy households (HFCN (2016a)).

Appendix B: Definitions of variables

B.1. Assets, debts, income and consumption

Net wealth is the difference between the gross wealth (value of all real and financial assets) and the value of total debt at the time of interview.

Real wealth (or non-financial wealth) includes the main residence, the other real estate properties, the motor vehicles, the self-employment businesses and other valuable assets that the household owns.¹² The category of other valuable assets consist of, for example, jewellery, antiques and works of art. Self-employment businesses correspond to the 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 wealth includes sight deposits, saving deposits, financial tradable assets, voluntary pension plans and other financial assets. Similar to what happens in the Financial accounts, Savings Certificates and Treasury Certificates are included in saving deposits. Tradable assets include mutual funds, debt securities and quoted shares. The value of the voluntary pension plans correspond to the accumulated investment (by the household members' initiative) in financial products that provide income later in life (e.g., pension funds that are not associated with the professional activity, retirement savings plans or insurances ensuring a pension). Other financial assets include: the value of participations in unquoted businesses, in which any household member participates only as an investor; money owed to the household as

^{12.} This definition of real assets differs from the definition in the National Accounts, namely because it includes vehicles and businesses.

private loans (for example, loans to friends, relatives or to self-employment businesses); managed investment accounts; and any other financial asset that was not yet accounted for in the preceding items (e.g., financial derivatives or patents).

Debt corresponds to the outstanding amount of loans having real estate properties as collateral (mortgages on the main residence or on other real estate properties), the outstanding amount of other loans and the outstanding amounts of bank overdrafts, credit lines or credit cards debts.

Household income is the sum of all gross income of the household members (i.e., it corresponds to the income before the payments of taxes and mandatory retirement contributions by the workers). The income sources are: employee income; self-employment income; public pensions (old age, retirement, survivors or disability pensions); private pensions (from occupational plans or voluntary pension plans); unemployment benefits; other regular transfers from the public sector (for example, family allowances, scholarships or other welfare payments); regular private transfers (e.g. alimony, scholarships or other grants); income from real estate properties; income from financial investments (for example, interest and dividends); income from unquoted businesses (excluding self-employment income); and also from other sources (e.g. capital gains or losses from the sale of assets or severance payments). In Figure 3 pensions includes public and private pensions and other transfers include unemployment benefits, other regular benefits from the public sector and regular private transfers.

Consumption corresponds to regular household expenditure on nondurable goods and services. In the HFCS, this amount is collected in aggregate terms, as well as disaggregated in the following items: food at home; food outside home; utilities and other regular expenses in non-durable goods and services. The data is collected in monthly values for the typical month. For this article, the figures collected were multiplied by twelve in order to reflect annual values.

B.2. Demographic and socioeconomic characteristics of households

The households' characteristics considered are the age, work status and education level of the reference person, the net wealth and income of the household, and the household size. Aside from income, which refers to 2012, the other variables refer to the time of the interview (i.e., the period from March to July of 2013).

The reference person is selected according to Canberra definition. In this definition the following sequential criteria are applied until a single household member is chosen: 1) a member of a couple with dependent children; 2) a member of a couple without dependent children; 3) a lone parent with dependent children; 4) the person with the highest income; and 5) the eldest person.

The age classes correspond to: less than 35 years old; between 35 and 44; between 45 and 54; between 55 and 64; between 65 and 74; and 75 years old or more.

The work status distinguishes employees, self-employed, unemployed, retired and other situations of inactivity, which include, for example, students, permanently disabled and individuals doing unpaid domestic tasks.

The education levels considered are: below secondary, secondary and tertiary. In terms of the scale of International Standard Classification of Education from 1997 (ISCED-97), these levels correspond, respectively, to: below or equal to ISCED2; ISCED3 and ISCED4; and ISCED5 and ISCED6.

Income and net wealth classes are defined according to the percentiles of these variables in the population, i.e., in the weighted sample. The following classes are considered: less or equal to the 20th percentile; between the 20th and the 40th percentiles; between the 40th and the 60th percentiles; between the 60th and the 80th percentiles; between the 80th and the 90th percentiles; and higher than the 90th percentile A percentiles is a unit that divide the sample ordered by ascending order of data in 100 equal parts. Thus, for example, a net wealth of 71 thousand euros for the 50th percentile, means that 50 per cent of households have net wealth lower than that amount.