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THE HOUSEHOLD SAVING RATE IN SPAIN BETWEEN
2007 AND 2016: DECOMPOSITION BY POPULATION
GROUP AND POSSIBLE DETERMINANTS

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ABSTRACT

The article quantifies the contributions made by different household groups to the change in the aggregate household saving rate in Spain between 2007 and 2016. Against the backdrop of the last crisis – heightened uncertainty and significant labour market deterioration – the findings show that certain household groups reduced their expenditure over the course of the downturn and then increased it again at the start of the recovery phase. Both these patterns are consistent with the hypothesis of precautionary saving. In particular, between 2007 and 2013, university-educated households and households with lower secondary education at most made a similar contribution to the increase in the saving rate, although the group with the lowest level of education, who are usually poorer, made a relatively higher contribution to the fall in the saving rate in 2013 to 2016. By year of birth, the group aged under 45 in 2007 made the largest contribution to the increase in the saving rate during the downturn. When households are grouped by the tenure status of their main residence, it was observed that homeowners with housing debt outstanding made a particularly high contribution to the increase in the saving rate in 2007 to 2013.

Keywords: aggregate saving, distribution by household type, precautionary saving.

JEL classification: D12, D14, E21.

THE HOUSEHOLD SAVING RATE IN SPAIN BETWEEN 2007 AND 2016: DECOMPOSITION BY POPULATION GROUP AND POSSIBLE DETERMINANTS

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Introduction

The household saving rate in Spain has changed significantly since the financial crisis. In 2018 it was around 5.9% of disposable income, one of the lowest rates in the euro area.¹ This is the result of changes both in the expenditure and the income of different population groups. The article presents an estimate, for the period 2007 to 2016, of the saving rates of households with different education levels, years of birth and tenure status of main residence. It also quantifies the contributions of the different population groups to the change in the aggregate saving rate.

The main findings may be summarised as follows:

- The groups with the highest and the lowest educational attainment level made a similar contribution to the increase in the saving rate in 2007-2013 (48% and 41%, respectively), but the group with the lowest level of education – the poorest households – made a relatively higher contribution to the fall in the aggregate saving rate in 2013-2016 (up to 70%).
- In addition, the contribution of the generations aged under 45 in 2007 (80%) was particularly pronounced. These generations also accounted for a significant share of the decline in saving between 2013 and 2016 (20%).
- By tenure status of the main residence, homeowners with housing debt outstanding explain much of the increase in the saving rate in 2007-2013 (68%) and part of the subsequent fall (35%).

These statistical decompositions, presented in the next two sections of the article, show how households distributed their saving over the business cycle, although they do not identify the economic factors underpinning the change in expenditure. To cast light on this, in the last section of the article precautionary saving is presented as a possible way to explain the change in expenditure in Spain. According to this

¹ The recent revision of the National Accounts shows an increase in the saving rate in early 2019.

hypothesis, households facing greater uncertainty postpone certain items of expenditure, to reconsider them, at least in part, when household income risk diminishes.

The household saving rate by population group

The household saving rate in Spain rose from 5.6 percentage points (pp) of disposable income in 2007 to 11.3 pp in 2009. It remained around 10% in 2010-2011 and then started to decline in 2011, down to around 5.9% in 2018 (see Eurostat (2019)). This is the result of changes in the expenditure and the income of different population groups that responded differently both to the downturn and the subsequent upturn.² It is, therefore, appropriate to calculate the contributions made by different population groups to the change in the aggregate saving rate, combining the information on household income drawn from both the Spanish Survey of Household Finances (EFF by its Spanish acronym) and the Survey on Income and Living Conditions (ECV by its Spanish acronym) with the expenditure measures included in the Household Budget Survey (EPF by its Spanish acronym).

This section analyses the change in gross income and total expenditure between 2007 and 2016 in groups defined by their educational attainment level, their age or year of birth and the tenure status of their main residence. By focusing on characteristics that are relatively stable over time, it is possible to analyse the changes in income and expenditure across the business cycle of essentially the same type of households. In addition, level of education, year of birth and tenure status are comparable across the three surveys used: the EPF (2007, 2013 and 2016 waves), the EFF (2008 and 2014 waves) and the ECV (2014-2017 waves).³

Between 2007 and 2013 all household groups, irrespective of educational attainment level, reduced their average expenditure by around 30 pp (see Table 1). In absolute terms, this fall exceeds the drop of 20 pp observed in gross average income. Conversely, during the subsequent upturn (2013-2016), expenditure rose by more than 5% for all education levels, while average income rose by less than 4%. Therefore, if the average expenditure of each group is compared with their

2 Arce, Prades and Urtasun (2013) and Martínez-Matute and Urtasun (2017) show that the change in expenditure by income group, education level and housing tenure status has varied across different population groups. Compared with these studies, this analytical article also examines the change in income by population group, combining several surveys which permits analysis of changes in saving.

3 Other variables, such as household income, are less comparable across surveys. Owing to the different purpose of each survey, the EPF uses a limited number of questions to determine income, whereas the EFF obtains much more disaggregated income data in response to numerous survey questions. In consequence, the income measures obtained are not strictly comparable.

Table 1

EXPENDITURE AND INCOME GROWTH, 2007 TO 2016

	2007-2013		2013-2016	
	Cumulative change in expenditure (%) (a)	Cumulative change in income (%) (b)	Cumulative change in expenditure (%) (a)	Cumulative change in income (%) (c)
	(1)	(2)	(3)	(4)
Educational attainment of reference person				
Lower secondary education at most	-30.1	-21.0	6.6	1.5
Upper secondary education	-32.1	-21.9	7.2	3.1
University education	-28.0	-16.1	5.6	3.8
Year of birth of reference person				
1973-1989 (aged 18-34 in 2007)	-31.1	-10.9	12.0	10.3
1963-1972 (aged 35-44 in 2007)	-28.9	-17.2	10.8	9.9
1953-1962 (aged 45-54 in 2007)	-30.8	-20.5	2.0	-0.1
1943-1952 (aged 55-64 in 2007)	-37.2	-27.0	-0.9	-4.7
1933-1942 (aged 65-74 in 2007)	-25.5	-13.8	-0.2	-5.0
Before 1932 (aged 75 or over in 2007)	-12.3	-5.8	0.7	-1.1
Main residence, tenure status				
Owned, no debt used to finance purchase	-23.7	-18.1	5.3	2.5
Owned, debt used to finance purchase	-32.7	-11.8	10.4	6.8
Rented	-28.3	-15.7	8.4	9.9

SOURCES: Banco de España and INE.

- a** Using data on average expenditure by education group from the EPF 2007 and 2013 and the 2013-2016 waves (column 3). Average expenditure excludes imputed rent on owner-occupied housing.
- b** EFF (2008-2014). Using the change in average income before tax of the group considered, corresponding to the year prior to the survey. Income excludes imputed rent on owner-occupied housing.
- c** ECV (2014-2017). Using the change in average income before tax of the group considered, corresponding to the year prior to the survey. Income excludes imputed rent on owner-occupied housing.

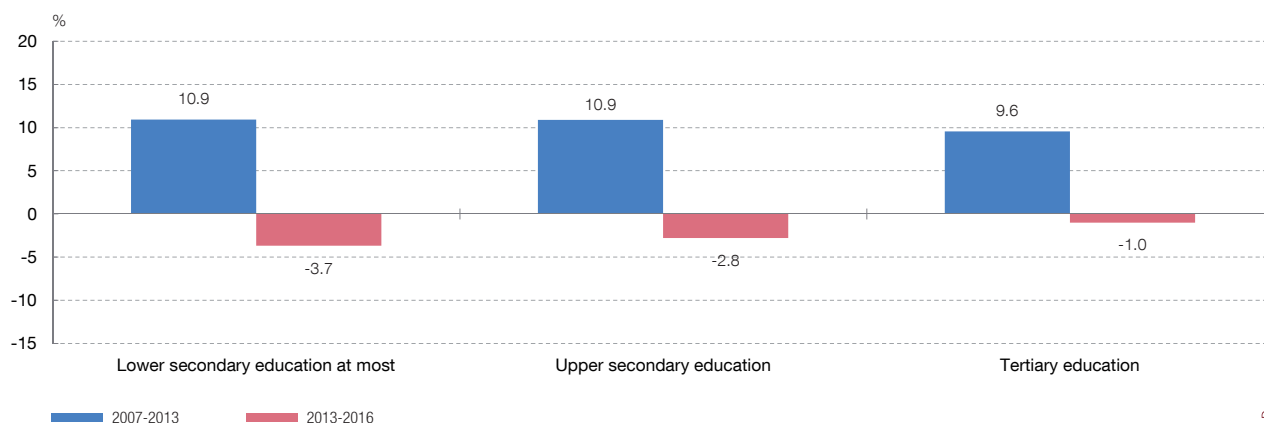
average income, differences are revealed in the scale of the adjustment during the downturn. In the group with lower secondary education or less, the share of income allocated to saving rose by 10.9 pp between 2007 and 2013, while in the group with the highest educational attainment level it rose by 9.6 pp (see Chart 1). In turn, during the upturn that began in 2014, the largest reduction in the saving rate (3.7 pp) was observed in the group with the lowest educational attainment level, compared with a reduction of 1 pp in the group with tertiary education (see Chart 1).⁴

4 There are discrepancies between the surveys that limit the comparisons. For instance, the scale of the fall in the expenditure-to-income ratio depends on the survey taken as reference, because average income by education group differs between the EFF 2014 and the ECV 2014. To mitigate these differences, the EPF and the EFF are used to calculate the change in the saving rate between 2008 and 2013, and the EPF and the ECV to calculate the change between 2013 and 2016. In other words, the same survey that is used to analyse each change in the saving rate is used to calculate aggregate income. Two different surveys are used for the period 2007-2013 because neither the EFF nor the ECV covers the complete period analysed. The EFF 2017 data (2016 income data) are not yet available, and the ECV 2008 income data are not strictly comparable with the 2013 data owing to a methodological change.

Chart 1

CHANGE IN SAVING-TO-INCOME RATIO OF EACH EDUCATION GROUP, 2007 TO 2016

The chart depicts the change in the saving rate between 2007 and 2013 (in blue) and between 2013 and 2016 (in red). Saving is defined as the annual difference between gross income and expenditure. The expenditure measure is obtained from the EPF and includes all expenditure except imputed rent on owner-occupied housing. The income measures are obtained from the EFF (2008 and 2014) and from the ECV (2014 and 2017). All education groups increased their saving rate between 2007 and 2013 and reduced it between 2013 and 2016. The sharpest fall observed in 2013-2016 was for the groups with the lowest educational attainment level.



SOURCE: Banco de España (EFF) and INE (EPF and ECV).



The breakdown of population by year of birth of the reference person (see Table 1) shows that, during the downturn, average expenditure fell by around 30% for all households whose reference person was under 65 at the start of the downturn, and by less than 25% for households whose reference person was 65 or over at that time. The scale of the fall in average income in 2007-2013 was in all cases smaller than the fall in expenditure, and was especially pronounced in the case of persons aged between 35 and 64 at the start of the downturn.⁵ By contrast, during the subsequent upturn, all the groups considered reduced the share of their income allocated to saving (see Chart 2).

Lastly, the breakdown of households by housing tenure status shows that both the decline in expenditure and its subsequent recovery were especially pronounced among homeowners with housing debt outstanding (see Table 1 and Chart 3). The greater sensitivity of consumption of households with mortgages to changes in income is generally associated with the existence of fixed mortgage repayments which mean that in the event of any fall in income, the adjustment in household expenditure is concentrated on other goods.⁶

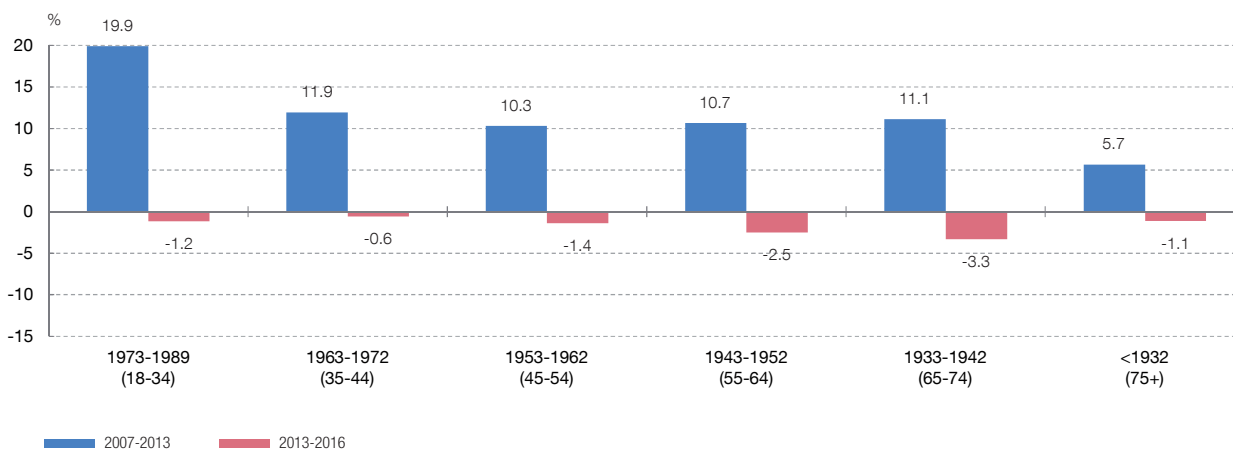
5 Anghel et al. (2018) document widespread declines in income per capita during the downturn, most especially in the low income groups, with a growing presence of young households. By contrast, Table 1 follows the same cohort over time, thus capturing wage growth over the life cycle.

6 See Chetty and Szeidl (2007).

Chart 2

CHANGE IN SAVING-TO-INCOME RATIO OF EACH AGE GROUP BY YEAR OF BIRTH, 2007 TO 2016

The chart depicts the change in the saving rate between 2007 and 2013 (in blue) and between 2013 and 2016 (in red). The figures in brackets denote age in 2007. Saving is defined as the annual difference between gross income and total expenditure. The expenditure measure is obtained from the EPF and includes all expenditure except imputed rent on owner-occupied housing. The income measures are obtained from the EFF (2008 and 2014) and from the ECV (2014 and 2017). All the groups considered increased their saving rate between 2007 and 2013 and reduced it between 2013 and 2016, with the sharpest fall for the groups aged 55-64 and 65-74 in 2007.



SOURCES: Banco de España (EFF) and INE (EPF and ECV).



To sum up, almost all groups increased their saving rate during the downturn and reduced it in the subsequent upturn. This suggests that the household groups analysed postponed their spending. The next section of this article quantifies each group's contribution to the change in the aggregate household saving rate, which requires that their share of total income be taken into account.⁷

Expenditure and income by subgroup and their contribution to the change in the aggregate household saving rate

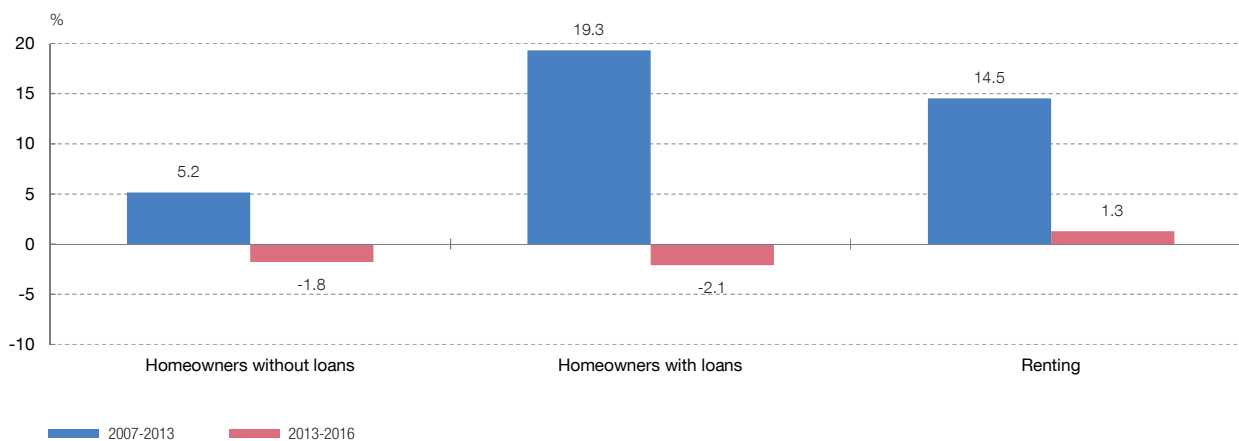
The aggregate household saving rate may be obtained by adding together the saving rates of the different population groups, weighted by their share of total income. Accordingly, the aggregate saving rate may rise if one specific population group increases the share of income it allocates to saving, and the larger the share of total income of this population group, the greater the impact. However, the aggregate household saving rate may also rise if the share of total income of population groups

⁷ For a detailed description of the method described, see Barceló and Villanueva (2019). In general, decompositions of changes in aggregate scales as a function of the dynamics of individual scales can be found in Blundell et al. (2003) or in De Loecker and Eeckhout (2017).

Chart 3

CHANGE IN SAVING-TO-INCOME RATIO BY TENURE STATUS OF MAIN RESIDENCE, 2007 TO 2016

The chart depicts the change in the saving rate between 2007 and 2013 (in blue) and between 2013 and 2016 (in red). Saving is defined as the annual difference between gross income and total expenditure. The expenditure measure is obtained from the EPF and includes all expenditure except imputed rent on owner-occupied housing. The income measures for 2007-2013 are obtained from the EFF (2008 and 2014) and from the ECV (2014 and 2016). All the groups considered increased their saving rate between 2007 and 2013. Between 2013 and 2016, the groups of homeowners with and without outstanding loans reduced their saving rate, while the renting households group increased it. Both the increase and the decline were most pronounced for homeowners with home loans.



SOURCES: Banco de España (EFF) and INE (EPF and ECV).



with high saving-to-income ratios increases.⁸ This second factor is a composition effect that may drive up the saving rate even if there is no change in the proportion of income that households allocate to saving. Below, the change in the aggregate household saving rate is decomposed into two effects, one associated with the change in each group's saving rate and the other with the composition effect.

The first row of Table 2 shows the changes in the saving rate resulting from aggregating the behaviour of the groups with different educational attainment levels.

8 In particular, the change in the aggregate saving rate in 2007-2013 may be expressed as the sum of the contributions of a set of groups, identified by g :

$$\frac{S_{2013}}{Y_{2013}} - \frac{S_{2007}}{Y_{2007}} = \sum_{g=1}^N \left\{ \frac{c_{2007}^g}{y_{2007}^g} - \frac{c_{2013}^g}{y_{2013}^g} \right\} \pi_{2013}^g + \sum_{g=1}^N \frac{c_{2007}^g}{y_{2007}^g} \left\{ \pi_{2007}^g - \pi_{2013}^g \right\}$$

In the above mathematical expression, the terms S_t and Y_t denote, respectively, the scale of total saving and total income in year t , while c_t^g and y_t^g denote the aggregate saving and income in that year of each of groups g . Lastly, π_t^g denotes the aggregate income of group g as a proportion of total income. The first term of the mathematical expression measures each group's contribution to the saving rate (weighted by its share of income). The second term reflects the composition effect. The charts and tables show a slightly different decomposition. In particular, the first term is estimated as the change in each group's average expenditure to average income ratio between 2007 and 2013, rather than using aggregate ratios. This difference generates an additional term in the decomposition, which reflects the discrepancies between surveys as to the change in the number of households in each category.

Table 2

DECOMPOSITION OF AGGREGATE SAVING-TO-INCOME RATIO BY EDUCATIONAL ATTAINMENT LEVEL, 2007 TO 2016

	Change in aggregate saving rate, calculated from surveys					
	2007-2013 (a)	2013-2016 (b)				
Total	9.5	-2.0				
Change in saving rate by educational attainment level and contribution to change in aggregate rate (c)						
	Share of total income in 2013 (%)	Expenditure/income in 2007-2013	Contribution to change in saving rate in 2007-2013	Share of total income in 2016 (%)	Expenditure/income in 2013-2016	Contribution to change in saving rate in 2007-2013
	(1)	(2)	(3) = (2)*(1)	(4)	(5)	(6) = (4)*(5)
Lower secondary education at most	35.4	10.9	3.9	37.1	-3.7	-1.4
Upper secondary education	16.9	10.9	1.8	20.1	-2.8	-0.6
Tertiary education	47.7	9.6	4.6	42.8	-1.0	-0.4
Change in saving rate owing to expenditure/income ratio			10.3			-2.4

SOURCES: Banco de España (EFF) and INE (EPF and ECV).

- a** The change in the saving rate in 2007-2013 is calculated as the difference between the expenditure-to-income ratio in 2007 and the same ratio in 2013. The income data by education group are taken from the EFF. The year indicated is the year prior to the survey. The expenditure data by education group are taken from the EPF and exclude imputed rent on housing.
- b** The change in the saving rate in 2013-2016 is calculated as the difference between the expenditure-to-income ratio in 2013 and the same ratio in 2016. The income data are taken from the ECV and the year indicated is the year prior to the survey.
- c** The panel shows the components of the first term in the decomposition described in footnote 8. The difference between the sum of the change in the saving rate of each group and the change in the aggregate saving rate is due to the composition effects and to an adjustment for discrepancies between surveys as to the change in the share of different population groups.

Thus calculated, the saving rate rose by around 9.5 pp between 2007 and 2013, and then fell by 2 pp between 2013 and 2016. These figures do not coincide with the National Accounts figures, which after the recent revision suggest that the saving rate rose by just 2.5 pp between 2007 and 2013, followed by a fall of slightly less than 1 pp between 2013 and 2016. But the figures are not strictly comparable; for example, not all the surveys used measure the flow of services that a main residence generates for its owners, nor do they all include questions on the income before tax measure that is used here. Nevertheless, the qualitative profile of the increase in the saving rate in 2007-2013 and its subsequent fall in 2013-2016 is similar to that of the aggregate household saving rate (see the Banco de España's *Annual Report 2018*).⁹

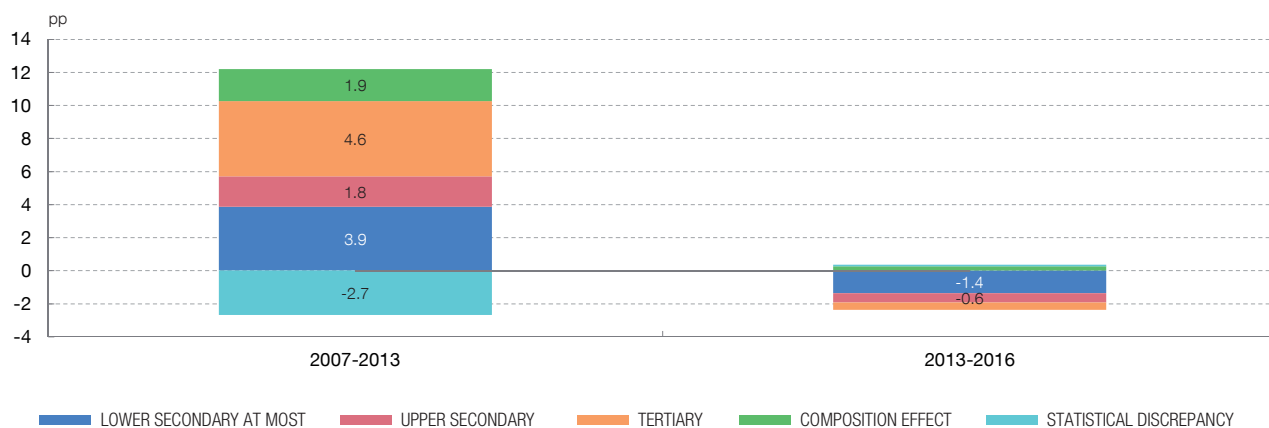
The second column of Table 2 presents the change in the household saving rate in 2007-2013 for each education group; this is the same figure as shown in Chart 1. In

⁹ According to Eurostat (2019), the gross saving rate in Spain rose by 2.3 pp between 2007 and 2013 (from 5.59 pp in 2007 to 7.91 pp in 2013) and then fell by 0.85 pp between 2013 and 2016. There are two sources of conceptual discrepancy between the expenditure-to-income measure used in this article and in the National Accounts. First, the article uses income before tax, whereas in the National Accounts the saving rate is defined on the basis of disposable income. Second, the article does not consider the flow of services that a main residence generates for its owners, which in the National Accounts is counted as income and expenditure.

Chart 4

DISTRIBUTION OF CHANGE IN SAVING-TO-INCOME RATIO BY EDUCATION GROUP

The chart presents a decomposition of the change, between 2007 and 2016, in the aggregate saving-to-income ratio (calculated from surveys) according to the contribution of each education group. This contribution is calculated by multiplying the increase shown in Chart 1 by each group's share of aggregate income (see footnote 8 in the main text). Between 2007 and 2013, the group with tertiary education contributed 4.6 pp of the 9.5 pp increase (similar to the 3.9 pp contribution of the group with the lowest educational attainment level). Between 2013 and 2016, the group with the lowest education level contributed 1.4 pp of the 2 pp fall. The positive composition effect during the downturn reflects the larger share of the income distribution of the university-educated group (which allocates a low portion of its income to spending).



SOURCES: Banco de España (EFF) and INE (EPF and ECV).



the third column of Table 2 it is weighted by each group's share of total income. The group with tertiary education contributed the most to the rise in the aggregate saving rate, even though, as Chart 1 shows, its saving rate was not the one that rose the most in the period. However, university-educated households, given their high share of total income (47.7% in 2013), contributed around 48% of the increase in the aggregate saving rate in the downturn and around 20% of the fall in the subsequent upturn. In turn, the group with the lowest education level made a slightly smaller contribution to the increase in the saving rate in the downturn (around 41%), while its contribution to the fall in the subsequent upturn was around 70% (see Charts 1 and 4).

The breakdown by year of birth of the main breadwinner shows that households whose head of household was aged under 45 in 2007 contributed 7.6 pp of the 9.5 pp increase in the saving rate (80%) in 2007-2013. The contributions to the subsequent decline were more evenly split (see Table 3 and Chart 5). Both the young households group and the group with the lowest education level were more exposed to the risk of job loss during the downturn, which could explain the reduction in their spending.

Lastly, a breakdown of households by the tenure status of the main residence shows that spending decisions of homeowners with housing debt outstanding explain much

Table 3

DECOMPOSITION OF AGGREGATE SAVING-TO-INCOME RATIO BY YEAR OF BIRTH, 2007 TO 2016

	Change in aggregate saving rate, calculated from surveys	
	2007-2013 (a)	2013-2016 (b)
Total	9.5	-2.0

	Change in saving rate by year of birth and contribution to change in aggregate rate (c)					
	Share of total income in 2013 (%)	Expenditure/income in 2007-2013	Contribution to change in saving rate in 2007-2013	Share of total income in 2016 (%)	Expenditure/income in 2013-2016	Contribution to change in saving rate in 2013-2016
	(1)	(2)	(3) = (2)*(1)	(4)	(5)	(6) = (4)*(5)
Born in 1973-1989 (aged 18-34 in 2007)	23.7	19.9	4.7	26.2	-1.2	-0.3
Born in 1963-1972 (aged 35-44 in 2007)	24.0	11.9	2.9	25.0	-0.6	-0.1
Born in 1953-1962 (aged 45-54 in 2007)	22.4	10.3	2.3	22.2	-1.4	-0.3
Born in 1943-1952 (aged 55-64 in 2007)	17.7	10.7	1.9	15.3	-2.5	-0.4
Born in 1933-1942 (aged 65-74 in 2007)	9.2	11.1	1.0	8.1	-3.3	-0.3
Born before 1932 (aged 75 or over in 2007)	3.1	5.7	0.2	3.2	-1.1	0.0
Change in saving rate owing to expenditure/income ratio			13.0			-1.4

SOURCES: Banco de España (EFF) and INE (EPF and ECV).

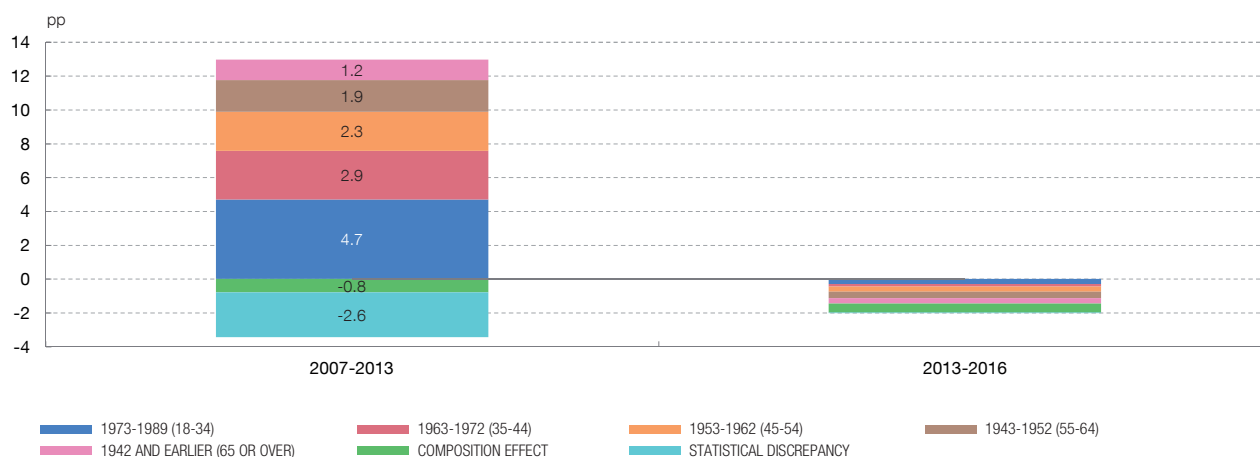
- a** The change in the saving rate in 2007-2013 is calculated as the difference between the expenditure-to-income ratio in 2007 and the same ratio in 2013. The income data by year of birth are taken from the EPF. The year indicated is the year prior to the survey. The expenditure data by year of birth are taken from the EPF and exclude imputed rent on housing.
- b** The change in the saving rate in 2013-2016 is calculated as the difference between the expenditure-to-income ratio in 2013 and the same ratio in 2016. The income data are taken from the ECV and the year indicated is the year prior to the survey.
- c** The panel shows the components of the first term in the decomposition described in footnote 8. The difference between the sum of the change in the saving rate of each group and the change in the aggregate saving rate is due to the composition effects and to an adjustment for discrepancies between surveys as to the change in the share of different population groups.

of the increase in the saving rate during the downturn (6.5 pp of the 9.5 pp increase), and that they also contributed to the drop in the saving rate in the subsequent upturn (0.7 pp of the 2 pp decline). By contrast, renting households made a positive contribution to the saving rate across the cycle, although they account for a relatively small proportion of the income distribution (around 15% in 2013) (see Chart 6). The high contribution of indebted homeowners to the change in the aggregate saving rate may be due to the series of fixed costs they bear associated with their mortgage repayments. Thus, considering that a fall in future income might prevent them from meeting these payments, these households, by way of precaution, would have made proportionally larger expenditure adjustments compared with all other households. The next section analyses precautionary saving in the Spanish economy.

Chart 5

DISTRIBUTION OF CHANGE IN SAVING-TO-INCOME RATIO BY GENERATION (BY YEAR OF BIRTH)

The chart presents a decomposition of the change, between 2007 and 2016, in the aggregate saving-to-income ratio (calculated from surveys) according to the contribution of each generation. The figures in brackets denote age in 2007. The contribution is calculated by multiplying the change shown in Chart 2 by each group's share of aggregate income (see footnote 8 in the main text). Between 2007 and 2013, the group aged 18-34 in 2007 contributed 4.7 pp and the group aged 35-44 contributed 2.9 pp of the 9.5 pp increase. Between 2013 and 2016, the group aged 55-64 in 2007 contributed 0.4 pp of the 2 pp fall. The negative composition effect is due to the increase in the share of income of those born after 1962, who have high expenditure-to-income ratios.



SOURCES: Banco de España (EFF) and INE (EPF and ECV).



Explanations for the change in the saving rate between 2007 and 2016

The analysis in the previous section indicates that, with certain exceptions, most household groups considered contributed both to the increase in the saving rate between 2007 and 2013 and to its subsequent fall between 2013 and 2016. It also shows that some of the groups that made the most marked contribution to the increase in the saving rate during the downturn also made a substantial contribution to its decline from 2013. This is the case of the groups with the lowest educational attainment level, households whose reference person was born before 1963 or homeowners with a mortgage.

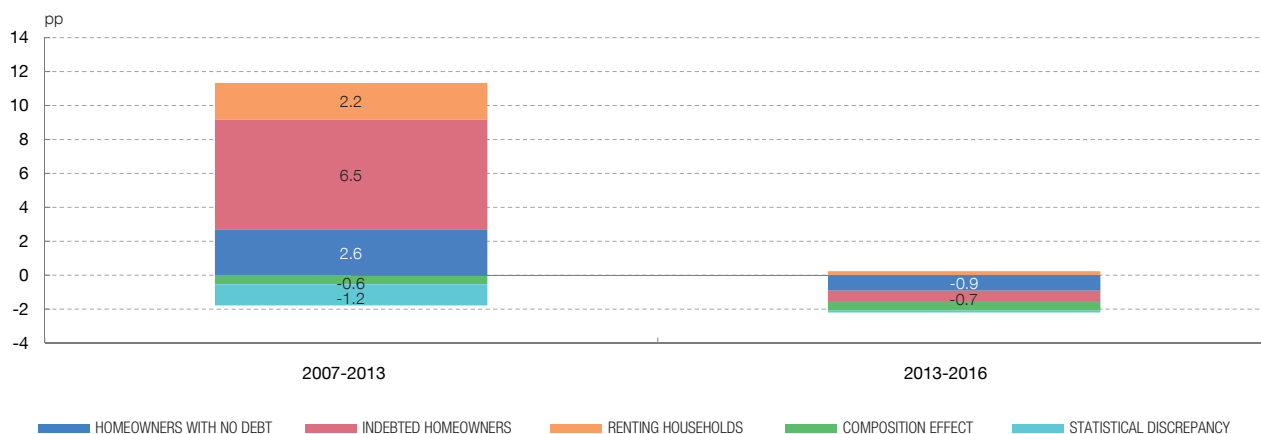
One explanation for the different groups' consumption pattern is precautionary saving. According to this hypothesis, when faced with greater future income uncertainty households reduce their current expenditure, so as to maintain a higher level of financial wealth to allow them to withstand possible drops in income.¹⁰ Some evidence of the importance of precautionary saving in the Spanish economy, which

¹⁰ According to the precautionary saving model, households that face a greater risk of job loss reduce their current spending, only to consume their wealth in the future, with an increase in future expenditure being observed whether or not the risk materialises (see Banks et al. (2001)).

Chart 6

DISTRIBUTION OF CHANGE IN SAVING-TO-INCOME RATIO BY TENURE STATUS OF MAIN RESIDENCE

The chart presents a decomposition of the change, between 2007 and 2016, in the aggregate saving-to-income ratio (calculated from surveys) according to the contribution of each group by tenure status of main residence. This contribution is calculated by multiplying the increase shown in Chart 3 by each group's share of aggregate income (see footnote 8 in the main text). Between 2007 and 2013, the group of indebted homeowners contributed 6.5 pp of the 9.5 pp increase; between 2013 and 2016 it contributed 0.7 pp of the 2 pp fall. The negative composition effect during the downturn is due to the growing share of the income distribution of indebted homeowners (a group with a high expenditure-to-income ratio).



SOURCES: Banco de España (EFF) and INE (EPF and ECV).



may help explain the behaviour of the saving rate over the last decade, is presented below.

A key source of uncertainty, which is relevant in the Spanish labour market, is the type of employment contract, given that workers with temporary contracts are more likely to be made redundant than those with permanent ones. In past downturns, adjustments in employment in Spain have been chiefly concentrated on workers with temporary contracts.¹¹ These contracts generally have an end date that is known at the date of signing. As contracts approach that date, uncertainty may increase over whether the contracts will become permanent or whether the employment relationship will be terminated (for example, because the legal limit is reached). In any event, if temporary contracts are converted to permanent ones, workers' uncertainty regarding their future employment income will tend to decrease. Accordingly, insofar as households undertake precautionary saving, their expenditure should increase when the temporary contract of their reference person is converted to a permanent one, or in other words, when the source of employment income risk is mitigated.

Chart 7 draws on information on household expenditure and the employment status of the household reference person taken from the ECPF (1998-2003), the predecessor

¹¹ See Estrada, Izquierdo and Lacuesta (2009).

Table 4

DECOMPOSITION OF AGGREGATE SAVING-TO-INCOME RATIO BY HOUSING TENURE STATUS, 2007 TO 2016

	Change in aggregate saving rate, calculated from surveys					
	2007-2013 (a)			2013-2016 (b)		
Total	9.5			-2.0		
Change in saving rate by tenure status of main residence and contribution to change in aggregate rate (c)						
	Share of total income in 2013 (%)	Expenditure/income in 2007-2013	Contribution to change in saving rate in 2007-2013	Share of total income in 2016 (%)	Expenditure/income in 2013-2016	Contribution to change in saving rate in 2013-2016
	(1)	(2)	(3) = (2)*(1)	(4)	(5)	(6) = (4)*(5)
Owned, no outstanding loan/mortgage	51.4	5.2	2.6	52.0	-1.8	-0.9
Owned, with outstanding loan/mortgage	33.8	19.3	6.5	31.3	-2.1	-0.7
Rented/assigned	14.8	14.5	2.2	16.7	1.3	0.2
Change in saving rate owing to expenditure/income ratio			11.3			-1.4

SOURCES: Banco de España (EFF) and INE (EPF and ECV).

- a** The change in the saving rate in 2007-2013 is calculated as the difference between the expenditure-to-income ratio in 2007 and the same ratio in 2013. The income data by tenure status of the main residence are taken from the EFF. The year indicated is the year prior to the survey. The expenditure data by housing tenure status are taken from the EPF and exclude imputed rent on housing.
- b** The change in the saving rate in 2013-2016 is calculated as the difference between the expenditure-to-income ratio in 2013 and the same ratio in 2016. The income data are taken from the ECV and the year indicated is the year prior to the survey.
- c** The panel shows the components of the first term in the decomposition described in footnote 8. The difference between the sum of the change in the saving rate of each group and the change in the aggregate saving rate is due to composition effects and to an adjustment for discrepancies between surveys as to the change in the share of different population groups.

of the EPF, to describe the change in expenditure and in income in the quarters before and after temporary employment contracts are converted to permanent ones. Income remains relatively stable in the quarters before and after the conversion, but the expenditure dynamic shifts. As temporary contracts approach their end, spending declines by up to 8% two quarters before the conversion, and increases by 23% between then and the quarter in which the contracts become permanent.¹² In other words, when the risk of job loss is high, households reduce their consumption, and then increase it when the risk subsides.

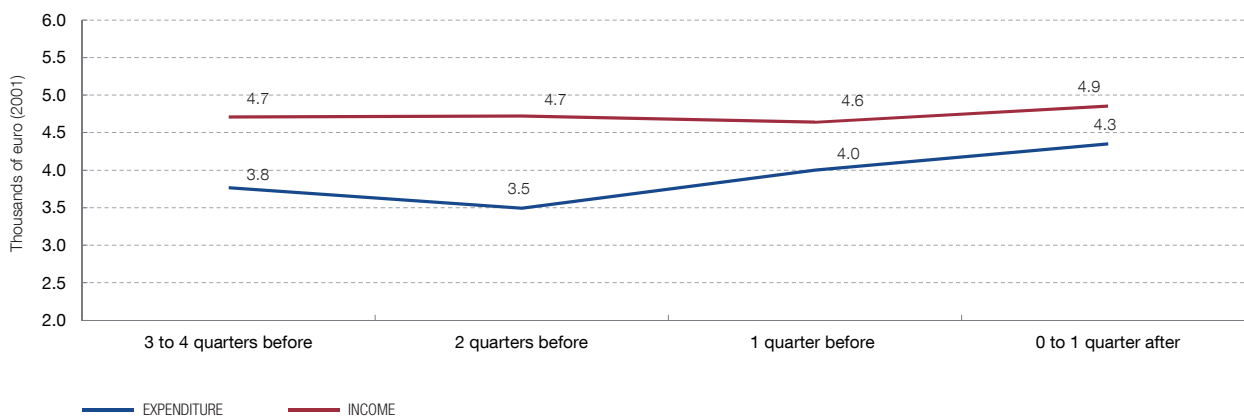
Secondly, to understand the change in expenditure, the wealth of households whose head has a temporary employment contract is compared with that of households whose head has a permanent employment contract. Drawing on the first three waves of the EFF, households whose main breadwinner or their partner had a temporary employment contract are compared with other households with similar income levels

¹² The null hypothesis of no decline in expenditure in the second quarter before conversion is rejected with a 3% confidence level.

Chart 7

HOUSEHOLDS' EXPENDITURE ON NON-DURABLE GOODS AND INCOME BEFORE AND AFTER TEMPORARY EMPLOYMENT CONTRACTS ARE CONVERTED TO PERMANENT ONES

The chart shows the change in quarterly expenditure on non-durable goods and income of households where the reference person's temporary employment contract is converted to a permanent one (which tends to coincide with the end date of the contract signed). The figures are obtained from the ECPF (1998-2003) and are expressed in thousands of 2001 euro. Between the third and second quarter before the employment contract is converted expenditure falls by around 8%, while income remains stable. Between the two quarters before and the quarter after the contract becomes permanent, expenditure increases by 23% and income by around 4%.



SOURCE: Banco de España (EFF).



and employment histories but where both household members had permanent employment contracts. This exercise shows that the first group had higher levels of financial wealth. This greater financial wealth, stemming from containment of expenditure in periods of uncertainty, accounted for around 40% of their annual employment income.¹³ Precautionary saving was observed during the last downturn even among workers with permanent employment contracts. When households whose reference person has a permanent contract are analysed, it is observed that households in regions with higher unemployment growth reduced their spending by a proportionally larger amount at the start of the downturn. Aside of the type of employment contract, households that perceived a greater risk of job loss also had lower expenditure levels than the other groups.¹⁴

Overall, these findings suggest that, in the case of Spain, precautionary saving associated with employment uncertainty may explain a significant part of both the increase in household saving during the crisis (2007-2013) and its subsequent decline.

18.11.2019.

¹³ For more details, see Barceló and Villanueva (2016).

¹⁴ See Campos and Reggio (2015) and Lugalde et al. (2018).

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