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Introduction

Since the onset of the crisis, Spanish households have addressed consumption, saving and financing decisions against a very adverse macroeconomic backdrop, characterised by a high degree of uncertainty. In this setting, the household saving rate, as a percentage of their disposable income, has fluctuated very markedly during recent years. Thus, after following a stable pattern during most of the previous upturn, fluctuating moderately around 11% of disposable income, the saving rate increased by 7.4 percentage points (pp) between 2008 and 2009 to 17.8% in 2009. Conversely, since 2010, this rate has fallen very sharply to stand at 8.2% of disposable income at end-2012 (see Chart 1).[1]

The decline in the saving rate in Spain since 2009 has not been an isolated phenomenon in the euro area where other countries have also shown a trend towards a lower level of saving, especially certain countries subject to a high degree of macro-financial uncertainty such as Ireland and Italy (see Chart 1). In Italy, the saving rate has held on a downward path since 2006, to stand at end-2012 below the euro area average in a setting in which the main income components have fallen back notably. Like Spain, in Ireland and in Portugal the saving rate picked up temporarily during the early stages of the crisis and subsequently decreased in 2010 and 2011, to then recover slightly in both cases in 2012. By contrast, in Germany and France gross disposable income has continued to grow in the more recent phase of the crisis, which has enabled the saving rate to hold at relatively stable levels that are generally higher than those seen in the peripheral economies.

Such sharp fluctuations in the Spanish household saving rate during the crisis suggest the presence of several factors, with countervailing influences on this variable. The relative strength of these factors has varied during these years. They include two particularly relevant factors: household disposable income and the sensitivity of consumption to changes in households' real spending capacity.[2] This article analyses how these two determinants have combined in the most recent period to prompt the saving rate to fall to historically low levels. With this objective, section 2 documents the decline of the saving rate which has followed the contraction of household disposable income since 2010, by using both aggregate consumption and saving series as well as data on households relating to income, consumption and employment status, among other things. Section 3 analyses the possible rigidities of consumer spending on certain goods and services which may occur faced with sharp reductions in income, taking into account in this regard the degree of necessity of the various consumption categories. The main conclusions are summarised in the last section of the article.

Changes in income, consumption and saving during the crisis

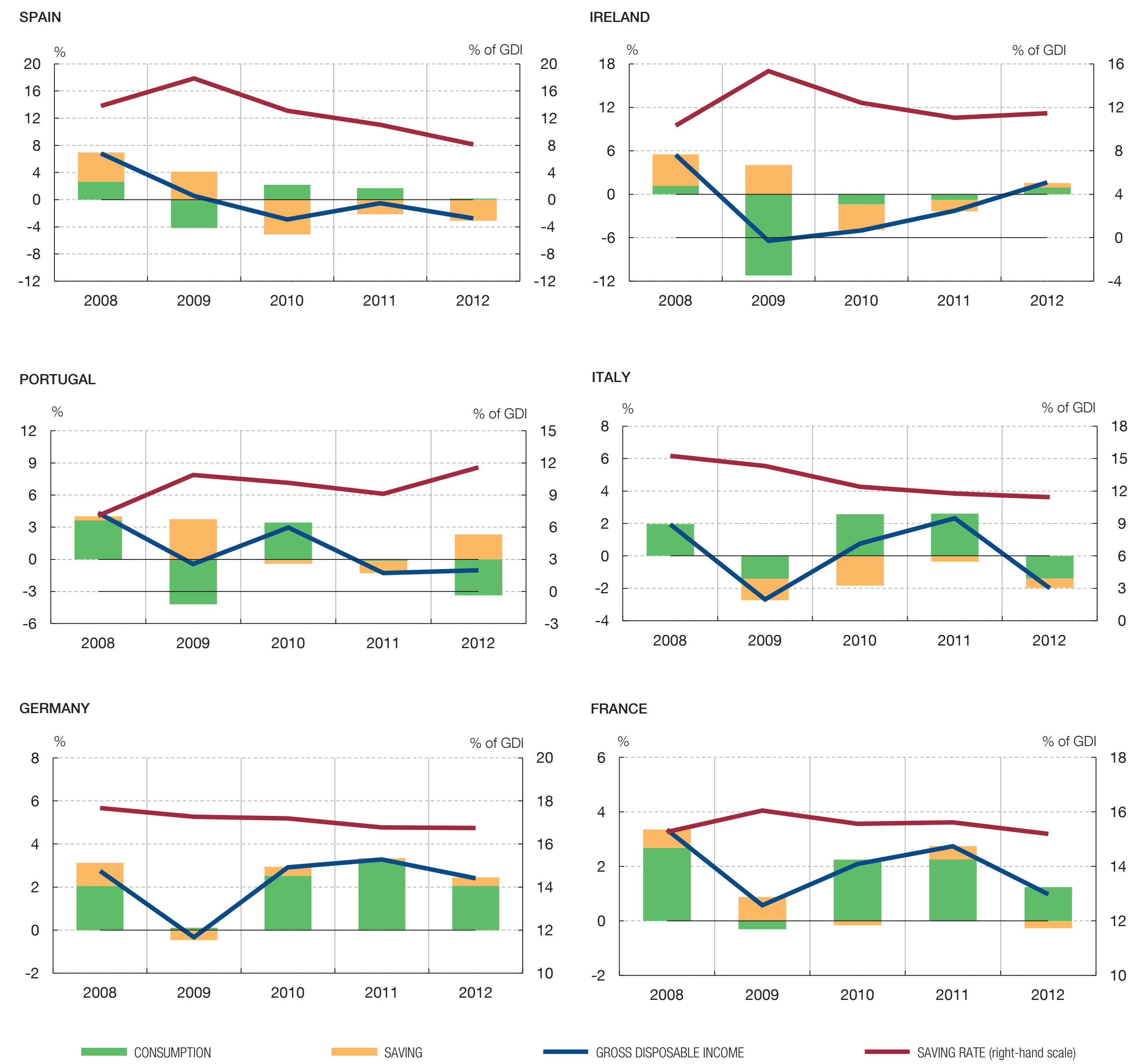
During the period 2008-2009, the nominal income of Spanish households increased despite the impact of the financial and economic crisis. A particular contributing factor here was the positive sign of the contribution of income from general government, through the

1 This is the lowest level in the time series, although the preliminary data for 2013 Q1 have shown that the saving rate has risen slightly to 8.5% of gross disposable income.

2 For a review of the literature on the factors underlying changes in private consumption and the saving rate see Sastre and Fernández-Sánchez (2011a). Also, Box 5.2 of the *Annual Report 2012* includes a preliminary discussion of these issues.

SAVING RATE AND CHANGE IN DISPOSABLE INCOME

CHART 1



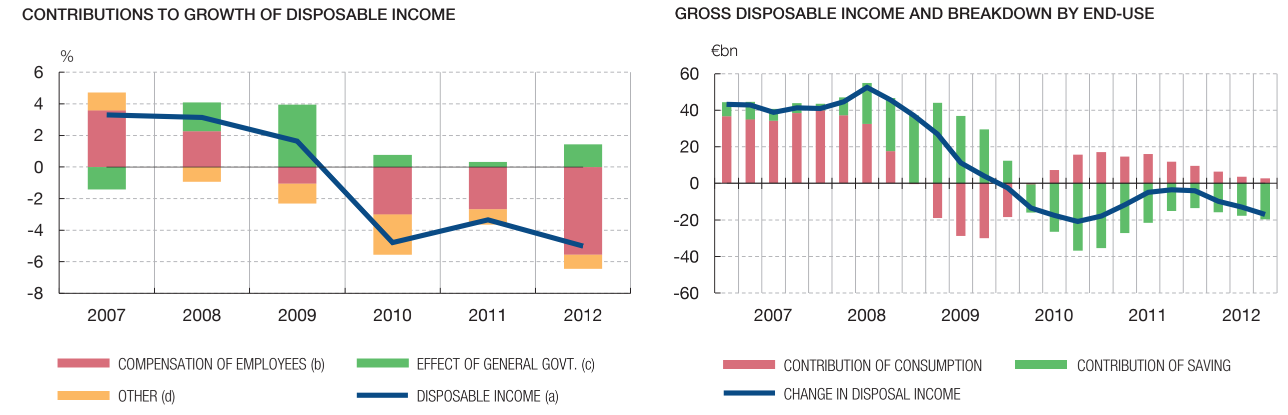
SOURCES: Eurostat and Banco de España.

dual channel of the effect of the automatic stabilisers and of certain discretionary tax measures adopted in 2008 which, overall, countered the negative contribution of labour income (see the left-hand panel of Chart 2). This rise in nominal income was essentially assigned to increasing saving, a development that was particularly noticeable during 2009 when nominal consumer spending fell (see the right-hand panel of Chart 2). The strong pace of the downturn in the labour market and, in general, the high level of uncertainty that began to become evident in the final stretch of 2008 is estimated to account for a substantial portion of the increase in the saving rate due to precautionary reasons.

From 2010, household income began to diminish under the weight of the continuing phase of forceful job destruction and the onset of the fiscal consolidation process. Since then, declines in income have been accompanied mostly by sharp falls in saving and, on the contrary, by increases in household nominal consumption. However, despite the increases in nominal spending recorded for most of this period, since the beginning of 2011 real

GROSS DISPOSABLE INCOME

CHART 2



SOURCES: INE and Banco de España.

a Year-on-year rate.
b Compensation of employees in gross terms.
c Includes social benefits, social contributions and taxes on income and wealth.
d Includes gross operating surplus, interest and other items.

consumption has fallen. Although the precautionary reasons which boosted saving in the period 2008-2009 have not receded – as shown by the fact that the weak labour market and uncertainty about future wage income have not eased substantially in the latest phase of the crisis – they have been offset since 2010 by other factors which operate in the opposite direction and which have exerted a negative net effect on saving.

The steep fall in the saving rate from 2010 can be partly explained by the role of saving as a stabilising factor of the pattern of consumption over time. Under the commonly accepted assumption that agents take a positive view of a stable consumption path over time, their natural response to temporary reductions in their income level is to reduce the saving rate. Thus, insofar as at least part of the decrease in households' funds in the most recent phase of the crisis has been perceived as temporary, the fall in income during that period appears to have contributed to reducing the saving rate. Accordingly, some of the main factors underlying the squeeze on income from 2010, essentially caused by a deterioration of labour income and a reduction of net transfers from general government (see the left-hand side panel of Chart 2), can plausibly be interpreted as partially temporary.

In addition to the above-mentioned effects, it is also possible that the propensity to save decreases during phases of very sharp declines in income, insofar as households encounter short-term obstacles to adjusting their consumption by the same proportion, especially when the level of available funds reaches unusually low levels. These obstacles may stem from the persistence of habits, the existence of minimum consumption thresholds for certain goods and contractual relationships for the supply of certain services, which, overall, seem to reduce households' capacity to respond in the short-term to negative shocks in their income (see, for example, Carroll *et al* 2008 and Slacalek 2009).

Against the backdrop of sharply contracting household income which has characterised the most recent phase of the crisis, the latter assumption seems to be a plausible explanation of the strong positive relationship between disposable income and the saving rate shown by the aggregate data (see the right-hand panel of Chart 2). Nevertheless, to the extent that the socio-economic circumstances inherent in each household unit determine their propensity to save part of their income, the heterogeneity across households becomes particularly important when analysing the recent pattern of the saving rate for the sector as a whole (see IMF 2011 and 2012).

The difficulty of undertaking an exhaustive analysis of savings pattern at microeconomic level usually lies in the limited availability of historical data with a sufficient degree of disaggregation and which is suitably up to date. In the case of the Spanish economy, it is possible to overcome some of these limitations by using the income and expenditure data per household obtained in the Household Expenditure Survey (EPF by its Spanish abbreviation).[3, 4] Although this source does not permit changes in the saving rate of a household to be followed over time, it does offer the possibility of monitoring the changes in the saving pattern across similar households, using certain assumptions and taking into account specific socio-economic characteristics of the main breadwinner.[5] Specifically, from the comparison of the data for 2006, 2009 and 2011 some conclusions can be drawn about the behaviour of the Spanish household saving rate in the two phases of the crisis in which this variable performed markedly differently at aggregate level.[6]

An initial conclusion drawn from the comparison of changes in saving during the period 2006-2011 for various levels of household income is that for those households with relatively low income, the propensity to increase saving when there is a rise in income (such as those in the period 2006-2009) is, generally, lower than for households with average and high income. Conversely, faced with falls in income (such as in the period 2009-2011), the trend to reduce saving is considerably more pronounced in households with lower income (see the left-hand side panel of Chart 3). These two observations suggest, therefore, in line with the previous hypothesis, the presence of different patterns of household saving and consumption related to changes in income and income level. The aggregate reflection of this heterogeneity at microeconomic level in the most recent period of the crisis, in which the average income of Spanish households has decreased, would be a further fall in the saving rate above that induced by other factors such as the desire to maintain a stable consumption pattern.

The presence of debts is particularly relevant when determining household saving. Repayment of these debts usually requires earmarking a predetermined amount of the household budget to this item. Since the main source of debt financing of Spanish households is through the mortgage market, the status of the main residence (owned or rented) is, a priori, an important constraint on household saving and consumption decisions. Indeed, the EPF data show that households which are owner-occupiers with some type of "current loan or mortgage" increased their saving rate between 2006 and 2009 by a greater proportion and reduced it by a lower amount in the period 2009-2011 than households renting property or owner occupiers without any type of outstanding loan or mortgage (see right-hand panel of Chart 3).

3 The Household Expenditure Survey is compiled annually by the INE. This survey provides annual information on the nature of consumer spending, the end-use of consumer expenditure and various characteristics of households' living conditions.

4 The Banco de España compiles the "Spanish Survey of Household Finances" to provide microeconomic data on the income, wealth and debt of Spanish households. Three waves of this survey are already available (2002, 2005 and 2008) and a fourth (2012) is being complied for release at end-2013. Given the availability of the most recent data, the EPF is used for this analysis.

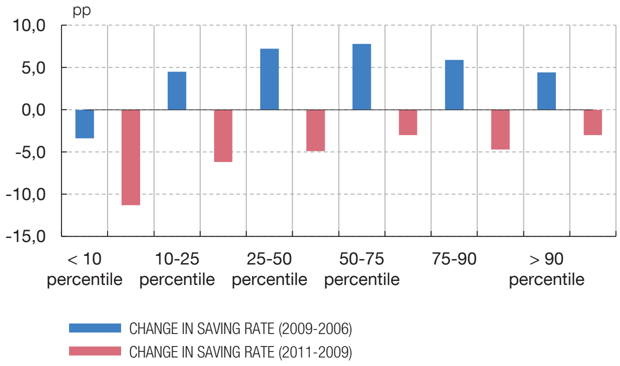
5 The EPF data used in this analysis were subject to several adjustments to correct the under-reporting both of income and expenditure which usually occurs in this survey [see Marchante et al. (2002)]. The adjustment followed the methodology applied in García (2010) in order to make income and expenditure compatible, after aggregation, with the estimations provided by the Spanish National Accounts.

6 2006 was used as the reference of the last full year without notable problems in the financial markets prior to the onset of the subprime crisis in summer 2007. In July 2013 the preliminary EPF data for 2012 were published, but on this occasion, the 2011 census was used to calculate the factors and, consequently, the data are not comparable with previous waves of the survey.

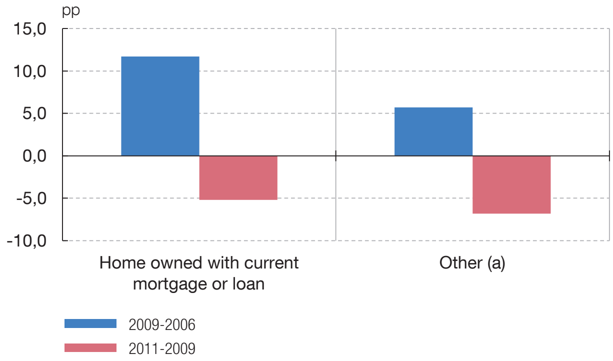
CHANGE IN SAVING RATE THROUGH HOUSEHOLD EXPENDITURE SURVEY

CHART 3

CHANGE IN SAVING RATE BY REVENUE QUINTILE



CHANGE IN SAVING RATE BASED ON HOLDING A CURRENT LOAN



SOURCES: Encuesta de Presupuestos Familiares (INE) and Banco de España.

a Ownership status of main residence: owner-occupied without current loan or mortgage, rented or made available free of charge or for a token charge.

Some of the most visible consequences of Spain's economic recession are the scale and persistence of the job destruction process. In fact, signs that this process is moderating have only begun to be seen very recently. Insofar as employment status is an essential determinant of the capacity to obtain present and future income, the strong increase in unemployment in recent years, in principle, is another important factor which explains recent savings dynamics in the Spanish economy. Since the impact of job destruction typically affects different groups unevenly (according to their age, level of education and type of employment contract) these individual characteristics and their distribution among the population are particularly interesting when analysing saving and consumption patterns at micro and macro-economic level.

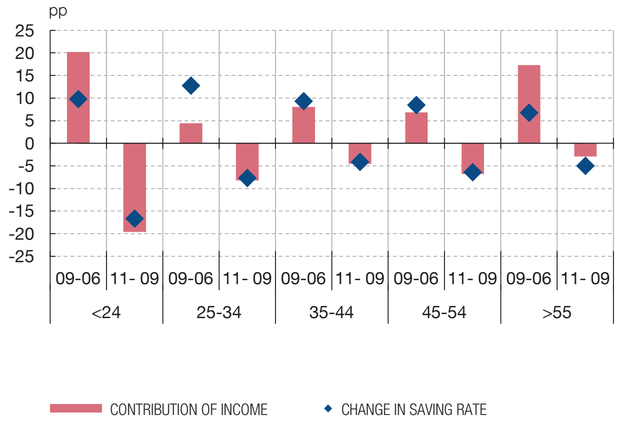
Using the data from 2007 to 2012, Cuadrado and Lacuesta (2012) analyse transitions from employment to unemployment differentiating by age group and level of studies. The highest rise in the exit rate from employment to unemployment was seen in the youngest population segment (16-24 years old) at the beginning of the crisis and, in fact, continued throughout 2012 and climbed to 12.5% of the number of employees in that age group. Among the middle age groups, those between 25 and 34 years old were, together with the youngest group, those most affected by the initial stage of the crisis (see left-hand panel of Chart 4). By level of education there is greater diversity in the differences in the exit rates from employment to unemployment, the groups with a lower level of education have seen the probability of losing their job increase most from 3.2% in 2007 to 7.8% in 2012. The analysis of labour market flows by type of employment reveals a strong increase in the exit rate from employment to unemployment among employees with temporary contracts during the crisis, whereas for employees with permanent contracts this increase has been considerably lower (see right-hand panel of Chart 4).

In short, the employees who in recent years have maintained a better relative performance in terms of employment, with a more moderate increase in their exit rate from employment, are the oldest ones with most training and a permanent contract. The higher degree of stability in the labour income of these groups has resulted, according to the EPF's data, in generally more stable behaviour of their respective saving rates throughout the two phases of the crisis considered here. In particular, the disaggregated data referring to the age and type of contractual relationship of the main breadwinner clearly reveal

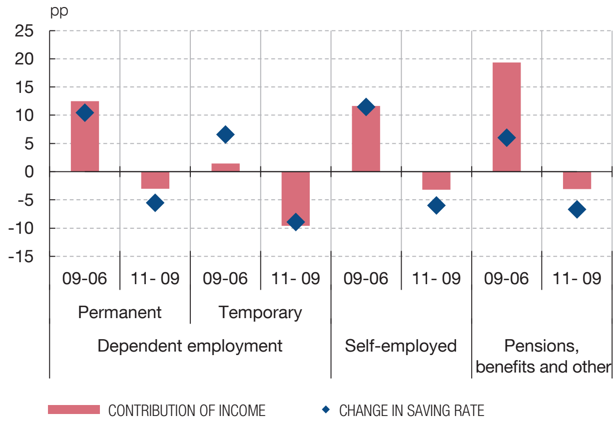
CHANGES IN THE SAVING RATE AND INCOME DEVELOPMENTS

CHART 4

BY AGE GROUP OF THE MAIN BREADWINNER



BY TYPE OF MAIN SOURCE OF INCOME AND CONTRACT TYPE OF THE MAIN BREADWINNER



SOURCES: Encuesta de Presupuestos Familiares (INE) and Banco de España.

that the population segments which have experienced a sharper decline in their income (young people and temporary employees) are also those who have reduced their saving rate by a greater extent.[7]

Disaggregated analysis of consumer spending

The high volatility of the saving rate in recent years has been reflected in changes in the consumption of Spanish households. Although their consumption has naturally maintained a notably more stable pattern than saving, it has also varied significantly, not only in terms of rate of change and sensitivity to changes in income but also in terms of its composition. In this section these aspects relating to the private consumption function are analysed, once again by using the disaggregated data.

The breakdown of consumption by type of good underlines that the rise in saving in the initial phase of the crisis was encouraged not only by the increase in household disposable income but also by the strong contraction of the weight of expenditure on purchasing consumer durables. This trend, which continued during the period 2007-2009, was boosted by the sharp drop in the price of these goods (see Chart 5). From 2009, the margin for reducing expenditure on this type of consumption seems to have been clearly lower which, in turn, contributes to explaining the higher downward stickiness in aggregate consumption or, in equivalent terms, the high sensitivity of saving to the fall in income seen since then.

Conversely, since the beginning of the crisis until 2012, the fraction of income earmarked for the consumption of essential goods, which show low elasticity to changes in income and price, has gained weight for all income levels.[8] In fact, the increase in consumer spending from 2010 (and, consequently, the reduction in the saving rate), at least in part, is the result of a sustained increase in the prices of these goods and services as a result of the increases in VAT and in certain regulated prices. As a result of such a pronounced change in the composition of the consumption basket, the weight of durable goods in

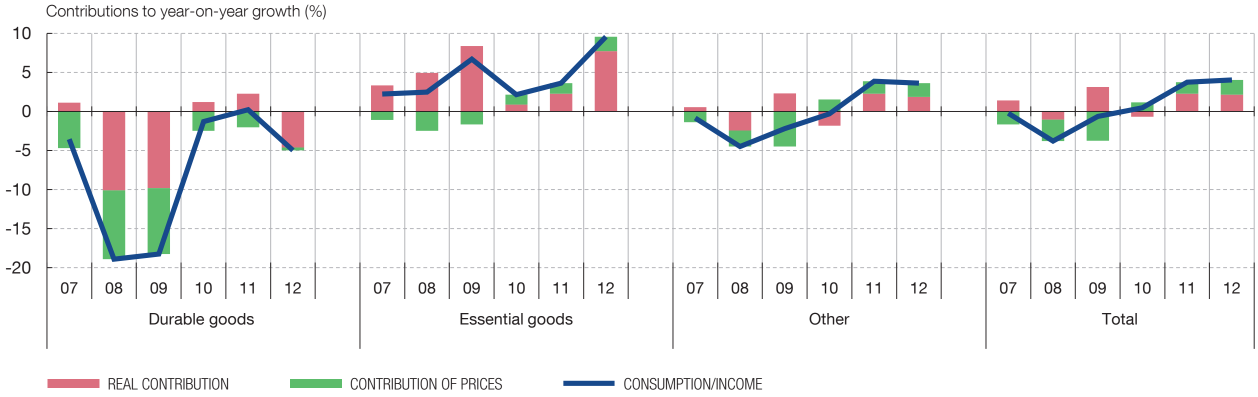
7 One aspect of potential interest, which is not addressed in this article, is the role of inter-family transfers of income and wealth. Studying this may provide relevant information about household saving and consumption patterns, especially during periods of economic crisis and high unemployment such as at present [see, for example, Bentolila and Ichino (2008)].

8 The group of essential goods includes those related to housing, rents, both real and imputed, and spending on water, electricity, education and medicines.

CHANGES IN CONSUMPTION/INCOME RATIO BY TYPE OF GOOD

CHART 5

BREAKDOWN BETWEEN REAL EFFECT AND PRICES



SOURCES: Encuesta de Presupuestos Familiares (INE) and Banco de España.

total consumption of Spanish households has fallen back from slightly less than 10% at the beginning of the 2000s to levels of less than 6% in 2012 (see left-hand panel of Chart 6).

From a different perspective the sharp fall in the consumption of durable goods during the crisis may have reflected, in addition to a voluntary reduction in purchases of this type of goods, that the conditions of access to financing for Spanish households, on the available information, seem to have tightened since the onset of the crisis [see for example Méndez (2013)]. Accordingly, since the acquisition of durables normally entails a higher degree of borrowing than in other goods and services, an increase in the sensitivity of consumption of durables to income could indicate a rise in the relative weight of own funds in the financing of this type of purchases, prompted by a worsening in the conditions of access to credit. The dynamic estimations of income elasticity – by type of goods (durable and non-durable) in fact reveal that the elasticity of durable goods increased significantly from 2008, and is estimated to have held at high levels during the subsequent years (see right-hand panel of Chart 6).[9] This latter effect, conversely, is not present in the case of non-durable goods. The degree of variability of non-durable goods to income is considerably lower than that of durable goods and is very stable over time.

This latter observation suggests that the downward stickiness in consumption – associated with a rapid fall in the saving rate from 2010 – is estimated to be the result of a considerable increase in the weight of non-durable consumption, which includes most of the most essential goods and services that are not very sensitive to changes in income, in the total consumption basket. Thus, the decreases in household income since then seem to have fed through much more directly to their saving capacity, triggering a sharp fall in the saving rate in recent years.

Concluding remarks

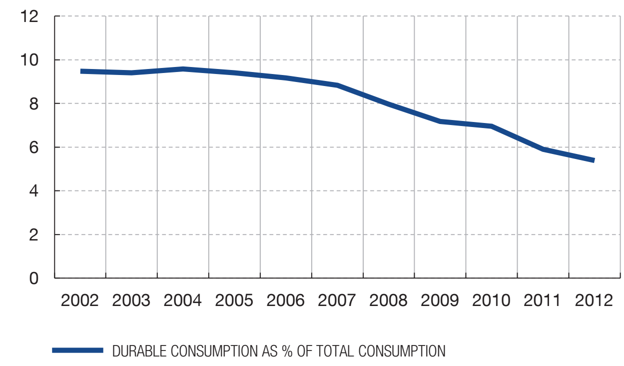
Fluctuations in the Spanish household saving rate since the onset of the crisis reflect how several factors, of variable strength and direction, have come together and conditioned individual saving and consumption decisions against a particularly complex backdrop. Coinciding with the decline in household income which has characterised the most recent phase of the crisis, the saving rate in our country has fallen sharply to historically low levels.

9 The details of this methodology for identifying credit restrictions can be seen in Bachetta and Gerlach (1997).

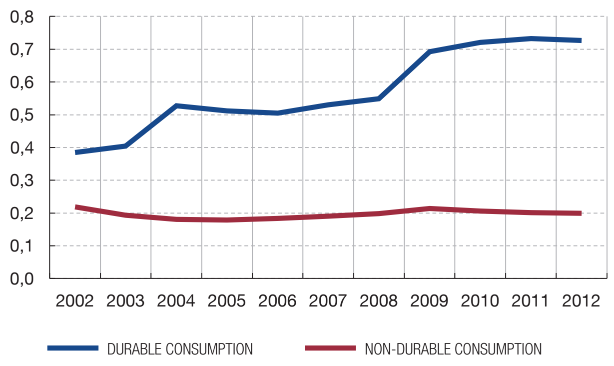
SENSITIVITY OF CONSUMPTION TO INCOME

CHART 6

WEIGHT OF DURABLE CONSUMPTION IN TOTAL CONSUMPTION



ELASTICITY OF CONSUMPTION TO INCOME (a)



SOURCES: INE and Banco de España.

a Percentage change in consumption as a result of a variation of 1% in income.

This trend in general has also been seen in other euro area economies which during recent years have been affected by a high degree of macro-financial tightening.

Although there may be many causes of the recent decline in Spanish households' propensity to save, the analysis in this article underlines the strong positive correlation between disposable income and the saving rate in recent years. Specifically, based on the analysis of disaggregated data, at the level of the economic situation and employment status of households and of the composition of the average consumption basket, it can be concluded that the recent fall in the saving rate indicates the presence of rigidities in the consumption function, such as the persistence of habits and the existence of minimum thresholds for the consumption of certain goods, which limit the speed at which consumer spending can adjust to abrupt declines in household revenue and which induce a negative response in saving. Accordingly, it should be expected that as household income begins to stabilise, the household saving rate will return to levels that are closer to historical averages and consistent with the necessary deleveraging process of households currently under way.

5.9.2013.

REFERENCES

BACHETTA, P., and S. GERLACH (1997). "Consumption and credit constraints: International evidence", *Journal of Monetary Economics,* 40, pp. 207-238.

BENTOLILA, S., and A. ICHINO (2008). "Unemployment and consumption near and far away from the Mediterranean", *Journal of Population Economics,* Vol. 21, pp. 255-280.

CAROLL, C., J. SLACALEK, and M. SOMMER (2008). *International Evidence on Sticky Consumption Growth*, working paper 13876, NBER.

CUADRADO, P., and A. LACUESTA (2012). "La evolución del empleo y del paro en el tercer trimestre de 2012, según la EPA". *Boletín Económico,* November, Banco de España.

GARCÍA, J.R. (2010). "Determinantes microeconómicos del ahorro: un análisis estático", *Situación España*, 1T, BBVA Research.

INTERNATIONAL MONETARY FUND, (2011) "What drives the UK's household saving rate?" UK Article IV, Selected issues.

— (2012) "U.S. household wealth and saving: the micro story behind the macro dynamics", US Article IV, Selected issues.

IWAISAKO, T., and K. OKADA (2012) "Understanding the Decline in Japan's Saving Rate in the New Millennium", *Japan and the World Economy: International Journal of Theory and Policy,* 24 (3), pp. 163-173.

MARCHANTE, A., B. ORTEGA, T. SORIA and L. COLOMER (2002). "Renta, consumo y ahorro de los mayores: un análisis aplicado", *Estudios de Economía Aplicada*, Vol. 20 (1), pp. 197-215.

MÉNDEZ, M. (2013): "Encuesta sobre préstamos bancarios en España: abril de 2013", *Boletín Económico,* May, Banco de España.

SASTRE, T., and J.L. FERNÁNDEZ-SÁNCHEZ (2011a) "El ajuste del consumo duradero y no duradero en España durante la crisis económica", *Boletín Económico*, January, Banco de España.

— (2011b) "La tasa de ahorro durante la crisis económica: el papel de las expectativas de desempleo y de la financiación", *Boletín Económico*, November, Banco de España.

SASTRE, T., and J. MARTÍNEZ (2008) "Estructura de la renta y disponibilidad de ahorro en España: Un análisis con datos de hogares", *Boletín Económico*, April, Banco de España.

SLACALEK, J. (2009) *What drives personal consumption? The role of housing and financial wealth*, Working Paper Series, Nº 1117, November, European Central Bank.