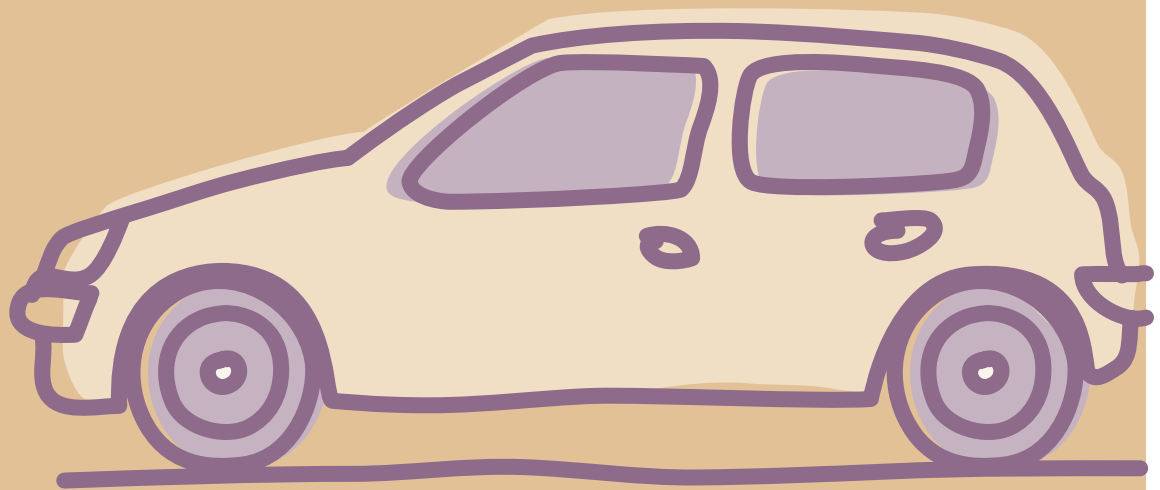


# Consumption Watch

Economic Research Department

Second half 2009



While the global economic situation recovers, although with a high level of uncertainty...

..., the adjustments pending in the Spanish economy condition the start of recovery

The fragility of the determinants of consumption, along with the deleveraging process underway, shall keep demand weak in 2010...

..., although the improvement of consumer expectations could push the forecast upwards



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Closing date: November 27, 2009

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## 1. Summary

The global economy has experienced a significant improvement since the last edition of this publication, leaving behind the freefall sensation that had been prevalent since the end of 2008, and has given way to a situation of relative stability and, in some cases, moderate growth. The origin of the change lies mainly in the exceptional public stimulus measures adopted by most economies, on both the monetary and fiscal fronts. Nevertheless, the fundamentals of the world economy continue to be fragile and the risks of a downturn are fully present in the short term. The main risk faced by the global recovery is the premature withdrawal of stimulus packages, especially in the most advanced economies, along with the uncertainty on whether private spending can replace public expenditure as the main vector of recovery once these stimulus packages are withdrawn. The labour market figures will also not contribute towards a swift emergence from the crisis, since the rate of job losses continues to be very high in many economies.

This results in an uneven economic recovery. Emerging economies are currently experiencing a solid recovery due to, among other things, a lower exposure to the financial crisis, the success of their fiscal and monetary measures, the increase in commodity prices, the modest recovery of world trade, and their existing policies for macroeconomic stability. Among the developed economies, the U.S. economy is in better shape than Europe in terms of emerging from the crises sooner due to the greater and more effective fiscal impulse and the level of progress in financial restructuring.

The economic decline in Spain has also moderated in the last two quarters, leaving behind the steep decline in GDP and employment observed at the start of 2009. Despite the existence of elements that depress the growth of the Spanish economy as compared to the rest of Europe, what is true is that the Spanish economy has been able to withstand the most serious phase of the recession and prevent its decline from being greater than the European one for two reasons. First, it has made a more incisive use of countercyclical fiscal policies. Second, the positive performance of net exports has significantly compensated some of the reduction in domestic demand.

However, there are not many elements suggesting that 2010 will mean the start of a new cycle of sound recovery. There are various reasons for this. First, the economy will continue to destroy jobs, although at a lower rate than in 2009. The growth in activity at the end of next year will be insufficient for sustained job creation. Second, the resizing of the real estate sector will extend into 2010. Third, the beginning of a fiscal consolidation phase in 2010, after the intensive countercyclical use of public balances in 2008 and 2009 will contract short term economic growth. Finally, the deleveraging process of the private sector has gained intensity throughout 2009 and will continue to do so in 2010.

Household consumption continues to play a major role in the recession cycle of the Spanish economy. Even though consumption only experienced a 0.1% decline in the third quarter, this data adds up to a total of seven consecutive quarters of decline in real household spending, despite significant fiscal and financial stimuli for household income in the last two years. The adjustment in consumption can be seen in the significant increase in the savings rate, which was at 17.5%

of available income between April and June, 7 percentage points higher than at the beginning of 2008. The consumption of durable goods specifically is still experiencing a steep decline, both because of the loss of momentum in their key determinants (income, wealth, and financing conditions for the private sector), and the increase in precautionary savings derived from the uncertainty with respect to the future economic situation. Nevertheless, there has been a slowdown in the decline of demand for durable goods in recent months due to an improvement in consumer confidence, the recovery of foreign demand from our main trading partners, and the effects of the 2000E Plan on car sales.

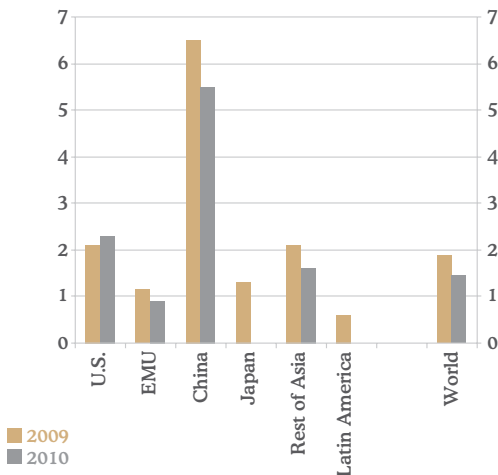
More specifically, the results of the 2000E Plan were seen immediately after it was approved in the month of May. The reduction in the number of cars registered bottomed out significantly during the months of June, July, and August. September was the first month in which the year-on-year growth rate of registrations increased after declining for eleven consecutive quarters. In October, growth increased to 26.4% and BBVA ERD predictions indicate that it will remain in two digit figures in November and December. The 2000E Plan has been so effective that BBVA ERD estimates suggest that, out of the 190,000 registrations under the program up to October 31, approximately 51% would not have occurred had the plan not existed. In macroeconomic terms, the additional demand generated by the assistance provided for purchasing a vehicle contributed 0.6 percentage points to the year-on-year change in private consumption registered for the third quarter of the year.

The trend in other consumer durables was less favorable. While the Moto-E Plan has not been able to reactivate the demand for scooters and motorcycles due to coordination problems since the beginning of the program and to the fact that few regions have implemented the Plan, the resizing process of the real estate sector continues to shrink the demand for household appliances and furniture.

Consumer lending has not contributed to stimulate demand either, despite the recent slowdown in the pace of its decline. In fact, the criteria for approving new credit for companies and households began to ease in June 2009, due to public sector support for the financial sector and the improvement of the international economic situation. Although expectations point to a continuation of these trends, in the short term continuing tensions in the financing markets and the risks that exist in the Spanish economy provide a bleak outlook on consumer lending.

The publication ends with an article that compares consumer behavior in developed countries. The results indicate that international consumer patterns are closely linked to the degree of development of a country. Developed economies allocate a lower percentage of their income to spending on goods and services designed to cover basic needs (e.g. food), in favor of others that are not considered basic needs (e.g. entertainment, restoration, and communications). It is therefore reasonable to expect that economic development will result in changes in the spending patterns of emerging countries. The analysis of OECD countries suggests there is a convergence process of spending patterns. Thus, companies should take this process into consideration when designing their commercial and production strategies in order to adapt to the changes in the behavior of the global consumer.

Chart 2.1.  
Fiscal programs: Relative size  
(% GDP)



Source: BBVA ERD

## 2. An uncertain economic environment

### 2.1 The global economy stabilizes, but risks remain

#### Global economic activity has stabilized and the recovery has started ...

The global economy has entered a more positive phase since the publication of the last Consumption Watch in March. The free fall experienced by most economies since the end of 2008 has given way to a situation of relative stability and, in some cases, of moderate growth.

The change in the trend since then is basically the result of the exceptional public stimulus measures adopted by most economies, on both the monetary and fiscal fronts. First, on the monetary side, there have been substantial reductions in the intervention rates, massive injections of liquidity and a wide range of non-conventional measures, whose implementation has led to a partial reestablishment of liquidity conditions. Secondly, on the fiscal side, there have been ambitious public stimulus packages, which have provided, among other things, a boost for specific sectors like the automobile sector, and in general, temporary support for the income and spending of private agents.

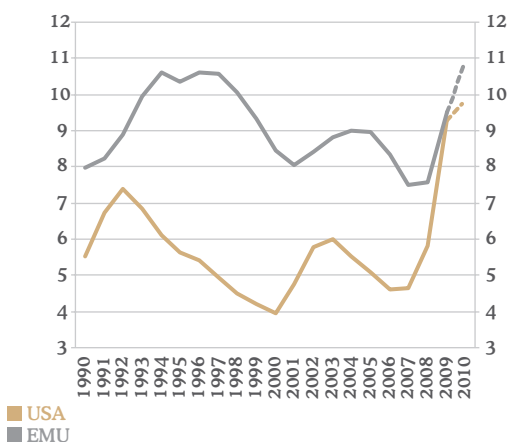
#### ..., but downside risks remain, especially in developed economies

Nevertheless, the fundamentals of the world economy continue to be fragile and there are real risks of a downturn in the short term. The main risk faced by the global recovery is the premature withdrawal of stimulus packages, especially in the most advanced economies, along with uncertainty over whether private spending can replace public expenditure as the main vector of recovery once these stimulus packages are withdrawn. This is because, unlike what has happened in emerging economies, in some developed countries, the growth pattern during the expansive phase was characterized by a strong boost for domestic demand. One of its determinants (use of debt by private agents) will not have the same leading role in this new cycle. The labor market figures will also not contribute to a swift emergence from the crisis, since the rate of job losses continues to be very high in many economies.

For all these reasons, the biggest challenge for policy-makers is still deciding on the right moment to withdraw public programs. The premature and uncoordinated withdrawal of stimuli, particularly monetary stimuli, could partially reactivate the circle of economic contraction that began at the end of 2008.

In Europe, the European Central Bank (ECB) refinancing rate is currently at 1% and will remain at these levels for an extended period of time, probably well into 2011. This is partly because unused capacity in the economy of the euro zone is at very high levels, which helps keep inflationary pressures at a minimum. In addition, the high current euro exchange rate places downward pressure on prices and export activity, and also limits the margin for early rises in interest rates. Nevertheless, it is worth remembering that if the stimuli remain in

Chart 2.2.  
USA and EMU: Unemployment rate  
(% labour force)



Source: BBVA ERD

place over time they could have harmful effects on growth. First, they distort the incentives of agents to adopt measures that would not be postponed otherwise over time; and second, they will seriously debilitate the public balances of many economies, whose deficit and public debt levels could become difficult to sustain. For all these reasons, the monetary and fiscal authorities should take into account the current risk balance, given that a move in the wrong direction could seriously damage recovery. It therefore appears probable that central banks will gradually try out possible alternatives to bring their liquidity policies back to normal. It is important that communication is particularly careful in this situation.

Overall, the progress made in the financial markets has been substantial in recent months. Tensions have been reducing steadily from the highs after the collapse of Lehman Brothers in September of last year. Nevertheless, the current situation is far from fully satisfactory, given that the tension in the financial markets is still far from pre-crisis levels. The biggest progress so far has been in the interbank markets. Thus the three-month OIS spreads in the U.S. and the EMU are currently at their lowest levels for more than eighteen months. Nevertheless, the progress of these markets continues to depend greatly on the massive injections of liquidity by the central banks.

The reduction in risk premiums has been extraordinarily swift over recent months. Thus, U.S. bank CDS reached their lowest levels since the start of the crisis, and European CDS were at their lowest level for nearly a year. However, the downward correction has slowed down since the start of the summer. Caution appears to have taken hold in most markets (including the equity markets, where there has been relatively modest growth since July), in a context in which it is still difficult to gauge the extent to which economic recovery at a global level is sound and sustainable, and risk aversion is at all-time high levels.

### Emerging economies have become the main driver of global growth

However, economic recovery is uneven. In general terms, emerging economies are on a more solid path to recovery than developed ones. This can be explained by a number of factors that set these economies apart and have made it easier for most of them (with the exception of Emerging Europe) to cope with more expensive funding markets and the contraction in activity and employment. Specifically, these factors include: lower exposure to the financial crisis, above all in its initial stage; the success of the fiscal and monetary stimulus packages implemented after the start of the crisis; the growth in commodity prices in recent months; the modest recovery in world trade after its collapse at the end of 2008; and, perhaps most importantly for stable long-term growth, the earlier efforts made in many of the countries to promote and practice a policy of macroeconomic stability. For all these reasons, it is expected that from here on, the convergence between emerging economies and developed ones will accelerate.

The signs of recovery in activity are already clear in emerging countries, although the growth pattern still presents some notable variations. Thus, China, for example, registered high growth rates in the last quarter (8.9% year-on-year), partly as a result of a rapid increase in credit and other stimulus measures. Most economies

Chart 2.3.

### USA and EMU: Financial Tensions Indicator

(100= January 07)

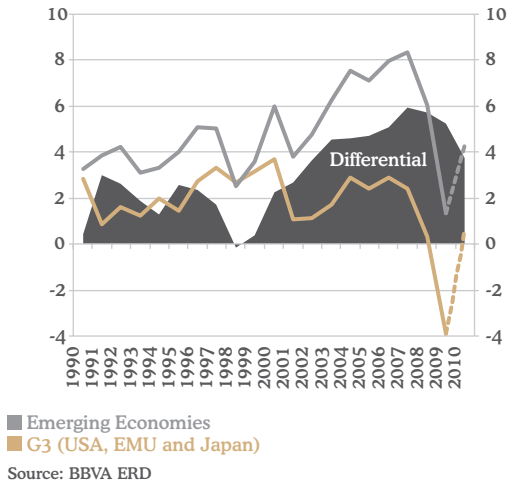


Chart 2.4.

### USA and EMU: Corporate risk index (non financial 5yr CDS, bp)



Chart 2.5.  
Emerging economies and G3: GDP growth (% y/y)



within Latin America also showed signs of positive growth in the last quarter. However, there is greater risk in the situation of Emerging Europe economies, which met this crisis in a more vulnerable macroeconomic and financial situation.

The U.S. economy, on the other hand, registered its first positive quarterly growth (0.7%) since September of 2008 in the last quarter. The temporary stimulus programs in specific sectors (especially "cash-for-clunkers", designed to stimulate the demand for vehicles) are largely responsible for this upturn. Available data suggest that the U.S. economy appears to be in better shape than the European one in terms of emerging from the crisis faster. There has been greater progress in the recapitalization and restructuring of the financial system. In addition, the fiscal stimulus in the U.S. will be relatively greater than in Europe and will have a more significant impact on growth over the coming years. In 2010 it is forecast to reach 3 percentage points (pp) compared with 1.5 pp in Europe. In all, the most probable scenario for the U.S. economy is of moderate growth in the future, as there is no certainty that once the public stimulus ends the private sector will return to sustained growth; and because there are still risks of a renewed downturn, questions such as unemployment and the public balances remain an obvious concern.

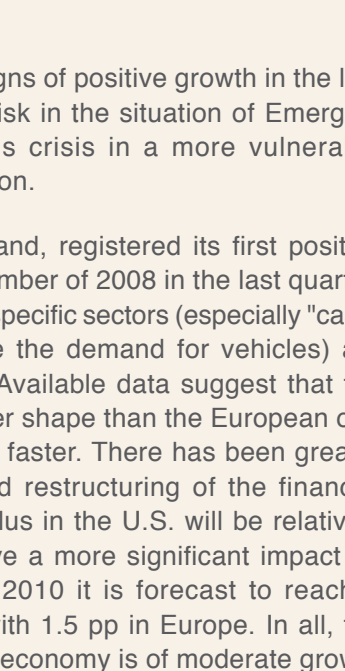
In Europe, the fiscal stimulus will be comparatively lower in 2010, and will vary among the different countries. The recovery in activity will also be delayed by greater rigidity in the European labor market (which means longer-lasting impacts on employment), as well as the slow restructuring of the banking system in those economies requiring substantial public assistance.

**..., but the challenge posed by global imbalances and fiscal consolidation remains to be solved**

In general terms, the maintenance of a sustainable growth pattern in the long term will to a large extent depend on a return to an equilibrium of forces at a global level. This will change the current pattern of savings and investment in advanced and emerging economies that has led to major macroeconomic imbalances at a world level. This would necessarily imply more domestic consumption in those economies with current account surpluses (mainly Asian economies). Their growth in recent years has been based partly on a model directed by a depreciated exchange rate, which stimulates exports and the accumulation of foreign currency for precautionary reasons; and partly on a high rate of savings, which reduces domestic consumption. Given the difficulty for consumption in advanced economies to once more become the driving force of global growth, and the need for the U.S. to increase its savings rate, the rebalancing of global demand will have to aim almost entirely at more balanced growth in the world economy in the long term. This represents a number of challenges for different economies. Among them is to avoid the sudden mismatch of currencies in a context of high exchange-rate volatility.

At the same time, in the medium term credible fiscal consolidation plans will have to be set up to prevent public expenditure from harming private-sector demand. Once more, the design of these plans does not necessarily have to coincide with the time of their application.

Chart 2.6.  
USA and EMU: GDP growth (% q/q)



Source: BBVA ERD



## 2.2 The adjustments pending in the Spanish economy condition the beginning of recovery

Throughout the second and third quarters of the year, the Spanish economy has shown a pattern of slowing deterioration in its economic activity. The figures no longer show a major decline in GDP and employment, as at the start of 2009 behind. In the third quarter of the year GDP declined by a quarterly 0.3%, compared with -1.1% between April and June, while employment fell 1.1%, compared with -1.4% in the second quarter, far from the figures for the first quarter (-3.0% q/q). The Spanish economy has thus not been immune to the slower decline experienced by other similar economies, though unlike other countries in the euro area, there is still no quarterly growth. This situation will probably continue in the fourth quarter of the year.

One of the factors responsible for the slower pace of deterioration in the Spanish economy is the intensity of the use of countercyclical fiscal policy measures, which is comparatively greater than in Europe. In this sense, the State Fund for Local Investment has played a particularly important role. It has been able to significantly reduce the rate of the job destruction since it was put into place. More recently, the stimulus programs for automobile purchases (see Section 4) have been able to partially reactivate the consumption of these goods. In addition, the Spanish economy has experienced a slight improvement in exports since the spring, which is derived from the improvement in economic activity in our main economic partners.

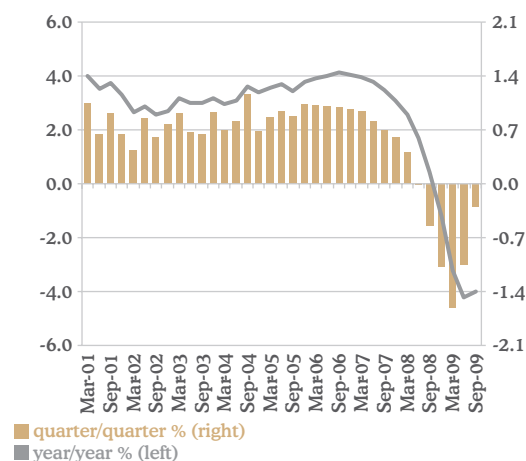
Table 2.1. Spain. Macroeconomic scenario

(% year-on-year growth)	2006	2007	2008	2009	2010
Household consumption	3.8	3.6	-0.6	-5.4	-1.7
Public spending	4.6	5.5	5.5	4.1	1.1
GFCF	7.2	4.6	-4.4	-15.3	-7.5
Capital goods and other products	8.9	6.8	-2.7	-21.5	-10.6
Construction	6.0	3.2	-5.5	-10.6	-5.2
Housing	6.2	3.0	-10.3	-23.6	-10.8
Rest	5.8	3.3	-0.4	1.7	0.2
<b>Domestic demand (*)</b>	<b>5.5</b>	<b>4.4</b>	<b>-0.5</b>	<b>-6.8</b>	<b>-2.9</b>
Exports	6.7	6.6	-1.0	-13.9	0.5
Imports	10.2	8.0	-4.9	-20.4	-4.9
<b>External balance (*)</b>	<b>-1.4</b>	<b>-0.9</b>	<b>1.4</b>	<b>3.0</b>	<b>1.7</b>
<b>GDP at mp (% yoy)</b>	<b>4.0</b>	<b>3.6</b>	<b>0.9</b>	<b>-3.8</b>	<b>-1.2</b>
<b>Memo item</b>					
Total employment (LFS)	4.1	3.1	-0.5	-6.9	-3.5
Unemployment Rate (% of active population)	8.5	8.3	11.3	18.1	20.1
Current account balance (% GDP)	-9.0	-10.0	-9.6	-5.6	-4.0
Public debt (% GDP)	39.6	36.2	39.7	54.0	64.0
Public sector balance (% GDP)	2.0	1.9	-4.1	-11.4	-10.3
Annual average CPI	3.5	2.8	4.1	-0.4	0.9

(\*) contribution to growth  
Source: INE, Bank of Spain and BBVA ERD

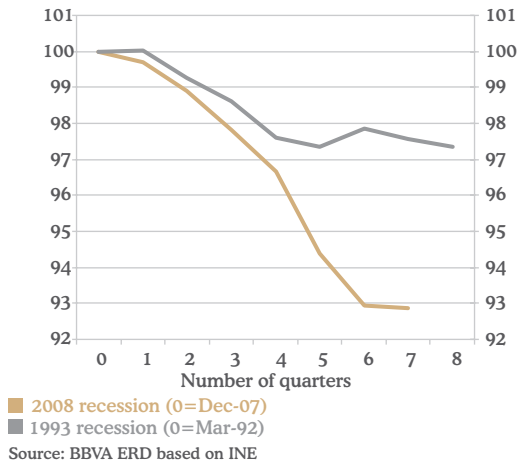
However, some factors that have led to this slowdown in the rate of deterioration in the economy will probably not be permanent. There are few elements to suggest that the recession will not extend into part of 2010, and still fewer that it may turn into a period of sound recovery with job creation. On a yearly average, GDP contraction in 2010 will be

Chart 2.7.  
Spain. GDP growth



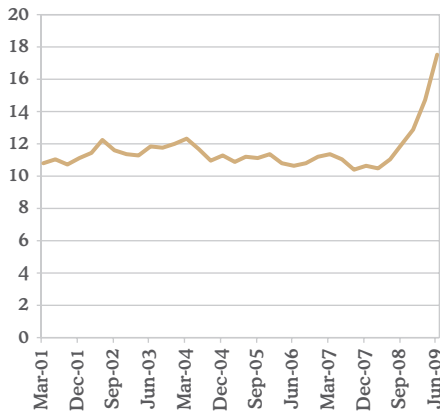
Source: BBVA ERD based on INE

Chart 2.8.  
Spain. Consumption  
(Quarter 0=100)



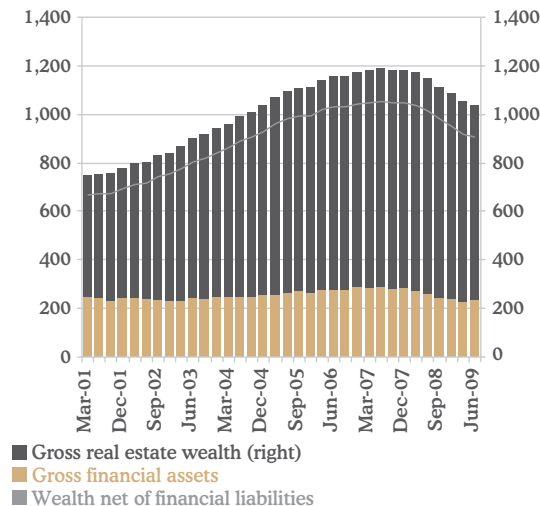
Source: BBVA ERD based on INE

Chart 2.9.  
Spain. Household saving rate  
(% of annual accumulated GDI)



Source: BBVA ERD based on INE

Chart 2.10.  
Spain. Gross and net household wealth  
(% of its GDI)



Source: BBVA ERD, based on Bank of Spain and INE

-1.2%. There are various reasons for this. First, the moderate growth prospects for our main trading partners will lead to very low levels of export growth. However, it will be domestic demand that will determine the rate of GDP, as all its components will be negative, except for public consumption. Weak domestic demand in 2010 is justified by a series of factors pending adjustment. First, the deleveraging processes in the private sector and the reduction of the Spanish economy's financing needs. Second, the process of resizing that is underway in the real-estate sector. Third, the inefficient labor market and high level of structural unemployment. Finally, the adjustment in the public balances that will begin in Spain in 2010, after the intensive countercyclical use they were put to in 2008 and 2009<sup>1</sup>.

### The deleveraging and the expectation of less growth in permanent income will lead to weak consumption in 2010

Household consumption continues to play a major role in the recession cycle of the Spanish economy. Although consumption registered a quarterly decline of only 0.1% in 3Q09, with this information, this totals seven consecutive quarters of decline in real household spending, despite significant fiscal and financial stimuli for income in the last two years. The attached chart compares the importance of this decline with the adjustment during the recession that took place at the beginning of the 1990s. The decline in household consumption is reflected by the intense increase in savings rates, which stood at 17.5% of disposable income in 2Q09, 7 percentage points (pp) higher than in 1Q08.

This situation can be explained by different factors, including the deleveraging process faced by households.<sup>2</sup> At the beginning of 2008, the total financial liabilities of households stood at 137% of their income (30 points more than in 2005), while their gross real estate and financial assets rose stood at 270% and 900% of their disposable income respectively (overall, 170 points more than in 2004). Thus their net balance sheet position at the time was relatively more comfortable, particularly if we take into account that household income grew above 5% per year. However, as can be seen in the attached charts, since then households have seen this position deteriorate significantly. The slowdown in household debt has been moderate. In addition, there has been a much more intense decline in wealth. Thus, according to data from 2Q09, the household balance sheet is still weakening. Since 1Q08 wealth has fallen by 1.3 times the annual household income.

As the savings rate will probably close 2009 at around 20%, it may appear that part of this restructuring process of family finances has been completed and that from now on reduced savings will boost consumption. Although this is plausible, it is not the most probable scenario for two reasons. First, the level of household debt as a percentage of GDP is still close to 30 points above the average in the euro zone. This is simply a reflection of the high rate of growth of credit in the expansive phase, which has been far greater than in Europe as a whole (see Box 1). Second, any change in the value of the financial assets is extremely limited by the likely continued falls in housing prices

<sup>1</sup> For a more detailed analysis of the factors behind our forecasts, see SpainWatch of November 2009.

<sup>2</sup> Together with the main determinants of savings and consumption (income, wealth and interest rates) it is important to point out that savings may also have been boosted by the shorter-term phenomenon of so-called precautionary savings (see Box 4).

and the uncertain future of equity markets, following significant stock market rises in spring and summer.

What is more, consumption will not be boosted by the rest of its fundamental factors. Interest rates have little additional margin to stimulate consumption, and the availability of credit will not be the same as before the crisis. The reduction in the debt burden, which in 2009 allowed income of over 15 billion euros to be freed, will barely reach 1.1 billion in 2010.

The growth perspectives for household income are even more relevant. In 2010 income barely grew by a nominal 0.5% and its real growth will be zero, unlike in 2009, when real income is expected to grow by nearly 2%. The non-wage component is responsible for the stagnation of household income, which will not receive an additional boost from the expansive fiscal measures as it did in 2009 by the elimination of wealth tax and the 400 euro income tax rebate, which between them totaled almost 7 billion euros. In addition, the wage component will practically register a standstill as a result of the expected performance of the job market. In line with the predicted fall in GDP, employment as measured by the Labor Force Survey could decline 3.5% in 2010. In seasonally adjusted terms, job destruction will gradually decrease throughout the year and employment could stabilize by the end of 2010. Despite the decrease in employment, the recovery margin for the unemployment rate is moderate, given the intense decline predicted in the active population as a result of immigrants leaving the labor force. Thus, the active native population will slightly decrease in 2010, while the rate of decline in the foreign population will be steeper, so that at the end of 2010 the participation of this group as a whole will revert to the levels at the start of 2008. The expected decline in the active population of little more than 1% will mean that the unemployment rate will reach around 20% in 2010.<sup>3</sup>

The last factor that conditions consumption next year is the announced increase in the VAT contained in the draft National Budget for 2010, and to be applied starting in the month of July. The fiscal consolidation process is necessary for an economy like Spain's, which will probably close 2009 with a public sector deficit of 11.4% of GDP, and will probably still exceed 10% of GDP in 2010. In addition, the structural deficit can be estimated at 6%, and therefore the simple elimination of the countercyclical fiscal measures adopted and the end of the recession will not be enough to return to a balanced budget throughout the cycle. Thus it is necessary to adopt measures that are geared towards reducing expenditure as well as increasing public revenues.

In this sense, the increase in VAT will have different effects in the short and long term. According to our estimates, private household spending on consumer goods would increase in the first quarters of the year, anticipating the rise in prices resulting from higher taxes. Once the tax is increased, households respond by significantly reducing spending by more than the earlier increase. This finally results in trend GDP being 0.5% below the trend had the measure not been taken. This permanent fall in output is the result of the distorting effect of taxes on the decisions of consumers.

<sup>3</sup> For more details regarding the current situation and our perspectives on employment, see: [http://serviciodeestudios.bbva.com/KETD/fbin/mult/091111\\_labourmarketobservatoryspain\\_tcm348-205290.pdf?ts=16122009](http://serviciodeestudios.bbva.com/KETD/fbin/mult/091111_labourmarketobservatoryspain_tcm348-205290.pdf?ts=16122009)

Chart 2.11.

### Spain. Household debt burden (% GDP)

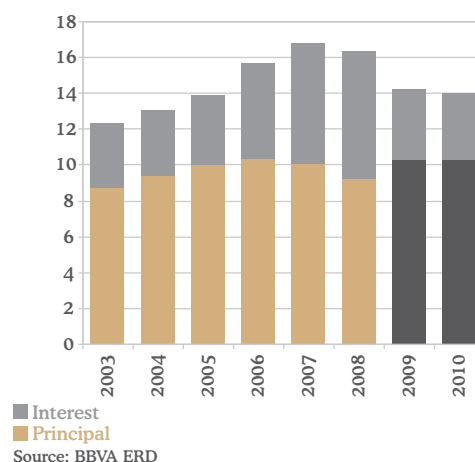


Chart 2.12.

### Spain. Seasonally-adjusted LFS employment

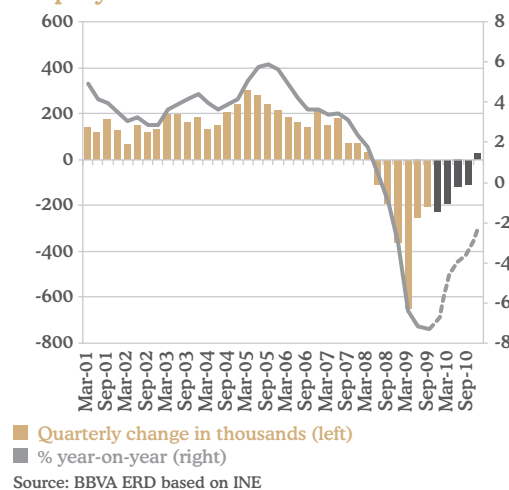
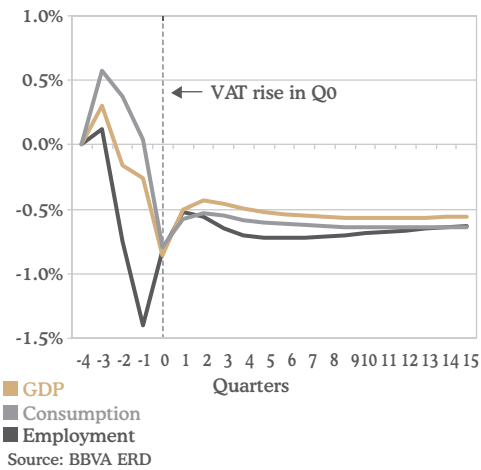


Chart 2.13.  
**Spain. Response to an increase of two pp in VAT**  
 (percentage deviation from the trend)



Source: BBVA ERD

In short, the deleveraging process, greater uncertainty in the labor market, expectations of lower growth in income (a perception that potential growth may have reduced) and expectations of fiscal consolidation starting in 2010 and continuing over the following years, are all factors that will cause consumption to remain weak in 2010, before the return to more sustainable debt levels and the reestablishment, at least partially, of household balance sheets.

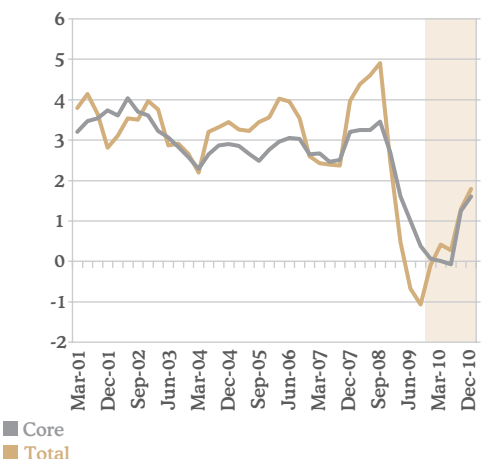
**Low inflation horizon**

Inflation in Spain initially slowed, then has fallen slightly. Although some of the current negative inflation rate responds to a base effect of oil prices, weak demand undoubtedly led to a decline in inflation in its core components as well. Thus headline inflation reached its lowest level in July (at -1.4% y/y) and since then has begun a gradual upturn, while core inflation continued to fall to a year-on-year rate of 0.2% according to the latest data. The forecasts suggest that total inflation in December will show positive growth figures, above 0.5%, supported by the return of the base effect of energy prices. Core inflation will remain stable at current levels.

The scenario is particularly favorable for a continued downward pressure on prices in 2010. The extended weak demand will lead to extremely negative output gap figures. The current historically low level of productive capacity, combined with high unemployment rates, which together with the low inflation rate at the close of 2009 will limit wage increases, are factors that suggest low inflation rates across the whole forecast horizon. This has to be added to the pressure that may result in 2010 from the recent appreciation in the euro. These elements will only be partly countered by the increase in VAT included in the national budget for 2010 (applicable from July). In all, our average forecast for 2010 is a rate of 0.9% for headline inflation, and even a few decimal places below this for core inflation<sup>4</sup>.

Thus, persistent deflation is not among the most probable scenarios. There are still no signs in the economy of the interaction between expectations of falling prices and postponement of spending decisions that is a feature of deflationary periods. On the contrary, the existence of negative inflation rates is helping to compensate part of the loss in price competitiveness accumulated in the expansive phase before the economic crisis. Throughout 2009 the headline inflation differential in the euro area has been favorable to Spain by 0.6 percentage points on average (the historical average differential is unfavorable to Spain by nearly one point). What is even more important in terms of the recovery of price competitiveness is that the core inflation differential has increased throughout 2009 in favor of the Spanish economy: standing at -0.9 percentage points (the historical average is +0.9 pp) according to the most recent data. Although negative inflation rates also involve harmful aspects (for example, as the real debt level increases), the fact is that they can contribute to improving the export figures by the drop in the real effective exchange rate. The maintenance of low inflation rates in the core component and a negative price differential in the medium term will be essential factors if the Spanish economy is to take advantage of the recovery in the global economy and, specifically, the European economy, finding a new driving force for growth in the external sector.

Chart 2.14.  
**Spain. Inflation**  
 (% yoy)



Source: INE and BBVA ERD

<sup>4</sup> For more details, see our latest Inflation Observatory, available at: [http://serviciodeestudios.bbva.com/KETD/fbin/mult/091113\\_inflationobservatorypain\\_tcm348-205780.pdf?ts=16122009](http://serviciodeestudios.bbva.com/KETD/fbin/mult/091113_inflationobservatorypain_tcm348-205780.pdf?ts=16122009)

## BOX1. The deleveraging of Spanish families and its effect on savings and consumption

The swift increase of indebtedness of Spanish households that has characterized the last decade reached its maximum in 2008 when the financial vulnerability of households was worsened by the global economic crisis and the start of the recession in our economy. Deteriorating income growth expectations and increased uncertainty throughout 2009 pushed households to reduce their level of indebtedness, preferring savings to consumption. In the long term, it is likely that this deleveraging process will continue until it reaches a debt level that will allow households to withstand the financial strain this entails with some comfort.

### The debt of Spanish households is greater than in other European countries

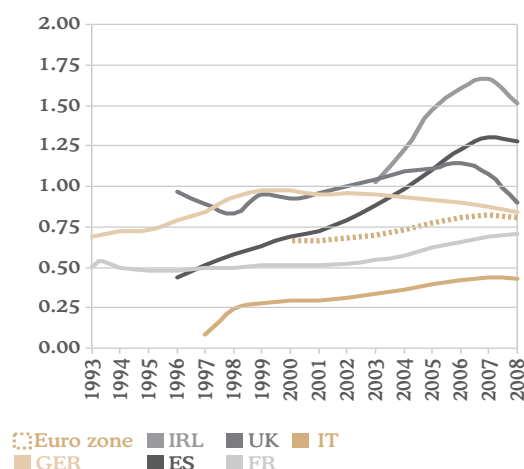
The household debt to income ratio has increased over the last ten years in most European countries. Although it has been widespread, this growth presents important differences between countries. As can be seen in Chart 1, household debt as a proportion to gross disposable income has increased in almost all of the countries considered, but in two, Spain and Ireland, it has risen to more than 125%, far from the euro zone average of 80%.

In nearly all neighbouring countries, most of the debt comes from the home purchase (Chart 2), even though consumer credit, e.g. through credit cards, has registered significant growth in recent years.

There are three main factors that can explain the increased households ability to rise debt. First, improved conditions for finance with low and less volatile interest rates, along with new risk-transfer financial instruments and more bank competition, have helped increase the leverage and maturity of credit operations for families, thus helping to increase the rate of homeownership in many countries. Second, the extraordinary boom that has characterized the real estate market in the majority of industrialized countries during the last decade, has created optimistic expectations which favored residential investment over other assets<sup>1</sup>. Finally, the economic environment in which this household debt increase has occurred has been characterized by a sustained increase of income and a low inflation environment, which has ultimately allowed households to obtain loans for higher amounts.

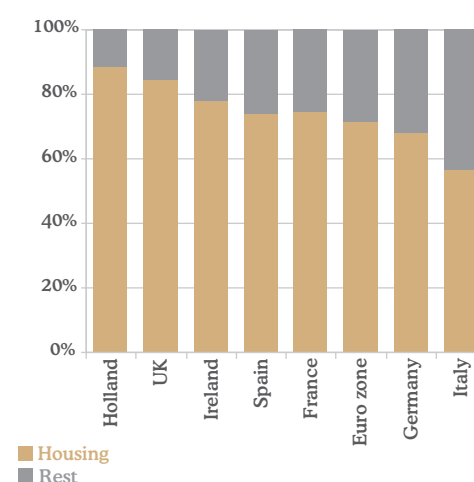
<sup>1</sup> The positive fiscal treatment of home purchases has also contributed to influencing the decision of investors to invest more in real estate than in alternative assets.

Chart 1.  
Household debt in some European countries  
(debt/household GDI)



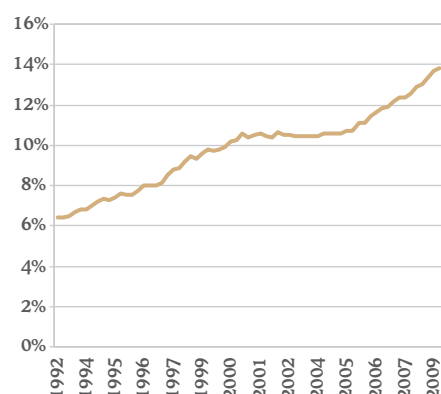
Source: BBVA ERD, based on ECB and national sources

Chart 2.  
Composition of household credit in 2008



Source: BBVA ERD based on ECB and national sources.

Chart 3.  
Spain. Household debt over total assets



Source: BBVA ERD based on INE and Bank of Spain

### In the current economic environment, the sustainability of household balance sheets is getting weaker

In order to evaluate the sustainability of household debt, it is helpful to examine two indicators that measure the leveraging of households and whether the debt burden implied by the debt is acceptable. If the debt is analyzed in terms of household assets, both financial and not financial (Chart 3), it is not possible to conclude that the ratio increased exponentially: 8 pp since 1992, of which 4 pp was in the last five years. This lower growth is partially due to the strong revaluation experienced by real estate assets, which represented more than 90% of gross household wealth in Spain over this period. The debt burden (Chart 4), which reflects the percentage of income which households allocate towards debt repayment, has not registered a major increase either. The slowdown of the debt burden last year can be explained mostly by the reduction of interest rates to very low levels, as a result of the response of monetary policy to the global financial crisis.

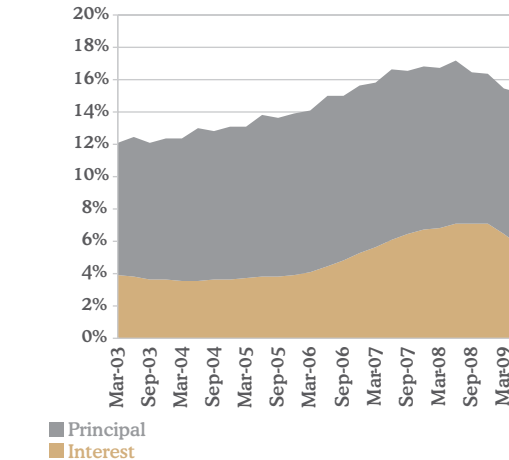
However, even though debt indicators have not exhibited alarming figures up to now, this does not mean that they cannot worsen threatening the ability of households to make their payments. This is especially true in the current environment, which is characterized by adjustments in key sectors of the Spanish economy. Elevated debt implies an increased vulnerability of household solvency to fluctuations in home prices, interest rates, and income, which, in the end, could affect their ability to spend.

A high proportion of variable rate loans, as in Spain, means that interest rate fluctuations are passed directly on to borrowers, immediately affecting their ability to repay the debt and to spend. In this context, an increase (or decrease) in interest rates will reduce (or increase) the resources available for consumption, in inverse proportion to the borrower's savings during periods when interest rates were low.

In addition, increased volatility in home prices could affect the capacity for household consumption. This effect manifests itself through the variation in the value of the asset that guarantees the mortgage, which could generate a fall in consumer confidence levels and diminish the ability to extract liquidity from the mortgage for consumption purposes through the MEW (Mortgage Equity Withdrawal). In Spain, however, the existing empirical evidence points to a moderate wealth effect on consumption due to, among other factors, the limited use of instruments such as the MEW<sup>2</sup>.

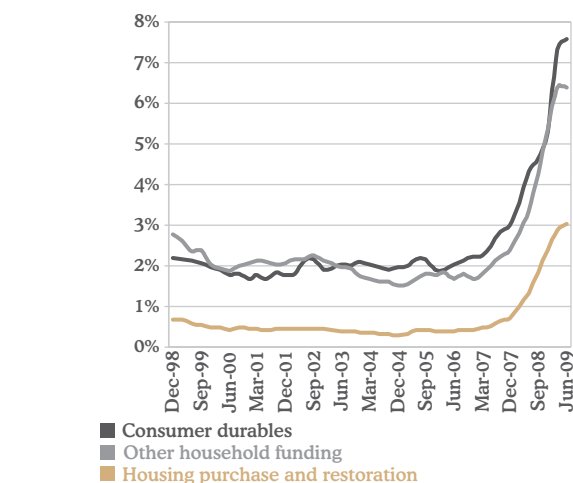
<sup>2</sup>For more details regarding the effects of consumption on changes in house prices, see "Consumer Watch", first quarter of 2009, pgs. 10-11.

Chart 4. Spain. Household debt burden (% of GDI)



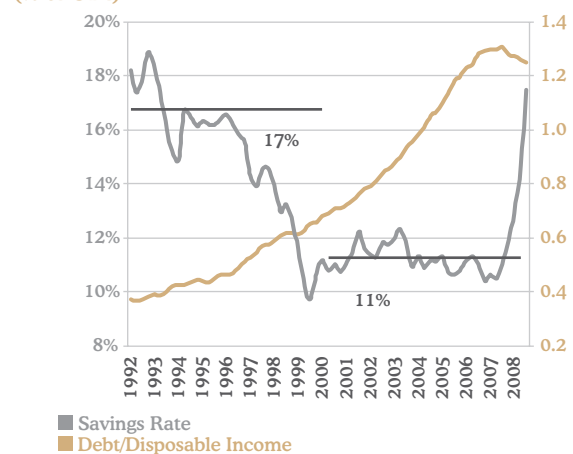
Source: BBVA ERD based on INE and Bank of Spain

Chart 5. Spain. Household credit default rates



Source: Bank of Spain

Chart 6. Spain. Household debt and savings (% of GDI)



Source: BBVA ERD, based on INE

A third factor that conditions the sustainability of household debt is the negative shock caused to income by a possible job loss. From the beginning of 2008, the Spanish economy has lost more than 1.5 million jobs (-7.5%), which has undoubtedly affected the solvency of households and borrower confidence.

### The reduction of household debt will require an increase in savings...

After more than 15 years of uninterrupted growth in household disposable income, households face the need to reduce their leverage to more sustainable levels given the economic environment expected for the medium and long term. Interest rates, economic growth, and asset values are three of the most important factors for determining debt sustainability. For the purpose of analyzing household debt more closely, a formula can be used to summarize its financial balance position:

$$(1) AF_t + IR_t + C_t = R_t + \Delta D_t - rD_{t-1}$$

where  $AF_t$  represents household financial savings in period  $t$ ,  $IR$  residential investment (non-financial savings)  $C$  consumption,  $R$  disposable income,  $D$  debt and  $r$  the interest rate. Dividing (1) by the income, we can obtain an equation of the debt ratio:

$$(2) \frac{D_t}{R_t} = \frac{D_{t-1}}{R_{t-1}}(1+r-g) + \frac{AF_t + IR_t + C_t}{R_t} - 1,$$

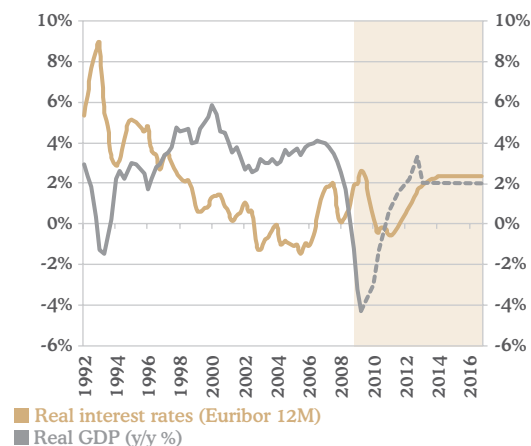
Where  $g$  is the growth rate of household income Equation(2) can be re-written as:

$$(3) \frac{D_t}{R_t} = \frac{D_{t-1}}{R_{t-1}}(1+r-g) + \frac{AF_t + IR_t}{R_t} - S_t$$

Where  $S_t = 1 - (C_t/R_t)$  denotes the household savings rate. As can be seen, a reduction in the debt ratio can be achieved through lower investment, an increase in disposable income that is higher than the interest rates, or an increase in savings rates.

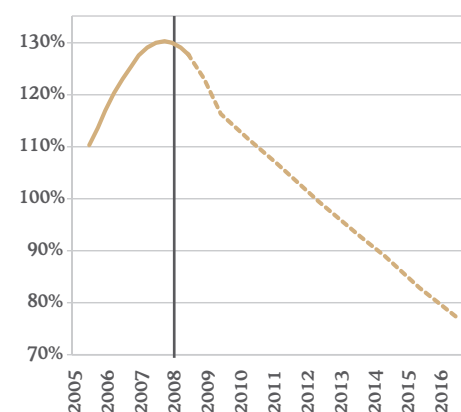
During the decade of debt expansion, the lowering of interest rates and the sustained economic growth allowed household debt volume to expand (Chart 7). Besides, the low risk perception and the optimistic expectations regarding the future direction of the economy, especially in the real estate sector, encouraged investment in residential real estate, which caused credit to grow to comparatively high levels. However, the trend change in the economic cycle and the adjustment in the construction sector have affected the risk perception of families, which have started to limit the size of their debt. This change has affected especially the consumption and savings behaviour from the beginning of the crisis.

Chart 7.  
Spain. Trend GDP growth and long term interest rates



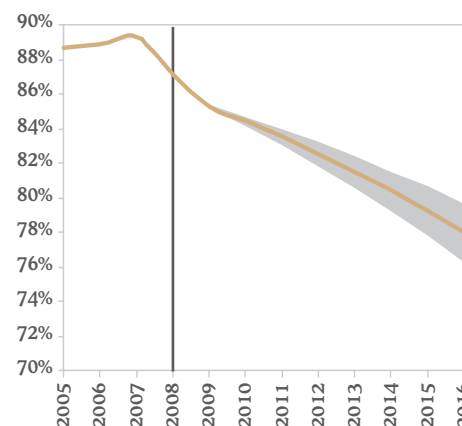
Source: BBVA ERD based on INE and Bank of Spain

Chart 8.  
Spain. Simulation of household debt ratio



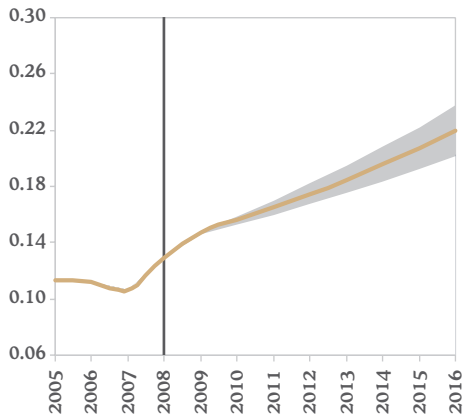
Source: BBVA ERD

Chart 9.  
Spain. Household consumption rate forecasts (\*)



(\*) Consumption rate = household consumption/GDI  
Source: BBVA ERD

Chart 10.  
Spain. Household saving rate forecasts (\*)



(\*) Savings rate = household savings/GDI  
Source: BBVA ERD

The debt reduction process can be seen in the significant increase in savings rates, that from 11% during the second quarter of 2008 has increased to 17.5% for the same period of 2009 (Chart 6), a level similar to that of the first half of the 1990s. This dynamic has implied a strong correction in consumption. There have been seven consecutive quarters of quarterly falls in private consumption expenditure, including in the third quarter of 2009.

### ...until more sustainable levels are reached

The reduction of household debt has accelerated during the last year and a half. The ratio of debt to disposable income reached its peak in the middle of 2008, at over 130%. It has since then decreased and is currently closer to 125%. It is therefore worth asking which is the acceptable level of household debt and what implications this deleveraging process could have on consumption.

For this purpose, several convergence scenarios where the debt ratio moves towards a long term level equal to the 1990-2008 average of 80% (also equal to the EU household debt average) have been analyzed. The scenarios have been created using a simple household debt model<sup>3</sup> in accordance with different assumptions

about the main variables that affect the dynamic growth of the debt/GDI ratio: growth of disposable income, interest rates and the percentage of savings allocated towards the repayment of debt. Charts 9 and 10 show the results of these simulations.

The household deleveraging scenarios are shown in Table 1. According to these, in order for the ratio of debt over GDI to decline to 80% by 2016, savings rates must increase from 17% to 20-24%. This increase in savings rates will reduce the percentage of income geared towards consumption from the current 87% down to 78% in the base scenario or 76% in the worst case scenario (Chart 10).

In conclusion, it seems probable that households will continue to adjust their balance sheets in response to the new economic environment. The current recession has changed household expectations in terms of their future income and debt burden. This process can occur if the savings and consumption trends of the most recent quarters continue, or if debt reduces through default or foreclosure, or by a lower rate of lending. In any case, during this deleveraging phase, households will not have the same consumption capacity that they had before the crisis, which will probably contribute to slowing down the economic recovery process.

<sup>3</sup> See Glick, R. and K.J.Lansing (2009): "U.S. household deleveraging and the future consumption growth", FRBSF Economic Letter, 2009-16.

### Box 1. Household deleveraging scenarios for debt/GDI ratio to equal 80% in 2016

	Average growth nominal income (%)	Euribor 12 months	% of savings allocated to repayment of debt
Core Scenario	2	4	80
Lower	1	3	80
Higher	3	5	80
Average of the last ten years	3.55	3.53	
Current values	4	1.24	

Source: BBVA ERD



### 3. Consumer finance

#### The deterioration in consumer lending in Spain has slowed down

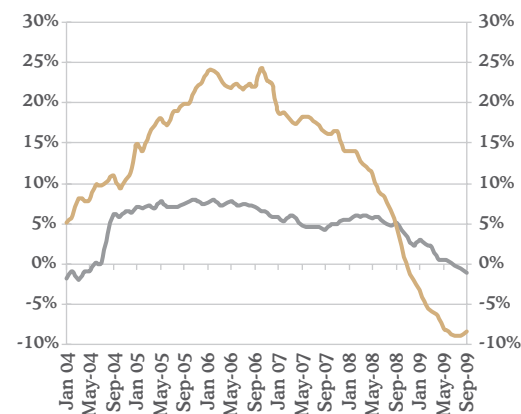
In an adverse international market environment, consumer lending in Spain has continued on the downward path which began in early 2007. The latest available data shows a year-on-year growth rate of -8.4% in September 2009, well below the rate in the euro area, but moderating. The outstanding balance of consumer lending from Spanish financial institutions was 100 billion euros in September 2009, compared to 631.9 billion in the euro area, which has started to slow down at a rate of -1.0% (Chart 3.1). Even so, credit burden over GDP in Spain has been greater than in the euro zone since 2002, reaching 9.1% in September of this year compared with 7.1% for the EMU (Chart 3.2).

There was also a decrease in the number of new consumer credit transactions, both in Spain and in the rest of the euro area. In Spain, new transactions have declined since the end of 2007: the credit granted in the third quarter, 7.3 billion euros, is 21.8% less than the previous year, but the decline has slowed down from -27.8% for the same period in 2008. In the months of July, August, and September, the slowdown of lending in the euro area was less significant, with 50.6 billion euros in new loans granted, 7.8% less than in 2008, up from -20.1% in 2008. This trend will probably continue, at least until the economic cycle improves.

The main difference in the maturity profile of new transactions in Spain and the rest of Europe is the greater prevalence of short term operations in Spain. This is in part explained by the importance of quick loans and credit cards in a context of greater consumer uncertainty. In the euro zone, medium-term transactions predominate, with maturity between 1 and 5 years. Whilst short-term operations accounted for 61.2% between January and September in Spain, they only accounted for 31.0% in the euro zone. Furthermore, in Spain the importance of medium-term operations is decreasing, accounting for 19.8% of the total, compared to 38.6% in the euro zone. Lastly, operations that are longer than 5 years continue to decline in Spain, from 24.9% of the total in 2008 to 19.0% of the third quarter in 2009, reflecting the fall in consumption of durable goods (Chart 3.3). In the future, as lower official rates are passed on to lending rates there will be a limited stimulus for consumption. This fact, along with the slowdown of credit and the slackening of income will mean a reduction in households' debt burden, which will have a limited effect on consumption in an environment of confidence that is still negative.

According to the most recent Bank Loan Survey (EPB), the criteria for approving new credit for companies and households began to ease in June 2009, due to government support for the financial sector and the improvement of the international economic situation. The slowdown in contraction in both supply and demand was more marked in Spain than in the euro zone. The forecasts indicate that this slowdown in access to credit will continue to improve during the next quarter, due to expectations about economic activity in general, and the solvency of those seeking credit. (Chart 3.4). These results are consistent with the adjustment taking place in credit.

Chart 3.1.  
Spain. Year-on-year growth of consumer credit

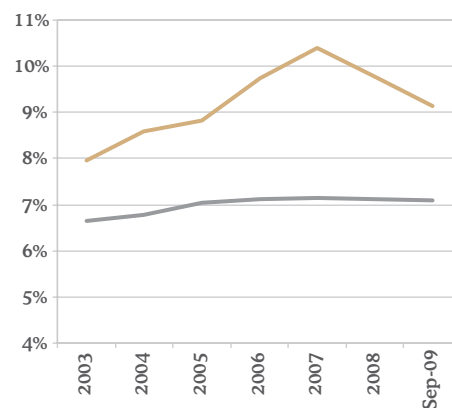


■ EMU  
■ Spain\*

\* Including securitization

Source: BBVA ERD, based on Bank of Spain and ECB

Chart 3.2.  
Spain. Consumer credit / GDP ratio

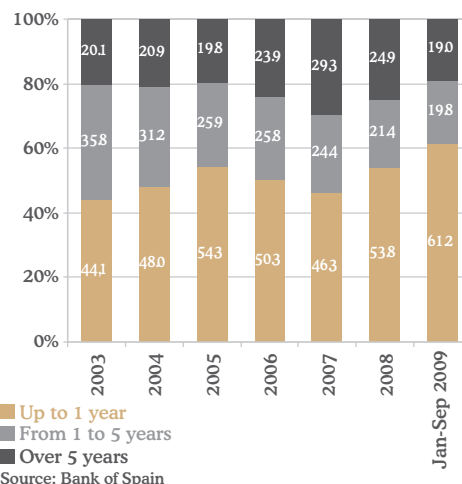


■ EMU  
■ Spain\*

Source: ECB and Bank of Spain

\* Including securitization

Graph 3.3.  
Spain. New consumer credit transactions



■ Up to 1 year  
■ From 1 to 5 years  
■ Over 5 years

Source: Bank of Spain

Chart 3.4.  
Spain. Bank Loan Survey  
Consumer and other credit

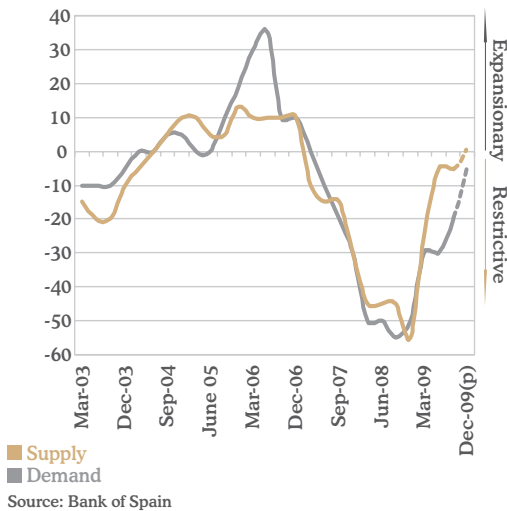


Chart 3.5.  
Spain. Percentage of new consumer finance transactions

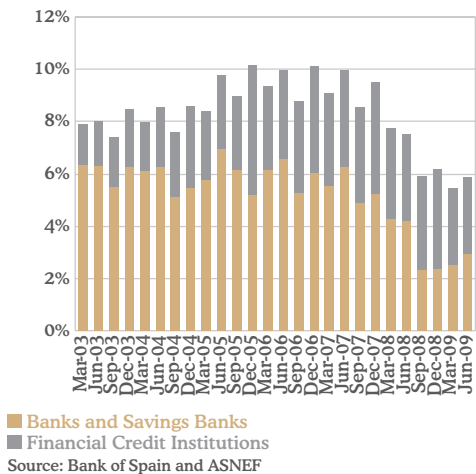
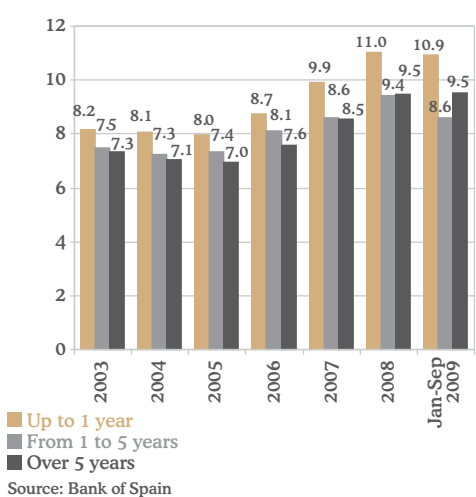


Chart 3.6.  
Spain. Interest rates on new consumer credit transactions



## Revolving Loans: maintaining their importance

As there are no aggregate statistics for consumer credit granted by the financial sector as a whole broken down by purpose, the breakdown analysis has to be carried out using figures from the Asociación Nacional de Entidades Financieras (Asnef - the National Association of Financial Institutions), which compiles information from financial credit institutions. In the second quarter of 2009, new consumer credit transactions by financial credit institutions reached 4.1 billion Euros, 20.6% less than in the same period of last year, and in line with the negative growth rates experienced from the end of 2008. In the first six months, the credit granted by these institutions decreased 24.1%. Thus, 2.9% of new consumer credit transactions in the second quarter of the year were financed by these institutions and an additional 3% by other entities (Chart 3.5).

In terms of type of credit, the biggest fall during the first semester was in new personal loans, down 68.1% in the first half of 2008. Until last year they represented the biggest proportion of the total. The funding of consumer goods registered the second greatest decline (-31.0% in the first half of 2009, in comparison to -0.2% in 2008). Finally, the lowest fall was for revolving loans (-14.7% from January to June of 2009, compared with 5.1% for the same period of the previous year). Therefore, products such as fast loans and debt consolidation schemes, which have become considerably more expensive, no longer play such a prominent role in household finance, despite the increasing financial difficulties being faced. Nevertheless, revolving loans continue to account for 74.3% of finance from financial credit institutions, while the financing of consumer goods accounted for 20.6% and personal loans for 3.8% (Charts 3.6 and 3.7).

New funding for buying vehicles by financial credit institutions amounted to 3.2 billion euros in the first six months of 2009, down 46.8%. New private cars continued to be the most important item, accounting for 63.6%, even though they fell by 52.6%. They were followed by new cars for business use and used cars for private individuals, which fell by 50.4% and 22.2% respectively to 12.4% and 16.6% of the total. Finally, the increase in new operations for financing second-hand business cars still stands out. There was an increase of 107.4% during the first half of 2009 as compared to the same period for last year.

During the second quarter of 2009, the average value of loans for purchasing new cars was over 12,000 euros, down 19.5% compared to 2008. Loans for second-hand cars were financed with loans of around 12,400 euros. The significant increase in the average amount of used business car loans is notable, at 18,100 euros in June. Sales of second-hand ex-rental and high-end automobiles may be behind this trend.

In short, consumer credit continues to decline in Spain, although the trend is slowing. The greatest strengths can be observed in short term and revolving loans in an environment in which market perspectives point to a gradual improvement in supply and demand conditions.

## Box 2. Regulatory changes and consumer protection: a comparative analysis of Mexico, US, and Spain<sup>1</sup>

One of the most important effects of the global financial crisis has been the rapid design of new proposals for the regulation of financial activities. Something that is already the subject new regulations in some countries is protection for users of financial services, both in general and at the product level, given that the previous regulations permitted situations that were considered unfavorable to clients.

In general, as opposed to the United States and Mexico, changes in Spanish regulations did not arise as a reaction to the crisis. They were already included in the European Union's schedule. Therefore, from the beginning, EU legislation has sought to protect the economic interests of consumers and the alignment of standards in order to increase competition and transparency in the market.

This box covers the new consumer protection regulations and initiatives adopted in Mexico, the United States, and Spain.

1. There have been legal changes in **Mexico** in order to strengthen the powers of the Bank of Mexico (Banxico) and the National Commission for the Defense of Users of Financial Services (CONDUSEF)<sup>2</sup>,
  - a. CONDUSEF will establish the requirements and procedures for termination of contracts between credit institutions and their clients. It will also be able to issue provisions that define the activities not considered good practices and sanction violations with fines.
  - b. Modifications to the Financial Services Transparency and Regulation Law (LTOSF). These give CONDUSEF the power to issue provisions regarding the form and terms of contracts, account statements, and advertising affecting the characteristics of lending, savings and service operations. The following are dealt with in account statements and items that verify operations:
    - Quality and simplicity of information.
    - Show fees and other items charged by the entity, as well as other characteristics of the service.
    - Relevant information regarding the charging of fees and interest, the charging of interest, the balances, credit limits, and warnings regarding transaction risks, among other items.
    - Incorporate information that allows the comparison of fees and other conditions applicable to related transactions.

- Financial entities<sup>3</sup> must offer location and contact information for the department dealing with explanations and claims, as well as the time limits for submitting them.
- For consumer credit transaction account statements, incorporate warnings of excessive indebtedness and the impact nonpayment will have on credit history.

- c. In the modifications to the LTOSF, the Bank of Mexico is also given the power to issue general provisions to regulate interest rates, fees, prepayment and early payment of transactions with credit institutions, limited object finance companies and multiple object finance companies, as well as regulating exchange shares.
    - In addition, in terms of credit loans or revolving credit card financing, LTOSFT establishes provisions for limiting both offers and interest rates, fees and minimum payments (see Box 1)
  - d. Finally, included in the modifications of the Protection and Defense of the Users of Financial Services Law, CONDUSEF is granted the powers to implement educational and other types of programs regarding financial culture.
2. The concern for consumer protection in the **United States** has resulted in two new initiatives which will enter into force during 2010:
    - a. Regulation on credit cards: "Credit Card Accountability Responsibility and Disclosure Act of 2009" (H.R. 627). The purpose of this regulation is to prevent the excesses committed by credit card issuing companies during the preceding expansion period. Changes are mainly made to the fees charged and payment conditions (see Table 1). The impact of this law on the credit card industry could be significant, both in terms of profitability and credit volume. In addition, preliminary analysis suggests, it will cause changes in marketing and client relationship management practices.
    - b. New agency for consumer protection for financial products: "Consumer Financial Protection Agency Act 2009" (H.R.3126). It is based on the "Financial Regulatory Reform", and it dictates the products and financial services must be based on the principles of greater transparency, simplicity, justice, access for all users, and responsibility.

<sup>1</sup>We would like to thank Sara Castellanos and Adolfo Albo for their collaboration.

<sup>2</sup>Created in 1999 for the purpose of promoting, assessing, protecting, and defending the rights and interests of users of financial institutions, arbitrating their differences impartially, and ensuring fairness in their relations.

<sup>3</sup>Credit Institutions, limited object financial companies, leasing and finance companies, financial factoring companies, regulated and unregulated multiple object finance companies, savings and loan associations, and financial entities that act as fiduciaries for trusts that grant credit, loans, or financing to the public.

<sup>4</sup>The Energy and Commerce Committee has included an amendment for transforming the agency into a five member commission. This way, no political party will dominate the commission, in addition to making it less bureaucratic.

The purpose of this new agency is to centralize the task of consumer protection which was previously spread out across numerous agencies. With this, global coverage will be provided for the entire market to prevent any abuse and eliminate the ability to select the least strict state regulation, which is what used to occur under the previous regulations. The agency will now impose new equal minimum standards for all of the states.

3. For **Spain**, the European guidelines for consumer protection were already in existence before the crisis. All of the countries in the European Union are regulated by the following guidelines that regulate different aspects of consumer protection, specific products and investors.
  - a. Consumer Credit Directive (2008/48/EC). Seeks to harmonize reporting obligations, terms, and formal requirements of the right to termination<sup>5</sup>. This regulation will be transposed by the Ministry of Health and Social Policy and should be incorporated into Spanish national law on May 12, 2010. The main changes this directive will bring to Spain are administrative. The requirement for more pre-contractual information will require modifications in product marketing. It also regulates advertising information that must be published. This aspect was not taken into account by the current law.

The entry into force of the Directive includes some limits on fees; the client shall have the right to, at any time, partially or completely settle the obligations derived from the contract with a compensation that is not greater than 1% (or 0.5% if the contract period is not longer than a year). This will result in changes in the charges and the contracts in order to adjust fee payments.

- b. Directive on the prevention of the use of the financial system for the purpose of money laundering and terrorist financing (2005/60/EC and 2006/70/EC). Its purpose is to control the movement of illicit capital and the generating of returns from such capital.

Its transposition<sup>6</sup> is pending in Spain, although it should have entered into force on December of 2007. The preliminary version is more restrictive than the original and the transposition carried out in Portugal. While the European directive requires that information be kept for a minimum of five years, the Portuguese regulation requires seven and the Spanish one ten. Client

identification requirements are also greater in the case of politicians, their families and those closest to them.

	<b>Politicians national</b>	<b>Politicians foreign</b>
Directive community	Due diligence measures <sup>7</sup>	Enhanced due diligence measures
Portugal	Due diligence measures	Enhanced due diligence measures
Spain	Enhanced due diligence measures	Enhanced due diligence measures

Stricter administrative requirements and new client identification requirements derived from the new regulation will probably translate into higher structural and administrative costs.

- c. Other European legislation: SEPA (Single Euro Payments Area, 2007/64/EC) which begun its implementation on November 2 for cross-border direct debits, and the MiFID Directive (Markets in Financial Instruments Directive, 2004/36/EC) for investor protection, transposed in November 2007.

The next steps in consumer protection could be a stricter regulatory regiment that extends to other products like mortgages, or a that an increased awareness of «responsible credit» leads to a tougher transposition of the directive on consumer credit in Europe.

## References

- "Credit Card Accountability Responsibility and Disclosure Act of 2009" (H.R. 627).
- "Consumer Financial Protection Agency Act 2009 " (H.R.3126).
- Directive on the prevention of the use of the financial system for the purpose of money laundering and terrorist financing (2005/60/EC and 2006/70/EC), European Union, 2005 and 2005.
- Consumer Credit Directive (2008/48/EC), European Union 2008.
- SEPA Directive (Single Euro Payments Area, 2007/64 EC), European Union, 2007.
- MiFID Directive (Markets in Financial Instruments Directive, 2004/36/EC), European Union, 2004.
- Credit Institutions Law, Official Bulletin of the Federation, June 25, 2009, Mexico.
- Financial Services Transparency and Regulation Law, Official Bulletin of the Federation, June 25, 2009, Mexico.
- Protection and Defense of the Users of Financial Services Law, Official Bulletin of the Federation, June 25, 2009, Mexico.

<sup>7</sup> The due diligence measures are:

1. Formal identification. Anonymity is prohibited, and duly accredited documents are required.
2. Identification of the real titleholder. Real titleholder: who intends to establish a business relationship or participate in any transaction on his/her own account
3. Know the purpose and nature of the business relationship.
4. Continuous monitoring of the business relationship.  
In the case of more stringent diligent measures, the following should be added to the diligent measures:
  1. Have adequate risk procedures in place for the purpose of determining whether or not a client is a politician.
  2. Obtain authorization from management to establish business relationships with these clients.
  3. Adopt adequate measures for determining the origin of the assets and the funds used to establish the business relationship or operation.
  4. Strictly and permanently monitor the business relationship.

<sup>5</sup> In this case refers to the right of the client to rescind a credit contract for no reason within a maximum period of 14 days.

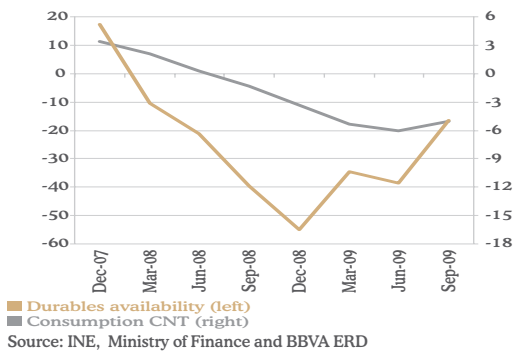
<sup>6</sup> On November 20, 2008, the European Commission initiated infringement proceedings against Spain before the Court of Justice for breach of its obligations under article 45 of Directive 2005/60/EC, on enforcement of the legislation. No ruling has been issued yet on this matter. The Commission has taken identical measures against other Member States that have not fully complied with the Directive.

Table 1. International comparison of credit card regulations

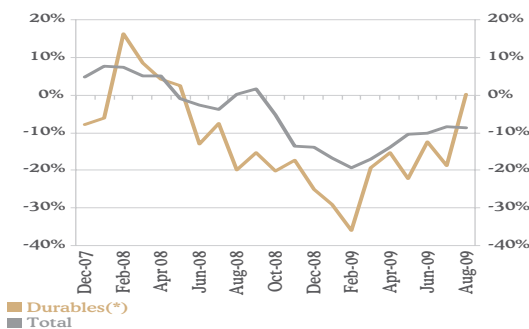
U.S.: (Credit Card Accountability, Responsibility and Disclosure Act -2009)	Spain: Circular 8/1990 and New Directive 2008	Mexico: (Credit Institutions Law, LTOF, and the Condusef Law, 2009)
An increase in interest rates for the pending balance only allowed in the following cases: 1) Expiration of promotional period; 2) Variation in the reference index; 3) Payments that are more than 60 days late	8/90 regulation 6 section 8: interest rates can be raised when «reasonable notice» is given Directive: Notice must be given for all modifications before the change is to take place	The interest rate may vary with no notice or notification of any kind to the client only in the following cases: 1) Variations in the reference rate level, and 2) Expiration of a promotional interest rate
Interest rates must be reestablished to their previous levels if payments are made on time for the following 6 months.	Directive: Obligation to inform of any interest rates for late payment as well as the ways they can be implemented and the costs for not paying late payment interest rates	Not regulated
Double billing cycles and "Universal default" are prohibited.		Not regulated
Overdraft (when the authorized limit is exceeded) charges are prohibited except with prior authorization from the client.	Applied to the exceeded maximum balance for the monthly payment period (industry practice)	It is prohibited to charge an overdraft fee or fee for an attempted overdraft
Interest rates cannot be increased during the first year the account is open	Not regulated	Not regulated
Promotional interest rates must last at least 6 months	Not regulated	Promotional interest rates that are lower than the ordinary maximum interest rates may be offered provided that their terms and conditions are stated clearly
Punitive fees may not be charged for electronic payments or phone payments		Not regulated
Retroactive rate increases are generally prohibited	Prohibited	Interest may be charged only on daily unpaid balances that fall within the interest calculation period for the account statement in question.
Payments must first be applied to the balance with the highest interest rate	Directive: Inform of the order in which payments will be applied	Not regulated
Notice must be given for any change in interest rate and changes to contracts • Written notification with at least 45 days notice • Client's right to cancel the card	Obligation of advance notice, even if shorter term, a minimum of 15 days in Spain Right to terminate (revision: Law 1/2007 and in Directive) and cancel	Through its general provisions, the Bank of Mexico will determine the minimum payment amounts to be charged for TDC credits
Greater dissemination and disclosure fees and terms requirement that will be reviewed by the Federal Reserve; Internet Publication of contracts and the delivery of those contracts to the Federal Reserve Board Provide information about the consequences of making minimum payments Reference a toll free number	Obligation to publish fee schedule at Bank of Spain and on notice board. Directive: Regulates all of the information that must be provided to the consumer including the minimum payment	Obligation of advance notice, even if it is 30 days prior to changing the interest rate Through general provisions, Condusef will establish the requirements and procedures for termination operations as well as the cancellation and settlement procedures for the receiving institution.
New requirements and certain prohibitions are established for credit granted to minors (under 21 years of age)	Regulated by the Civil Code. Minors cannot run up debts.	Requirement for greater dissemination and disclosure of fees and terms Internet Publication of contracts and the delivery of those contracts (Condusef) Determine the amounts of the minimum payments (Bank of Mexico) Reference the facilities, access, and help needed to handle clarifications (Condusef)
The need to consider the ability of consumers to pay when granting credit cards or increasing credit limits	Obligation to evaluate the solvency of the consumer (C4/2004 of Bank of Spain and in the Directive)	TDC will only be granted after estimating the viability of the applicant to pay and a TDC line of credit can only be increased for clients that have exhibited a behavior of meeting their credit obligations, with the client expressly accepting the offer being presented

Source: BEVA ERD

**Chart 4.1.**  
**Household consumption.**  
 Total and consumer durables (% yoy)

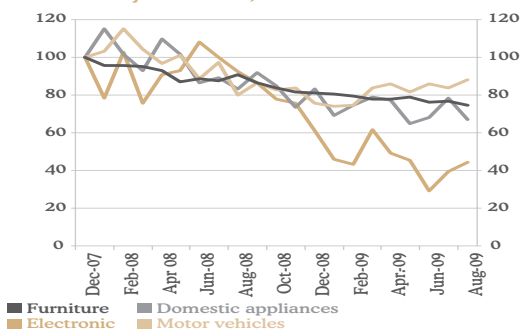


**Chart 4.2.**  
**Spain. Exports of goods (real terms)**  
 (% yoy. Seasonally-adjusted and calendar-adjusted data)



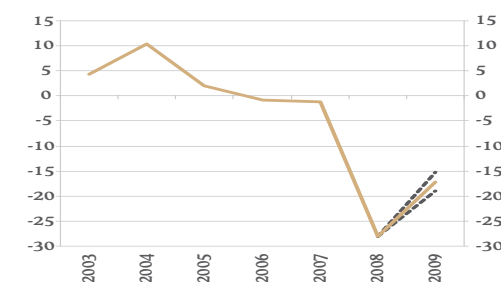
(\*) Automobiles, furniture, electrical appliances, and electronics for consumption  
 Source: Ministry of Industry, Tourism and Commerce, and BBVA ERD based on Datacomex

**Chart 4.3.**  
**Spain. Exports of goods (real terms)**  
 (Dec-07 = 100. Seasonally adjusted and calendar-adjusted data)



Source: BBVA ERD based on Ministry of Industry, Tourism and Commerce

**Chart 4.4.**  
**Spain. Car registration growth (% yoy)**  
 Central forecast and confidence interval at 80%



Source: BBVA ERD based on ANFAC

## 4. Consumer durables

### Mild slowdown in the decline in consumer durables throughout 2009...

During 2008, the consumption of consumer durables experimented significant contraction due to the loss in dynamism in their main determinants (income, wealth, private sector financing conditions) and the increase in precautionary savings derived from the greater uncertainty about the future of the economy. The slowdown of the decline of the Spanish economy in 2009 (partly due to the effect of the stimulus plans on domestic demand), improved consumer confidence, the reduction in inflation rates, and above all, the recovery of foreign demand of our main commercial partners, have caused a slowdown in the decline of durable goods consumption (Chart 4.1).

### ..., favoured by an heterogeneous recovery of external demand

In the same manner as the global commercial collapse during the second half of 2008 contracted the exports of Spanish products, especially consumer durables, and therefore contributed to worsening the recession that our economy is still experiencing, its timid and progressive recovery throughout 2009 is limiting the magnitude of the decline. Thus, while exports of consumer durables fell an average of 25.6% year-on-year between October of 2008 and February of 2009,<sup>1</sup> the average decline has slowed down to -14.6% yoy since March 2009 (Chart 4.2).

However, recent development of exports in consumer durables varies according to types of goods. While car sales abroad have recovered from the beginning of the current year to levels that are similar to pre-crisis ones during the second half of the year, the export of furniture, electrical appliances and, above all, electronics continues to decline significantly (Chart 4.3).

As shown in Box 4.1, the contraction of exports of consumer durables from their highest points in the previous cycle to the lows in 2009 has been bigger than the accumulated figure (using the most recent data available) for all of goods under consideration, except furniture. The slowdown in the pace of the export contraction has been especially significant in automobiles, which have benefited from direct financial assistance to facilitate their purchase in practically all of our export markets.

The weakness of external demand does not appear to have translated into a significant decline in export prices, as can be seen in Box 4.1. Thus, the accumulated decline of consumer electronics and electrical appliance exports has been slightly higher in nominal terms than in real terms. Similarly, the adjustment of car sales abroad increases when the price-effect is considered. On the other hand, the only goods considered that have slowed their deteriorating exports due to price changes are furniture. Export price movements limited the decline in sales from the end of 2007 by 1 percentage point (pp).

<sup>1</sup> Seasonally adjusted and calendar adjusted data.

Table 4.1. Export of consumer durables. Information, in constant 2000 euros, seasonally adjusted and calendar adjusted

	Automobiles		Furniture		Electrical appliances		Consumer electronics		Total	
<b>Maximum (€, thousands)</b>	1,802,334	<b>Feb-08</b>	129,307	<b>Dec-07</b>	76,517	<b>Jan-08</b>	210,206	<b>Jun-08</b>	14,756,493	<b>Feb-08</b>
<b>Minimum (€, thousands)</b>	1,154,795	<b>Jan-09</b>	96,118	<b>Aug-09</b>	43,011	<b>May-09</b>	56,548	<b>Jun-09</b>	11,921,203	<b>Feb-09</b>
<b>Growth between maximum and minimum</b>	-35,9%		-25,7%		-43,8%		-73,1%		-19,2%	
<b>Average monthly growth between maximum and minimum</b>	-4,0%		-3,6%		-3,5%		-10,4%		-1,8%	
<b>Growth between maximum and the latest available data</b>	-23,4%		-25,7%		-42,0%		-58,9%		-14,9%	
<b>Nominal growth between maximum and latest available data</b>	-41,4%		-24,9%		-44,6%		-77,0%		-24,0%	

See BBVA ERD based on Ministry of Industry, Tourism and Commerce.

## 4.1. Automobiles: before and after the entry into force of Plan 2000E

After the major contraction in the demand for automobiles during the second quarter of last year and the first quarter of this, and with the success of sales due to direct assistance for the purchase of cars in some other European countries, the government approved the 2000E plan in mid May. The purpose of this program was to boost demand for new or second-hand vehicles under 5 years old, with reduced CO2 emissions. Help in the form of €, 2,000 co-financed by the Ministry of Industry, Tourism, and Commerce (MICYT), the autonomous communities and manufacturers and importers was given if a vehicle that was 10 years or older<sup>2</sup> or with a minimum of 250 thousand kilometers was scrapped.

The effects of the 2000E Plan were quickly felt. The reduction in the number of cars registered bottomed out significantly during the months of June, July, and August (an average of -8.9% as compared to -41.0% yoy in the three preceding months). September represented the first month in which the year-on-year registrations increased after being in decline for six consecutive quarters. In October, the growth increased to 26.4% and BBVA ERD predictions indicate that it will remain in two digit figures in November and December. Nevertheless, the number of new cars registered in 2009 will be under 940,000, 17.2% less than in 2008 (Chart 4.4).

Private purchases have been mainly responsible for the positive car registration figures since the implementation of the 2000E Plan. The number of cars registered by private individuals increased an average of 30.8% yoy between the months of June and October. However, the decline in company and rental firm registrations, -33.66% yoy and -42.0% yoy, respectively, partially counterbalanced the positive trend in private registrations, so that the total average increase barely reached 3.5% since June (Chart 4.5)

Table 4.2. The main characteristics of the scrapping plans Selected countries

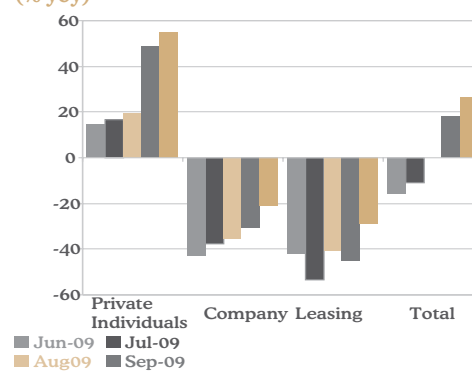
	Subsidies per vehicle	Minimum age of car scrapping (years)	Restrictions on volume emissions	Entry into force
Germany	€, 2,500	9	Yes (Euro5/6)	Jan 09 (Expired)
Spain	€, 2,000	10 (new)/12 (second-hand)	Yes (140-160 g/km of CO2)	May 09
France	€, 1,000	10	Yes (160 g/km of CO2)	Dec-08
Italy	€, 1500- €, 5000	9	Yes (120-130 g/km of CO2)	Feb-09
U.K.	£2.000	10	No	May 09

More details at: <http://www.acea.be/>  
Source: BBVA ERD based on ACEA

<sup>2</sup> The minimum age of vehicles scrapped increased to 12 years if was purchased second-hand. For more details see:

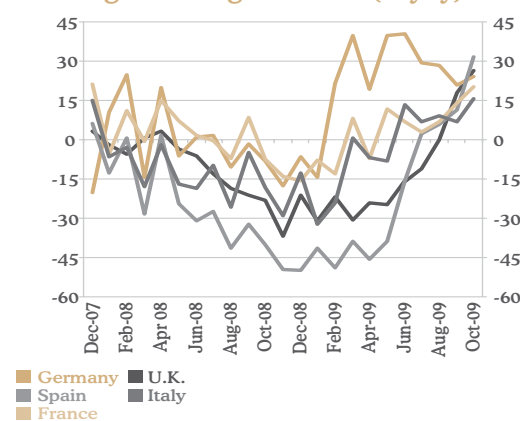
<http://www.mityc.es/industria/es-ES/Servicios/2000E/Paginas/Plan2000E.aspx>

Chart 4.5. Spain. Registrations per channel (% yoy)



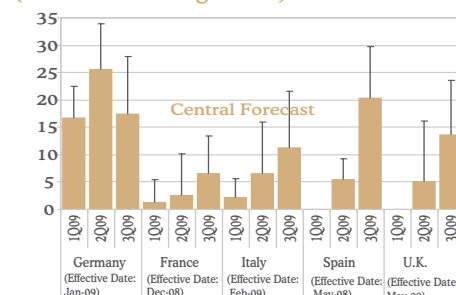
Source: BBVA ERD based on ANFAC

Chart 4.6. Passenger car registrations (% yoy)



Source: ACEA

Chart 4.7. Additional demand effect of the vehicle scrapping plans. (% of new cars registered)



—|: Upper limit if all the error forecast for the car registrations is considered as aggregated demand  
Source: BBVA ERD

Chart 4.8.  
Private consumption  
(% yoy)

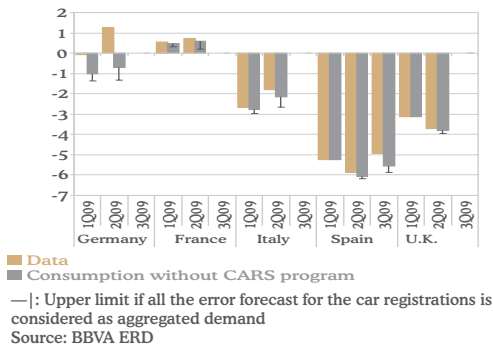


Chart 4.9.  
Automobile consumer prices  
(Dec-07 = 100)

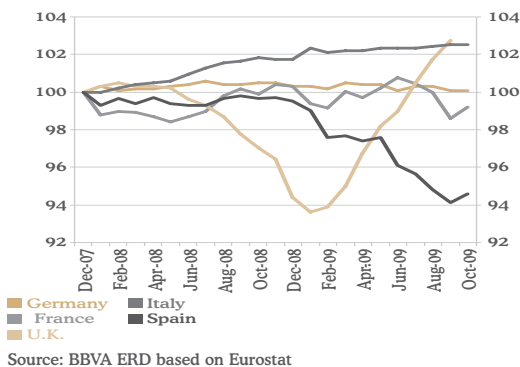


Chart 4.10.  
Car registrations by autonomous communities in 2009  
(Accumulated January-October)

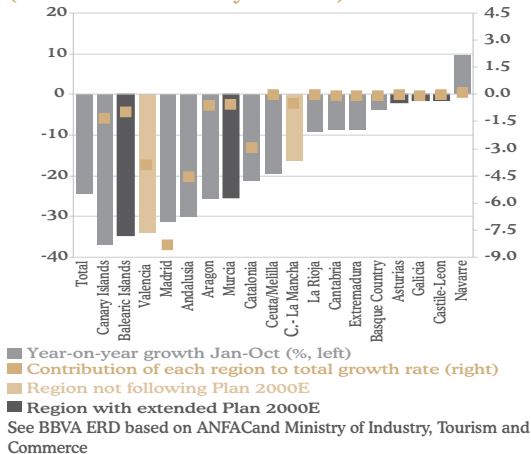
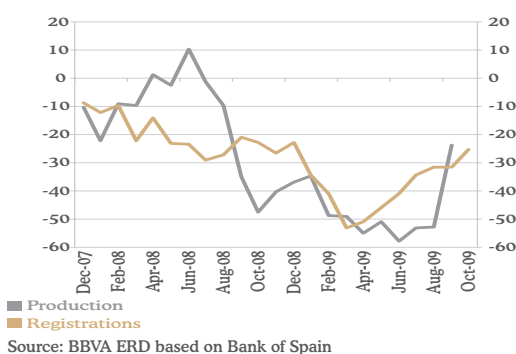


Chart 4.11.  
Motorcycles. Production and new registrations  
(Annual change in quarterly rolling average)



## 51% of the operations under Plan 2000E would not have taken place if the plan had not existed

If the new registration numbers until now are compared with information from April 30, the month before Plan 2000E entered into force, the amount of additional demand generated by the incentive program can be estimated, using certain assumptions<sup>3</sup>. Thus, BBVA ERD estimates suggest that, out of the 190,000 registrations under the 2000E Plan up to October 31, approximately 51% (96,000) would not have occurred had the plan not existed.

When the results of the additional demand created by the 2000E Plan are compared with those derived from the direct assistance provided by surrounding countries, only the German plan, which has already ended, has had a more significant effect so far (Chart 4.6 and 4.7). In this respect, BBVA ERD forecasts indicate that 13.0% of cars registered in Spain constituted this additional demand during the second and third quarters of 2009. In Germany, this figure rose to 22.0% because the German incentive program began sooner, was more generous, and less restrictive than the Spanish one (Box 4.2). In turn, in the United Kingdom, Italy, and France, the number of new car registrations that would have been registered without the incentives between April and September was modest (11.7%, 8.6%, and 4.3% respectively).<sup>4</sup>

## ..., limiting the decline in private consumption during the second half of the year

In macroeconomic terms, the additional demand generated by the direct assistance for purchasing automobiles has translated into a reduced slowdown in private consumption throughout 2009. While a significant effect in Spain is only estimated for the third quarter of the year (Plan 2000E would have added 0.6 percentage points to the year on year consumption growth between July and September<sup>5</sup>), the contribution of purchase incentives to consumption growth has been relevant in Italy, and above all, in Germany (Chart 4.8).<sup>6</sup>

Finally, although the effect of the programs has certainly affected demand, and thereby, consumption, the effects on prices are nonconclusive. While the reduction in prices has contributed to the expansion of demand in Spain and France, prices have responded positively to the growth in car purchases in Italy and the United Kingdom (Chart 4.9).

## The existence of autonomic scrapping programs supplemental to Plan 2000E has affected the progress of new registrations

Focusing on Spain, the progress in the number of cars registered varies according to region. Although all of the regions, except Navarra,

<sup>3</sup> Specifically, the observed registration numbers were compared with the upper level of the forecast range at 80% of the forecast made with information for up to April 30. Therefore, it is assumed that only one part of the difference that may exist between the registrations for each month and the central forecast for the month can be considered added demand. The rest of the difference is due to other aspects, such as the improvement in financing conditions or a less pessimistic perception by consumers of the economy.

<sup>4</sup> By comparing the central forecast for the number of registrations before the entry into force of each scrapping plan with the observed data, we obtain the maximum extra demand, i. e. the demand accounts for all of the forecast error by the entry into force of the incentive programs. This upper limit is represented by the segment above each column in Chart 4.7.

<sup>5</sup> The quarterly growth of consumption generated by the added demand of cars in the third quarter of 2009 reached 0.7 pp.

<sup>6</sup> For more details regarding the effects of the scrapping plans in Europe, see Europe Watch from November 2009.



experimented a reduction in new registrations between January and October, those that have an incentives program supplementing Plan 2000E registered a comparatively positive progress in employment and are not especially affected by the downturn in tourism – i. e., Galicia, Castilla and León, and Navarra have exhibited more positive results (Chart 4.10).

### Mopeds and motorcycles: little success of Moto-E Plan

Given the positive impact of Plan 2000E on car registrations and given the strong decline in the demand of mopeds and motorcycles since the end of 2007 (Chart 4.11), the government approved the Moto-E Plan<sup>7</sup> at the beginning of July. With a budget of 9 million Euros, the Moto-E Plan provides direct assistance for the purchase of new motorcycles and mopeds with of under 74 kW, and a maximum price below 9.500 euros (including VAT). The subsidies, which are summarized in Box 4.3, are conditioned on the scrapping of a moped or motorcycle that is more than 5 years old (more than 7 in the case of a motorcycle of more than 250cc).

The coordination problems after the program entered into force<sup>8</sup> and the small number of regions that have implemented it (only Andalusia, Asturias, and Catalonia so far), have been the main causes for its failure. In this respect, BBVA ERD forecasts indicate that the additional demand generated by the Moto-E Plan barely reaches 0.4% of new registrations between the month of July and October (Chart 4.12).

Table 4.3. Moto-E Plan Subsidies

Vehicle new registered	Vehicle scrapped	Contribution of Ministry Tourism and Commerce of Industry (€)	Contribution of the brand (€)	Contribution of the autonomous region in the scheme (€)
<= 50cc	>5 years	75	150	75
<=250cc	>5 years	175	350	175
>250cc	>7 years	250	500	250

Source: Ministry of Industry, Tourism and Commerce

## 4.2 Furniture and major appliances: progress affected by the resizing process of the real estate sector

### Major appliances

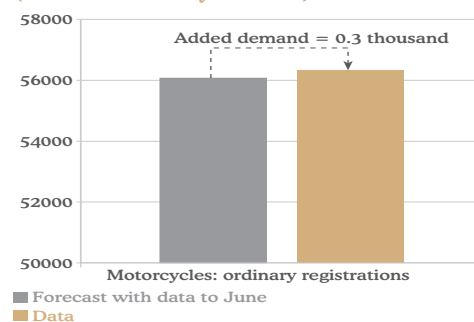
According to information from ANFEL (the Asociación Nacional de Fabricantes de Electrodomésticos de Línea Blanca - the National Association of Manufacturers of major appliances), the sales volume of electrical appliances declined 18.1% yoy between January and September of 2009, from 14.4% at the closing of 2008 (Chart 4.13). All the segments of electrical appliances saw sales fall, though it is refrigerators, washing machines, hobs, and ovens that experienced falls above the average (Chart 4.14). Without a doubt, the fall in demand for

<sup>7</sup>See <http://www.pmotoe.es/portalmotoe/index.html> for a detailed description of the Moto-E plan.

<sup>8</sup>The Ministry of Industry, Tourism and Commerce did not designate the FITSA Foundation as the entity in charge of handling the subsidies until October 27. Sales agents were not able to submit requests for subsidies until November 16, and the first assistance payment was not made until December 1.

Chart 4.12.

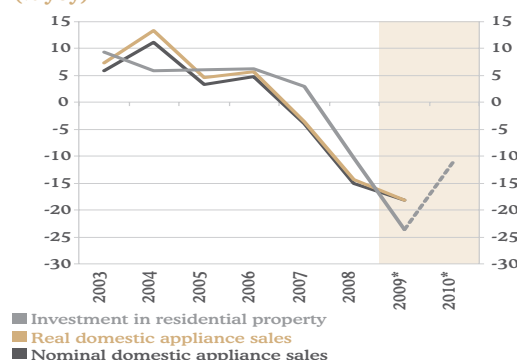
### Motorcycle registrations (Accumulated July-October)



Source: BBVA ERD and Bank of Spain

Chart 4.13.

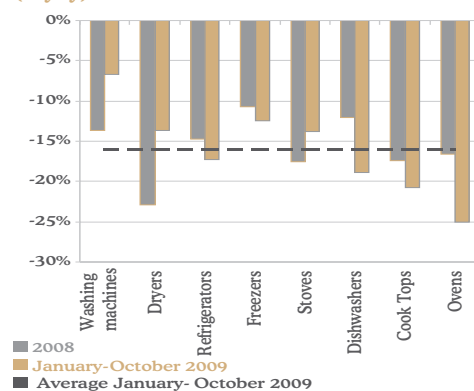
### Spain. Sale of electrical appliances and investment in residential property (% yoy)



(\*) The sale of electrical appliances includes information up to September. Growth in investment in residential property: forecasts BBVA ERD  
Source: BBVA ERD, based on ANFEL and INE.

Chart 4.14.

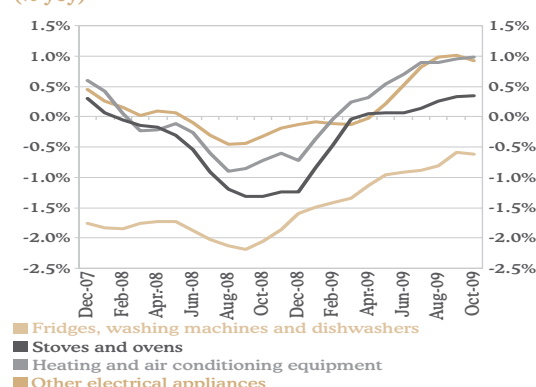
### Spain. Major appliances market (% yoy)



Source: BBVA ERD based on ANFEL

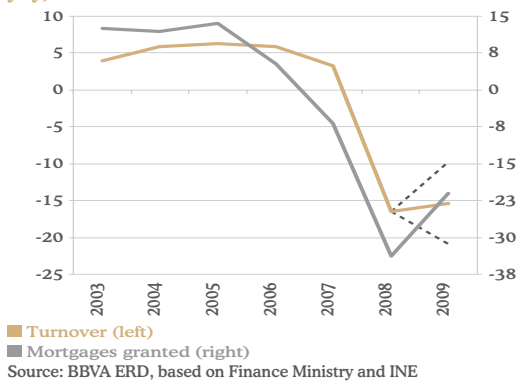
Chart 4.15.

### Spain. Major appliances consumer prices (% yoy)

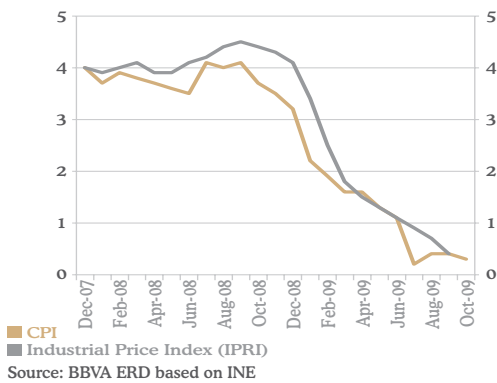


Source: BBVA ERD based on INE

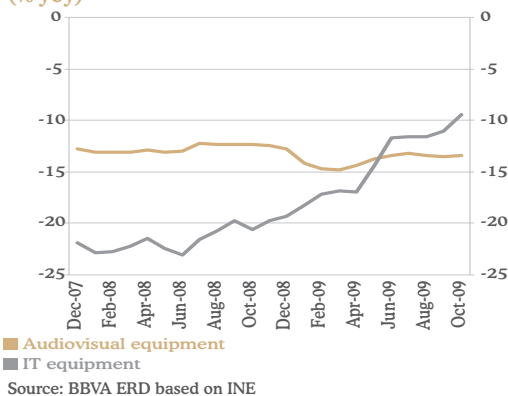
**Chart 4.16.**  
**Turnover in the furniture manufacturing sector and the mortgages granted**  
 Central forecast and confidence interval at 80% (% yoy)



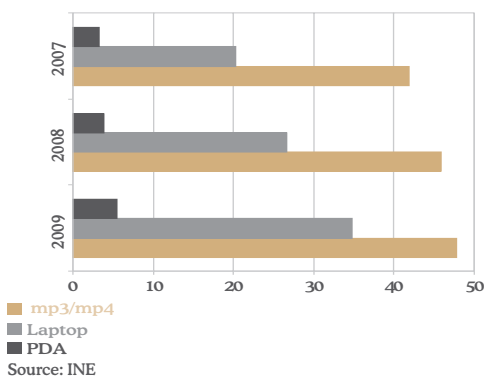
**Chart 4.17.**  
**Spain. Industrial prices and furniture consumer prices**  
 (% yoy)



**Chart 4.18.**  
**Spain. Consumer prices of video, sound and computer equipment**  
 (% yoy)



**Chart 4.19.**  
**Spain. Home IT equipment**  
 (% of homes that have each product)



housing and in consumer confidence has had a a greatest loss in dynamism in sales of electrical appliances.

The continued lack of demand, both external and mainly domestic, have not led to a decline in the prices of consumer electrical appliances similar to the one in 2008. On the contrary, prices of various segments, except fridges, washing machines, and dishwashers, have grown from the beginning of the second quarter of 2009 (Chart 4.15), which has probably limited the recovery of demand, and therefore, activity in that sector.

As shown in the Consumption Watch magazine for the second half of 2008,<sup>9</sup> sales of electrical appliances are a leading indicator of economic activity. We can see how the prices of electrical appliances, in particular washing machines and fridges appear to anticipate the Spanish business cycle since 1991, the first year for which comparable figures for electrical appliances are available. In other words, sales of electrical appliances began to fall one year before GDP, and, symmetrically, began to recover one year before the economy as a whole began to bounce back. However, given the resizing process that the Spanish economy is experiencing in the real estate sector, this correlation may not occur this time.

### Furniture

BBVA ERD forecasts indicate that billing in the furniture section will contract around 15.0% in 2009, slightly below 2008 (a -16.4%), but the numbers are still far from the growth figures registered in 2007 (3.3%) (Chart 4.16).

As with large appliances, the progress of furniture sales is the same as the one for the real estate sector, particularly residential. Thus, there is a close relationship between the turnover in the sector over time and the number of mortgages granted. BBVA ERD estimates show that furniture sales will decrease between 0.2% and 0.4% given the 1% decline in the number of mortgages.<sup>10</sup>

The decline in the consumption of furniture has caused a slowdown price growth, both in the industrial and consumer area, so that the prices in furniture consumption barely surpassed an average of 0.3% in the last 4 months of 2009 (Chart 4.17). Nevertheless, given that general inflation decreased an average of 1.0% between July and October, furniture increased in real terms, which probably contributed to the reduction in demand.

### 4.3 IT Equipment: the persistent reduction in prices contributes to increase the level of penetration in homes and companies

The IT equipment sector continues to experience falling prices. Prices in this sector continue to fall: from the beginning of 2009 to the month of October of this year, the prices of audiovisual equipment have

<sup>9</sup> See: [http://serviciodeestudios.bbva.com/KETD/ketd/Descargas?pais=ESPA&canal=web&tipocontenido=AFON&idioma=ESP&pdf=/fbin/mult/ESCES\\_0811\\_Situacionconsumo\\_12\\_tcm346-182317.pdf](http://serviciodeestudios.bbva.com/KETD/ketd/Descargas?pais=ESPA&canal=web&tipocontenido=AFON&idioma=ESP&pdf=/fbin/mult/ESCES_0811_Situacionconsumo_12_tcm346-182317.pdf)

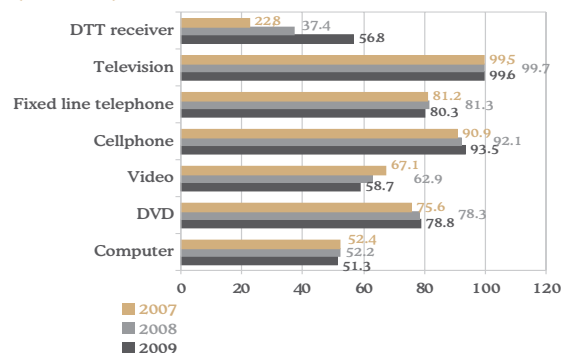
<sup>10</sup> The Consumer Watch magazine for the second half of 2005 [http://serviciodeestudios.bbva.com/KETD/fbin/mult/0510\\_SituacionConsumo\\_02\\_tcm346-176712.pdf?ts=11112009](http://serviciodeestudios.bbva.com/KETD/fbin/mult/0510_SituacionConsumo_02_tcm346-176712.pdf?ts=11112009)) analyzed the relationship between furniture sales and housing transactions. The results indicate that there is a two year gap between new home purchases and their effect on furniture sales.

experienced a decline of 12.1%, while IT equipment has declined 7.3% (Chart 4.18).

This general fall in prices has resulted in an increased penetration of IT equipment in Spanish homes. According to figures from the National Statistical Institute (INE), the percentage of homes with a laptop computer has increased 1.7 times over the last two years, from 20.2% in 2007 to 34.7% in 2009, to the detriment of PCs, where the growth rate has been significantly lower. In addition, penetration of mp3/mp4 music and video players increased substantially to 47.8% of households in 2009. The only products in this sector to experience moderate growth were PDAs, whose use is more for professional than leisure purposes (Graph 4.19).

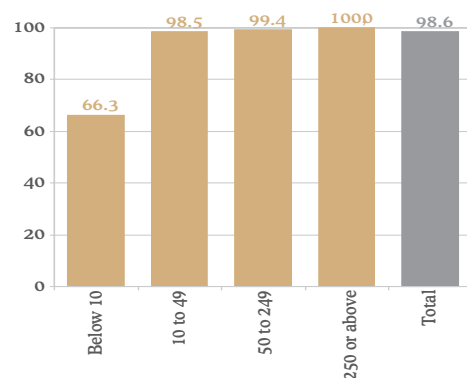
Surveys on IT equipment and use in homes and companies conducted by the INE offer a more detailed panorama of the degree of penetration of the different goods. In this regard, Chart 4.20 shows that the product whose presence has increased most in households during the last three years is DTT receivers, followed by mobile phones and DVD players. It can be seen that despite the strong expansion during the last decade, the penetration of computers in households continues to be in comparatively reduced numbers. On the other hand, for companies the figure is practically 100%, except for those with fewer than 10 employees (Chart 4.21). Thus while the penetration of IT in homes can be improved in Spain, when it comes to businesses, the only growth can be in SMEs. For the remaining business, the sector will depend on the fact that equipment and software become obsolete as a result of progress in technology.

**Chart 4.20.**  
**Spain. Homes with information and communication technology equipment (% homes)**



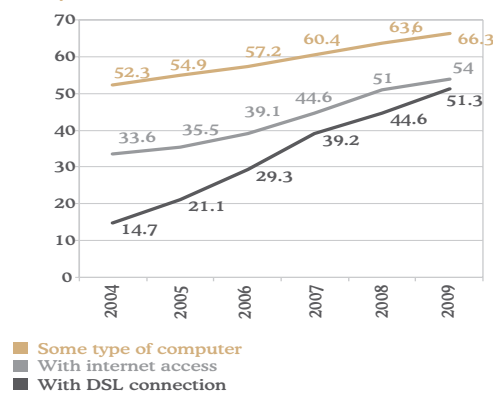
Source: INE

**Chart 4.21.**  
**Spain. Percentage breakdown of computer use according to business size**



Source: INE

**Chart 4.22.**  
**IT equipment in homes. 2004 - 2009. Domestic total**



Source: INE

## Box 3. Are consumer durables luxury products?

### Demand for durables as response to changes in household income

During the adjustment in the Spanish economy, the household demand for goods and services has significantly diminished. However, the shrinkage in consumption has not affected all goods the same way, as can be observed in Chart 1. Thus, the decline in the demand for consumer durable goods has been significantly greater than for non-durable goods and this, as a whole, has been greater than that for food, beverages and tobacco.

In addition to the differences in price, among the several reasons for the difference in consumption according to the level of the durability of the goods are the following:

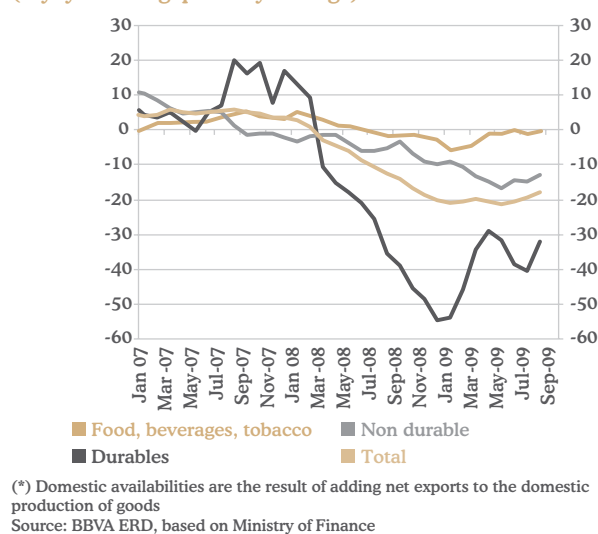
- i. The importance of inventories. The fact that durable consumer goods can be accumulated affects the present and future purchase of additional goods.
- ii. The possibility of postponing its purchase. In general terms, the decision to purchase durable goods can be postponed more easily than non-durables.
- iii. Uncertainty as a purchase determinant. The expectations of the future economic situation of the household, as well as uncertainty regarding the future macroeconomic environment, affect the purchase of durable consumer goods.
- iv. The existence of imperfect markets. The information asymmetry between the purchaser and seller in durable goods markets (specifically used goods) can affect the purchase decision.
- v. The role of interest rates. Given that a portion of durable goods purchases is financed, the behavior of interest rates can affect demand.
- vi. Differences in income elasticity. The sensitivity of the demand for each good in terms of changes in household income, *i. e.*, its income elasticity, differs between goods.<sup>1</sup>

This last reason is especially relevant given that household income constitutes the main determinant for consumption. Thus, two types of goods can be identified in terms of their income-elasticity value: inferior and normal. Inferior goods are those whose income-elasticity is negative. This means that when household income increases (or decreases), spending on these goods diminishes (or increases). In contrast, normal goods have a positive income elasticity. These are divided into essential items, whose income-elasticity is below one, and luxury items, whose income elasticity is greater than one.

Therefore, a major reason for the decline in the demand for consumer durables could be because they are luxury goods. To test this hypothesis, this box estimates the income

elasticity of six groups of durable goods: furniture and furnishing items; heating and kitchen devices, fridges, washing machines, and other large electrical appliances; automobiles; motorcycles and mopeds; sound and video receivers, recorders and players, photography and film equipment; and IT equipment<sup>2</sup>. In order to put the results obtained in context, income elasticity is also estimated for the food and non-alcoholic beverages groups, and for cultural and recreational services.

Chart 1.  
Spain. Availability of consumer goods (\*)  
(% yoy of rolling quarterly average)



The data used for estimating income elasticity comes from the Household Budget Survey (EPF) for this year. The EPF is the only database which contains microeconomic information on the socio-demographic characteristics of households and how much they spend on goods and services.<sup>3</sup>

### Spending on consumer durables according to the reference population

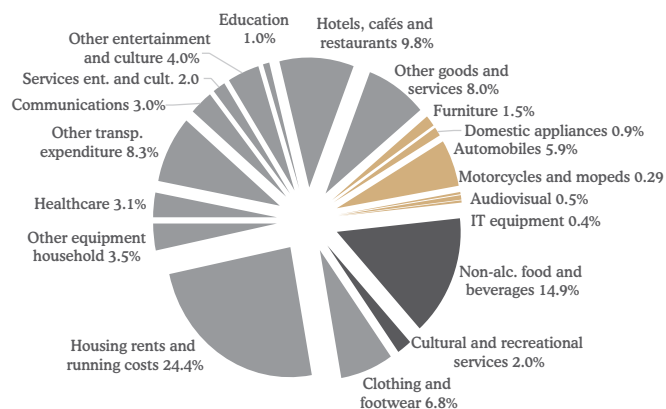
How much weight do durable goods have in the basket of Spanish household consumption? The response is not trivial given that it depends on what the reference population is. If all households are analyzed, the six groups of consumer durable goods comprise 9.5% of average spending (2,900 euros per household in 2007). The remaining spending is distributed as indicated in Chart 2, with food and non-alcoholic beverage group (14.9%) and housing and supplies (24.4%) notably high.

<sup>2</sup> The coding of spending groups is done through the classification of individual consumption by purpose (COICOP) which can be found at: <http://www.ine.es/daco/daco42/daco4213/anexoecpf06.pdf>

<sup>3</sup> In order to prevent aggregation bias and understand the effect that demographic characteristics have on demand, the income-elasticity estimation of a good or service requires the use of microdata (Blundell, 1988).

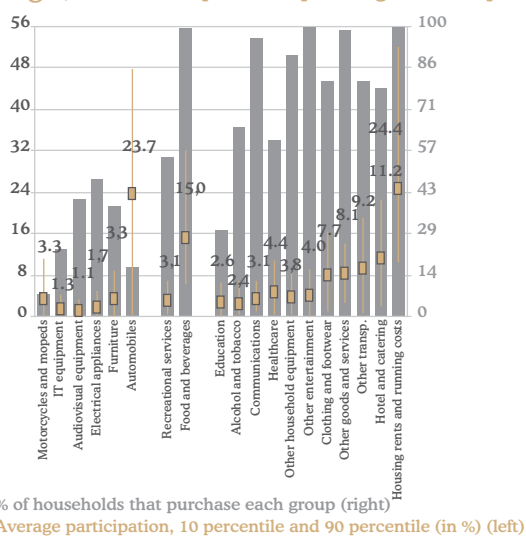
<sup>1</sup> See Deaton and Muellbauer (1980), Chapter 13, for further details.

**Chart 2.**  
**Spain. Composition of consumer spending**  
(all households)



(\*) Excludes 100% imputed spending  
Source: BBVA ERD, based on INE (EPF 2007)

**Chart 3.**  
**Participation of each product in total household spending** (Homes with positive spending for each product)



(\*) Excludes 100% imputed spending  
Source: BBVA ERD, based on INE (EPF 2007)

However, when spending is compared among the subgroup of households that consumes each good or service, the results are different. Chart 3 shows that the participation of consumer durable goods in total spending is greater when the all households are considered. For example, the households that purchase automobiles, 16.7% of the total, allocate 23.7% of their spending on this durable good, compared with 5.9% of the aggregate.

An additional result extracted from Chart 3 is the great diversity in household consumption patterns, for both goods and services. For example, the average spending on furniture and furnishing articles among purchasing households fluctuates between 0.1% (10th percentile) and 9.0% (90th percentile) of the total. The dispersion of the participation of

spending on each product is due both to discrepancies in the system of preferences and the differences in the socioeconomic characteristics and composition of households. Income plays a central role in this.

Table 1 shows breaks down the spending of households who buy each of the products analyzed by family income segments. Three groups of products stand out:

- i. Those whose participation decreases as income increases. These are made up of electrical appliances, IT equipment and audiovisual equipment. The food and non-alcoholic beverages group also falls into this category, confirming Engel's law.<sup>4</sup>
- ii. Those whose share remains relatively constant when income levels change. Among these are furniture and furnishing articles.
- iii. Those whose participation in spending exhibits an inverted-U relation. This group is made up of automobiles, motorcycles and mopeds, and cultural and recreational services.

### The need to control for socio-demographic households' characteristics

Although the information in Table 1 allows us to extract an initial result on the consumption sensitivity of each product when income levels change, the evidence is non-conclusive due to the role played by other variables. For example, the spending share of group (i) goods can be reduced, not because they are essential products, but because of the existence of economies of scale in the home. When the number of breadwinners increases, income grows, but this does not necessarily mean an increase in the consumption of group (i) goods. Similarly, spending on group (iii) products may raise, among other reasons, because the size of household increases or due to a greater preference for these kinds of goods, and not necessarily because of an improvement in household income.

Therefore, in order to obtain the spending elasticity<sup>5</sup> of each one of the products under consideration, it is necessary to condition the remaining household characteristics. In order to do this, demand equations are used, where the proportion of household spending  $h$  geared towards the purchase of an  $i$  ( $BS_i^h$ ) good depends on household characteristics ( $Z_i^h$ ), total spending in logs ( $LN(x^h)$ ), and an idiosyncratic error term ( $u_i^h$ ):

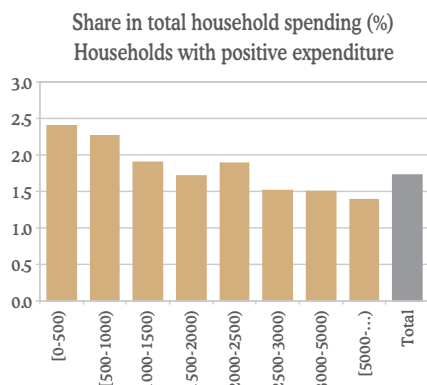
$$BS_i^h = \alpha_i + \gamma_i Z_i^h + \beta_i LN(x_i^h) + u_i^h; \quad h=1, \dots, N; \quad i=1, \dots, 8. \quad (1)$$

<sup>4</sup> Engel's law postulates the existence of a negative relationship between consumer spending on food and the income level of a household or economic territory.

<sup>5</sup>The measurement of household income is done through the total spending on goods and services. The main reason spending is used is the proven understating of income by the households participating in surveys, not only in Spain, as Deaton (1992) chapter 5, indicates. This is why results are given in spending-elasticity terms instead of income-elasticity terms.

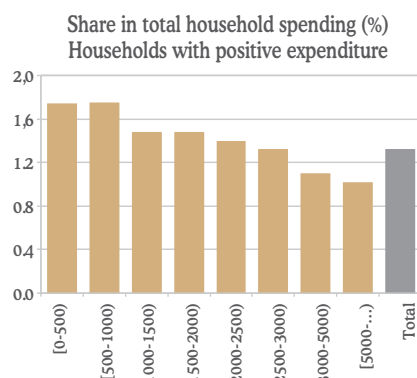
**Table 1.**  
**Participation of each good or service in total household spending according to income segment**

**Expenditure on domestic appliances**



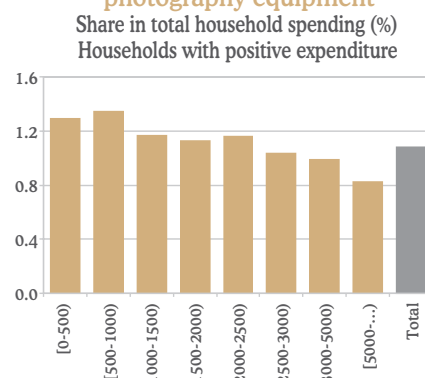
(\* Excludes 100% imputed spending  
 Source: BBVA ERD, based on INE (EPF 2007)

**Expenditure on IT equipment**



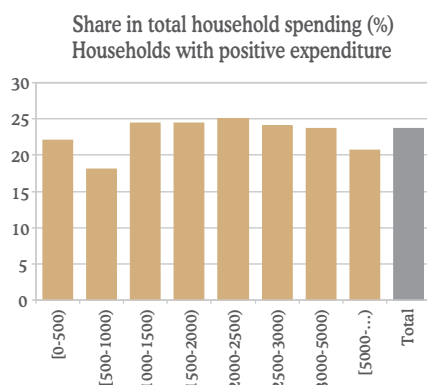
(\* Excludes 100% imputed spending  
 Source: BBVA ERD, based on INE (EPF 2007)

**Expenditure on audiovisual, video, photography equipment**



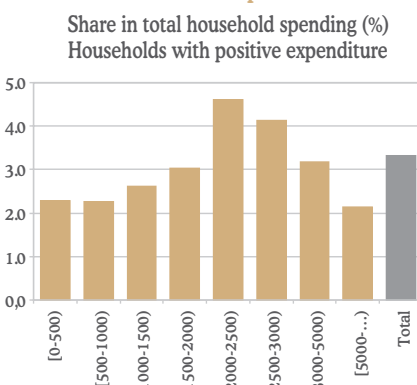
(\* Excludes 100% imputed spending  
 Source: BBVA ERD, based on INE (EPF 2007)

**Expenditure on automobiles**



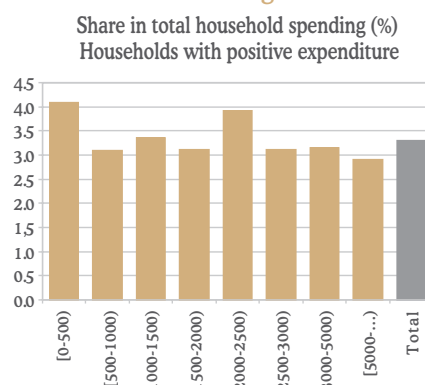
(\* Excludes 100% imputed spending  
 Source: BBVA ERD, based on INE (EPF 2007)

**Expenditure on motorcycles and mopeds**



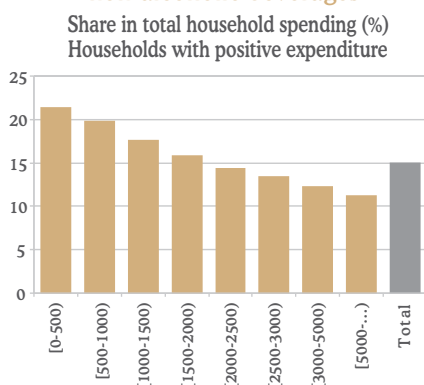
(\* Excludes 100% imputed spending  
 Source: BBVA ERD, based on INE (EPF 2007)

**Expenditure on furniture and furnishing articles**



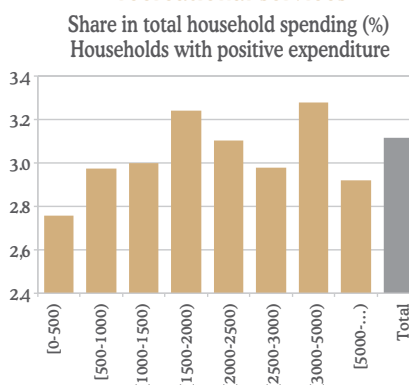
(\* Excludes 100% imputed spending  
 Source: BBVA ERD, based on INE (EPF 2007)

**Expenditure on food and non-alcoholic beverages**



(\* Excludes spending reaching 100%  
 Source: BBVA ERD, based on INE (EPF 2007)

**Expenditure on cultural and recreational services**



(\* Excludes spending reaching 100%  
 Source: BBVA ERD, based on INE (EPF 2007)

The vector  $Z^h$  is specific to each product and contains geographic variables (region, province capital, municipality size, population density, etc.), household characteristics (number of members, existence of dependant minors, number of income earners, etc.), of the home (type of tenure, residential area, size and number of bedrooms, ownership of other homes, etc.) and the head of household (sex, age, nationality, marital status, education level, etc.).<sup>6</sup>

After estimating the  $i$ -th demand equation<sup>7</sup>, the estimated spending-elasticity for each ( $\epsilon_i^h$ ) good is obtained by substituting parameter  $\beta$  with its estimator in the following equation:

$$\epsilon_i^h = \frac{\hat{\beta}_i}{\beta S_i^h} + 1 \quad (2)$$

**Although durable goods have contracted relatively steeply in terms of spending since they are luxury items, the worst may be over**

The elasticities estimated for the eight groups considered are shown in Table 2.

First, we see that only food and non-alcoholic beverages can be considered essential goods: *ceteris paribus* if consumer spending increased by 1%, spending on food and non-alcoholic beverages would only increase 0.5%.

Second, the spending elasticity of close to one of electrical appliances is notable, and especially IT equipment. Therefore, changes in the total spending of households translates into changes in the consumption of both groups in a similar manner.

Finally, cultural and recreational services, audiovisual equipment, furniture, motorcycles and mopeds, and automobiles are considered luxury items. Specifically, the change in their consumption derived from a variation in the total spending of households is between 50% to 87% higher than the variation in household spending.

Given the estimated spending elasticities and considering the final consumer spending forecasts for households predicted by BBVA ERD (Chart 4), we can estimate the future consumption of each good or service affected by changes in total household spending. The results indicate that the contraction in the consumption of each product affected by the decline in total spending has fluctuated about 6.7% in 2009 for IT equipment, and 12.1% for automobiles. In 2010, the decline in the demand for each product due to a decrease in total spending will be more limited: lower than 2.5%, and

<sup>6</sup>Note that equation (1) does not include prices. Given that the information comes from a cross-section, there is no time variation for prices, which does not make it feasible to identify price elasticities. For further details, see Deaton, Ruiz-Castillo and Thomas (1989) and Luengo-Prado & Ruiz-Castillo (2004).

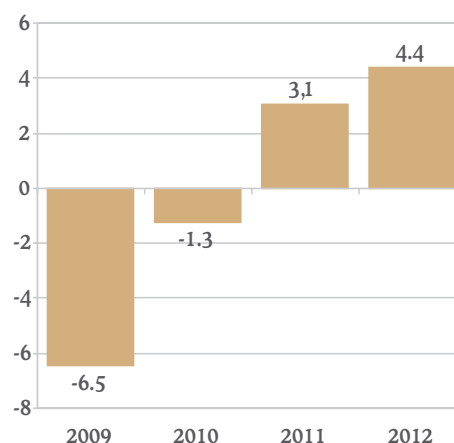
<sup>7</sup>The problems inherent to the estimation of demand equations are discussed in the Appendix.

**Table 2. Spending elasticity for each group of goods and services considered**

Food and non-alcoholic beverages	0.53
IT equipment	1.03
Electrical appliances	1.11
Cultural and recreational services	1.50
Sound, TV, video, photographic equipment	1.54
Motorcycles and mopeds	1.56
Furniture	1.63
Automobiles	1.87

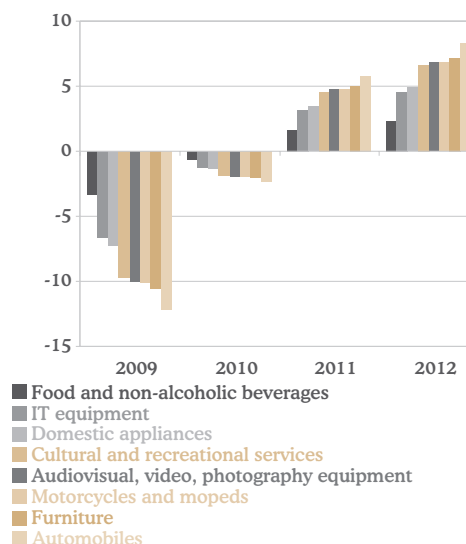
Source: BBVA ERD based on INE (EPF 2007)

**Chart 4. Nominal household final consumer spending (% yoy)**



Source: BBVA ERD

**Chart 5. Spain. Changes in the nominal spending on each product explained by changes in total household spending (%)**



Source: BBVA ERD.

reaching positive figures in 2011. *Ceteris paribus*, the average growth of nominal consumer spending on each good caused by an increase in total spending will rise to an average of over 3.8% in the 2011-2012 two year period for the six durable goods (Chart 5).

In short, the results indicate that, although the durable goods analyzed are luxury items and therefore have been fairly strongly affected by reduced consumer spending, the worst appears to be over. Nevertheless, the registered and predicted consumer spending on these goods could be different than that explained as a result of changes in household income due to the various factors listed at the beginning of this box. One of them, the role of expectations of future economic conditions, is analyzed next.

### Appendix: Estimate of the expenditure elasticity for each group of products

The estimate of the eight demand equations is affected, among other reasons, by the existence of null observations, *i. e.*, households that state they have consumed zero units of the analyzed goods.

There are at least four possible causes of null observations:

- i. Corner solutions. The households, given their budget restrictions, maximize their welfare by not consuming at all.
- ii. Non participation. The households maximize their welfare by consuming nothing regardless of the possible values of exogenous variables (among them, income).
- iii. Infrequency of purchase. Certain null observations are not only a question of household preferences, but they are caused by the brevity of the period in which the survey information is collected. This problem, which induces a measurement error in the spending variables, becomes more relevant as the durability of the good increases (example: automobiles).
- iv. Unobservable effects not identified in the information, both time variable and not time variable.

The estimation method for the demand equations depends on, among other things, the origin of the null observations.<sup>8</sup> In the case at hand, as in most household surveys, the problem lies in the co-existence of multiple causes. However, the fact that the EPF survey is a cross-section prevents the identification of the origin of the zero expectations.

<sup>8</sup> See Sanchís-Llopis (2001) and Labeaga and Vilaplana (2004) for an exhaustive review of the econometric treatment of null observation in the estimation of demand equations.

Therefore, assuming that the infrequency of purchases is a problem that is especially relevant to the consumption of durable goods, the demand equations have been estimated following the suggestions of Deaton and Irish (1984), Kay, Keen and Morris (1984) and Blundell and Meghir (1987), among others. For each good, it is assumed that purchase and consumption decisions are governed by different processes. Therefore, a two-phase estimation is carried out. In the first phase, the probability of purchase for each good is estimated for the set of households. In the second phase, spending variables are weighted according to the probability of purchase calculated in the first phase and the demand equation is estimated for household subgroup with positive consumption of each product. The eight demand equations have been estimated according to instrumental variables (GMM), instrumenting total household spending by income, as suggested by Keen (1986).

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## Box 4. Consumption and precautionary savings: Do confidence indicators allow us to anticipate changes in consumer spending?<sup>1</sup>

### Uncertainty, precautionary spending, and the illiquidity of durable consumer goods

As seen in Section 2 of the publication, the uncertainty regarding the future economic situation constitutes one of the determinants for the decline in household consumption since the middle of last year. However, not all consumption components respond the same way to changes in the degree of uncertainty. As it is shown in Box 3, durable consumer goods have been mainly responsible for the contraction in consumer spending during the current recession cycle.

What channels of uncertainty reduce the demand for consumer goods, especially durable ones? Mainly two: precautionary savings and illiquidity.

In times of uncertainty, the perception of risk by households increases, and they tend to increase their savings in order to insure themselves against an unforeseen decline in their income. In this respect, Chart 1 shows that savings rates have increased 7.0 percentage points (pp) since the first quarter of 2008, reaching 17.5% in June of 2009. Note that the increase in savings rates have only been accompanied by a decline in consumption since the fourth quarter of 2008, when the international financial crisis was exacerbated by the Lehman Brothers' bankruptcy in September.

Although precaution had already been suggested as a savings determinant by Keynes (1936)<sup>2</sup>, the traditional life cycle model<sup>3</sup> and its subsequent generalizations did not take it into account. Since complete certainty was assumed for the future, there was no place for precautionary saving. The objective of individuals was to maintain the marginal utility of their consumer spending over time. In fact, it wasn't until the end of the 1970s that consumption models incorporated the possibility that households save for precautionary reasons.<sup>4</sup>

The second channel through which uncertainty affects the consumption of durable goods is their illiquidity. Unlike the vast majority of financial assets, which can be turned into cash almost immediately, the inherent depreciation of durable consumer goods and the imperfections in their trading market complicate, delay, and therefore make it more expensive to

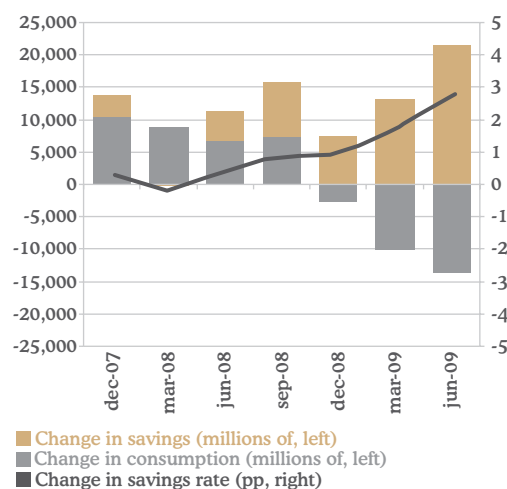
<sup>1</sup>We are grateful for comments and suggestions from Miguel Cardoso, José Félix Izquierdo and Pep Ruiz, as well as the econometric support of Rodrigo Falbo.

<sup>2</sup>The precautionary motive is the first of the eight subjective determinants listed by Keynes (1936), Chapter 9. The remaining ones are: prediction or life cycle, intertemporal substitution, better quality of life, independence, speculation, intergenerational altruism and greed.

<sup>3</sup>See Mayer (1973) for a detailed review of the consumption models developed in the 1950s by F. Modigliani, R. Brumberg and M. Friedman, among others.

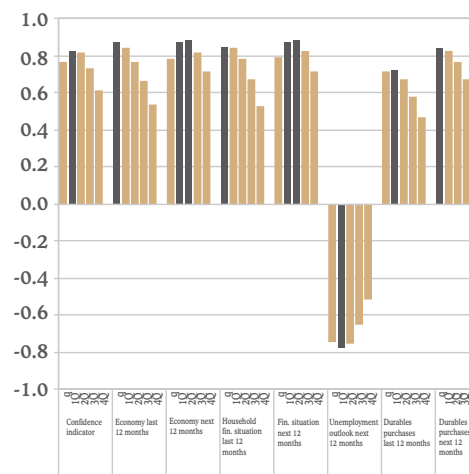
<sup>4</sup>The derivation of the Euler equation for the problem of optimal intertemporal localization (Hall, 1978) allowed uncertainty to be introduced into the consumption models, making the existence of precautionary savings possible.

Chart 1.  
Spain. Change in household saving rate (Quarterly variations of annual accumulated totals)



Source: BBVA ERD based on INE

Chart 2.  
Spain. Confidence indicators and household consumption  
Correlation matrix, 2Q08-3Q09



Source: BBVA ERD based on INE and EC

turn them into cash. Therefore, during times of heightened uncertainty, households see a higher risk of suffering a loss of income or wealth, and as a result, their preference for liquidity increases and they limit the purchase of durable goods.<sup>5</sup>

<sup>5</sup>Mishkin (1976, 1978) Posits the causes and discusses the effects of the non-liquid nature of durable consumer goods

### Consumer confidence as an indicator of uncertainty

First, in order to analyze the effects that the uncertainty inherent the household's future economic situation has on consumption, it needs to be measured.

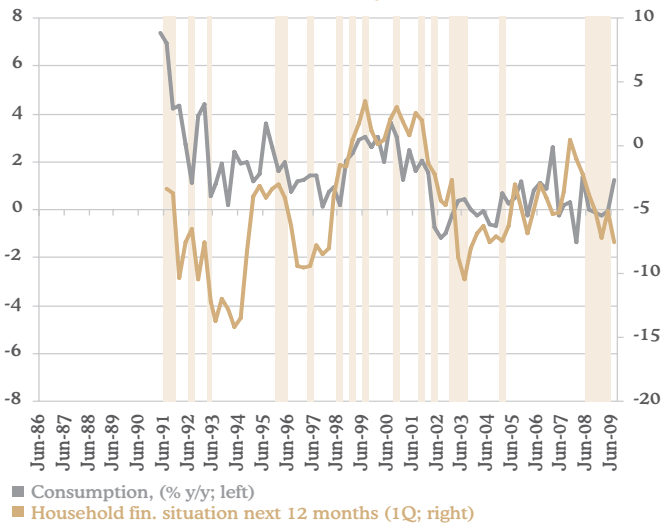
Different degrees of uncertainty have been established in economic literature, depending on the aggregate (macroeconomic) or disaggregate (microeconomic) nature of the information used<sup>6</sup>. The first group includes volatility of income growth or household consumption, variation in the consumption equation error term, etc. The second group, in addition to variability of aggregate income growth, uses unemployment rates, temporary employment rates, inflation rates (or inflationary expectations), etc.

Consumer confidence indicators are a set of subjective alternative variables, which may capture the degree of (un)certainly associated with the future household economic situation. When households see a greater possibility of a negative shock to their income level, they increase their precautionary spending, reduce their consumer spending, and probably report a more pessimistic view of the future economic situation. Unlike other risk or uncertainty indicators, confidence information could incorporate information on the impact of unexpected and/or isolated events that are not easily captured by macroeconomic information or past experiences (e.g. armed conflict). It could also reflect changes in expectations derived from events that have yet to take place (e.g. a possible fiscal reform as a result of a change in government).

<sup>6</sup>A detailed analysis can be found in Browning and Lusardi (1996).

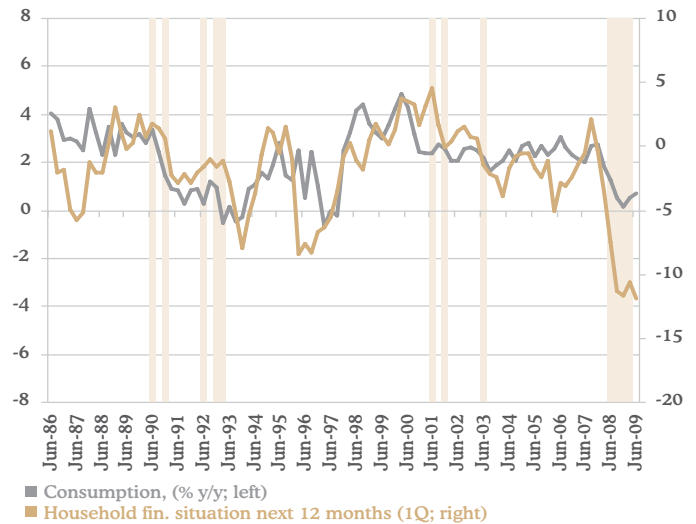
#### Box 1. Household consumption and perception of their future economic situation

Germany



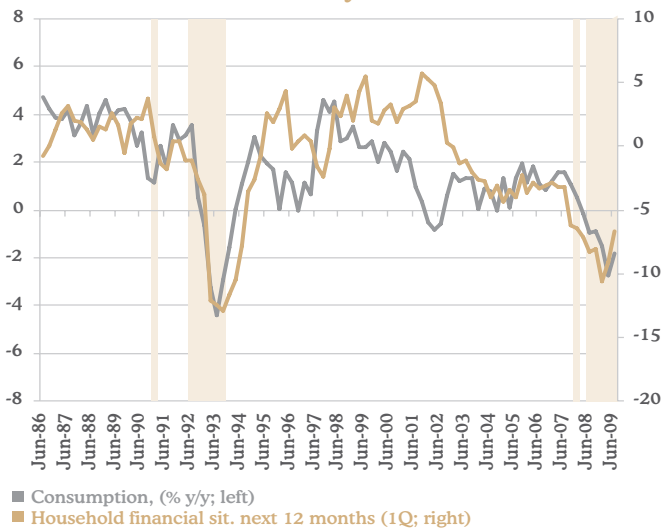
Source: BBVA ERD based on Eurostat and EC.

France



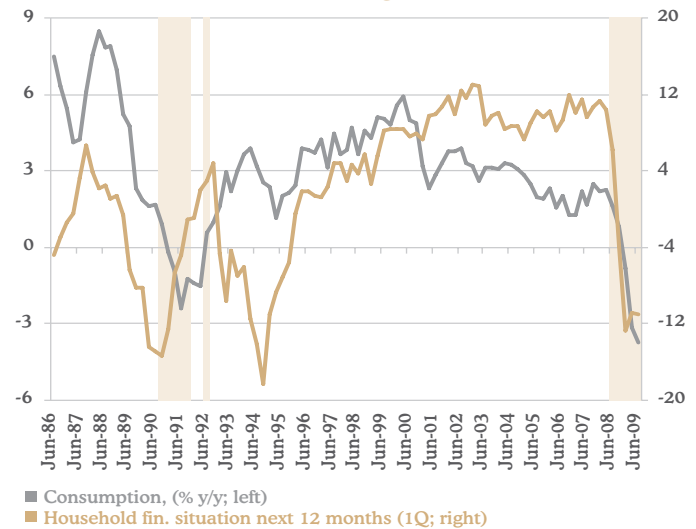
Source: BBVA ERD based on Eurostat and EC.

Italy



Source: BBVA ERD based on Eurostat and EC.

United Kingdom



Source: BBVA ERD based on Eurostat and EC.

This box uses the information from the Harmonized Consumer Survey (HCS) designed by the European Commission to analyze the role of confidence as a determinant of future consumer spending. It specifically tries to answer three questions: would confidence information have helped to better predict the adjustment in consumption this year? Does improvement in confidence suggest a turning point for consumption? Are there indications of an increase in the preference for liquidity among Spanish households?

### The correlation between the economic cycle and consumer confidence information is comparatively high in Spain

EAC gathers information regarding household savings and spending intentions<sup>7</sup>. The questions are organized according to four subjects - household financial situation, the economic situation, savings, and the intention of making large purchases - and the qualitative answers are systematized into net figures, i. e. , the difference between the percentage of negative and positive responses.

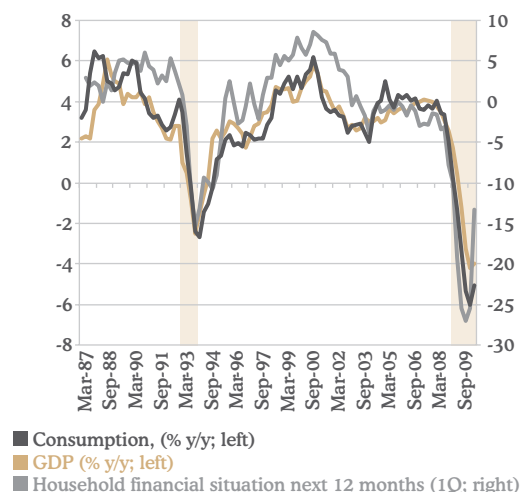
Although theory argues the existence of a close relationship between household confidence and their consumer spending, what does the information say? Chart 2 shows the correlation coefficient between the year-on-year growth of final household consumption and the net responses of the different spending and saving indicators for Spanish households in different quarters. Results indicate that: i) the current correlation between variables that evaluate the past situation with consumer spending is higher, and ii) the correlation between indicators of expectations, which are one or two quarters behind, and consumer spending is even greater, especially with the variable that measures household perception of the future economic situation.

If the relationship with the economic cycle is analyzed (Chart 3), it shows that consumer confidence, specifically the perception that individuals have on their future economic situation, began to decrease between the third and fourth quarters prior to the beginning of the last two recession cycles (2Q1992-1Q1993, and 2Q2008-...), which could be an indicator of its predictive ability.

The link between indicators of expectations for the future economic situation and household consumption growth is significantly closer than for other countries, as indicated in Box 1. In Italy alone, the existing correlation between perspectives on the economic situation of households and the progress of consumption is 0.6. In addition, Table 2 shows that this less precise relationship is generalized for the remaining indicators of expectations.

<sup>7</sup>For more details see: [http://ec.europa.eu/economy\\_finance/indicators/business\\_consumer\\_surveys/userguide\\_en.pdf](http://ec.europa.eu/economy_finance/indicators/business_consumer_surveys/userguide_en.pdf)

Chart 3.  
Spain. GDP, household consumption and perception of their future economic situation



Source: BBVA ERD based on INE and EC.

### Box 2. Confidence indicators and household consumption

#### Correlation matrix (\*)

	Germany	Spain	France	Italy	U. K.
$\Delta C(t)$ , Confidence indicator (t-2)	0.16	0.82	0.47	0.42	0.48
$\Delta C(t)$ , Confidence indicator (t-1)	0.18	0.83	0.57	0.52	0.51
$\Delta C(t)$ , Confidence indicator (t)	0.17	0.76	0.61	0.58	0.49
$\Delta C(t)$ , Household economic situation next 12 months (t-2)	0.16	0.88	0.47	0.52	0.26
$\Delta C(t)$ , Household economic situation next 12 months (t-1)	0.16	0.87	0.51	0.61	0.24
$\Delta C(t)$ , Household economic situation next 12 months (t)	0.16	0.79	0.53	0.65	0.19
$\Delta C(t)$ , Economic situation next 12 months (t-2)	0.15	0.88	0.54	0.48	0.53
$\Delta C(t)$ , Economic situation next 12 months (t-1)	0.14	0.87	0.59	0.52	0.47
$\Delta C(t)$ , Economic situation next 12 months (t)	0.13	0.78	0.59	0.54	0.35
$\Delta C(t)$ , Unemployment expectations next 12 months (t-2)	-0.01	-0.75	-0.45	0.04	-0.54
$\Delta C(t)$ , Unemployment expectations next 12 months (t-1)	-0.04	-0.78	-0.56	-0.05	-0.63
$\Delta C(t)$ , Unemployment expectations next 12 months (t)	-0.04	-0.75	-0.62	-0.10	-0.67

(\*) 1Q85-2Q09 for Germany, France, Italy, and United Kingdom; 2Q86-3Q09 for Spain  
Source: BBVA ERD based on Eurostat and EC

### Consumer confidence: an advance indicator of growth in consumption

In order to isolate the effect that households' expectations of their economic situation may have on their consumer spending, various nested single equation models were estimated, with and without the consumer confidence indicators. The estimated equations are represented by [a].

$$[a] \Delta \text{LN}(\text{household\_consumption}_t) = \alpha + \sum_{i=1}^4 \beta_i \Delta \text{LN}(\text{household\_consumption}_{t-i}) + \sum_{i=1}^4 \gamma_i Z'_{t-i} + \sum_{i=1}^4 \delta_i \text{CC}_{t-i} + u_t; \\ t = 3T1986, \dots, 3T2009,$$

where  $\Delta \text{LN}(\text{household consumption}_t)$  is the real growth rate for final household consumption in each t quarter;  $Z_t$  is an explicative variable vector, which differs for every equation, and tries to cover all of the fundamental determinants of consumption (income, net wealth and interest rates), as well as alternative approaches to measure uncertainty (inflation and unemployment rates);  $\text{CC}_t$  is the variable that measures the perception of the household's economic situation for the next 12 months and  $u_t$  is an error term (see Appendix for further details).

First, the results of the estimations conducted indicate that the predictive capacity outside of the model samples that include the confidence indicator is greater than those that do not include it. This fact, along with the significance of the confidence variable as a determinant of consumer growth regardless of the remaining macroeconomic variables considered, allows the conclusion that consumer confidence constitutes an advance indicator of final consumer spending of households.

Second, the estimates suggest that the best predictions occur when only the delayed endogenous determinant (consumption growth in the preceding quarters), income, net wealth, and confidence determinants are included as determinants for consumption growth. Therefore, the consideration of interest rates (nominal or real) does not help improve the prediction of consumption growth.

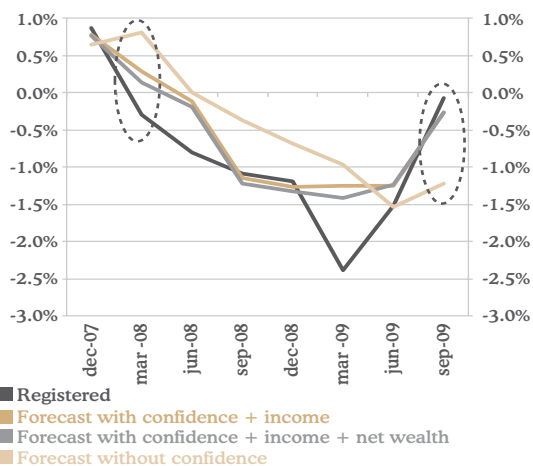
Third, when alternative uncertainty measures, such as the progress of inflation or unemployment rates, are incorporated into the model, the predictive capacity decreases.

### Would consumer confidence information have helped (better) predict the decline in household consumption for the current year? Yes

Going back to the questions posed at the beginning of the box, the results of the forecast indicate that the prediction for consumption is closest to that actually registered when household expectations are taken into account.

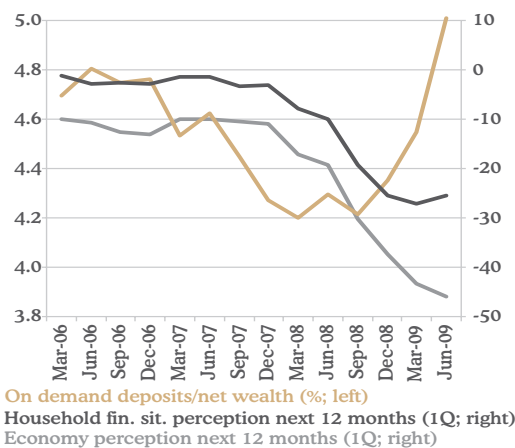
Chart 4 shows that if the deterioration of confidence during the second half of 2007 and at the beginning of 2008 had

Chart 4. Spain. Quarterly household consumption growth



Source: INE and BBVA ERD

Chart 5. Spain. Demand deposits/net wealth vs consumer confidence



Source: BBVA ERD, based on Bank of Spain and EC

been taken into account, the growth predicted for consumption would have been closer to that actually observed. Nevertheless, the fall in private consumption during the first half of 2009 was such that neither the total contribution of its fundamentals nor the expectations component can completely explain it.

### Would the improvement in confidence during the first semester of 2009 have predicted the slowdown in consumption decline? Yes

Household consumption growth (quarterly) reached its low in the first quarter of 2009. However, the prediction that only considers the macroeconomic determinants for consumption would not have predicted the change in trend that took place in the second quarter of 2009 nor the major slowdown in deterioration during the third quarter. But when expectations

are incorporated, we can see that the predicted decline in consumption fits closely with the numbers observed in the second half of the year.

### Is there evidence of an increase in the preference for liquidity throughout the current year? Yes

In short, the decrease in household demand, especially for durable consumer goods, was explained, among other things, by a decline in expectations regarding the future economic situation. Growth in savings, mainly precautionary, was manifested through an increase in the preference for liquidity, as is suggested in Chart 5. Thus, the weight of demand deposits in the net wealth of households increased 0.8 pp from the third quarter of 2008 to the second one of 2009, at the same time as uncertainty over the economic situation was increasing.

Given that consumer expectations began to improve during the first quarter of the year, and taking into account the lag between the confidence figures and consumer growth, ceteris paribus the contribution of expectations to the degree of preference for liquidity will become negative during the next three quarters.

### Appendix

There are at least two traditional estimation methods for the determinants of short-term household consumption growth: single equation and multiple equation models.<sup>8</sup>

Given the possibility that some explicative variables of consumption growth could be endogenous, a natural approximation would consist of a vector error correction model (VECM). A four-equation model has been estimated - consumption, income, net wealth, and confidence - with interest rates being the only purely exogenous variable. Given that it has been necessary to exclude the last six quarters so that consumption growth can be a stationary variable, the short-term predictive ability of the VECM is less satisfactory than that of the single-equation model mentioned.

This, along with the fact that: i) the objective in this case is short-term forecasting and not to obtain a long-term estimate of the determinants of consumption, and ii) the tests conducted allow the endogeneity of the different explicative variables included in the consumption forecast equation to be discounted, constitute arguments in favor of the single equation approximation used in this box.

Six nested equations for consumption growth have been estimated that exclude the consumer confidence indicator (CC<sub>t</sub>) and another six that include it. The explicative variables

<sup>8</sup>Throop (1992) estimates a VECM for predicting the growth progress of durable goods consumption in the U.S. based on reliable information. On the other hand, Acemoglu and Scout (1994), Carrol, Fuhrer and Wilcox (1994) and Toussaint-Comeu and Di Franco (2009), among others, opt for single equation models.

included in each specification are covered in Table A.1. The predictive capacity of each one of the twelve estimated equations is evaluated using the weighted average of the mean square error for between one and eight future periods. The predictive ability is covered in Table A.2., along with the results of the nullity of the total lags in the confidence variable (columns 4 to 6 in Table A.2).

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**Table A.1. The explicative variables included in each equation for predicting consumption growth**

	Model without confidence indicator	Model with confidence indicator
[1]	$Dln(\text{household\_consumption})_{t-i}$	$Dln(\text{consumption})_{t-i}; CC_{t-i}$ (where CC is the perception of households of their economic situation for the next 12 months)
[2]	$[1] + Dln(\text{employee wages} + \text{gross operating surplus})_{t-i}$	
[3]	$[2] + Dln(\text{net wealth})_{t-i}$	
[4]	$\text{Net wealth} = \text{net financial wealth} + \text{gross real estate wealth} - \text{loans for purchasing and remodeling of homes}$ $[3] + D(3 \text{ month interest rates})_{t-i}$	
[5]	$[4] + D(\text{unemployment rates})_{t-i}$	
[6]	$[5] + Dln(\text{consumption deflator})_{t-i}$	

Source: BBVA ERD based on INE and Bank of Spain.

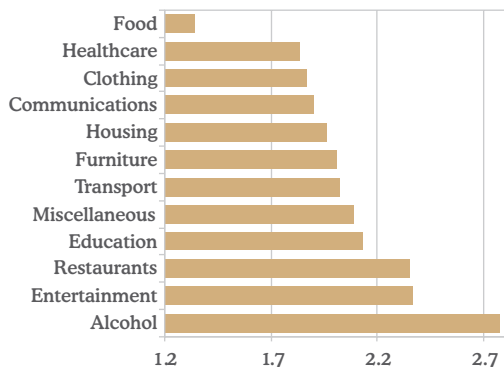
**Table A.2. Predictive capacity for each consumption equation**

	Model without confidence indicator RMSE	Model with confidence indicator			
		RMSE	$\sum bi = 0$	Test F ( $\sum bi = 0$ )	P-Value ( $\sum bi = 0$ )
[1]	0.0085	0.0057	0.0023	4.7871	0.0000
[2]	0.0079	0.0056	0.0023	4.8294	0.0000
[3]	0.0077	0.0055	0.0025	4.7593	0.0000
[4]	0.0073	0.0057	0.0022	3.9508	0.0002
[5]	0.0074	0.0068	0.0019	3.1200	0.0030
[6]	0.0074	0.0080	0.0015	2.2309	0.0307

$\sum bi$ : Sum of the estimated coefficients of the confidence variable and its lags.  
RMSE: Root of mean-square error.  
Source: BBVA ERD

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Chart 5.1.  
**Variability in real PPP per capita consumption**  
 (standard deviation)

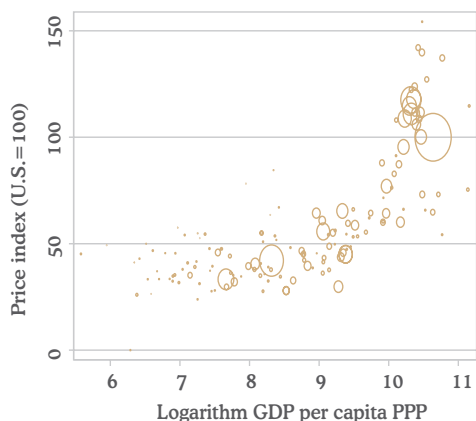


Source: Prepared in-house based on ICP.

Table 5.1. What are Purchasing Power Parities?

Purchasing Power Parities (PPP) are the currency conversion rates that equalize the purchasing power of the different currencies eliminating the differences in price levels between countries. In this manner, the information expressed in PPP allow for international comparisons, especially in the case of countries with very different price structures.

As can be observed in the chart, the price structure has a close relationship with the degree of economic development. A comparison of high income countries with low income countries without taking PPP into account could lead to incorrect conclusions.



For an international comparison in consumption patters, information expressed in PPP will be used. However, for the analysis of consumption patterns in high income countries (OECD), the information is in constant prices (without being converted into PPP) given that it can be shown that the similarities in the price structure of these countries does not discredit the analysis.

Source: Prepared in-house based on ICP data.  
 Note: Size of observations weighted by PPP GDP.

## 5. Consumption patterns in developed countries <sup>1</sup>

### Introduction

The globalization phenomenon has meant a convergence in the attitudes and behavior of consumers throughout the planet. However, there are still differences in the budget that families in different countries set aside for the consumption of certain goods and services. The level of economic development of a country, among other factors, conditions the composition and progress of its consumption basket. This article intends to offer an overview of consumption patterns at an international level, highlighting the importance of the level of development. The results obtained suggest there is a process of convergence in the consumption patters for high income countries that belong to the Organization for Economic Cooperation and Development (OECD).

### World consumption patterns: differences and similarities between countries

Are there divergences in consumption patterns at the international level? A priori, it would seem logical that the same proportion of income is not set aside for the consumption of a good in a developed country and in an emerging one. In the same manner, the divergences in consumption patterns between countries are not homogenous by good or service<sup>2</sup>. Chart 5.1 shows the standard deviation of real *per* capita consumption in purchasing power parity (PPP) per type of product<sup>3</sup>. As can be seen, the variability is lower for those consumption divisions that are more associated with covering basic needs such as food, health and clothing and shoes. On the other hand, some divisions like restaurants, entertainment, culture, and alcoholic beverages and narcotics exhibit a greater divergence between countries.

### The importance of economic development

Are there idiosyncratic factors that help explain the differences in consumption patterns between countries? It could be suggested that the homogenization of markets (globalization) usually has a close relationship with a country's level of development. If this is true, as different countries increase their *per* capita income, they would adapt their consumption to the patterns observed in more developed countries. Information for the year 2005 from the *International Comparison Program* (ICP), a program sponsored by the World Bank where PPP consumption estimates are done for a large number of countries, was used for this analysis.

First, in order to analyze how important the degree of a country's development is as a determinant for consumption habits, a measurement is needed that values the relative importance of the consumption of a good over the total consumption basket of a country. The relative consumption of goods and services of division *i* is defined in the following manner for this purpose:

$$relative\ consumption_i = \frac{AIC_i}{\sum_{i=1}^{12} AIC_i}$$

<sup>1</sup> This work has been carried out within the research framework of Cátedra Fedea-BBVA. More information at: [www.fedea.es/catedras/index.asp?z=2](http://www.fedea.es/catedras/index.asp?z=2).

<sup>2</sup> Goods and services have been catalogued into twelve divisions following the international classification of consumption COICOP.

<sup>3</sup> The effects of using PPP are described in Chapter 5.1.

where AIC is actual individual consumption, measured in PPP<sup>4</sup>.

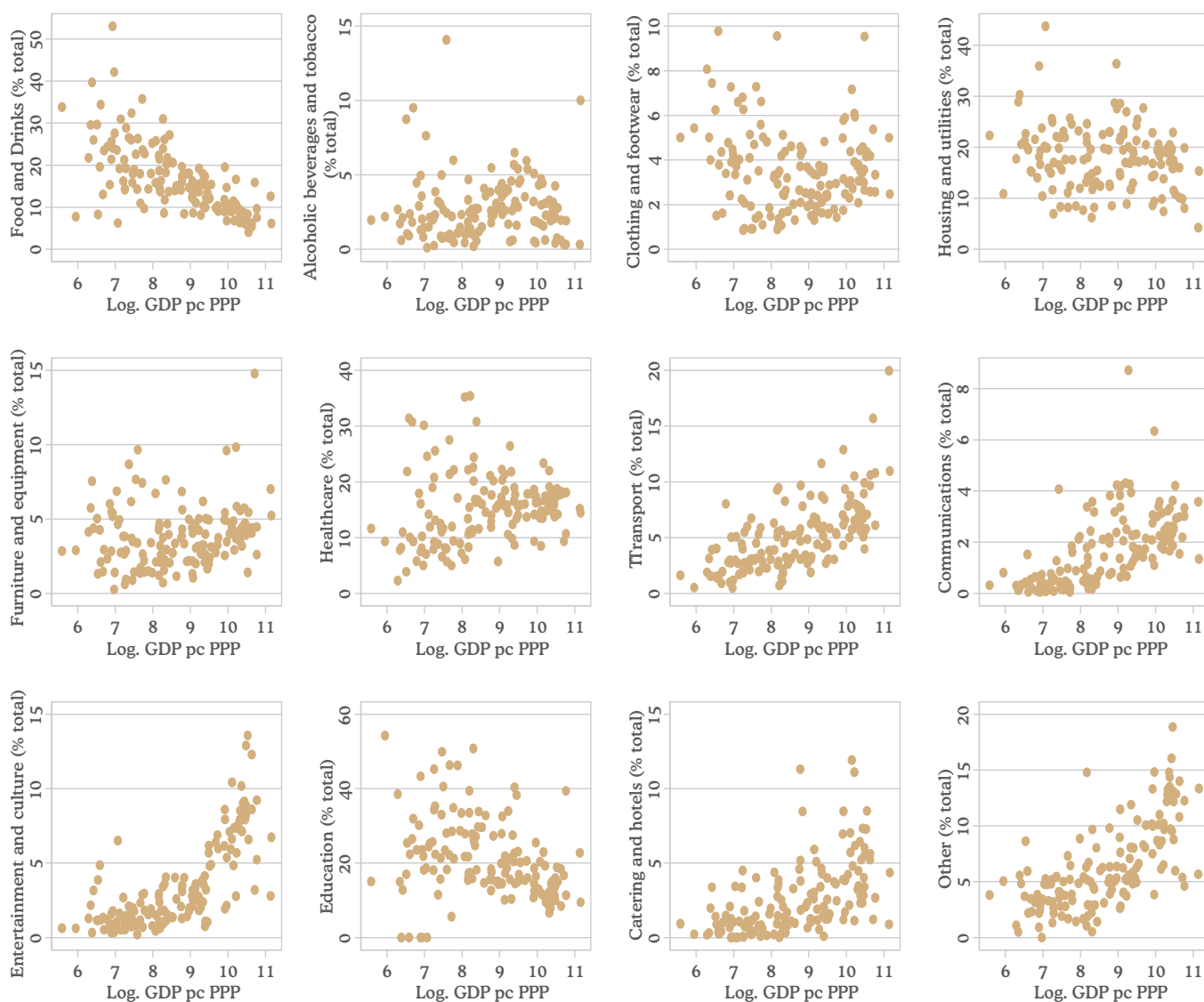
Chart 5.2 shows the relationship between the consumption of different goods and services (as a % of total) and the logarithm of *per capita* GDP based on PPP. The information suggests there are clear relationships between the level of a country's development and the importance of the relative consumption of certain goods and services:

- First, there is a clear negative relationship between the increase in the real *per capita* income of a country and the relative consumption of food and non-alcoholic beverages. This empirical evidence supports the theory that increases in income cause relative reductions in lower category goods ( *Engel 's Law*).

<sup>4</sup> By definition, this measure falls between 0% (no consumption of this division) and 100% (all of the basket is dedicated to the consumption of this item). However, when it comes to information expressed in PPP (using a reference economy, in this case the U.S.), this relationship does not always occur:  $\sum_{i=1}^{12} AIC_i = Total AIC$  This is specifically because PPP estimations are done separately for each consumption division and for the total AIC. In the case of U.S., the previous relationship is an identity (by PPP construction). For economies "similar» to the U.S., the differences are not noticeable. In the case of other economies (generally emerging ones), the differences increase. Although this analysis uses  $\sum_{i=1}^{12} AIC_i$  total AIC as a measurement (meaning the sum of all of the divisions), it has been shown that results do not vary when using an estimation in PPP of "Total AIC".

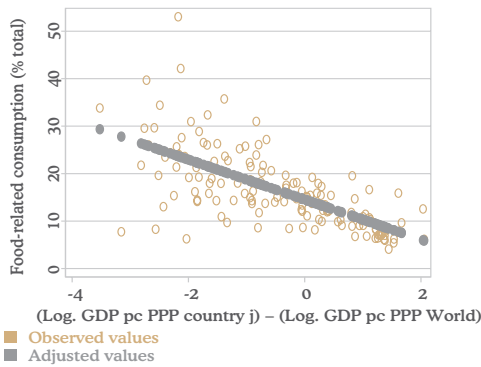
Chart 5.2.

### Relative consumption (% of total) and economic development (logarithm of pc GDP based on PPP)



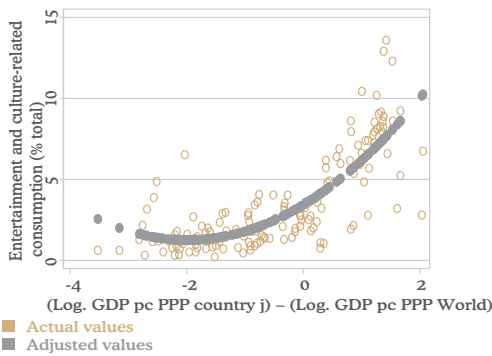
Source: Prepared in-house based on ICP data.

**Chart 5.3.**  
**Relative consumption of food and beverages and economic development: linear adjustment**



Source: Prepared in-house based on ICP data.

**Chart 5.4.**  
**Relative consumption of goods and services related to entertainment and culture and economic development: quadratic adjustment**



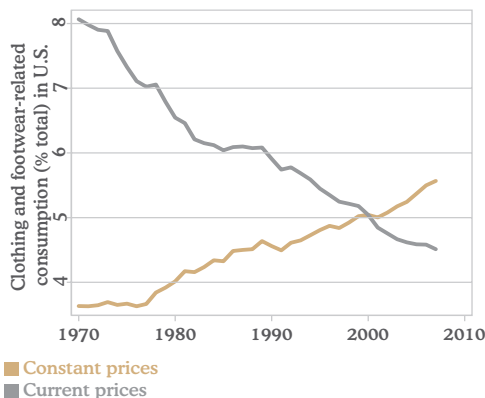
Source: Prepared in-house based on ICP data.

**Table 5.2. Constant vs. current prices**

The ratio of spending on a particular good out of total consumption is used for the analysis of international consumption patterns. If this ratio is defined in current prices you get

$$relative\ consumption\ (\epsilon)_i = \frac{p_i C_i}{\sum_{i=1}^{12} p_i C_i}$$

where  $C_i$  is the spending on the item  $i$  and  $p_i$  its corresponding price. Note that this ratio is more sensitive to the change in relative prices between the price of the good  $i$  ( $p_i$ ) and the total price of the goods and services consumed ( $\sum p_i C_i$ ). If consumption is observed in terms of spending divisions where relative prices have changed, the measurement of relative consumption in current prices of a certain item could be severely altered, as is suggested in the following chart (for U.S.). This is why the analysis is carried out with information expressed in constant prices.



Source: Prepared in-house based on OECD data.

- Second, the relative consumption of goods and services related to education decreases when the development level of a country increases. Although this result could seem counterintuitive, we must remember that AIC not only includes private consumption, but also consumption by the private sector and nonprofit institutions that help households (ISLFSH) <sup>5</sup> Given that the proportion of spending that the public sector gears towards education is relatively higher in many emerging countries, the relationship with the level of development is ambiguous.
- Finally, there are other spending divisions in which the relationship between relative consumption and development level is positive. This is the case for transportation, communication, recreation and culture, restaurants and hotels, financial services, personal care, and to a lesser degree, the goods and services related to furnishings and household appliances. It is reasonable for the relative consumption of products that do not meet an essential need to increase as the country's income increases.

A question that arises from the evidence exhibited in Chart 5.2 is: Does the relative weight of an *item* change in proportion to a country's GDP? If the progress of the relative consumption of food is observed in chart 5.3, we can see a lineal (negative) relationship with the evolution of a country's income (relative). However, the consumption of goods and services related to recreation and culture, hotels and restaurants, or others appear to exhibit a different behavior. In fact, Chart 5.4 suggests that a quadratic adjustment could help to better understand the progress of consumption related to these goods and services<sup>6</sup>.

### Consumption patterns in developed countries

After studying the importance of economic development on international consumption patterns from a static point of view, these patterns are analyzed over time. It is interesting to study the behavior of consumption attitudes and, finally, prove the existence of convergence between countries.

The lack of comparable data requires the analysis to be focused on countries belonging to the OECD (except Mexico, due to lack of information). Once more, the variable being studied is the relative consumption of each spending division out of total consumption. However, this time around, the data allow us to focus attention on household final consumption expenditure (HFCE). The information is expressed in constant prices, not in PPP (see Table 5.2). Therefore, the relative consumption measurement is defined as follows:

$$relative\ consumption_i = \frac{HFCE_i}{\sum_{i=1}^{12} HFCE_i}$$

<sup>5</sup> The AIC includes the household final consumption expenditure (HFCE), consumption spending of the NPISHs and public sector spending on «individualizeable» goods and services like health and education. The consumer information from World Bank included in the ICP, refer to the first definition (AIC), while the ones for OECD are based on the second (HFCE). While both measurements, AIC and HFCE, are practically equivalent for some consumption divisions, the same is not the case for goods and services where the public sector or NPISHs play a more relevant role.

<sup>6</sup> The increase of the *percapita* income of a country (in terms of the world average) imply more than proportional increases in the relative consumption of certain goods and services (in this case, the relative consumption of entertainment and culture). The "adjusted value" series in Chart 5.4 is the result of the following regression:

$$relative\ consumption_i = \beta_0 + \beta_1(\log GDP_j - \log GDP_{WORLD}) + \beta_2(\log GDP_j - \log GDP_{WORLD})^2 + \epsilon_j$$

where  $GDP_j$  is the GDP per capita of the country  $j$  expressed in PPP.



The results show that the relative consumption of durable goods has increased progressively over recent decades, reducing the importance of the consumption of perishable items and services (Chart 5.5 and 5.6).

Some common trends can be observed for the group of countries under analysis, according to product class. Thus, in line with the results obtained in the previous section, the relative consumption of food and non-alcoholic beverages decreases for the entire group of countries. In countries with the highest *per capita* income in the OECD, the relative consumption of this division tends to be at levels close to 10-15% (with the exception of the U.S., with a relative consumption in food close to 7% in recent years), as shown in Chart 5.7. Something similar occurs with the relative consumption of alcoholic beverages and narcotics, converging at amounts of 2-4% (Chart 5.8).

Other consumption divisions do not exhibit such clear trends. There is a high degree of heterogeneity in the case of housing and utilities (water, electricity, etc.), with relative consumption situated around 15-25% in more developed economies. More stable behavior is exhibited in the clothing, footwear, furniture, and home maintenance and furnishing divisions, where their relative consumption is around 4-8% and 6-8% respectively, in the main economies of the OECD.

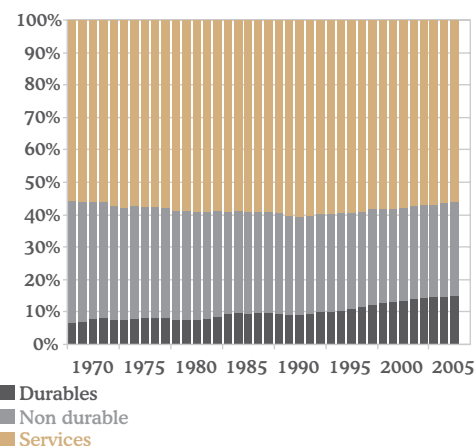
The private consumption of goods and services related to education, which is currently less than 1% in developed European countries, is notably stable. However, it reaches figures of 2% in the U.S. and Japan, 3% in Australia, and more than 6% in South Korea. In turn, the relative consumption of health goods and services is currently at around 2-5% for all the countries in the OECD except the U.S., where it is at 18% due to the specifics of its health system. The consumption of goods and services related to transport and hotels and restaurants have also not experienced any noticeable changes. In the case of transportation, the relative consumption has fluctuated between values close to 12-14% (with some exceptions like Luxembourg, at 22%). Hotels and restaurants has remained stable for the period under observation, but with some regional variations. Thus, while the majority of countries show a relative consumption of 4-6%, in the case of Spain or Italy, the percentage goes up to 16-17%.

Some consumption divisions have been more variable in their behavior. This is the case with the consumption of goods and services related to recreation and culture and communications. In the case of leisure and culture, countries such as U.S. have tripled the relative consumption of this division (see Chart 5.9). The goods and services related to communication have increased from an insignificant relative weight in 1970 (less than 1% in countries where data is available for these dates), to levels close to 3.5-4% for the OECD as a whole.

### The composition of a consumption basket typical of a developed economy

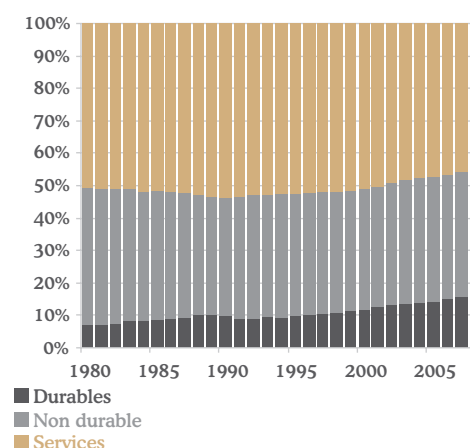
As we have shown, certain consumption patterns follow a similar pattern in a number of OECD countries, particularly the wealthier ones. Can the average consumption habits for developed economies be summarized? Box 5.3 uses the latest information available (2007) to calculate the descriptive statistics of the relative consumption of each product in the OECD countries with the highest income<sup>7</sup>. Although there is a great deal

Chart 5.5.  
Relative consumption in U.S.



Source: Prepared in-house based on OECD data.

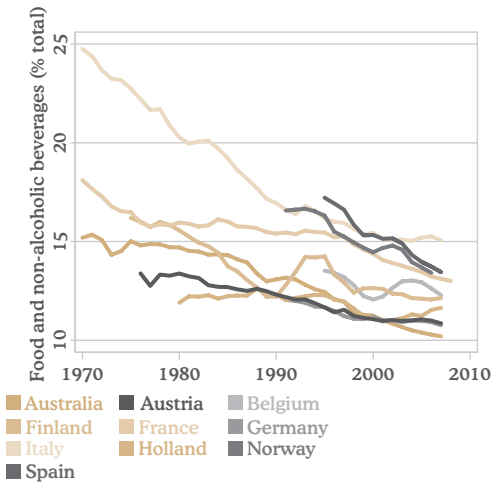
Chart 5.6.  
Relative consumption in the U.K.



Source: Prepared in-house based on OECD data.

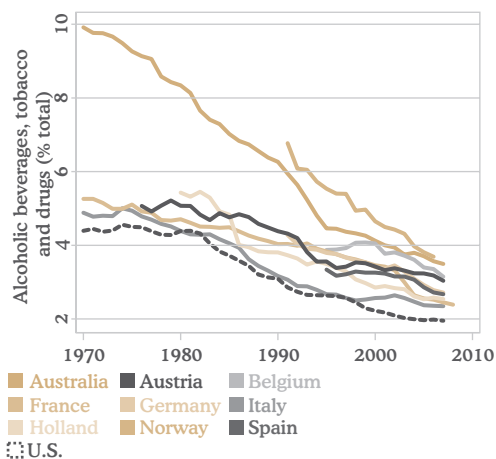
<sup>7</sup> The countries used to calculate average relative consumption are the 20 countries in the OECD with the highest *per capita* income in 2007: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Iceland, Ireland, Italy, Japan, Luxembourg, Holland, Norway, Spain, Sweden, Switzerland, the United Kingdom, and the United States.

Chart 5.7.  
Relative consumption of food and non-alcoholic beverages



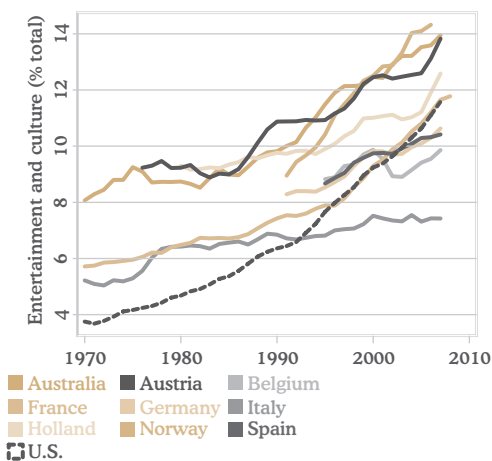
Source: Prepared in-house based on OECD data.

Chart 5.8.  
Relative consumption of alcoholic beverages, tobacco, and narcotics



Source: Prepared in-house based on OECD data.

Chart 5.9.  
Relative consumption of recreation and culture



Source: Prepared in-house based on OECD data.

of unevenness in certain divisions, the results allow the approximate evaluation of the composition and importance of items consumed in an «average developed economy.» Assuming a process convergence in international consumption patterns, it could be considered that the basket type covered in Table 5.3 is a representation of the consumption basket that lower income countries would tend towards.

### Convergence of consumption patterns in developed countries

The previous section has shown that the composition of consumption in the countries belonging to the OECD generally follows the same pattern. Next, there is an analysis of whether or not the pattern of progress of these countries exhibits a convergence, in other words, if consumption attitudes between high income countries tend to become the same. An adaptation of the methodology proposed in Konya and Ohashi (2007)<sup>7</sup> is used for this purpose. Specifically, the following equation is estimated:

$$\Delta w_{i,j,t} = \alpha + \beta w_{i,j,t-1} + \sum_{n=1}^3 \gamma_n \Delta w_{i,j,t-n} + \sum_{k=1}^{15} \delta_{n,k} \Delta p_{i,j,t} + \eta_j m_{i,t} + \varepsilon_{i,j,t}$$

where  $w_{i,j,t}$  is the difference between the relative consumption of country  $i$  and the reference country (in this case the U.S.<sup>8</sup>) in the year  $t$  for the product  $j$  (including 12 consumption divisions plus the three categories: durable, non durable, and services).  $\Delta$  is the difference operator, such that  $\Delta w_{i,j,t} = w_{i,j,t} - w_{i,j,t-1}$ ;  $p_{i,j,t}$  is the difference between the price of the product  $j$  in country  $i$  in year  $t$  and that in the reference country, thus allowing for the existence of substitution effects;  $m_{i,t}$  is the logarithmic difference of per capita GDP based on PPP between country  $i$  and the reference country at time  $t$  which allows for the existence of income effects. Lastly,  $\varepsilon_{i,j,t}$  denotes the error term.

The magnitude of coefficient  $\beta$  in Table 5.4 measures the convergence rate of the relative consumption of product  $j$  from country  $i$  with the relative consumption of this product in the reference country. In general, although a certain degree of heterogeneity exists between products, the existence of convergence in the relative consumption of durable goods, in food and non alcoholic beverages, and in health. These results are in line with those obtained by Konya and Ohashi (2007)<sup>9</sup>.

### Conclusion

As we have tried to demonstrate, international consumer patterns are closely linked to the degree of development of a country. This means that developed economies are allocating a lower percentage of their income towards the consumption of goods and services that cover basic necessities (for example, spending on food), in favor of others that are not considered basic needs (for example, recreation, restaurants, and communications). Therefore, we can reasonably expect that economic development will cause changes in the consumption patterns of countries that currently have lower incomes. The analysis conducted for OECD countries suggests there is a process of convergence towards consumption patterns that are typical of a highly developed economy. Companies should therefore take this process into consideration when designing their production and commercial strategies.

<sup>7</sup> Konya, I. and Ohashi H. (2007). "International Consumption Patterns among High-income Countries: Evidence from the OECD Data". *Review of International Economics*, 15(4), 744-757, 2007.

<sup>8</sup> The results of the analysis are robust to the selection of other developed countries as a reference.

<sup>9</sup> Konya and Ohashi (2007) obtained some higher coefficients, largely due to the differences in the periods of the data used (three-year periods in their study, compared with years in the current analysis).

## Box 5.3. Average consumption basket of developed economies

		Average	Median	Standard Deviation	Min	Max
A	Durables	14.4	13.1	3.5	10.8	25.8
B	Non durables	36.6	37.5	5.2	26.4	49.0
C	Services	50.5	50.1	5.2	40.3	57.7
1	Food and non-alcoholic beverages	11.4	11.3	2.1	6.8	15.1
2	Alcoholic drinks and narcotics	3.5	2.9	1.7	2.0	9.0
3	Clothing and footwear	5.8	5.6	1.2	3.4	8.3
4	Housing and utilities	21.2	21.8	2.9	16.1	26.0
5	Furnishings, household equipment and routine household maintenance	6.6	6.4	1.0	4.9	8.4
6	Health	4.5	3.8	3.7	2.4	18.0
7	Transport	13.3	13.0	2.7	9.8	22.3
8	Communication	3.5	3.6	0.8	1.9	5.3
9	Recreation and culture	11.6	11.6	2.2	7.4	15.6
10	Education	1.1	0.7	0.8	0.4	3.0
11	Restaurants and hotels	7.8	6.2	3.6	4.7	17.6
12	Miscellaneous goods and services	12.0	11.2	2.1	8.1	15.9

Source: Prepared in-house based on OECD data.

Table 5.4. Convergence coefficients

	Dependent variable (relative consumption)	Coefs. $\beta$	Standard Deviation	Number of Obs.
A	Durables	-0.271***	0.032	289
B	Non durables	-0.019*	0.011	289
C	Services	-0.039***	0.014	289
1	Food and non-alcoholic beverages	-0.114***	0.017	302
2	Alcoholic beverages and narcotics	-0.035***	0.012	302
3	Clothing and footwear	-0.091***	0.017	302
4	Housing and utilities	-0.068***	0.015	302
5	Furnishings, household equipment and routine household maintenance	-0.063***	0.014	302
6	Health	-0.150***	0.027	302
7	Transport	-0.073***	0.021	302
8	Communication	-0.086***	0.022	302
9	Recreation and culture	-0.029*	0.017	302
10	Education	-0.022**	0.01	302
11	Restaurants and hotels	-0.022**	0.009	302
12	Miscellaneous goods and services	-0.03	0.019	302

Source: In-house. Note: \*, \*\* and \*\*\* denote significance levels of 10, 5 and 1%, respectively.

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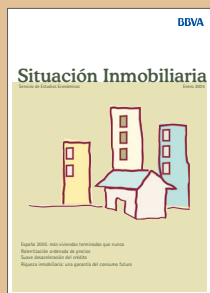
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