

Consumption Report

2021

Consumption in Spain: overcoming the worst of the pandemic

Profiling the recovery's star consumer

Getting into debt? Depends on how much was saved during the pandemic

Which sectors have benefitted the most from pent-up demand?

Inflation in Spain in 2020

How we consume throughout the month





CONSUMPTION REPORT 2021

The *Consumption Report* is a publication produced by CaixaBank Research

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2021



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«Whoever said money can't buy happiness didn't know where to shop»
GERTRUDE STEIN, AMERICAN WRITER



Consumption

CONSUMPTION PICKS UP IN 2021



CONSUMPTION GROWTH FORECAST: 5.7% IN 2022 and 3.6% IN 2023



Factors that have contributed to the recovery in consumption (starting from Q2 2021):



Lifting of restrictions



Pent-up demand



Recovery in the labour market



Less uncertainty (fewer precautionary savings)

However, there are some brakes to the recovery (Q4 2021 and 2022):



Bottlenecks in the global value chain



Energy crisis

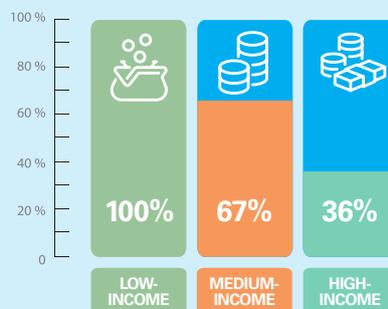
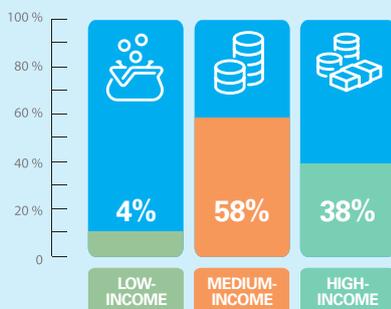


HOW MUCH DID SPANIARDS SAVE IN 2020 AND HOW ARE THEY SPENDING IT IN 2021?*



€46.6 billion (3.7% of GDP 2019) in excess savings...

... which will be released in 2021:



Sectors benefiting the most in 2021 from excess savings in 2020:



TOURISM



HOSPITALITY



LEISURE

*According to internal CaixaBank data.

WHEN AND HOW DO WE SPEND?



More even expenditure



Over 60 and high-income groups

WEEK 1

27.8%



WEEK 2

25%



WEEK 3

22.7%



WEEK 4

24.5%



Less even expenditure



Young people and low-income groups

Executive Summary

The recovering trend in consumption

The outbreak of the pandemic in early 2020 has had unprecedented repercussions in many areas of the economy. One of these has been household consumption, the main component of GDP and traditionally considered an indicator of the health of the economy and the well-being of society. Because of the restrictions on business and travel during the health crisis caused by COVID-19, the drop in consumption was much greater than during previous crises. The positive side is that once restrictions were lifted, Spain's consumption has rebounded more sharply in 2021 than in the past. In fact, in **October the consumption monitor produced by CaixaBank Research using internal data was already 13% higher than in the same month of 2019.**

This trend should continue, albeit more moderately, during 2022 and 2023 (we predict consumption growth of 5.7% and 3.6% in 2022 and 2023, respectively). These forecasts are based on the assumption that, thanks to the vaccination campaign, there will be no need to impose restrictions on business and travel as severe as those in place until last spring. While **factors have emerged that will take the shine off this recovery, such as rising energy prices and bottlenecks in global supply chains**, as these subside in 2022 we believe that **demand pent up** during the pandemic, a **recovering labour market**, improving consumer confidence, **accommodative financial conditions** and the boost from the **Next Generation EU funds will continue to support the recovery in consumption.**

In this report we focus on one of the most important underlying factors: pent-up demand. The impossibility of consuming a large number of services during the restrictions in 2020 and the consequent generation of forced savings (we estimate around €46.6 billion, 3.7% of 2019's GDP) are boosting consumption now that businesses have reopened, supported by the fact that consumers perceive the crisis has been temporary

(thanks to the vaccination campaign) and therefore see no need to keep a high level of savings for precautionary reasons. **With the help of CaixaBank's internal and completely anonymised data on more than 10 million clients, we have exhaustively analysed both the demand that has already materialised as well as its potential, according to the profile of each consumer.**

Our results suggest **that forced savings during the pandemic have been substantial but also very heterogeneous**: the distribution of excess savings across low, medium and high-income groups was 4%, 58% and 38%, respectively. We have also found that these savings are mostly concentrated among people aged over 60. According to our analysis, **accumulated savings are already being released in 2021** (specifically, low-income groups will use up 100% of their savings while this figure will be 67% and 36% for medium and high-income groups respectively), **particularly benefiting the tourism, leisure and hospitality sectors.**

We have also used this report to look at more structural issues regarding consumption patterns, using our internal data. Due to changes in consumption patterns, **in 2020 the inflation faced by the average consumer was 0.1% according to our internal data** (in contrast to the official figure of -0.3%), **even higher for people over 60 and low-income groups.** Finally, we have found that **consumers generally spend more during the first week of the month and this pattern is especially pronounced among low-income groups and young people.** In contrast, people over 60 and those on higher incomes tend to spend more evenly throughout the period.



Long-term optimism

Consumption in Spain: overcoming the worst of the pandemic

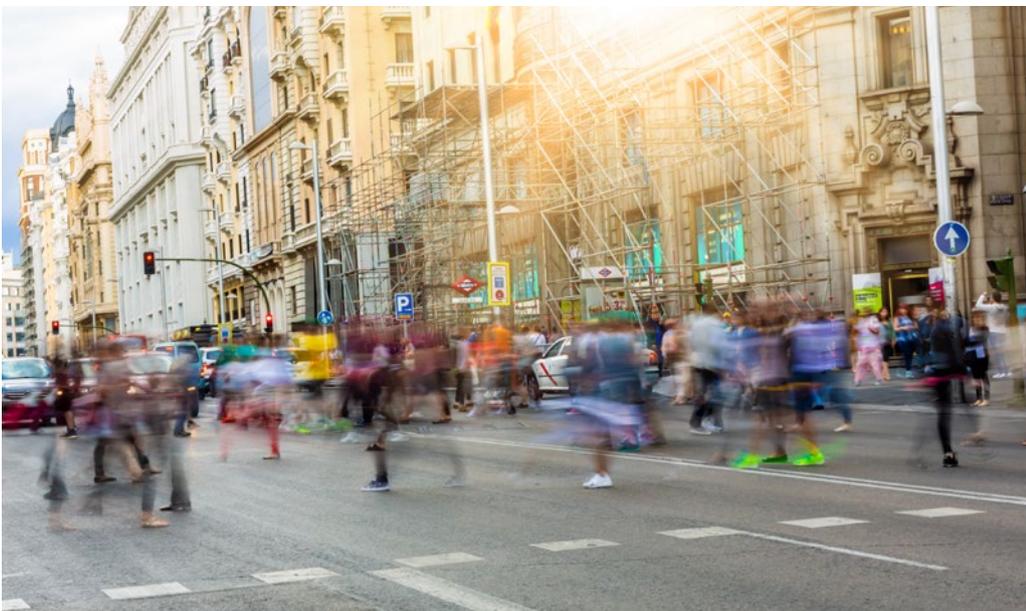
Consumption in Spain is recovering faster than in previous crises. This is highlighted in the consumption monitor produced by CaixaBank Research based on internal data. In the month of October, our consumption indicator was already 13% higher than in the same month in 2019. Albeit at a more moderate pace, we expect consumption growth to remain dynamic over the coming years, supported by several factors including the release of demand pent up during the pandemic, the recovery of the labour market, improved consumer confidence, accommodative financial conditions and the boost from the Next Generation EU funds. Although some factors have emerged that will take some of the shine off the recovery, such as the energy crisis and tensions in global supply chains, we therefore expect the rate of growth in consumption to remain strong over the next two years, with an increase of 5.7% in 2022 and 3.6% in 2023.

The underlying factors invite optimism for 2022 and 2023

The slump in consumption during the COVID-19 health crisis was far greater than during the financial and sovereign debt crisis of 2008-2014. This is largely because the factors that depressed consumption in these two recessionary periods are very different. During the 2008-2014 crises, the main determinants were the fall in gross disposable income and, to a lesser extent, the increase in uncertainty associated with the future economic situation.¹ In contrast, during the 2020 crisis the main determining factors have been restrictions on business and travel (see the chart below).²

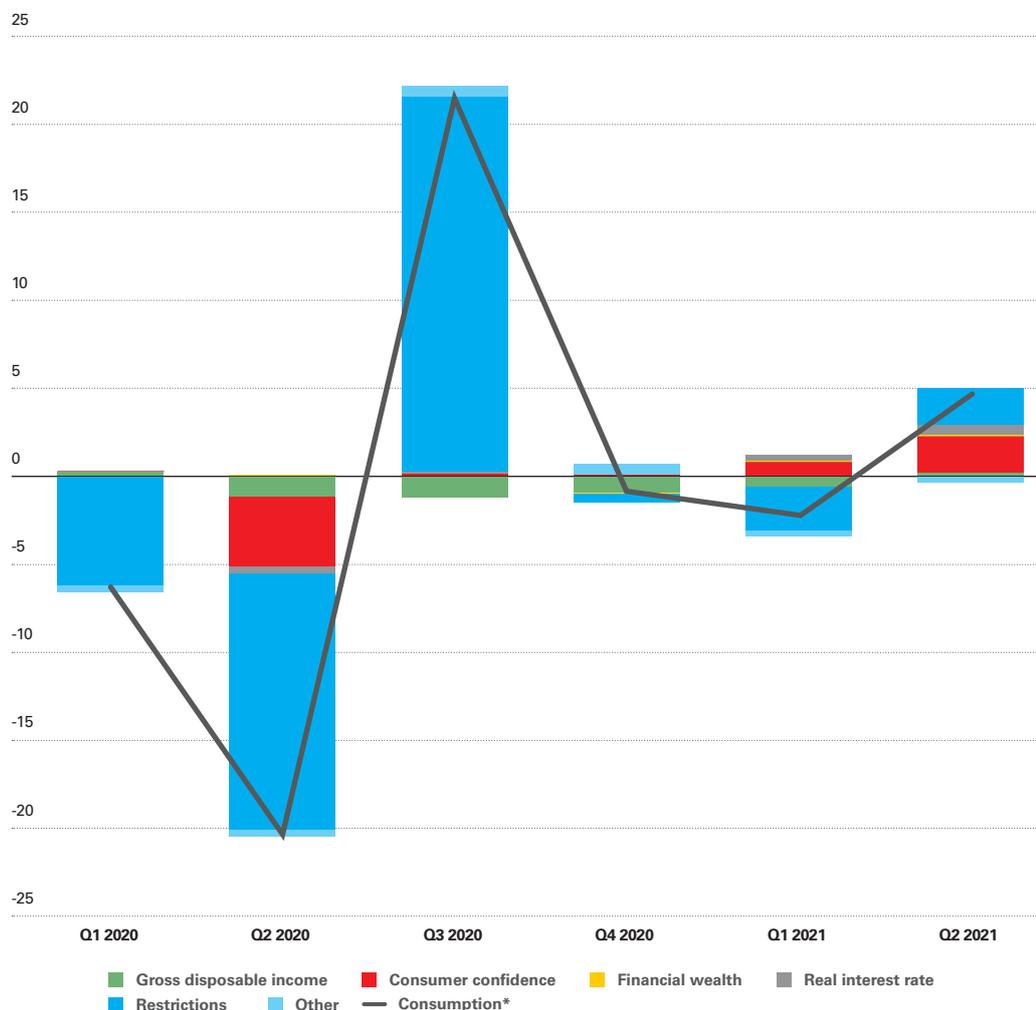
① See the Dossier «The recovery of consumption in Spain: reasons and outlook» in the *Monthly Report* for October 2017.

② Contributions to the variation in real consumption are obtained from a simple first-difference estimator using ordinary least squares, where the explanatory variables (the first three expressed in real terms) are gross disposable income, financial wealth, the interest rate (12-month Euribor) and consumer confidence. Following the methodologies of the ECB and Bank of Spain, the contribution made by the restrictions is estimated as the residual of the model (corrected for its historical forecast error). See «COVID-19 and the increase in household savings: precautionary or forced?» in the ECB Economic Bulletin 06/2020, and «Household saving during the pandemic and its possible effects on the future recovery in consumption» in the Bank of Spain's Economic Bulletin 1/2021.



Spain: determining factors for household consumption

Contribution to quarter-on-quarter change in real consumption (pp)



Notes: (*) Quarter-on-quarter change (%). Data in real terms.

Source: CaixaBank Research, based on data from the National Statistics Institute, the Ministry of Economic Affairs and Digital Transformation, the Bank of Spain and ECB.

The lifting of most of the restrictions in Q2 2021 paved the way for a recovery in consumption,³ especially in those sectors hardest hit by the restrictions (leisure, hospitality and tourism), as reflected by our consumption tracker (available in Spanish: Monitor de Consumo). Likewise, in 2021 this recovery has been supported by the release of the pent-up demand that accumulated during the toughest months of the pandemic, as well as by the notable improvement in both the labour market and consumer confidence, factors that will continue to drive consumption in 2022 and 2023.

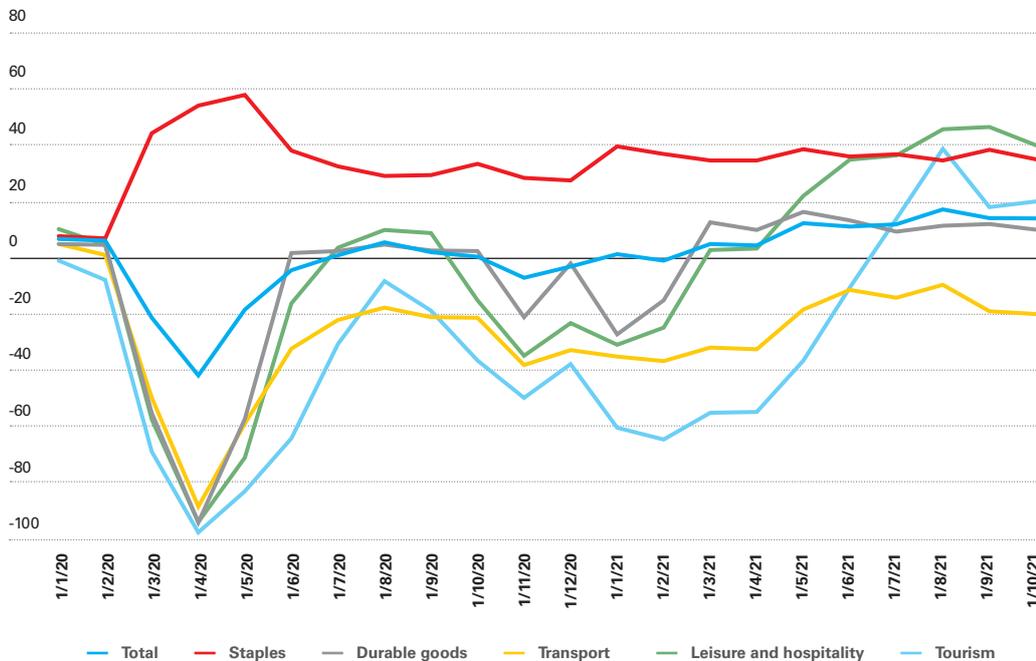
³ For more details on which sectors have benefitted the most from this rebound in consumption, see the article «Which sectors have benefitted the most from pent-up demand?» in this Report.



Consumption

In person expenditure of Spanish cards via CaixaBank POS terminals by commerce

Change compared with the same period in 2019 (%)



Source: CaixaBank Research, based on internal CaixaBank data.

Over the coming quarters, pent-up demand will play a particularly important role among high-income groups, which are the ones that generated the most excess savings during 2020⁴ and, according to our estimates, still have the largest cushion to maintain a relatively high rate of consumption growth by their standards. Specifically, we estimate that, in 2021, they have spent less than half the excess savings they accumulated on consumption,⁵ so there is room for their consumption to continue to grow significantly in 2022.⁶

As for the labour market, we expect its recovery to consolidate, 2022 and 2023 ending with employment growth of 2.7% and 2.1%, respectively. This will be the key factor to continue underpinning growth in household income, which we expect to post a cumulative 8.5% increase over the period 2022-2023.

Another factor that will also contribute to the growth in consumption is the improvement in consumer confidence, which has recovered significantly, particularly thanks to the successful vaccination campaign. Although we do not rule out the possibility of further waves of infections, we are confident that pressure on hospitals will remain limited over the coming months thanks to the effectiveness of vaccines and the high percentage of the Spanish population that has been vaccinated. This should mean that, in the coming months, there will be no need to impose such severe restrictions on travel and business as those in place until last spring. This is one of the main assumptions underlying our macroeconomic scenario. In this respect, one of the major risks is the possible emergence of new variants of the virus that reduce vaccine efficacy.

⁴ See the article «Consumption and pent-up demand: Profiling the recovery's star consumer» in this Report.

⁵ See the article «Whether to get into debt: a dilemma that depends on how much was saved during the pandemic» in this Report.

⁶ CaixaBank Research estimates that pent-up demand will contribute 1.2 pp to GDP growth in 2022.

In addition to the three factors mentioned above, we also believe that consumption will be supported by the continuation of accommodative financial conditions as we do not expect the ECB to start raising interest rates until 2024.⁷ This will encourage more consumer credit in order to finance, above all, the purchase of durable goods. Finally, the European recovery plan (NGEU) will also boost consumption over the coming quarters. One of the main aims of Europe's recovery and resilience plan is to encourage sustainable travel and renovate housing to promote energy savings, which will also boost the consumption of durable goods such as electric cars and more energy-efficient air conditioning appliances.

The brakes on the recovery

Although we expect the recovery in consumption to remain strong over the coming years, a few obstacles have appeared in recent months that will take some shine off it. Firstly, energy prices, both electricity and fuel, have risen sharply in the second half of the year. This increase reduces the purchasing power of households, which ultimately limits the ability of consumption to recover. Although we believe that energy prices will normalise over the course of 2022, we expect the impact on consumption growth in 2022 to be around 0.7 pp.⁸

Secondly, the sharp rise in international demand over the past few months has led to bottlenecks in global supply chains, restricting the capacity of supply to rally. As a result, growth in consumption will also be limited by longer delivery times for some consumer products such as vehicles, and by rising prices due to mismatches between supply and demand in some sectors. In any case, according to the latest available indicators, we believe these obstacles will start diminishing from Q2 2022 onwards, so the final impact on the recovery in consumption is expected to be limited.⁹

All in all, the obstacles that have appeared recently will take some of the steam out of consumption's recovery but the underlying factors supporting it are solid. We therefore expect consumption to post relatively high growth rates in both 2022 and 2023: 5.7% and 3.6%, respectively.

⁷ Our 12-month Euribor forecast for 2022 and 2023 is -0.35% and -0.27%, respectively.

⁸ Estimated based on a semi-structural general equilibrium model with 9 estimated equations and 14 auxiliary equations which, in the short term, is determined by demand while aggregate demand and supply are equalised in the long term. For more details (in Spanish), see «Modelo semiestructural de CaixaBank Research para España», Working Paper 01/21.

⁹ According to estimates by CaixaBank Research, bottlenecks will subtract 0.3 pp from GDP growth in 2022.



Who's driving the recovery?

Consumption and pent-up demand: profiling the recovery's star consumer

Savings in 2020: the engine behind pent-up demand

The restrictions put in place to curb the spread of the coronavirus and caution due to the prevailing uncertainty led to a large increase in savings by Spanish households in 2020. Specifically, we estimate that cumulative savings from the pandemic¹⁰ reached €46.6 billion, 3.7% of 2019's GDP. This sharp increase in savings has diminished as we have been able to return to our old habits, leading to a rapid recovery in consumption; a trend that will most likely continue in the coming quarters.¹¹

How was this increase in savings distributed across different population groups? Using information from more than 10 million CaixaBank clients, duly anonymised, we reconstructed the real-time trend in household gross disposable income (GDI) and consumption by both income group and age.¹²

As expected, the increase in savings was especially pronounced among those with higher incomes: high and medium-high income groups accounted for almost two-thirds of the additional savings generated in 2020 as a result of the pandemic, as can be seen in the chart below.



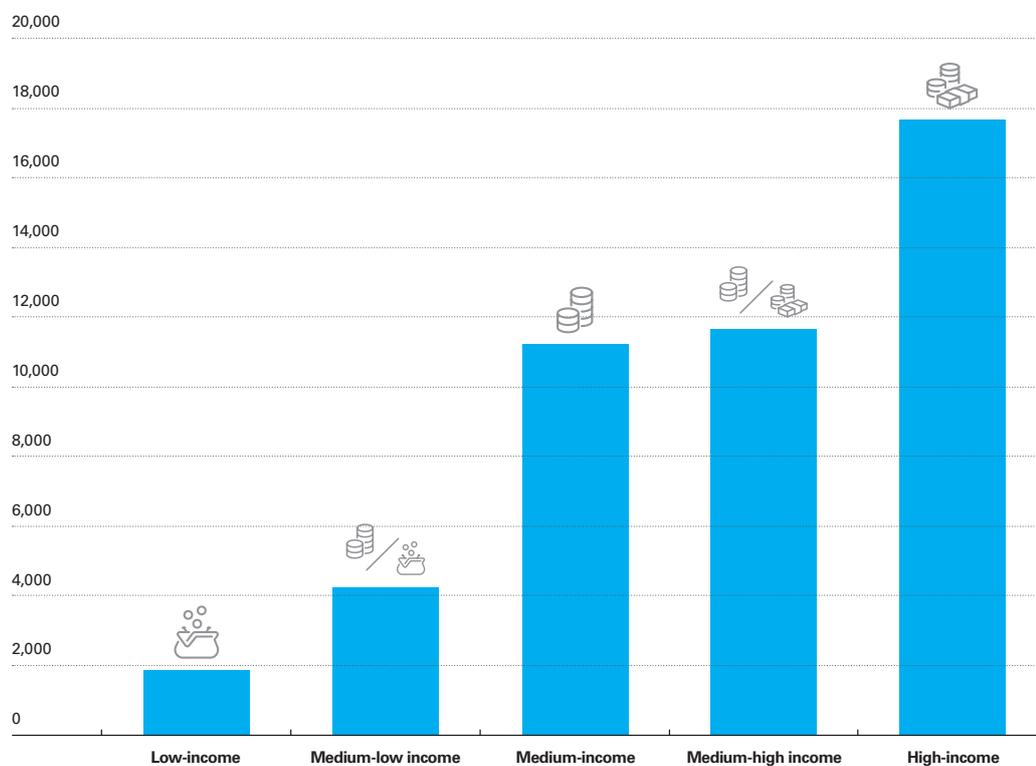
¹⁰ We define «excess savings» or «pent-up savings» as the difference between the savings occurring in 2020 and the savings that would have occurred if households had maintained their 2019 saving rate with their observed gross disposable income for 2020. We subtracted the part used to pay off debt from this amount.

¹¹ Specifically, in 2020 and according to data from the Bank of Spain, most savings were used to purchase financial assets (65%, with a very high share of deposits), while the proportions allocated to investment were relatively smaller, mainly housing (30%) and debt reduction (5%).

¹² We have taken the main sources of income into account in order to calculate the GDI: salary, unemployment benefit, state pension, state aid and income from private pension plans. We have subtracted any debt repayments. In terms of consumption, we have examined card transactions and cash withdrawals from ATMs and have also included direct debits and consumer transfers.

Breakdown of savings accumulated during the pandemic by income group

(Million euros)



Note: Estimates based on internal CaixaBank data weighted towards excess aggregate savings in the Spanish economy. Low-income refers to the 20% of the population with the lowest income, low-medium to the next 20% of people, medium to the next 20% with even more income... and so on.

Source: CaixaBank Research.

The results seem self-explanatory: restrictions were imposed on the whole population and entailed an involuntary reduction in consumption, especially for services and consumer durables, which resulted in those people with higher incomes to save a larger proportion of their income.

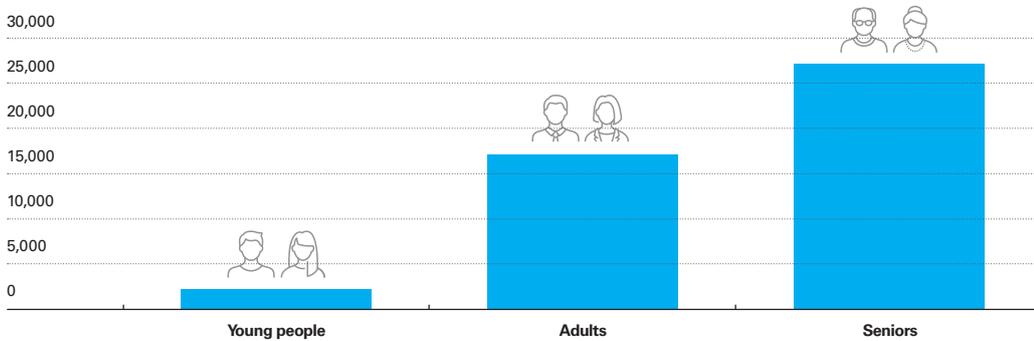
When we break down the excess savings by age, we can see that seniors (aged 60 plus) accounted for just over half the savings generated at an aggregate level; adults (aged 30-59) one third, and young people (16-29) a small proportion (see the chart below). Again, the result seems plausible: older people were subject to the same restrictions as the other demographic groups but the impact on their purchasing power was lower.



Consumption

Breakdown of savings accumulated during the pandemic by age

(Million euros)



Note: Estimates based on internal CaixaBank data weighted towards excess aggregate savings in the Spanish economy. Young people refers to people aged 16-29, adults to those aged 30-59 and seniors to people aged 60 and over.

Source: CaixaBank Research.

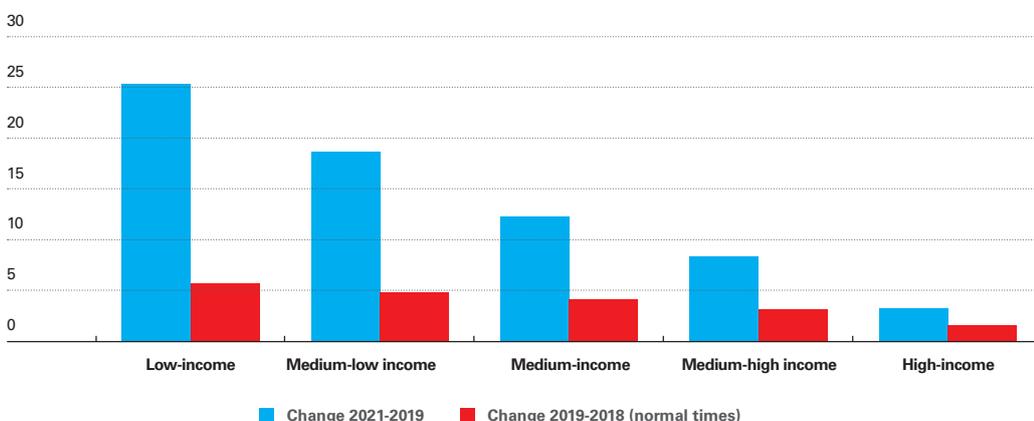
How are the savings accumulated during the pandemic being used? Who's driving the recovery in consumption?

The pent-up demand resulting from the toughest months of the pandemic is driving strong growth in consumption across all population groups, from the lowest to the highest income groups. In fact, this has already taken consumption to above its pre-pandemic levels in 2021, both at an aggregate level and across all income groups.¹³ This huge drive from demand, which can be observed across all the major developed countries, helps to explain the logistical difficulties occurring at a global level in satisfying such a rapid recovery in demand.

¹³ It is worth noting the substantial difference between the consumption carried out with card payments, cash withdrawals, e-commerce payments and direct debits, observed via CaixaBank's internal data, and the national accounting data published by the National Statistics Institute in which, according to their estimates, the recovery in household consumption is more modest.

Consumption growth forecast for 2021 by income group

(%)



Note: Projection based on internal CaixaBank data. Low-income refers to the 20% of the population with the lowest income, low-medium to the next 20% of people, medium to the next 20% with even more income... and so on.

Source: CaixaBank Research.

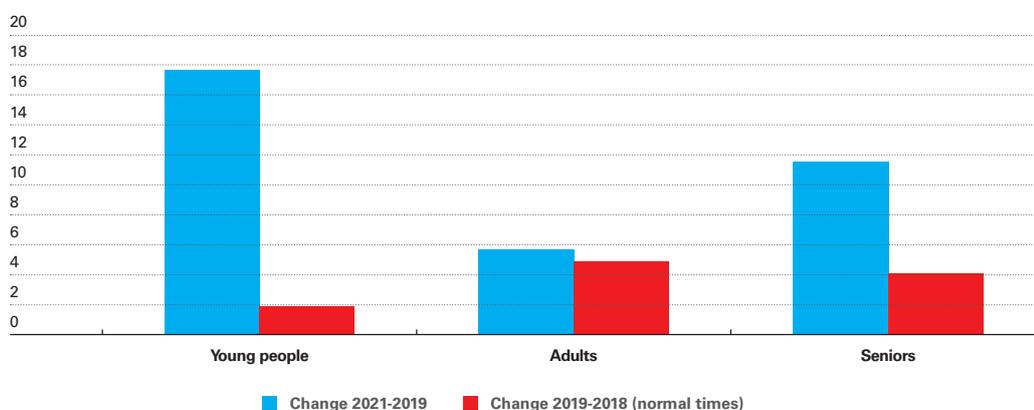
In any case, there are some notable differences between the different groups. Among low-income people, the rebound in consumption is more vigorous compared to the pre-pandemic period while the consumption growth rate is lower among those with higher incomes.¹⁴ Nevertheless, it should be noted that, given that people with higher incomes tend to have a greater volume of consumption, although the growth rate is lower their contribution to the aggregate growth in consumption is still significant. Specifically, for 2021 we estimate that the 20% of households with the lowest incomes have contributed around 10% to Spain's aggregate consumption while the 20% of the population with the highest incomes have accounted for more than 30% of the total.

¹⁴ It is common for people with higher incomes to have a lower marginal propensity to consume. See, for example, Laborda, J. L., Marín-González, C. and Onrubia-Fernández, J. (2018). «¿Qué ha sucedido con el consumo y el ahorro en España durante la Gran Recesión?: Un análisis por tipos de hogar». *Estadística Española*, 60(197), 273-311.

In terms of the demographic profile, the strong growth in consumption among young people is notable. For seniors our projections show strong growth in spending in 2021 compared with 2019, driven largely by the aggregate increase in savings in this group. On the other hand, consumption by adults is recovering more moderately compared with the other age groups. The fact that the economic uncertainty associated with COVID-19 has not completely dissipated and that other sources of risk have emerged, such as supply shortages and rising energy prices, could explain the slower revival in consumption among this demographic group, which tends to accumulate a higher level of debt and is perhaps moderating its consumption for precautionary reasons.

Projected consumption growth by age in 2021

(%)



Note: Projection based on internal CaixaBank data. Young people refers to people aged 16-29, adults to those aged 30-59 and seniors to people aged 60 and over.
Source: CaixaBank Research.

In short, the recovery in consumption in 2021 has been a palpable reality reaching a broad, heterogeneous set of households, particularly among young people and low-income groups. Looking ahead to 2022, the large amount of savings accumulated at an aggregate level during the pandemic suggests the recovery in consumption still has a long way to go, especially among high-income groups, provided the logistical problems in global value chains are resolved and inflation normalizes.



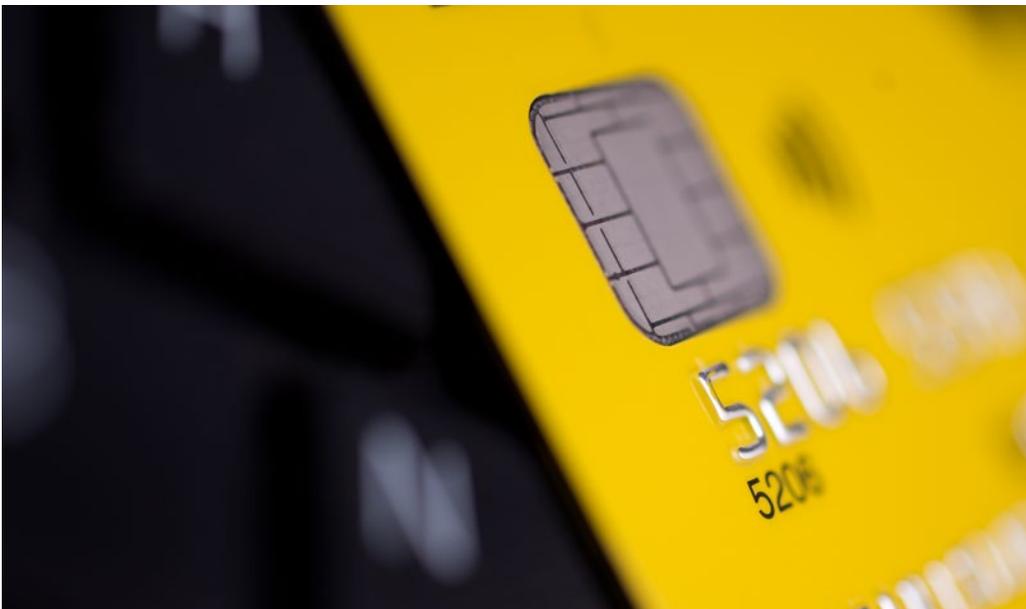
Trend and outlook for consumer credit

Whether to get into debt: a dilemma that hinges on how much was saved during the pandemic

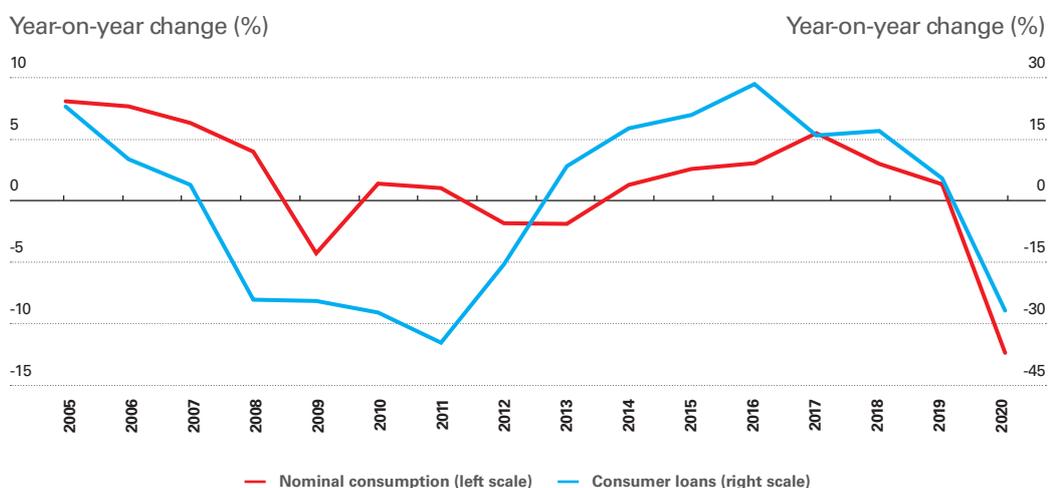
Context: this time is different

Historically, and in general terms, increases (or decreases) in consumption go hand in hand with larger increases (or decreases) in consumer credit. This relationship is particularly close in the case of durable goods, which are the most frequently financed given that they tend to be larger expenses.

Unlike past crises, this time the recovery in consumption will be greater: we expect nominal consumption growth in 2022 to be larger than in the gradual recovery from the previous crisis, continuing the momentum seen in 2021. This faster speed of recovery can be explained by the fact that much of the savings generated in 2020 were forced and are expected to be released relatively quickly, and also because economic support measures have mitigated the impact of the crisis on households. This booming consumer recovery will also drive further growth in consumer credit, although the extent of the rebound will depend on how excess savings are distributed.



Spain: consumption and consumer credit



Note: The figures for consumer credit include renegotiated loans.

Source: CaixaBank Research, based on data from the Bank of Spain and National Statistics Institute.

Trend in consumer debt: a disaggregated analysis

During 2020, household consumer debt shrank by 2.6% annually due to the collapse in consumption (down by 12% in 2020) as a result of restrictions on travel. These exceptional circumstances also had an impact on new consumer credit, which fell by 26.6% year-on-year. The reduction in debt was partly offset by legislative and sector moratoriums for the most vulnerable households.

During 2021, and following the lifting of travel restrictions, consumption recovered and, with it, new loans, which picked up strongly.¹⁵ This moderated the reduction in household debt for consumption purposes.¹⁶ When we use internal CaixaBank data to study the trend in debt during 2021 by income level,¹⁷ we observe that it increased for the lowest income group, fell significantly for the medium-income group and fell more slightly for high-income earners.

With regard to the medium-income group,¹⁸ the result is consistent with a deleveraging process as they were the group that accumulated the largest amount of debt before the pandemic (58% of consumer debt was concentrated in this group). This group also saved considerably during 2020, accounting for almost 60% of the aggregate excess savings in the year, according to estimates based on internal data. Our results suggest that the people in the medium-income group have taken advantage of excess savings not only to consume like mad¹⁹ but also to deleverage. In other words, there has been something of a pushback for this group. In contrast, those with lower incomes achieved modest excess savings in 2020 and they are also the ones who have consumed most vigorously in 2021 compared with the pre-pandemic period. It is therefore logical that they should be financing this high consumption, which would explain why their debt has increased since the end of the worst phase of the pandemic. Finally, high-income earners, who accumulated 38% of the excess savings in 2020, have a low consumer debt burden relative to their income, which would explain why they have not devoted these savings to reducing their debt to the same extent as medium-income earners.

¹⁵ Cumulatively 7.6% year-on-year in January-September 2021.

¹⁶ -0.4% between January and September 2021.

¹⁷ Up to September, the latest month for which we have data at the time of publishing this Report.

¹⁸ When we talk about medium-income, we mean the sum of medium-low income, medium-income and medium-high income groups.

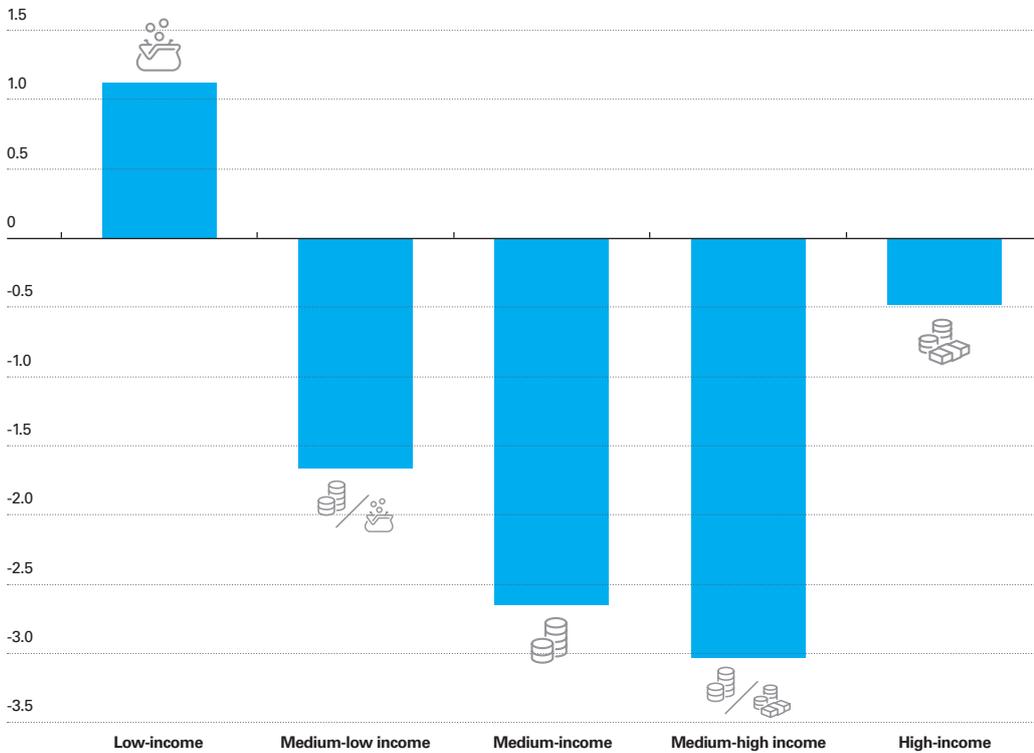
¹⁹ Indeed, there has been a significant rebound in consumption compared with the pre-pandemic period in the medium-income group. This is a larger increase for the second income group (medium-low income) and decreases for the following groups, although it is also higher than the trend in a normal year. See the article «Consumption and pent-up demand: profiling the recovery's star consumer» in this *Consumer Report*.



Consumption

Growth rate of consumer debt by income group

Change September 2021 compared with December 2020 (%)



Note: Low-income refers to the 20% of the population with the lowest income, low-medium to the next 20% of people, medium to the next 20% with even more income... and so on.

Source: CaixaBank Research, based on internal CaixaBank data.

Outlook: the importance of estimating pent-up demand accurately

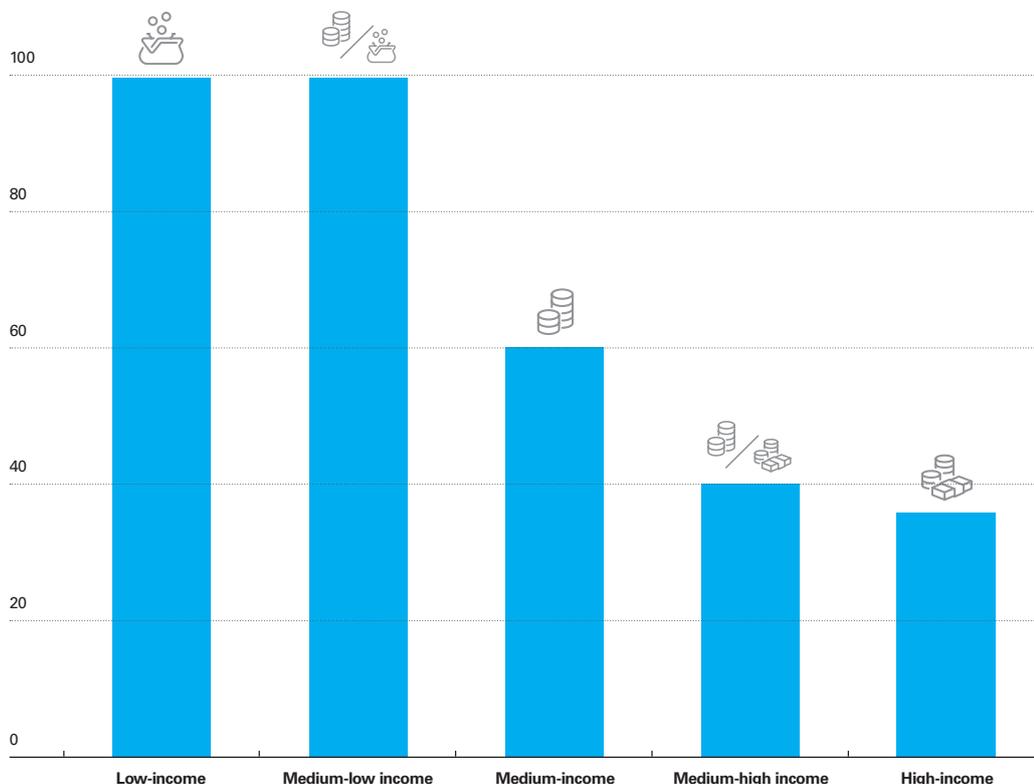
To understand future consumption financing needs we must first understand how much of the pent-up consumption was released in 2021 and how much can be met by savings accumulated during the pandemic.

Using internal data, we have estimated the additional consumption that took place in 2021 compared with the consumption that would have taken place before the pandemic by income group.²⁰ When compared with the excess savings generated in 2020 by income group, the results suggest that, on aggregate, half the excess savings would have been used in 2021. In particular, our results (see the chart below) show that low and medium-low income groups would have consumed all their excess savings from the pandemic in 2021, while medium-income groups would have consumed 60% and the medium-high and high-income groups clearly less than half. These results are in line with the recovery in new loans observed in 2021. Low-income and medium-low income groups do not have enough savings accumulated in 2020 to meet their pent-up demand, so they have resorted to bank financing, in addition to using savings accumulated before the pandemic. In contrast, the rest of the income groups still have a cushion of savings to finance their consumption in 2022 or to increase their long-term savings for future investments or retirement.

²⁰ In other words, we have compared the estimated consumption in 2021 with the consumption that results from maintaining the 2019 marginal propensity to consume with the 2021 gross disposable income, attributing this difference to the pent-up demand accumulated during the pandemic.

Excess savings in 2020 that will be used in 2021 by income group

Percentage (%)



Note: Projection based on internal CaixaBank data. Low-income refers to the 20% of the population with the lowest income, low-medium to the next 20% of people, medium to the next 20% with even more income... and so on.

Source: CaixaBank Research.

Looking ahead to 2022, consumption growth is expected to be strong and above its historical average. This growth will be supported by favourable financial conditions, by the remaining pent-up demand and the funds from the European recovery plan NGEU. The aim of these European transfers is to encourage sustainable travel and the renovation of housing to promote energy savings, among other areas, which will boost the consumption of durable goods such as electric cars, recharging points, appliances, air conditioning and more energy efficient heating, etc. Moreover, aid to the private sector does not cover the entire investment, so co-financing will be required.

Much of the consumption in 2022 by low-income and medium-low income groups, especially of consumer durables, will rely on bank financing as they will no longer have the savings cushion from 2020. Additionally, for medium-income and medium-high income groups, we estimate that the additional consumption expected in 2022 compared with the average pre-pandemic consumption will be greater than the funds they have left over from their pandemic savings (provided current supply problems do not persist), so they will also require other sources of financing such as bank financing.²¹ As a result, new consumer credit is expected to grow significantly in 2022.

²¹ In addition to relying on savings accumulated before the pandemic and reducing their savings rate in 2022.



A selfie of consumption's recovery

Which sectors have benefitted the most from pent-up demand?

In which sectors has spending increased the most?

An analysis by income group and age

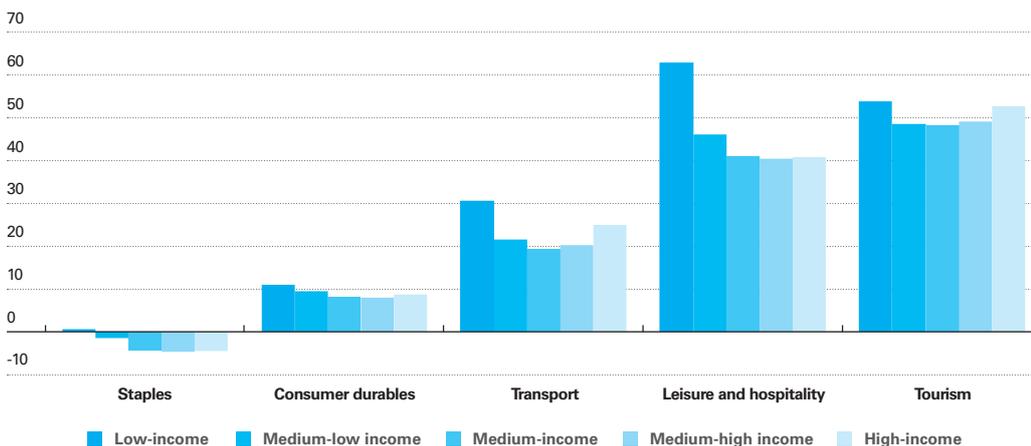
Analyzing of consumption growth since May 2021,²² when the last state of emergency ended, we can see that the recovery in spending on transport, and especially on leisure, hospitality and tourism, was particularly strong. The sectors hardest hit by the restrictions (most of them still in force in Q1 2021) are therefore the ones that are recovering the most.²³ On the other hand, consumer durables (furniture, textiles, etc.) have benefitted much more modestly from the pick-up in consumption, as will be seen below, while spending on basic necessities has fallen (except among low-income households), partly because these goods can be replaced by the services offered by the hospitality industry.

²² In particular, data on payments with cards issued by CaixaBank at CaixaBank point-of-sale (POS) terminals.

²³ Part of this recovery can be explained by a base effect as consumption in these sectors was depressed during the first part of the year. However, the high growth rates compared with the pre-pandemic period between May and September reinforce the hypothesis that it has been in these sectors where most of the pent-up demand has materialised. For more information, see the CaixaBank Research Consumption Monitor tracker.

Recovery of consumption by income group since the end of the state of emergency

(pp)

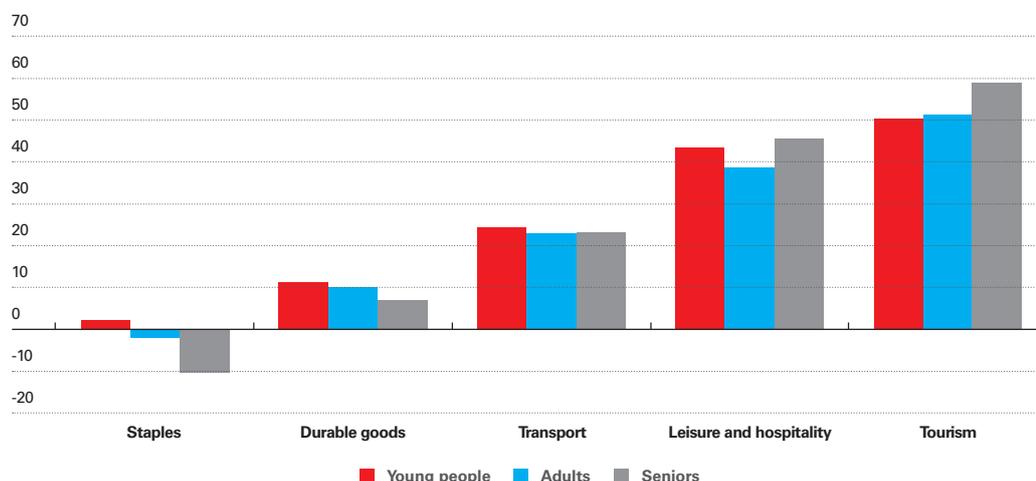


Note: Low-income refers to the 20% of the population with the lowest income, low-medium to the next 20% of people, medium to the next 20% with even more income... and so on. Each bar shows the difference between the trend in cumulative expenditure between May and September 2021 and the trend in the cumulative figure from January to April 2021. In both cases, we have calculated the change compared with the same period in 2019. Analysing the recovery in consumption by sector using this difference in cumulative change allows us to eliminate a very important part of the bias arising from the acceleration in substituting cash with card payments brought about by the pandemic, which should be similar in the two periods in question.

Source: CaixaBank Research, based on internal CaixaBank data.

Recovery in consumption by age since the end of the state of emergency

(pp)



Note: Young people refers to people aged 16-29, adults to those aged 30-59 and seniors to people aged 60 and over. Each bar shows the difference between the trend in cumulative expenditure between May and September 2021 and the trend in the cumulative figure from January to April 2021. In both cases, we have calculated the change compared with the same period in 2019. Analysing the recovery in consumption by sector using this difference in cumulative change allows us to eliminate a very important part of the bias arising from the acceleration in substituting cash with card payments brought about by the pandemic, which should be similar in the two periods in question.

Source: CaixaBank Research, based on internal CaixaBank data.

Another interesting aspect is that, in most sectors, consumption has picked up more readily among the lower income groups, presumably because they had already released all their pent-up demand in 2021. In terms of consumer age, the patterns are very similar. However, the substitution of basic necessities for leisure and hospitality services and goods has been greater among seniors. This group has registered the highest growth rates in the staple goods sector since the outbreak of the pandemic, so it is plausible that, once they feel safer thanks to the advances made in the vaccination campaign, they have replaced part of this expenditure with spending on hospitality.

Why haven't durable goods recovered as strongly?

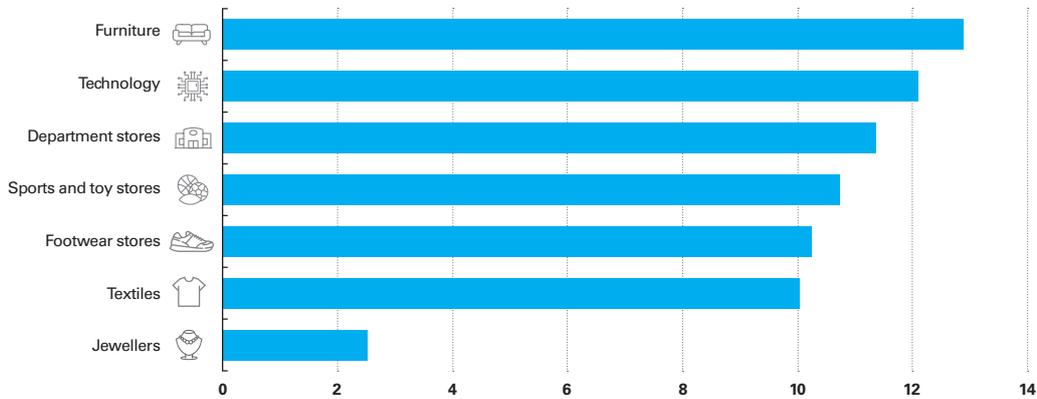
The recovery in spending on durable goods has been more contained²⁴ in the different sub-sectors that can be captured via CaixaBank's internal data. This is mainly due to the fact that the reduction suffered during the most critical phases of the pandemic was less than in other sectors, thanks to its great capacity to adapt to online sales, a channel currently enjoying remarkable growth rates that look like continuing, cushioning the fall in in person sales. Consequently, although consumer durable sales are picking up, their recovery has not been as strong as in other sectors.

²⁴ In fact, the recovery is somewhat smaller than shown in this article, as it includes spending in the automotive sector, one of the areas most affected by the current supply bottlenecks.



Consumption

Recovery in consumption of consumer durables since the end of the state of emergency (pp)

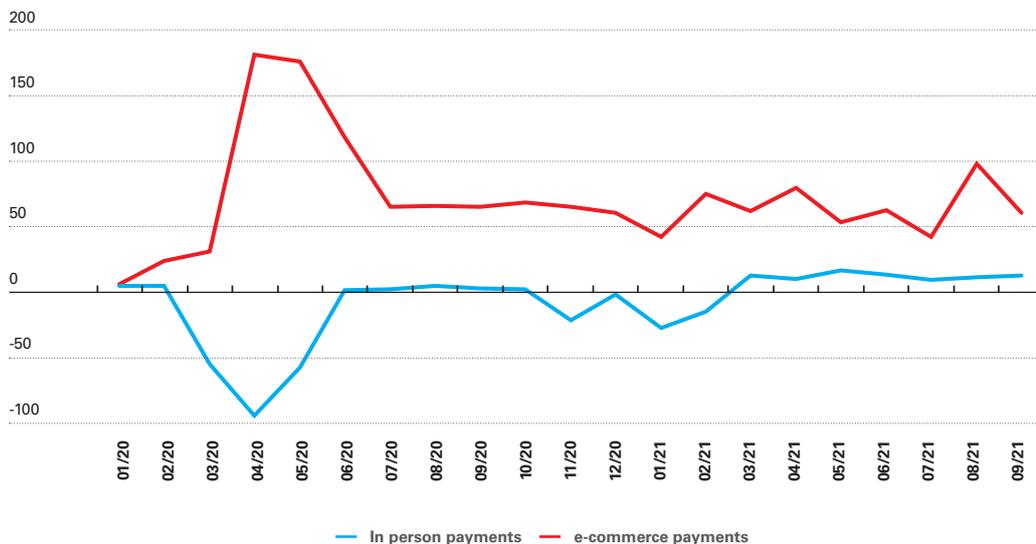


Note: Each bar shows the difference between the trend in cumulative expenditure between May and September 2021 and the trend in the cumulative figure from January to April 2021. In both cases, we have calculated the change compared with the same period in 2019. Analysing the recovery in consumption by sector using this difference in cumulative change allows us to eliminate a very important part of the bias arising from the acceleration in substituting cash with card payments brought about by the pandemic, which should be similar in the two periods in question.

Source: CaixaBank Research, based on internal CaixaBank data.

Spending on consumer durables by sales channel

Change compared with the same period in 2019 (%)



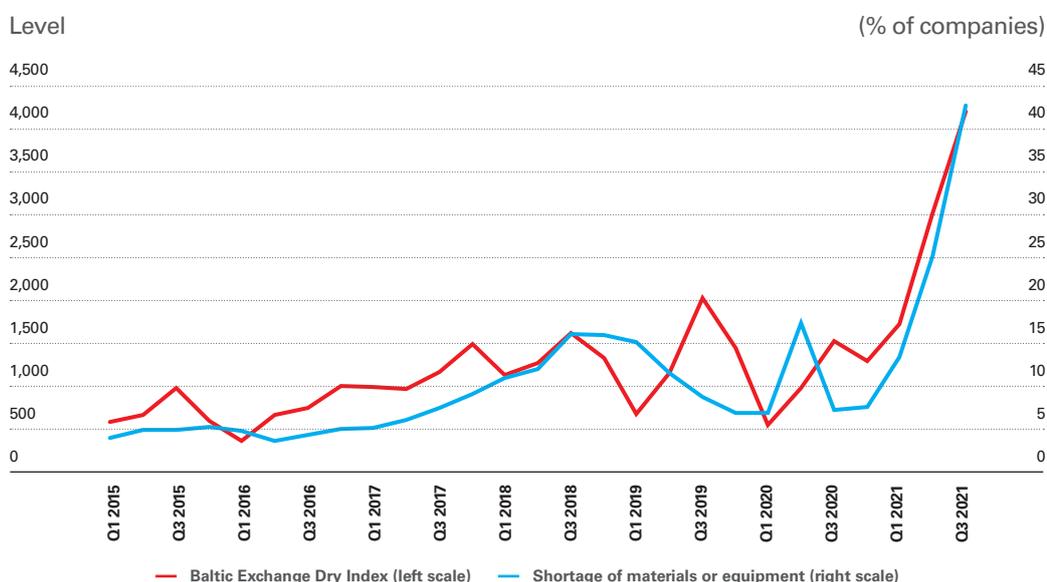
Source: CaixaBank Research, based on internal CaixaBank data.

A second factor has to do with supply chains and production capacity. The fact that most of the fall in consumption during the pandemic can be explained by the imposition of restrictions meant that demand has recovered much faster compared to previous crises

(indeed, consumption levels in all categories of goods already exceeded 2019 levels in 2021). In many sectors, however, supply has not been able to recover as quickly.

This mismatch between supply and demand has put enormous strain on supply chains, especially in maritime transport. This situation has particularly affected the consumer durables sector, where the final product is often the result of a long production chain. The price for sending a container ship has soared in the past few months, reaching levels not seen in recent years, causing many companies to be left without the supplies they need to maintain their level of production.

Euro area: the Baltic Exchange Dry Index (BDI)* and bottlenecks in manufacturing



Notes: (*) The Baltic Exchange Dry Index (BDI) is an index of maritime dry bulk freight rates for up to 20 key shipping lanes around the world. The blue line indicates the percentage of firms reporting a «shortage of materials or equipment» as a major limiting factor in their production.

Source: CaixaBank Research, based on data from Refinitiv and the European Commission.

Finally, another aspect to take into account which is also related to the mismatch between supply and demand brings us to China, the world's factory. The new guidelines set by Beijing in terms of containing energy consumption to keep prices in line and meet environmental targets have led to a significant number of companies being forced to reduce or even stop production for a few days. Together with the aforementioned tension in supply chains, both issues may pose a downside risk to the consumer durables market.



Official data vs. CaixaBank estimates

What was Spain's inflation rate in 2020?

One of the variables with the greatest impact on consumption decisions is its price, these falling on aggregate by 0.3% in 2020 in Spain according to official data.²⁵ However, there were marked changes in consumption patterns last year, making it very difficult to accurately measure the figure actually faced by consumers. CaixaBank's own estimates based on high-frequency internal data suggest that inflation was somewhat higher, namely 0.1%.²⁶ Moreover, inflation did not affect everyone equally, with differences depending on age and income.

How is inflation calculated?

Essentially, only two ingredients are required to calculate the inflation rate: a consumer basket containing the goods and services consumed by a representative household and the change in the price of these goods and services.²⁷ However, the problem of isolating changes in the quality of goods from the changes in prices is well known. So is the difficulty of pricing goods and services that, for some periods in 2020, could not be sold because of the pandemic's restrictions. We will therefore focus our attention on an additional complication: changes in the composition of the representative consumer basket. This basket consists of a wide range of goods and services divided into 12 major groups,²⁸ each with a weighting that reflects its relative importance in the average consumer's consumer basket.

²⁵ We have analysed inflation using the Harmonised Index of Consumer Prices (HICP) produced by the National Statistics Institute.

²⁶ Other studies also using high-frequency data have found a difference with respect to the official inflation data between April and December 2020 of 0.06 pp, 0.30 pp and 0.58 pp for the United Kingdom, Canada and United States, respectively, and between April and September of 0.60 pp for France (in our study for Spain, the estimated difference for both periods is 0.58 pp and 0.67 pp, respectively). See «Consumption shifts and inflation measurement during COVID-19», OECD, Statistical Insights (2021).

²⁷ To learn more about how inflation is measured and the various biases surrounding its calculation that have been the subject of debate over the past decades, see the article «How is inflation measured?» in the Dossier of the *Monthly Report* for May 2016.

²⁸ These are food and non-alcoholic beverages, alcoholic beverages and tobacco, clothing and footwear, housing, household goods, health, transport, communications, leisure and culture, education, hotels, cafés and restaurants and others.



Prior to the pandemic, the annual review of these relative weights went largely unnoticed due to the stability in consumption patterns. However, the advent of COVID-19 and the consequent imposition of restrictions completely have altered our consumption habits. The official agencies in charge of calculating inflation found they were tied to a distribution of relative weights based on a basket that was representative in 2019 but had ceased to be so as of March 2020. So the question we must ask ourselves is: if the official bodies had been able to modify the relative weights of the representative basket to adapt it to the new situation, what would have been the inflation rate for the Spanish economy in 2020?

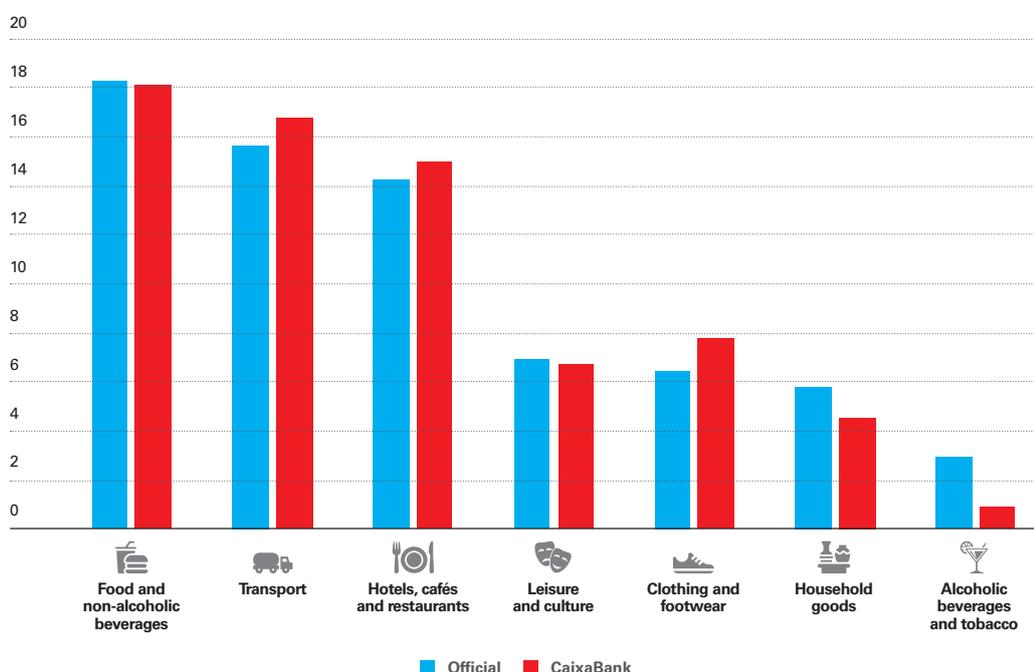
What was the inflation rate in 2020 according to CaixaBank's internal data?

To answer this question, we have used CaixaBank's internal, fully anonymised data on card payments at point-of-sale (POS) terminals.²⁹ First, to ensure the consumer basket resulting from our internal data is representative, we compared the relative weights according to our 2019 data with the official data for the groups of goods and services we can capture using POS card transactions (i.e. those whose consideration, or payment, is not mostly made via transfer or direct debit).³⁰ The result of this comparison clearly shows that the consumption observed via our internal data fits quite well with the consumption patterns of the average consumer, as shown in the following chart.

²⁹ Given that the HICP includes consumer spending by residents and non-residents in Spain, we have extracted, from the internal data, the spending with Spanish and foreign cards at all the bank's POS terminals.

³⁰ The groups of goods and services that we can analyse using our internal data are food and non-alcoholic beverages, transport, hotels, cafés and restaurants, leisure and culture, clothing and footwear, household goods and alcoholic beverages and tobacco, which accounted for 70% of the official basket in 2019. For those groups we cannot reliably detect using POS card transactions (housing, health, communications, education and others), we have used the official relative weight given by the National Statistics Institute in our inflation calculation.

Spain: relative weights in the HICP in 2019 (% of total)



Source: CaixaBank Research, based on internal CaixaBank data and National Statistics Institute data.

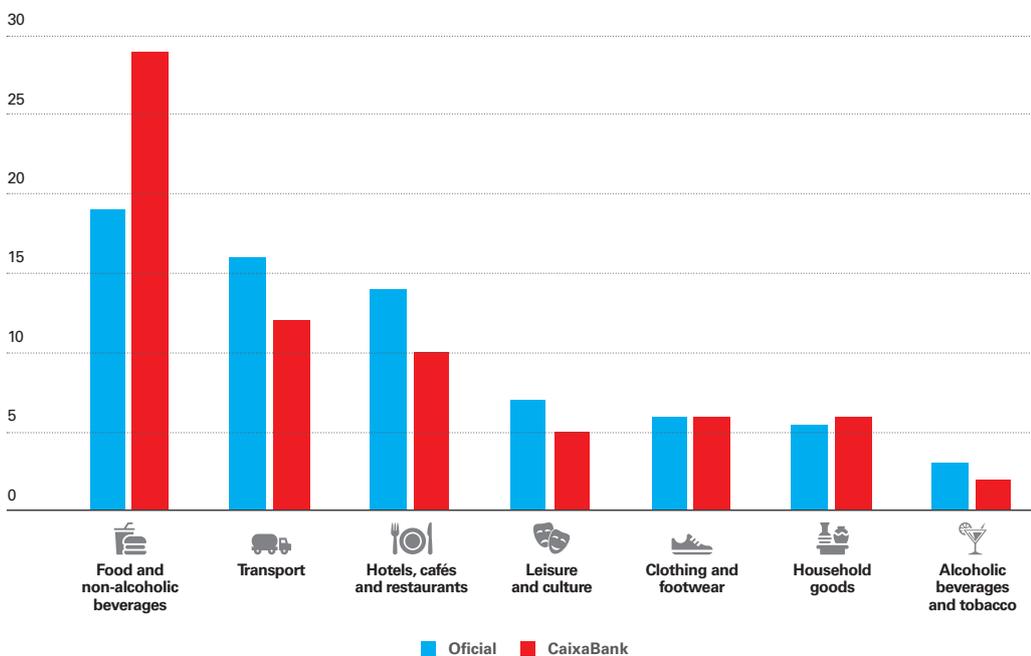


Consumption

One year later, in 2020, the pieces of the puzzle have fallen apart and a disparity has emerged between the official relative weights (calculated in early 2020 based on 2019 consumption patterns) and the relative weight distribution shown by our internal data. The goods and services most affected by the restrictions (transport, hotels, cafés and restaurants, and leisure and culture) are the ones whose relative weight decreased the most, being offset by the group of food and non-alcoholic beverages. This redistribution of weight is due to the fact that we are spending much more time at home than in pre-pandemic times, which also explains the slight increase in household expenses. The role played by e-commerce as a cushion against the slump in in person sales in the clothing and footwear group is also evident, as shown in the chart below.³¹

Spain: relative weights in the HICP in 2020

(% of total)



Source: CaixaBank Research, based on internal CaixaBank data and National Statistics Institute data.

As the basket used by the official agencies to calculate inflation in 2020 gave too much weight to the groups in which prices grew less or even fell sharply,³² and not enough weight to the food and non-alcoholic beverages group (with a 2.4% price increase in 2020), all the evidence suggests that the official inflation series suffered from a downward bias. Consequently, from April onwards and according to our internal data, inflation was higher (and deflation lower in those months when both series show a fall in prices) than the figures published by the National Statistics Institute, as shown in the first chart below. In contrast, this gap between the two series is non-existent during 2019 and much smaller in 2021 once the official agencies updated the relative weights of the consumer basket at the beginning of the year, adapting it to the consumption patterns observed during the first year of the pandemic (second chart below).³³

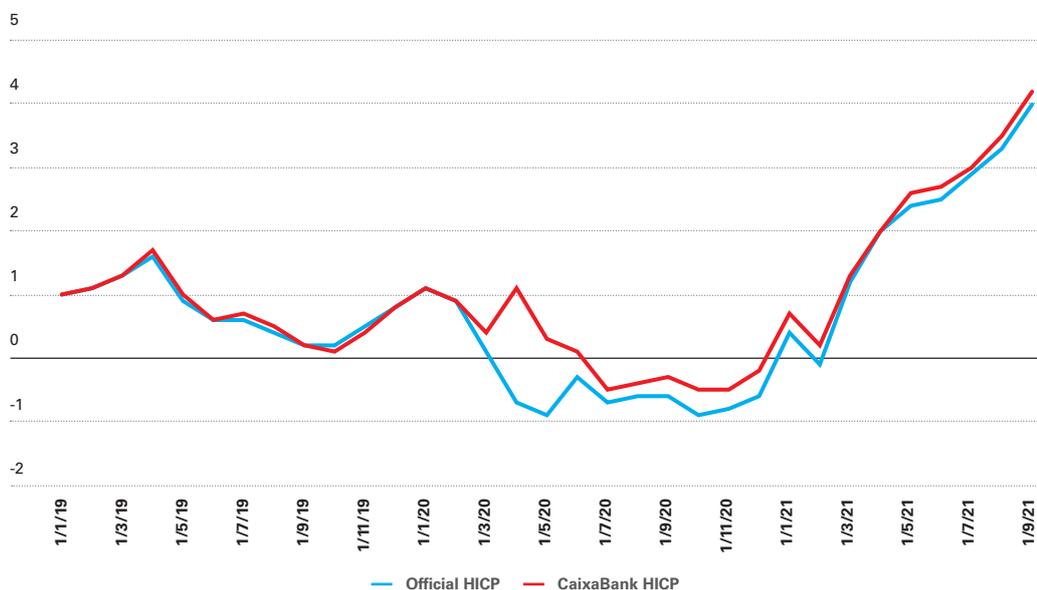
³¹ See the Focus «The awakening of e-commerce in the retail sector» in the *Monthly Report* of December 2020.

³² In 2020, the price change in the groups of transport, hotels, cafés and restaurants and leisure and culture was -3.6%, 0.8% and -0.8%, respectively.

³³ The exercise of calculating what inflation actually was in 2020 could also be carried out based on the official relative weights for 2021. Using this methodology, inflation for 2020 was -0.1%. However, with our internal data, exceptional months can be better captured by using monthly rather than annual relative weights. For example, in April and May 2020 the relative weight of the food and non-alcoholic beverages group according to our internal data was 52% and 39%, respectively, while the official relative weight in 2021 for this group was 23%. This implies that, if we compare inflation in both months under both methodologies, according to our internal data the figure is higher and this affects the annual value for 2020.

Spain: HICP

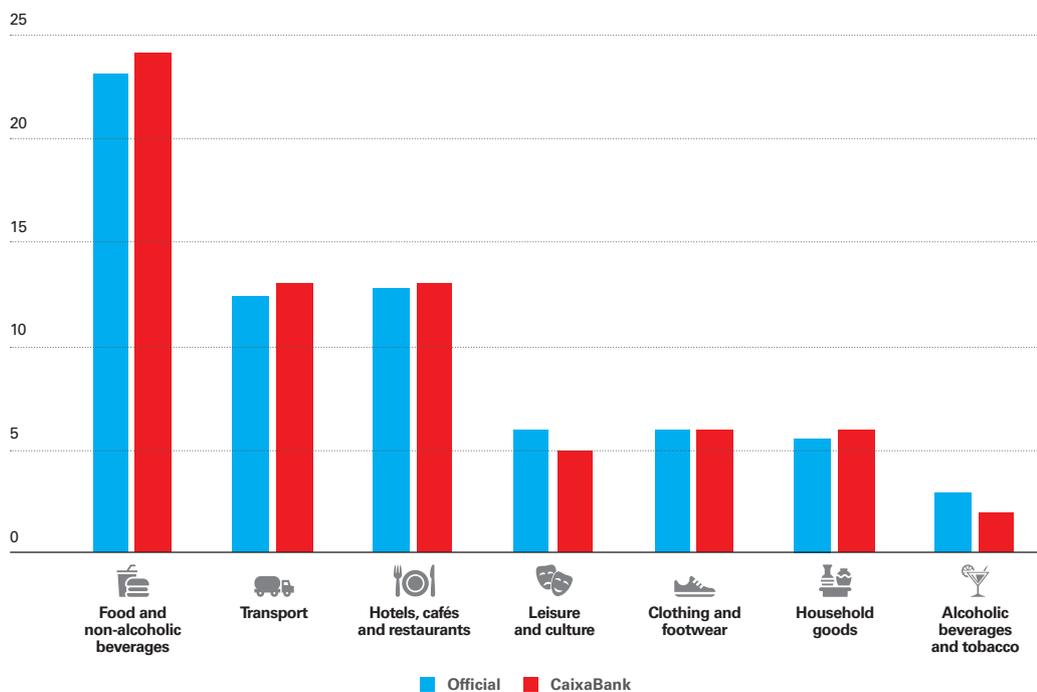
Year-on-year change (%)



Source: CaixaBank Research, based on internal CaixaBank data and National Statistics Institute data.

Spain: relative weights in the HICP in 2021*

(% of total)



Note: (*) In the case of the relative weights calculated according to CaixaBank internal data, the months from January to September are considered (the latest month available at the time of going to press).

Source: CaixaBank Research, based on internal CaixaBank data and National Statistics Institute data.



Consumption

Inflation in 2020 by generations and income group

So far we have analysed inflation in relation to the average consumer but the basket of goods and services obviously varies depending on the demographic group that consumes it. After breaking down our total clients into age group and income level, we have concluded that the inflation rate was higher for the over-60s and lower for 16-29 year olds during 2020 (see the chart below).³⁴ This difference between generations can be explained by their differing consumption patterns: seniors spend a higher proportion of their expenditure on basic necessities (inflationary during 2020) and less on transport or leisure and culture (deflationary), as opposed to younger people.³⁵

Likewise, the chart below shows how the consumer basket became more expensive for consumers with a salary in the lower part of the distribution (10th percentile) compared with the higher income group (90th percentile), something that can be explained by the fact that low incomes concentrate a greater part of their consumption on basic necessities and less on goods and services related to transport, tourism and leisure.³⁶

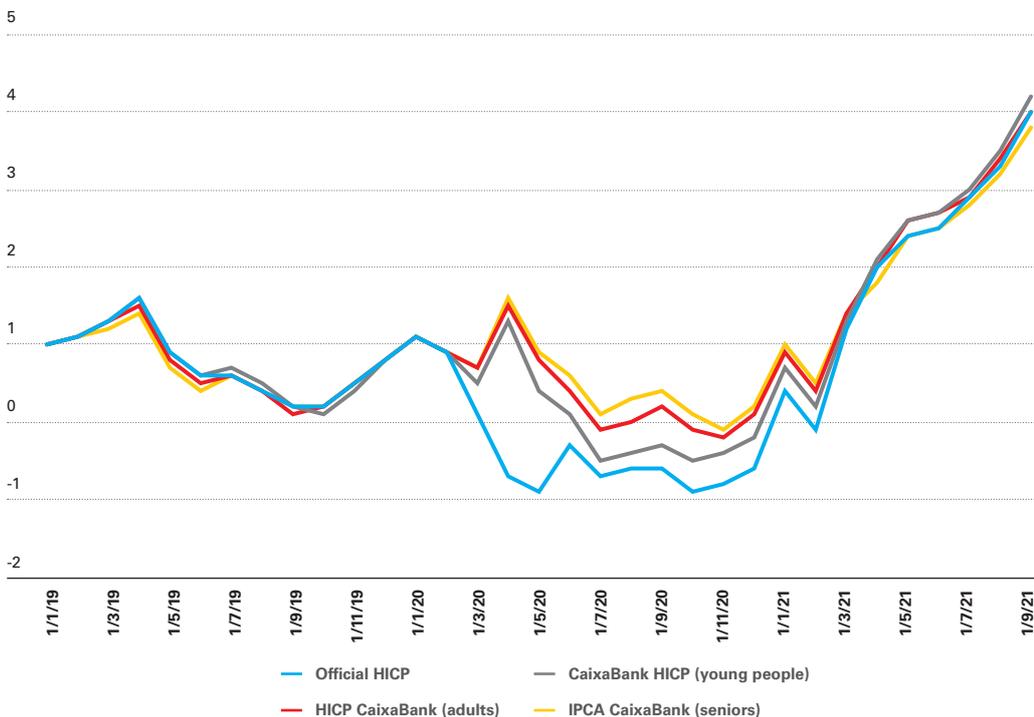
³⁴ Because this age-based analysis restricts the sample to payment cards issued by CaixaBank and does not cover the entire universe of Spanish and foreign cards, unlike in the first part of the article, the weighted average inflation rates for the three generations do not coincide in 2020 with the aggregate shown in the first part (the red line in the first chart on the previous page); In this respect, the age-related series suffer from a sampling bias that is slightly upward.

³⁵ See the article «The consumption of each generation in normal times... and in times of pandemic» in the Dossier of the *Monthly Report* for May 2021.

³⁶ The reason why no significant differences are observed in inflation rates during 2019 and 2021 between generations and income groups despite having different consumption patterns is due to the fact that the price trend in the different groups of goods and services was not as disparate as in 2020.

Spain: HICP by generation

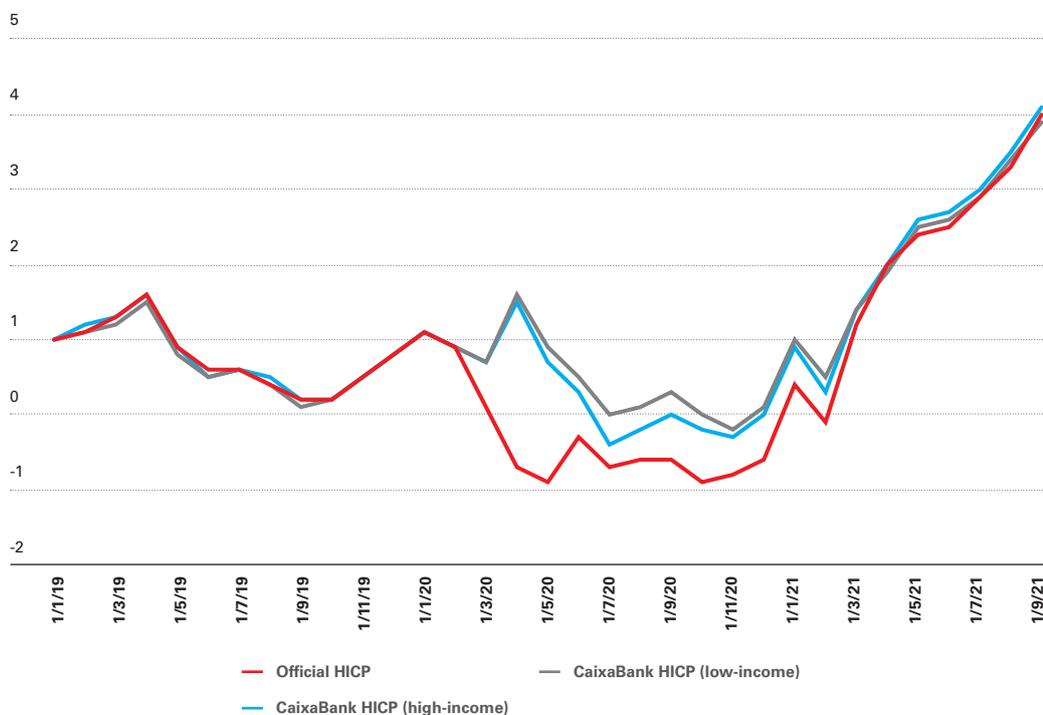
Year-on-year change (%)



Source: CaixaBank Research, based on internal CaixaBank data and National Statistics Institute data.

Spain: HICP by income group

Year-on-year change (%)



Source: CaixaBank Research, based on internal CaixaBank data and National Statistics Institute data.

To conclude, having verified that inflation estimates for Spain in 2020 would have been higher if the data on consumption patterns had included real-time changes, it is important to gauge the potential of high-frequency data in a changing environment such as the one we are experiencing. It is true that events as extreme as the current health crisis, which transformed the structure of spending overnight, do not happen often. However, our world is becoming more and more dynamic; to the extent that having this type of information will become increasingly important, especially for a variable such as the inflation rate.



Consumer behaviour

How do we spend throughout the month?

The distribution of consumer spending over the month, a key question for understanding consumer behaviour, has not yet been studied in the depth it deserves because of the scarcity of high-frequency public data. How do consumers allocate their spending week by week? How much more do they spend at the beginning of the month, which is when most people are paid? Do we consume with the same intensity regardless of our age or our income? Thanks to the use of CaixaBank's internal data on a daily frequency, we are able to carefully analyse the time patterns of consumption and answer these questions.

When do we spend the most?

Based on fully anonymised internal data on payments and cash withdrawals between 2017 and 2019 using cards issued by CaixaBank,³⁷ we can confirm that the percentage of spending is highest during the first week of the month³⁸ and decreases throughout the second and third weeks, before picking up slightly in the fourth week (see the chart below).³⁹ The fact that a significant part of the sample analysed receives their income during the last days of the month⁴⁰ is one of the reasons why the percentage of spending picks up in the fourth week.



³⁷ We have focused on a pre-pandemic period as policy changes regarding restrictions on business and travel during the health crisis could significantly alter our results.

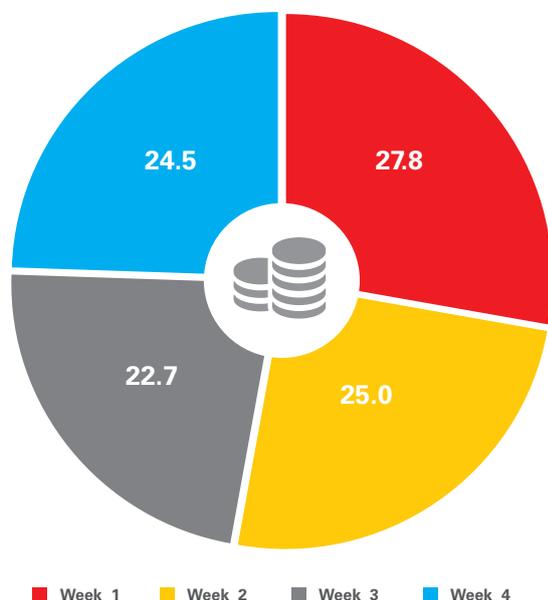
³⁸ This result is consistent with a study using daily card spending data in Denmark. See Andersen, A. *et al.* (2020). «Consumer responses to the COVID-19 crisis». VOX, CEPR Policy Portal.

³⁹ In those cases where a week falls between two different months, we have assigned the week to the month that contains the most days from that week (a minimum of four days). Likewise, in order to be able to compare the distribution of expenditure in different months, we have eliminated from our analysis those months with five weeks; i.e. we were left with only those containing four weeks.

⁴⁰ According to our internal data, 54.8% of salaries are paid at the end of the month; specifically on the 27th-31st, with the 30th being the most common day.

Distribution of spending over the month

(% corresponding to each week)



Source: CaixaBank Research, based on internal CaixaBank data.

What does the way we consume say about us?

There are three possible explanations (which are not mutually exclusive) why consumers spend more just after being paid. The first is associated with a consumer profile that consumes more as soon as they can. We all know someone, perhaps even ourselves, who enjoys the luxury of dining out or getting away for the weekend at the beginning of the month but tightens their belt at the end.

Economic theory tells us there are two reasons behind this behaviour: impatience and temporal inconsistency. The first, simply states that some people value present rewards more than future ones, resulting in them consuming more as soon as they have fresh income rather than spreading their consumption evenly over the month. The second reason is a somewhat less intuitive concept, although it has also been widely studied.⁴¹ This argues that there are other types of individuals who, despite valuing their future well-being (they are not impatient), are lacking in willpower and therefore end up focusing on the present when making their consumption decisions, without taking tomorrow into account. In other words, these consumers exhibit a short-sightedness that becomes accentuated in the week they receive their income.

The second explanation is that consumers choose to concentrate their spending in the first week of the month for organisational reasons. For example, in order to save time they may decide to go to the supermarket and do the whole month's shop during the first week, instead of consumer weekly. Another example would be a monthly travel pass, which may be bought at the beginning of the month but is used throughout the weeks. In this respect, these consumers are neither impatient nor short-sighted, even though they concentrate their spending in the first week of the month, as they distribute their consumption evenly.

⁴¹ We have focused on a pre-pandemic period as policy changes during the health crisis regarding restrictions on business and travel could significantly alter our results.



Consumption

The third explanation for tending to spend more at the beginning of the month revolves around withdrawals. According to an ECB study⁴² that takes an in-depth look at the use of cash by households in the euro area, when asked what the two biggest advantages of handling cash were, 42% of respondents said that it allowed them to keep better track of their spending. This response was the most popular and points to the fact that cash could act as a commitment device. In other words, in the first week consumers might withdraw from an ATM a significant portion of the cash they estimate they will need during the month but would consume it evenly.⁴³

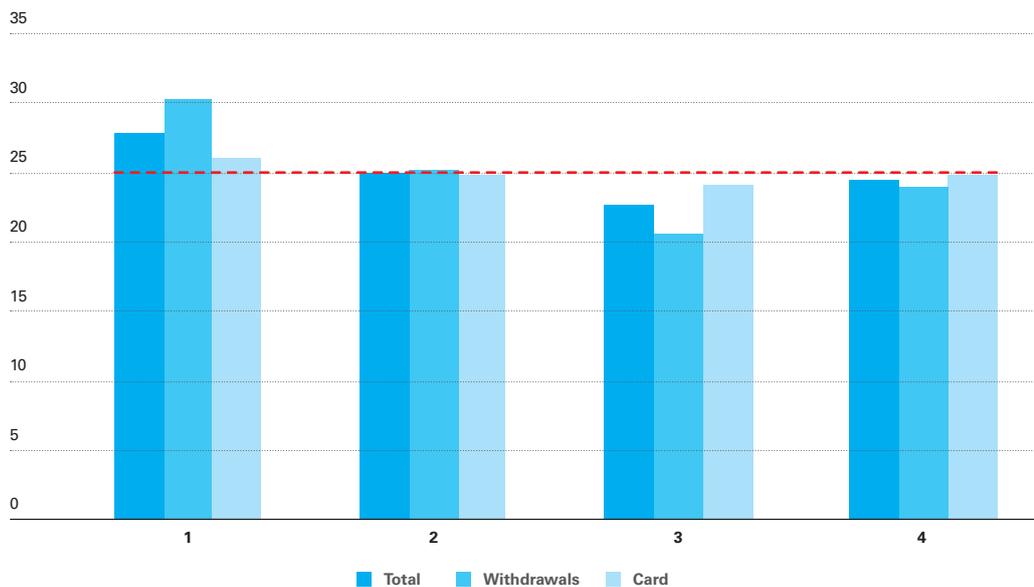
To find out which of the above explanations is more important, we have broken down the distribution of spending per week (shown in the chart above) into withdrawals and card spending (see the chart below). Considering that withdrawals show the highest concentration in the first week, we can conclude that the use of cash as a commitment device is a factor to be taken into account. On the other hand, if we look at card spending, we can see that its distribution is much more uniform with a percentage close to 25% in the four weeks of the month.

⁴² See Esselink, H. and Hernández, L. (2017). «The use of cash by households in the euro area». ECB Occasional Paper Series.

⁴³ A fourth factor that would also explain the higher percentage of expenditure observed in the first week of the month is related to the fact that it is on these days when payments via most direct debit bills are collected (water, electricity, internet, rent, loan repayments, etc.). However, as neither direct debits nor transfers are included in our analysis, we can rule out this fourth explanation.

Distribution of spending over the month

(% corresponding to each week)



Note: The numbers 1 to 4 on the horizontal axis refer to the week of the month (first, second, third and fourth, respectively).

Source: CaixaBank Research, based on internal CaixaBank data.

Do we spend the same according to our income and age?

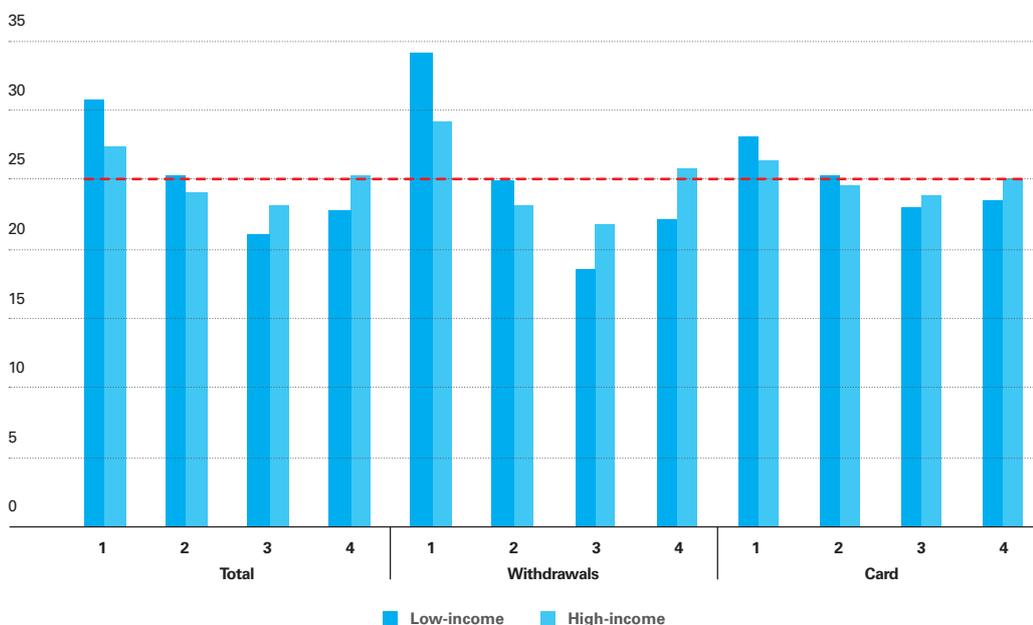
Taking advantage of the granularity of our internal data, we can go a step further and analyse whether the conclusions drawn for the aggregate data are the same for the different income groups and generations. In the first case we divided CaixaBank clients as a whole into low-income (up to 1,000 euros per month) and high-income (over 2,000 euros per month), while in the second case we divided them into young people (aged 16 to 29), young adults (aged 30 to 49) and senior adults (aged 50 to 64).

The left scale of the chart below shows the breakdown of total expenditure by income group. Regardless of the wage level, we can see that the percentage of spending is still higher during the first week of the month and decreases in the second and third week (on average for all the months analysed). That said, there is some heterogeneity between the low and high-income groups since the distribution of spending is more unequal for the former. Nevertheless, the bulk of the difference observed in total expenditure can be explained by the behaviour of cash withdrawals, as can be seen in the central part of the same chart. In other words, if we look at card spending (right scale of the chart), we can see that it is distributed more similarly than total spending over the month in the two income groups.

These results indicate the importance of the use of cash as a commitment device, especially for low-income groups, which should not be surprising considering they have more limited resources and must therefore have a clearer plan for their spending.

Distribution of spending over the month by income group

(% corresponding to each week)



Note: The numbers 1 to 4 on the horizontal axis refer to the week of the month (first, second, third and fourth, respectively).

Source: CaixaBank Research, based on internal CaixaBank data.



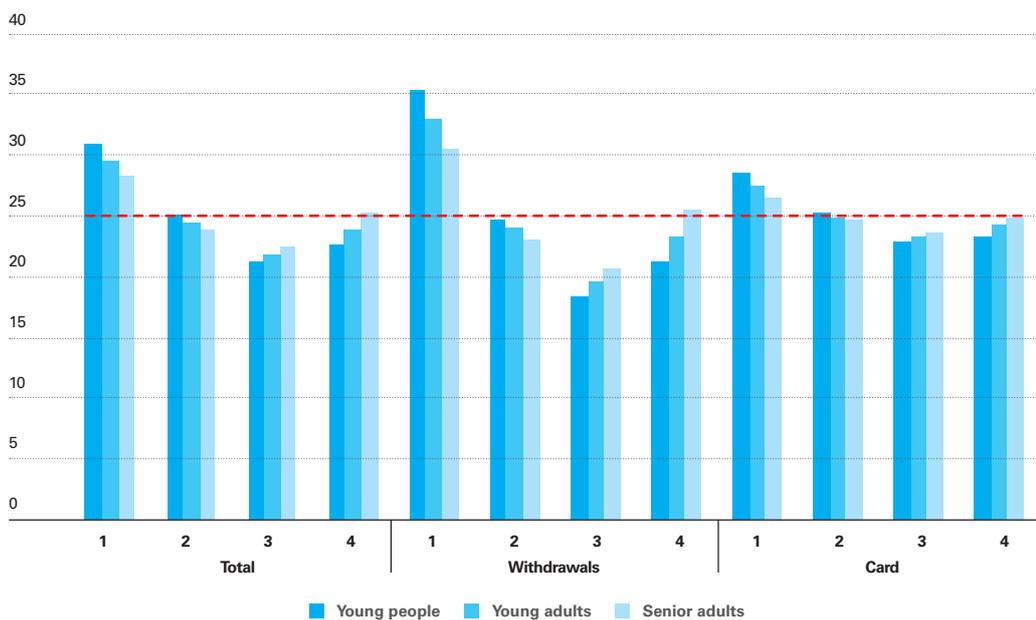
Consumption

As for the analysis by generation, the conclusions drawn regarding the distribution of spending by week also hold true, regardless of age: spending is higher in the first week of the month and lower in subsequent weeks. However, it can also be seen that young people spend the most unevenly throughout the month while senior adults spend the least unevenly.⁴⁴ Likewise, as with the aggregate results and by income group, expenditure appears to be distributed more evenly when only card spending is taken into account, as can be seen in the chart below.

⁴⁴This is consistent with the economic literature that documents a negative relationship between age and impatience in consumer behaviour. See, for example, Bishai, D. (2004). «Does Time Preference Change with Age?». Journal of Population Economics.

Distribution of spending over the month by generation

(% corresponding to each week)



Note: The numbers 1 to 4 on the horizontal axis refer to the week of the month (first, second, third and fourth, respectively).

Source: CaixaBank Research, based on internal CaixaBank data.

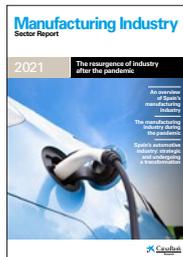
In conclusion, using high-frequency internal data we have found that consumers do not spread their spending evenly throughout the month but tend to spend more in the first week. Moreover, this behaviour is more pronounced for low-income groups and young people.

CaixaBank Research

The *Consumption Report* and the rest of the CaixaBank Research publications are available from the website www.caixabankresearch.com. Our research aims to stimulate debate and the sharing of opinions among all sectors of society, as well as raise awareness of the important social and economic issues of our time.



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