

ANALYSIS OF LABOR FLOWS AND
CONSUMPTION IN SPAIN DURING
COVID-19

2022

BANCO DE **ESPAÑA**
Eurosistema

Documentos Ocasionales
N.º 2202

Piluca Alvargonzález, Marina Gómez, Carmen
Martínez-Carrascal, Myroslav Pidkuyko
and Ernesto Villanueva

ANALYSIS OF LABOR FLOWS AND CONSUMPTION IN SPAIN DURING COVID-19 (*)

Piluca Alvargonzález

BANCO DE ESPAÑA

Marina Gómez

BANCO DE ESPAÑA

Carmen Martínez-Carrascal

BANCO DE ESPAÑA

Myroslav Pidkuyko

BANCO DE ESPAÑA

Ernesto Villanueva

BANCO DE ESPAÑA

(*) We are grateful to Olympia Bover, José Manuel González Mínguez, Virginia di Nino, Jiri Slacalek and participants at the Expert Meeting of the ECB-Consumer Expectations Survey, at the Working Group on Forecasting and at an internal seminar at Banco de España for detailed comments.

The Occasional Paper Series seeks to disseminate work conducted at the Banco de España, in the performance of its functions, that may be of general interest.

The opinions and analyses in the Occasional Paper Series are the responsibility of the authors and, therefore, do not necessarily coincide with those of the Banco de España or the Eurosystem.

The Banco de España disseminates its main reports and most of its publications via the Internet on its website at: <http://www.bde.es>.

Reproduction for educational and non-commercial purposes is permitted provided that the source is acknowledged.

© BANCO DE ESPAÑA, Madrid, 2022

ISSN: 1696-2230 (on-line edition)

Abstract

This article analyzes the link between household consumption and its determinants during the pandemic in Spain. For this purpose, both quantitative and qualitative data on consumption included in the Consumer Survey Expectations (CES) carried out by the European Central Bank are used. First, we construct a consumption index on the basis of its qualitative data on spending trends during the pandemic, and its heterogeneity across population groups points towards both unsatisfied consumption (due to existing restrictions on consumption) and the deterioration in the labor market being drivers of the decline of consumption during the pandemic. Likewise, the results show that, in line with the less stringent measures in place to control the pandemic, the strong negative link between income levels and consumption developments (linked to forced savings) has moderated in 2021 (with data up to August) with respect to the previous year.

Then, we estimate what proportion of the recovery in household expenditure during the third quarter of 2020, after the large decline observed in the first semester, can be explained by the observed changes in the distribution of hours worked. First, we combine information on hours, industry, gender and age in the Spanish Labor Force Survey (EPA) and consumption in the Spanish Survey on Household Finances (EFF) to estimate the potential change in expenditure associated with the change of hours worked for different population groups (age, gender, and education level). Those estimations also inform about the groups of the population whose expenditure has been most affected by the pandemic (low-schooling and individuals below 55 years of age). In a second step, we then compare potential and actual changes in consumption observed in the ECB's Consumer Expectation Survey to gauge quantitative contribution of changes in hours to the evolution of expenditure vs other factors (such as postponed expenditure). We find that changes in hours worked can explain almost half of consumption recovery in the 3rd quarter of 2020.

Expected consumption trends are also analyzed. Results based on the analysis of qualitative data on expected consumption developments in the CES database indicate that in 2020 consumption perspectives were similar for households with different income levels, even if higher income families accumulated larger forced savings during this period. During 2021, once the phase of larger uncertainty about the economic and sanitary situation was overcome, higher income households also showed better consumption prospects. This suggests that savings accumulated during the pandemic may add greater momentum to the pick-up in consumption once the uncertainty about the epidemiological and economic situation abates. Likewise, individuals that have suffered a recent decline in hours worked (and, particularly, those that have run into unemployment) seem to be also more pessimistic about their labor situation perspectives, affecting their consumption expectations. This suggests that that the consolidation of the recovery of the labor market observed recently is likely to have a key role in explaining future consumption developments.

Keywords: consumption, expectations, labor market dynamics, coronavirus.

JEL classification: D12, D15, E21, J22.

Resumen

Este documento analiza el vínculo entre el consumo de las familias y sus determinantes durante la pandemia en España. Para ello, se utiliza información tanto cuantitativa como cualitativa sobre la evolución del consumo contenida en la Encuesta de Expectativas de los Consumidores (CES, por sus siglas en inglés) llevada a cabo por el Banco Central Europeo. En primer lugar, se construye un índice según la información cualitativa. Su heterogeneidad por grupos poblacionales apunta a que la caída del consumo durante la pandemia ha resultado tanto del consumo no satisfecho (debido a las restricciones sobre él derivadas de las medidas adoptadas para contener la pandemia) como del deterioro registrado en el mercado de trabajo. Asimismo, los resultados indican que en 2021 (con datos hasta agosto), y en consonancia con la menor severidad de las medidas vigentes para contener la pandemia, el vínculo negativo entre el nivel de ingresos y la evolución del consumo (relacionado con el ahorro forzoso) se moderó con respecto a 2020.

Posteriormente, se estima qué proporción de la recuperación del gasto que tuvo lugar en el tercer trimestre de 2020, tras la intensa caída registrada en el primer semestre, puede explicarse por los cambios observados en la distribución de horas trabajadas. En primer lugar, se combina información sobre el número de horas trabajadas, el sector, el género y la edad de la Encuesta de Población Activa (EPA) y el consumo de la Encuesta Financiera de las Familias (EFF) para estimar el cambio potencial en el gasto asociado a la evolución en el número de horas trabajadas para diversos grupos poblacionales (definidos según la edad, el género y la educación). Las estimaciones proporcionan también información sobre los grupos poblacionales cuyo gasto se ha visto más afectado por la caída del número de horas (los de bajo nivel educativo y con edades menores de 55 años). En un segundo paso, se comparan los cambios potenciales y los observados en el consumo de acuerdo con la CES para obtener la contribución de los cambios en las horas trabajadas a la evolución del gasto frente a la de otros factores (como el gasto pospuesto). Los resultados indican que los cambios en las horas trabajadas pueden explicar casi la mitad de la recuperación del consumo durante el tercer trimestre de 2020.

Se analizan también las perspectivas de gasto futuro. El análisis basado en la información cualitativa contenida en la encuesta CES sobre este aspecto indica que en 2020 las perspectivas de gasto de los hogares con distinto nivel de ingresos eran similares, a pesar de que las familias de mayores rentas acumularon un volumen de ahorro forzoso mayor en este período. En 2021, una vez superada la fase de mayor incertidumbre sobre la situación económica y sanitaria, los hogares de mayores rentas presentaban también mejores perspectivas de gasto. Ello sugiere que la bolsa de ahorro acumulada durante la pandemia podría contribuir a imprimir un mayor vigor a la recuperación del consumo cuando la incertidumbre sobre la situación económica y sanitaria se disipe. Asimismo, los individuos que han sufrido ajustes en el número de horas trabajadas (especialmente, aquellos que han pasado a estar desempleados) parecen ser más pesimistas sobre la evolución de sus perspectivas laborales futuras. Ello incide, a su vez, sobre sus perspectivas de gasto, y sugiere que la consolidación de la recuperación en el mercado de trabajo observada recientemente desempeñará un papel determinante a la hora de explicar la senda futura del consumo.

Palabras clave: gasto de los hogares, expectativas, flujos del mercado laboral, coronavirus.

Códigos JEL: D12, D15, E21, J22.

Contents

Abstract	5
Resumen	6
1 Introduction	8
2 Evolution of consumption in the CES and in National Accounts	11
2.1 Gender and age	13
2.2 Education levels	14
3 The determinants of consumption during the pandemic: results from an ordered probit model	15
4 Evolution of consumption in the CES and in National Accounts	22
4.1 The behavior of employment, unemployment and inactivity	22
4.2 The behavior of hours worked	22
5 The role of changes in hours worked for changes in consumption: counterfactuals using the EFF 2017	26
5.1 Counterfactual exercise	27
5.2 Results	29
5.3 Decomposition by age and gender	31
5.4 Education	31
6 The role of the labor market situation of other household members for the consumption recovery	33
7 Expected consumption and implications for build-up savings	36
8 Conclusion	41
References	42
Appendix 1 Reweighting the CES	43
Appendix 2 Counterfactuals using EPA and EFF	45

1 Introduction

Consumption has shown an unprecedented decline during the pandemic. In Spain, one of the countries that was most strongly hit by the pandemic in 2020, household consumption dropped by 12.2% that year, according to Spanish National Accounts. During 2021, consumption has shown a rather limited recovery, and, as a result, in the third quarter of 2021 household consumption was still 8 pp below pre-pandemic levels. To a large extent, this decline in consumption has resulted from households' difficulty in undertaking some of their usual spending due to the restrictions imposed to control the pandemic. But also, the increase in uncertainty about health and economic developments and the deterioration in the labor market contributed to explain a portion of the fall in consumption¹. Both factors led to the build-up of a sizable reservoir of savings by the household sector, in a context in which household income has been sustained, to a significant extent, by the public support measures deployed to mitigate the adverse economic effects of the pandemic.²

Indeed, the economic impact of the pandemic would have been even larger without the economic policy response by the authorities. In this respect, the advantages offered to firms to launch furlough scheme (ERTE by their Spanish name) and the suspension of activity in the case of the self-employed have been essential in mitigating the impact of the pandemic on households' incomes – see, for example, Banco de España (2021) and Aspachs et al (2021).³ Thanks to the extensive resort to this mechanism, while hours worked declined by 10.4% in 2020 as a whole (in line with the observed historical relationship between this measure of the use of the labor factor and GDP), the employment adjustment in terms of number of people employed was much lower (4.2%). Thus, the aggregate decline in employment remuneration was almost completely offset by the increase in public transfers to employees, and the decline in household gross disposable income (4,9%) resulted from the decline in individual entrepreneur rents and other incomes. On the other hand, some evidence points at changes in the distribution of income during the period, which may affect consumption if the propensity to consume is higher among affected groups than among the rest.⁴

Many previous studies have analyzed the large drop of private consumption during the pandemic (for the euro area see, for example, Carvalho et al., 2020 for Spain; Bounie et al., 2020 for France; Golec et al., 2020 for the Netherlands or Christelis et al, 2020 for a study

1 The deterioration in the labor market translated into larger precautionary savings for individuals that perceive a larger uncertainty about their future labor situation. Also, some of them suffered a decline in income, more intense for individuals that become unemployed as a result of the pandemic and those under an ERTE and working zero or a very low number of hours.

2 See Aspachs et al (2021).

3 Aspachs et al (2020) use a sample of bank accounts from a financial institution to document that large drops in pre-transfer income in 2020, which were concentrated among low-income individuals, were offset by public support. Using information from a panel survey, Banco de España (2021) shows that, in spite of those transfers, inequality in income increased during the first quarters of 2020.

4 Banco de España (2021) reports an increase in the 90/10 ratio of family income of about 10pp between February and May 2020. Aspachs et al (2020) document that the Gini index of the distribution of post-transfer income increased by 3pp. Those increases in income inequality, coupled with aggregate stability point at some groups experiencing income drops.

on Belgium, Germany, France, Italy, Spain, and the Netherlands; for the United States, see Chetty et al, 2020). Within this literature, we focus on the role that forced savings (linked to household income levels, and one of the most idiosyncratic features of this sanitary crisis) and labor market developments have played in explaining private consumption developments.

For this purpose, this study combines the ECB's Consumer Expectations Survey (CES) data with information on hours, industry, gender and age in the Spanish Labor Force Survey (EPA) and consumption in the Spanish Survey on Household Finances (EFF). Firstly, we exploit household income, household size and changes in the financial situation to extract conclusions about which population groups have shown a larger decline in their consumption levels during the pandemic, and the factors behind these heterogeneous adjustments. In particular, we look at developments across income groups, which are informative about the relevance of forced savings. Secondly we analyze the role of labor market developments in explaining the changes in consumption decline across households. Finally, this study also analyzes household consumption expectations to assess to what extent the sizable reservoir of savings built-up during the pandemic is likely to boost the future recovery of consumption.

The results point towards both unsatisfied consumption (owing to the lockdown measures) and precautionary savings (as a result of worsening prospects in the labor market⁵) being among the drivers of the consumption drop during the pandemic. Moreover, a counterfactual experiment that reweights the relationship between consumption and hours in EFF 2017 to match the distribution of hours in EPA2020 shows that factors associated to the higher number of hours worked, on average, account for 5 pp out of the 12 pp increase in our measure of expenditure observed between the 2nd and the 3rd quarters of 2020 (when the recovery in expenditure took place after the unprecedented decline during the strict lockdown period).⁶ This study also analyzes the role of household insurance in mitigating or exacerbating consumption changes. In this respect, the results suggest that most household members have been exposed to similar shocks in the number of hours worked, so that households as such have provided little insurance.

Likewise, the results based on the analysis of qualitative data in the CES on expected consumption developments indicate that groups showing larger increases in savings (specifically, higher income households) show better consumption prospects in 2021 (with data up to August). Instead, during 2020, a period of higher uncertainty about the

5 During the pandemic, a high share of individuals has perceived that the pandemic could have a negative impact on their future labor status (see section 7), especially amongst those whose number of working hours were already negatively affected by the pandemic at the moment of the interview. Similarly, Banco de España (2021) reports that emotional well-being deteriorated during the pandemic, and that amongst those reporting a decline around 30% of individuals interviewed in January 2021 reported that unsteady earnings or income was a reason for this emotional deterioration (40% among the self-employed and workers with temporary employment contracts).

6 This exercise, explained in Section 5, builds from the fact that individuals who work less hours in 2017 have lower household per capita expenditure than other individuals with higher attachment to the labor market. Several factors may account for those differences. Aside from differences in total income, those individuals report 10pp higher propensities to consume in hypothetical questions –suggesting that their expenditure is more sensitive to shocks– and a higher probability of job loss over the next year (19pp vs 23pp).

epidemiological and economic situation, no substantial divergences in these expectations across income groups were observed. Likewise, at each point in time, individuals affected by a decline in hours worked as a result of the pandemic seem to be also pessimistic about their labor situation perspectives in the short run, a belief that weighs on their consumption expectations. These results suggest that accumulated savings during the pandemic can contribute to boost future consumption, and that the consolidation of the recovery of the labor market observed recently is likely to have a key role in driving future consumption developments.

This paper is divided in seven sections in addition to this introduction. Section 2 describes household consumption patterns in 2020, based on both the qualitative and the quantitative information contained in the CES. Then, section 3 analyzes which individual and household characteristics are behind recent consumption dynamics. This is done using an ordered probit model, linking the qualitative answers provided by respondents to the survey on the evolution of their recent household consumption to its determinants. Sections 4 and 5 focus on the evolution of hours worked by individuals, and their impact on household spending. Section 6 analyzes the role that household structure has had in mitigating or exacerbating the impact of the decline of hours worked on household consumption. Section 7 assesses consumption perspectives, and, specifically, to what extent excess savings accumulated during the pandemic are likely to boost future consumption recovery. Finally, section 8 summarizes the main conclusions of the analysis.

2 Evolution of consumption in the CES and in National Accounts

According to National Accounts, quarterly aggregate household expenditure fell in the first quarter of 2020 by 6,3pp, diminished further additional 20,4pp in the second quarter and increased by 21,5pp during the third quarter of 2020 – see Chart 1, Panel 1.⁷ To examine further which population groups could have contributed to those large fluctuations, it can be helpful to use disaggregated quarterly data on household expenditure.

In January 2020 ECB launched the Consumer Expectations Survey (CES) in order to collect high-frequency information on the economic and financial behavior of individuals in the euro area, including the consumption and income of the households they live in, as well as respondents' preferences and expectations regarding inflation, savings, and labor market conditions. The CES consists of two sets of questionnaires: monthly and quarterly. The monthly questionnaire includes, among others, a set of qualitative questions on the evolution of consumption and income over the last year as well as questions on expectations regarding inflation, savings, consumption and labor market conditions. Quarterly questionnaires include questions to the respondent on actual household spending over the last month, the employment situation of the interviewed person, and household savings, among others.⁸ We note that we use the term consumption and expenditure interchangeably, while the CES only measures expenditure.⁹

A comparison between consumption in the quarterly questionnaire of the CES and the corresponding measure in the National Accounts suggests that the quarterly dynamics of both series are broadly comparable during the period in which both measures are available. Namely, the quarterly questionnaires from the CES (April, July and October 2020 waves and January 2021 wave) can be used to construct measures of real household total expenditure during the second, the third and the fourth quarter of 2020 and first quarter of 2021.¹⁰ Chart 1, Panel 1 plots the quarter-on-quarter growth rate of consumption in the CES. The orange bars correspond to a broad consumption measure from the CES, while the pink bars correspond to a more restrictive definition that is comparable to the Spanish Survey of Household Finances (EFF).¹¹ Finally, the blue line shows expenditure growth in the National

7 All magnitudes in real terms. See <https://www.ine.es/daco/daco42/daco4214/cntr0320a.pdf>. According to the Encuesta de Presupuestos Familiares, mean household expenditure by household during 2020 was 26,995 euro, 10 percentage points lower than that observed in 2019 (30,242 euro), See https://www.ine.es/prensa/epf_2020.pdf.

8 In particular, the CES asks separately about twelve expenditure items: food at home, food at restaurants, housing, utilities, furnishings and refurbishment, clothing, health, transport, travel, childcare and education and others, as well as about debt repayments.

9 Consumption refers to the use of goods and services by the individuals or by households, while expenditure is the purchase of those goods and service for the use. In context of non-durable goods and services those two concepts overlap. While National Accounts and CES measure expenditure in a similar manner, economic theory emphasizes that households derive utility from the flow of services derived from durable goods, not from expenditure necessarily.

10 Our measure of total consumption expenditure includes expenditure of food, restaurants, housing, utilities, furnishings, clothing, health, transport, travel, childcare and other expenditure.

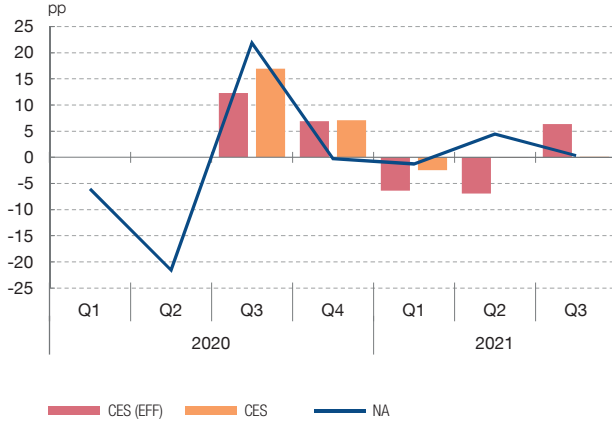
11 We define two measures of total consumption in the CES. The first one (plotted as the orange bar in Figure 1) includes expenditure in food, restaurants, housing, utilities, furnishings, clothing, health, transport, travel, childcare and other expenditure. We also construct a more restricted definition, that excludes expenditure on clothing, health and transport. The latter definition is more comparable with Banco de España's EFF.

Chart 1

EVOLUTION OF CONSUMPTION IN CES

According to National Accounts, expenditure growth in Spain fell abruptly in the first and second quarters of 2020 and recovered strongly in 2020Q3. Consumption did not change much afterwards. The quantitative information in the CES-ECB Survey (available from 2020Q2 onwards) reproduces this pattern. The increase in expenditure from 2020Q2 to 2020Q3 was highest among households of male respondents. All age and schooling groups report increases in household expenditure between 2020Q2 and 2020Q3, and those were most pronounced among individuals with college degree or ages above 35.

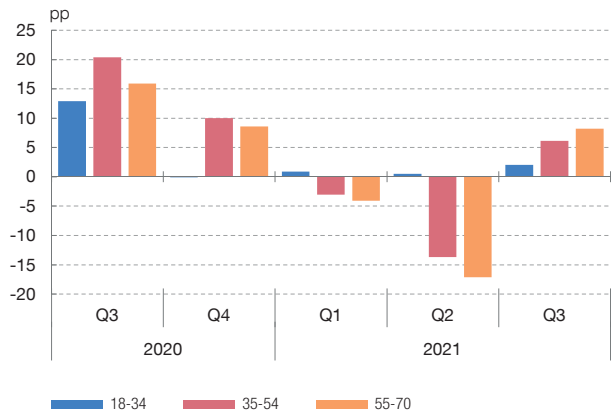
1 NA vs CES vs CES (EFF)



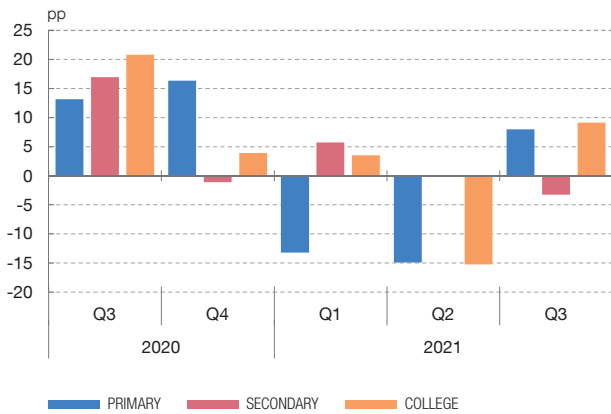
2 VARIATION IN CONSUMPTION BY GENDER



3 VARIATION IN CONSUMPTION BY AGE



4 VARIATION IN CONSUMPTION BY EDUCATION



SOURCES: National Accounts (NA): 2019Q4- 2021Q3 and ECB-Consumer Expectations Survey 2020Q2- 2021Q3.
NOTES: CES (EFF) contains the set of consumption items that are also recorded in the Spanish Survey of Household Finances and CES contains information on additional consumption items.

Accounts.¹² The CES captures quite well the growth of consumption in the third quarter of 2020 (around 17pp compared to 21pp reported in National Accounts) while it overestimates the growth rate of consumption in the fourth quarter of 2020 (7pp while National Accounts report a slight decline). Similarly, the CES slightly overestimates the decline in consumption in the first quarter of 2021 (2pp in the CES versus 2.2pp in the National Accounts). The more

¹² We use household final consumption expenditure series, seasonally and calendar adjusted, see <https://www.ine.es/jaxiT3/Datos.htm?t=30681>.

restrictive definition of consumption follows a similar pattern – 12pp growth in the third quarter of 2020, around 7pp growth in the fourth quarter of 2020, and a decline of around 6pp in the first quarter of 2021. In what follows and to have a better link to the counterfactual exercises in the consecutive sections this study focuses on this more restrictive definition of consumption that contains items available in the Banco de España’s Survey of Household Finances (EFF, by its initials in Spanish). The differences in consumption developments according to the CES and the National Accounts increase in 2021q2 and 2021q3.

Several reasons may account for the discrepancy between National Accounts and the CES, including sampling error and the possible effect of the characteristics of interview. The ECB-CES participants are recruited over the phone and the interview is conducted via Internet. As it is the case in other Web-based surveys, individuals with college education or who are working tend to be overrepresented.¹³ The Appendix discusses the weighting strategy to address those issues. Another factor that is most likely to have contributed to this discrepancy is the fact that, in the CES, data on consumption refer to spending in the last month of each quarter (no information on the whole quarter is available). Given the fluctuations observed in the incidence of the pandemic over time (and, in particular, within each quarter) and in the measures in place to contain it, consumption trends in the last month of each quarter might differ to a significant extent from consumption trends in the whole quarter. In addition, data in the CES are not seasonally adjusted, while data on National Accounts here presented are.

The nature of the CES also allows an examination of consumption developments on the basis of various characteristics. Chart 1, Panels 2, 3 and 4 plot the developments of consumption by gender of the respondent person, his or her age, and the education level. Those charts focus on consumption changes between the 3rd quarter of 2020 until the 3rd quarter of 2021¹⁴.

2.1 Gender and age

Chart 1, Panel 2 illustrates that the household consumption of male respondents grew relatively more than for females (both in the 3rd and 4th quarters of 2020 – 23pp and 9pp for males for this period compared to 10pp and 5pp for females). Only in the 1st quarter of 2021, females grew more than for males.

Regarding age, Chart 1, Panel 3 illustrates that individuals aged 35-70 years old lived in households that experienced the highest consumption growth between the second and fourth quarters of 2020 (those aged 35-54 experienced a 20pp increase in the third quarter of 2020, compared to the 16pp observed for those aged 55-70; those groups experience an increase of 10pp and 8pp in the fourth quarter of 2020, respectively). Youngest individuals

¹³ See Crossley, Fisher and Low (2021) for the case of the United Kingdom, who report that the Web-version of Understanding Society Survey undersamples individuals in low-skill occupations, social housing or renters.

¹⁴ For each quarterly survey (starting in April 2020) the survey asks about expenditure in the previous month, so growth rate reflects the change in the expenditure between those months.

(those aged 18-34) had the lowest consumption growth in the 3rd quarter of 2020 (13pp) and essentially no growth in consumption in the 4th quarter of 2020. In the 1st and 2nd quarter of 2021, youngest individuals (those aged 18-34) were the only ones who increased their consumption (by almost 1pp), while those aged 35 and above decreased their consumption.

2.2 Education levels

All education groups increased their consumption levels in the 3rd quarter of 2020 (21pp for individuals with college, followed by 17pp for those with secondary education and 13pp for those with primary education) – see Chart 1, Panel 4. The consumption changes between the 4th quarter of 2020 and the 3rd quarter of 2021 are more heterogeneous for different education groups. In the 4th quarter of 2020, the only group that substantially increased their consumption were the individuals with primary education (16pp), with those with upper secondary education experiencing very low growth (4pp) and those with secondary education decreasing their consumption (-1pp). On the other hand, in the 1st quarter of 2021 individuals with primary education decreased their consumption by almost 13pp, while those with secondary education and college education increased their consumption by 5pp and 4pp, respectively. In the 2nd quarter of 2021 individuals with primary and college education decrease their consumption by 15pp, while in the 3rd quarter of 2021 their increase their consumption by around 13pp and 15pp, respectively.

Note that the dynamics by group provided thus far are informative about the period starting in the third quarter of 2020, but cannot say much about the fall in expenditure observed in the first two quarters of 2020. Section 3 analyzes consumption developments and their determinants.

3 The determinants of consumption during the pandemic: results from an ordered probit model

This section analyzes which individual and household characteristics correlate the most with the recent consumption dynamics. For this purpose, the retrospective information in the monthly questionnaires of the CES about recent consumption dynamics is useful. In particular, a qualitative question on households' consumption can be used to construct a consumption index as follows:¹⁵

$$\text{Consumption index} = 1 \times (\text{Response} = \text{My household spending increased a lot}) + 0.5 \times (\text{Response} = \text{My household spending increased a little}) - 0.5 \times (\text{Response} = \text{My household spending decreased a little}) - 1 \times (\text{Response} = \text{My household spending decreased a lot})$$

That is, the higher the value of the index, the more dynamic household consumption of the respondent has been. The index value takes value 1 (0,5) during the months when the individual answers that her/his household's consumption has increased a lot (a little) during the last 12 months, and -1 (-0,5) when she/he responds it has decreased a lot (a little) and takes value 0 when she or he has indicated that spending has remained constant. This information has the obvious disadvantage, compared to the question formulated on a quarterly frequency, that it does not convey quantitative information. On the other hand, since the answers are available from April 2020 onwards and the question is formulated in year-on-year terms, it has two advantages. First, it allows an explicit analysis of the whole period virtually since the start of the pandemic, including the period of severe expenditure drops in the first half of 2020, unlike the quantitative information, which just allows for analyzing developments from 2020q3 onwards. Second, the fact that the question relates to year-on-year changes corrects for seasonality

Using the variable thus described, an ordered probit model is estimated, linking the qualitative answers provided by respondents on the evolution of their recent consumption (and captured by the index defined in previous section) to the following variables: gender, education, age and labor situation of the respondent (detailed below), and income, size and recent evolution of the financial situation of the household to which the individual belongs.¹⁶ Although the qualitative index on consumption developments is available on a monthly frequency, information on labor market situation of the respondent is available only at a quarterly basis until July 2021 (and on a monthly basis afterwards). Hence, the estimation includes one observation per quarter. Given that the consumption index captures consumption trends with respect to twelve months ago, it reflects consumption behavior against the prepandemic period, up to April 2021. Afterwards, the consumption index will

¹⁵ The question is formulated as "Compared with 12 months ago, what do you think has happened to your household spending?" with 5 possible answers: My household spending increased a lot, My household spending decreased a lot, My household spending increased a little, My household spending decreased a little, My household spending remained exactly the same (that is 0% change).

¹⁶ Individuals are asked whether their household financial situation has deteriorated with respect to 12 months ago or not (hence, it is not possible to distinguish when it has improved or remained unaltered).

reflect the recovery in consumption with respect to the pandemic period characterized by more restrictive measures. The sample period comprises between April 2020 and August 2021, and, in addition to the regressors indicated above, time dummies are also included in the specification.

With respect to the variable capturing the labor situation of the respondent, it is constructed on the basis of two variables in the CES database: one that captures the labor situation of the respondent (whether he or she is working part or full time, unemployed or inactive) and another one that captures whether the number of hours this individual works has decreased or not as a result of the pandemic, available up to March 2021.

Combining information on both variables, the following labor status categories are identified: individuals that were working before the pandemic and whose labor market participation has not been negatively affected by it, individuals that remain in their jobs but working less hours as a consequence of the pandemic (“Into ERTE”), employees who lost their jobs as a consequence of it (“Into Unemployment”), those who were not working before the pandemic but would like to have a job “Remains unemployed”), and individuals that have no job, did not lose it as a consequence of the pandemic and do not want to work (“Remains inactive”¹⁷). The respondent to the questionnaire is not necessarily a relevant contributor to household income (and hence his/her labor situation might not be strongly correlated to household consumption developments). For this reason, we use information on the age of the respondent and other household members and eliminate those observations that correspond to individuals that are likely to be descendants or parents of the main contributors to household income, rather than a relevant contributor to household income himself.

Results are presented in the second column of Table 1, that shows the estimated coefficients resulting from estimating the ordered probit model, and the associated standard errors. Since in an ordered probit model the coefficients are directly not informative about the magnitude of the impact of each regressor on the endogenous variable, Chart 2 depicts, for the most relevant regressors, the marginal impact of each predictor on the probability that the respondent indicates that consumption of his/her household has declined during the pandemic with respect to 12 months ago (either a little or a lot), evaluated at the mean value of the rest of predictors.¹⁸

Two regressors included in the specification are strongly linked to the key factors explaining consumption developments during the pandemic: restrictions imposed to control the pandemic (that resulted in unsatisfied desired consumption and an increase in forced

17 The category “Into unemployment” includes mainly individuals that become unemployed as a result of the pandemic, but also some individuals that become inactive, rather than unemployed; Unemployed individuals comprise individuals interested in having a job, either actively looking for a job or not. “Inactive” includes retired individuals, those unable to work, on extended leave (disability, sick, maternity or other leave), looking after children or other persons, doing housework or in other situations.

18 The coefficients associated to the labor situation and the corresponding marginal impacts are estimated using information up to January 2021 (from April 2021, no information on the impact of the pandemic on the number of hours worked is available anymore, and hence, this variable cannot be constructed).

Table 1

RESULTS OF AN ORDERED PROBIT MODEL FOR RECENT AND EXPECTED FUTURE CONSUMPTION

	Recent spending	Recent spending	Future spending	Future spending
Log(income)	-0.118*** (0.018)		0.001 (0.018)	
Log(income), year 2020		-0.175*** (0.024)		-0.013 (0.019)
Log(income), year 2021		-0.059** (0.024)		0.117** (0.051)
Age				
age = 35-54	-0.124*** (0.027)	-0.125*** (0.027)	0.039 (0.031)	0.039 (0.031)
age = 55-70	-0.123*** (0.030)	-0.122*** (0.030)	0.100*** (0.034)	0.101*** (0.034)
age >= 71+	-0.064 (0.058)	-0.061 (0.058)	0.063 (0.055)	0.065 (0.055)
Gender = Female	0.028 (0.018)	0.029 (0.018)	-0.006 (0.019)	-0.006 (0.019)
Education				
Secondary Education	0.081*** (0.028)	0.080*** (0.028)	-0.146*** (0.029)	-0.147*** (0.029)
Upper secondary education	-0.015 (0.022)	-0.017 (0.022)	-0.053** (0.023)	-0.054** (0.023)
Household size				
Household size = 2	0.133*** (0.034)	0.133*** (0.034)	0.061* (0.034)	0.060* (0.034)
Household size = 3	0.196*** (0.035)	0.195*** (0.035)	0.027 (0.036)	0.027 (0.036)
Household size = 4	0.222*** (0.035)	0.221*** (0.035)	0.039 (0.036)	0.038 (0.036)
Household size = 5	0.355*** (0.045)	0.355*** (0.045)	0.063 (0.046)	0.062 (0.046)
Worsening in financial situation	0.001 (0.020)	0.003 (0.020)	-0.081*** (0.021)	-0.081*** (0.021)
Labour situation				
Remains unemployed	-0.090* (0.050)	-0.119** (0.050)	0.011 (0.038)	0.004 (0.038)
Remains inactive (b)	-0.004 (0.038)	-0.020 (0.039)	-0.123*** (0.033)	-0.128*** (0.033)
Into ERTE (c)	-0.115*** (0.033)	-0.127*** (0.033)	-0.111*** (0.026)	-0.114*** (0.026)
Into unemployment (d)	-0.179*** (0.048)	-0.208*** (0.048)	-0.195*** (0.038)	-0.203*** (0.038)

SOURCES: Survey on Consumer Expectations and own calculations

NOTE: The estimation includes time dummies. In the table, standard errors are presented in parentheses. ***, ** and * indicate significance for a 99%, 95% and 90% confidence level.

- a Individuals that are unemployed and the number of hours they work has not been negatively affected by the pandemic.
b Individuals that did not work before the pandemic but do not want to work (retired individuals, students, people taking care of children, etc).
c Includes workers underfurlough schemes.
d Mainly includes workers that turn into an unemployment situation as a consequence of the pandemic, but also those that become inactive.

Table 1

RESULTS OF AN ORDERED PROBIT MODEL FOR RECENT AND EXPECTED FUTURE CONSUMPTION (cont.)

	Recent spending	Recent spending	Future spending	Future spending
Evolution of recent consumption				
Recent slight decline in HH spending			0.141*** (0.039)	0.140*** (0.039)
No recent changes in HH spending			0.441*** (0.038)	0.440*** (0.038)
Recent slight increase in HH spending			1.071*** (0.037)	1.069*** (0.037)
Significant recent increase in HH spending			1.602*** (0.047)	1.601*** (0.047)
Observations	14,043	14,043	14,043	14,043

SOURCES: Survey on Consumer Expectations and own calculations.

NOTE: The estimation includes time dummies. In the table, standard errors are presented in parentheses. ***, ** and * indicate significance for a 99%, 95% and 90% confidence level.

savings) and labor market developments (resulting in precautionary savings and, for some individuals, a decline in income).

The first of these two factors would be captured by a negative link between consumption growth and income levels. This is due to the fact that containment measures to curb the pandemic have affected more substantially consumption patterns of high-income groups (since restrictions on consumption have essentially affected those items entailing greater mobility and social interaction and these items have a higher weight in higher income household spending levels).

As for the second factor, uncertainty about health developments and, consequently, about the prospects for economic activity and employment has had a substantial impact on consumption dynamics as a result of the precautionary behavior of households. The relevance of precautionary savings is likely to have been larger for individuals that have suffered a decline in the number of hours they work during the pandemic than for those workers whose participation in the labor market has remained unaltered during the pandemic. This would be reflected in more contractive consumption developments during this period for individuals showing a decline in the number of hours worked during the crisis than for those working for which their participation in the labor market has remained unaltered.

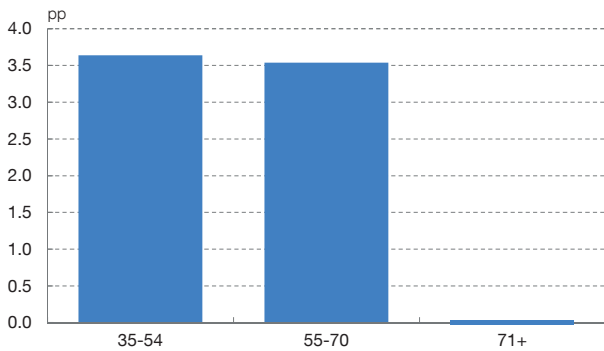
Developments in the labor market have not only translated into larger precautionary savings, but also in a decline in income. The decline in income, as well as uncertainty about its future developments, has varied substantially across households. Those that have lost their jobs are those experiencing larger income declines (and larger uncertainty about their future income), followed by those that remain working but have suffered a very substantial decline in the number of hours they work. Instead, for those under ERTes whose number of

Chart 2

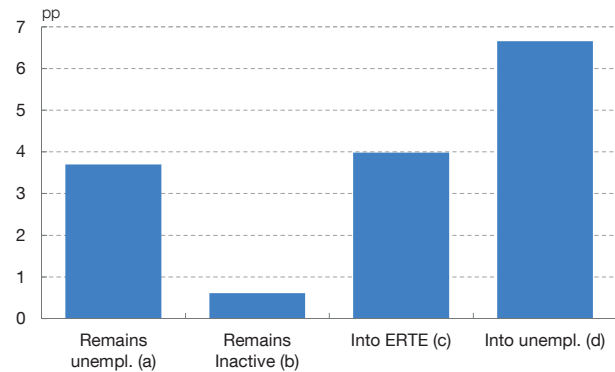
IMPACT (PERCENTAGE POINTS) OF SEVERAL HOUSEHOLD AND INDIVIDUAL CHARACTERISTICS ON THE PROBABILITY OF REPORTING A RECENT DECLINE IN CONSUMPTION

Once we compare households with respondents with similar characteristics the probability of experiencing a fall in expenditure during the pandemic was highest in higher income groups, households were the respondents became unemployed as a result of the pandemic, smaller sized households or those for which the respondent is in the age group 35-70.

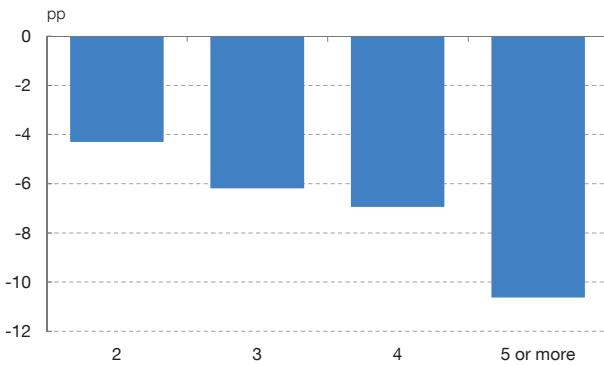
1 MARGINAL IMPACT OF CHANGES IN AGE GROUP ON THE PROBABILITY OF CONSUMPTION DECLINE. REFERENCE GROUP: AGE<35



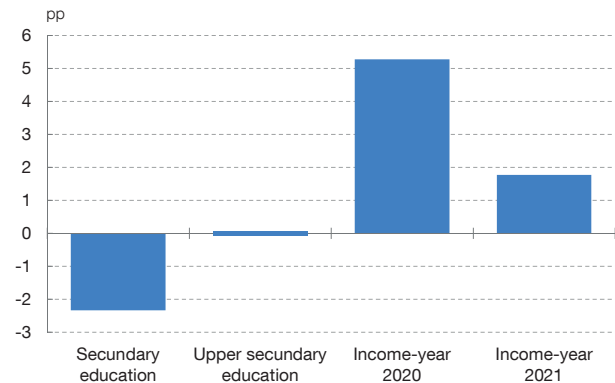
2 MARGINAL IMPACT OF CHANGES IN EMPLOYMENT SITUATION ON THE PROBABILITY OF CONSUMPTION DECLINE. REFERENCE GROUP: WORKERS WHOSE NUMBER OF HOURS WORKED DID NOT DECLINED AS A CONSEQUENCE OF THE PANDEMIC



3 MARGINAL IMPACT OF CHANGES IN HOUSEHOLD SIZE ON THE PROBABILITY OF CONSUMPTION DECLINE. REFERENCE GROUP: SIZE = 1



4 MARGINAL IMPACT OF CHANGES IN EDUCATION (REFERENCE GROUP: PRIMARY EDUCATION) AND HOUSEHOLD INCOME ON THE PROBABILITY OF CONSUMPTION DECLINE



SOURCES: Survey on Consumer Expectations and own calculations. See also Table 1.

- a Individuals that are unemployed and the number of hours they work has not been negatively affected by the pandemic.
- b Individuals that did not work before the pandemic but do not want to work (retired individuals, students, people taking care of children, etc).
- c Includes workers underfurlough schemes.
- d Mainly includes workers that turn into an unemployment situation as a consequence of the pandemic, but also those that become inactive.

working hours diminished moderately, the impact of the deterioration of the labor market on households' current incomes has been more moderate and quite limited (given that ERTes compensate for up to 70% of the salary that is not received due to the decline in the number of hours worked). In addition, it has to be noted that the impact of this current income decline on permanent income would be, for many individuals, quite limited, as far as they expect to re-start working soon, once the restrictions imposed to control the pandemic are lifted. In

the specification, the impact of income decline on consumption developments is reflected not only in the labor market status itself (that will also be linked to precautionary savings) but also in the indicator that captures whether the financial situation of the household has deteriorated in the last year or not.

Marginal effects shown in Chart 2 suggest that forced savings (last bar in panel 4) and changes in labor market status (panel 2) have played a key role in explaining consumption developments during the pandemic. First, a very strong negative link between consumption developments and income levels exists, suggesting that forced savings have been key in explaining consumption developments. The large marginal impact of changes in income on consumption is in line with the dominant role that forced savings have had in explaining consumption during the pandemic (see Cuenca et al (2021) for a discussion on the relative weight of this factor with respect to precautionary reasons and other factors). Second, labor market deterioration (and the resulting increase in precautionary savings and decline –quite limited and transitory for many individuals– in income) has also played a relevant role in explaining the drop in consumption. Indeed, as can be seen in Table 1 and Chart 2, individuals that become unemployed as a result of the pandemic are those showing worse consumption developments in comparison to workers for which the number of worked hours remained unchanged during the pandemic. This is shown by the coefficient associated to the group “Into unemployment” in column 2 in Table 1, and the corresponding marginal impacts shown in Chart 2. As can be seen, the estimated coefficient and the associated marginal impact on the probability of reporting a consumption decline is significant at a 99% confidence level and larger than that associated to any other labor market situation. This might reflect not only the impact of income decline on their consumption levels but also worse employment prospects for these individuals as a result of the irruption of the pandemic. Those that went under a furlough schemes (ERTEs, shown under the heading “Into ERTE” and those that were unemployed already before the pandemic (“Remain unemployed”) also show more subdued consumption dynamics than the reference group (those that have not suffered a decline in the number of hours worked), but their consumption seems to have been less strongly hit by the deterioration in the labor market than for those that become unemployed. As can be seen, the probability of reporting a decline in consumption is around 6,5 pp higher for individuals that become unemployed as a consequence of the pandemic than for those workers not affected by a decline in the number of hours worked, higher than the 4pp difference between workers not affected by the pandemic and those that are affected by an ERTE (and for those that were already unemployed before the pandemic)¹⁹. Instead, once controlling for labor market developments and the rest of determinants, consumption developments are not found to differ significantly across households showing a different evolution in their financial position. This non-significance could be linked to the fact that, as mentioned above, for those who suffered an income decline, the impact of this contraction on permanent income would be small for many individuals, as far as they anticipate a relatively quick re-start in their jobs

¹⁹ Worse consumption developments found for the unemployed during the pandemic are in line with results found in Christelis et al (2020).

(and hence a correction in this deterioration of their financial situation) once the pandemic is left behind.

Additionally, the results point towards a strong link between consumption dynamics and household size, with households of smaller size showing worse consumption developments than larger ones (see panel 3). A potential interpretation of those mitigated impacts by household size is that the income of other members can help to sustain consumption in the case of job losses, an issue discussed in section 5. Finally, middle-aged groups show worse consumption developments, although these links seem to be quantitatively smaller than that observed between consumption and income, labor situation of the respondent or household size. As for the gender of the respondent, once controlling for the rest of regressors the coefficient associated to women is positive but falls short of significance although close to it (p-value=10,5%).

The results in column 2 of Table 1 reveal a strong negative link between income levels and consumption dynamism. As explained, this is likely to be due to the fact that a large part of the decline in consumption has been involuntary, driven by the restrictions to curb the pandemic, that have affected more significantly spending items with higher weight in consumption of higher income groups. However, these restrictions have varied over time, being very stringent during Spring 2020 and lighter afterwards, especially along the year 2021, when infection rates were smaller and an increasing share of the population was vaccinated. Hence, the strong negative link between income levels and consumption dynamics is likely to have been much stronger in year 2020 than in 2021, in a context of a progressive, although incomplete, recovery in spending in those items more affected by the restrictions to control the pandemic (showing higher weight in the consumption basket of higher income households). Column 3 in Table 1 confirms this hypothesis: when the probit model is estimated allowing two different coefficients for income (one for observations corresponding to year 2020 and another one associated to year 2021), the negative link between income levels and consumption dynamics moderates substantially.

4 Evolution of the labor market during Covid-19

Given the impact of labor status on consumption changes uncovered in the previous section, this section analyzes closely the evolution of the labor market in Spain during the pandemic using the Spanish Labor Force Survey (EPA).²⁰

4.1 The behavior of employment, unemployment and inactivity

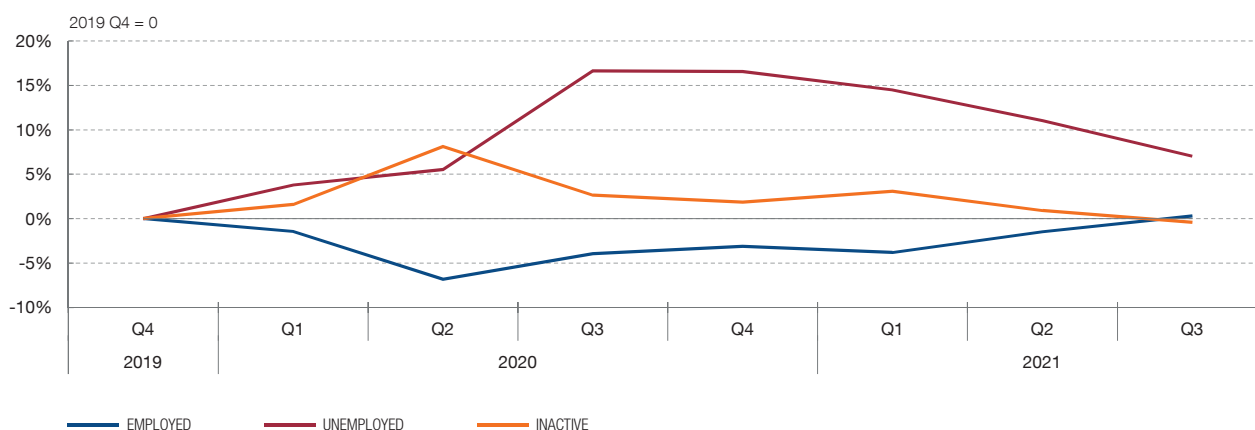
Chart 3, Panel 1 illustrates the evolution in employment, unemployment and inactivity during the pandemic, taking the fourth quarter of 2019 as a baseline period. Blue line

Chart 3

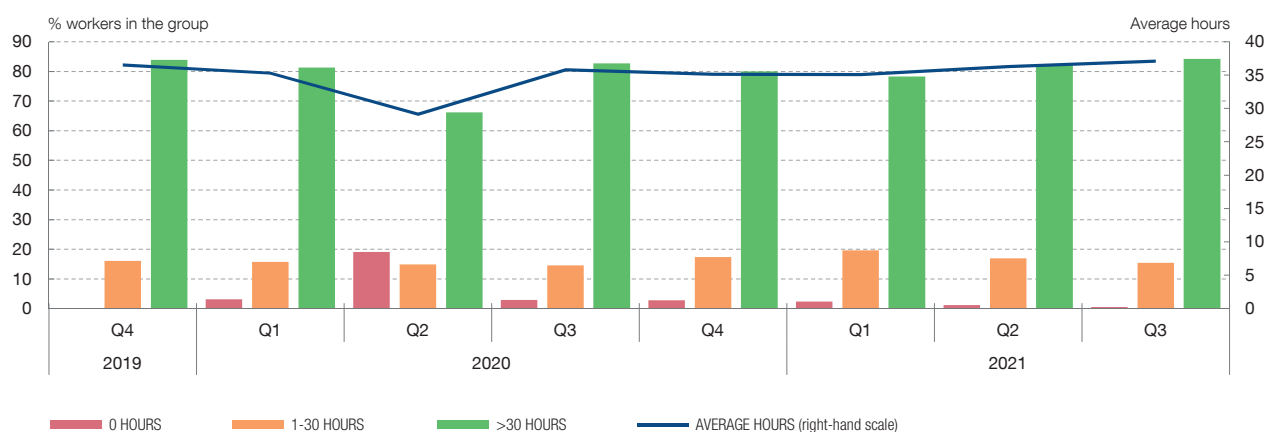
EVOLUTION OF LABOUR MARKET AND HOURS DURING COVID 19

The level of employment and the average hours worked have recovered pre covid levels. The employment and the average hours worked experienced a big drop in the second quarter of 2020: the employment fell by more than 7% and the hours diminished from 36 hours per week to 30. In 2020Q2 20% of workers worked zero hours but the fraction diminished in the third quarter of 2020.

1 CUMULATIVE LABOR MARKET VARIATION



2 EVOLUTION OF HOURS WORKED DURING COVID-19



SOURCE: Encuesta de Población Activa (EPA): 2019Q4 - 2021Q3.

²⁰ The analysis uses the effective number of hours declared by the respondent during the reference week of the survey.

plots the cumulative change in the employed population between the last quarter of 2019 and the third quarter of 2021. Relative to the 4th quarter of 2019, the number of employed individuals decreased by around 7pp in the 2nd quarter of 2020, totally recovering in the consecutive periods.

Similarly, the red and orange lines in Chart 3, Panel 1 plot the evolution of unemployed and inactive population, respectively, between the 4th quarter of 2019 and the 3rd quarter of 2021. Relative to the baseline period, the number of unemployed workers increased during 2020 and 2021, reaching a peak of about 15% higher in the 3rd quarter of 2020. The share of the inactive population, on the other hand, was about 10% higher at its peak in the 2nd quarter of 2020. In sum, Chart 3, Panel 1 illustrates that, while there have been movements in these three labor market aggregates (the share of employed, unemployed and inactive population), their magnitude is relatively moderate (see Chart 1, Panel 1) compared to the movements in other aggregates, such as private consumption. The fact that the fall in employment and the increase in unemployment were relatively contained is due to the extensive use of furlough mechanisms. Furloughed workers are still counted as employed and not as unemployed, even if they work a number of hours which is lower than usual (or even zero).²¹ For that reason, we turn to hours worked.

4.2 The behavior of hours worked

Because of those considerations, this section looks at hours effectively worked by the employed individuals during this period. Chart 2, Panel 2 illustrates the share of employed individuals who, according to the EPA (the Spanish Labor Force Survey) report, for each quarter since 19q4, prior to the start of the pandemic, having worked zero hours, between 1 and 30 hours and more than 30 hours (left axis), together with the average number of hours worked (right axis). The share of employed individuals working zero hours increased to almost 20% in the 2nd quarter of 2020 (this share was at around 3% in the 1st quarter of 2020 and from the 3rd quarter of 2020 the share has been decreasing until reaching almost 0%).

Additionally, the share of individuals working more than 30 hours a week decreased from around 81% in 1st quarter of 2020 to 66% in the 2nd quarter of 2020, recovering to a value of around 80% in consecutive periods.²² Similarly, the number of average hours decreased by almost 18% in the 2nd quarter of 2020 (compared to the quarter before), recovering to the pre-pandemic levels in consecutive periods.

The increase in the number of individuals working zero hours at the height of the pandemic varies with workers' characteristics. As Chart 4, Panel 1 illustrates, the share of individuals working zero hours among those employed in the so-called "social" industries

²¹ This treatment of furloughed workers as employed was also a recommendation by Eurostat. See, for example, https://ec.europa.eu/eurostat/documents/10186/10693286/GFS_draft_note.pdf.

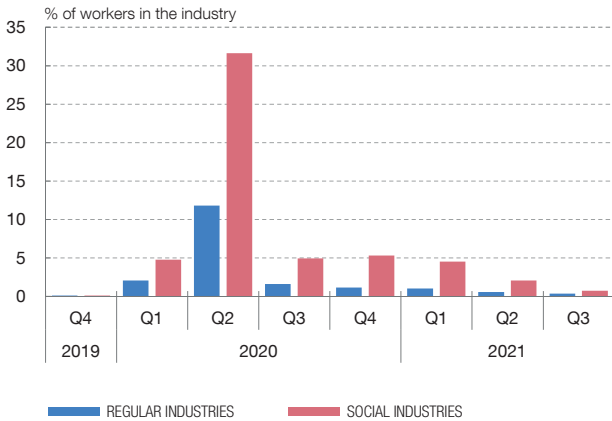
²² For an analysis of the process of furloughed employees resuming work along the second semester of 2020, see Izquierdo et al (2020).

Chart 4

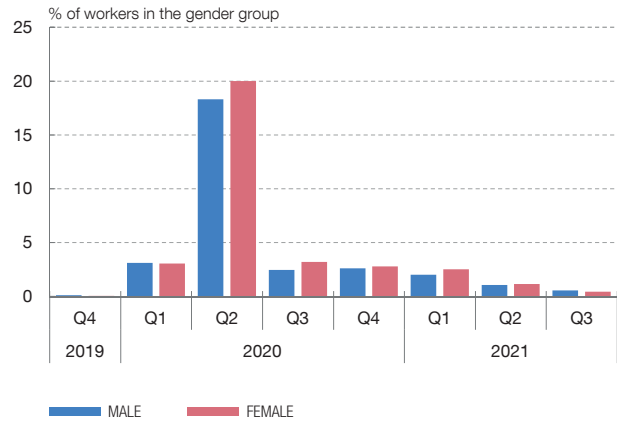
SHARE OF INDIVIDUALS WORKING ZERO HOURS

We define the social industries, as those that include retail, accommodation and food services, education and personal services; the rest of the industries includes agriculture, manufacturing, construction, business services and financial intermediation, public administration, health services, and transportation and storage. The share of workers working zero hours was concentrated on social industries (32pp vs 12pp in regular), females (20pp vs 18pp), individuals without a college degree (24pp vs 13pp) and below 54 years of age.

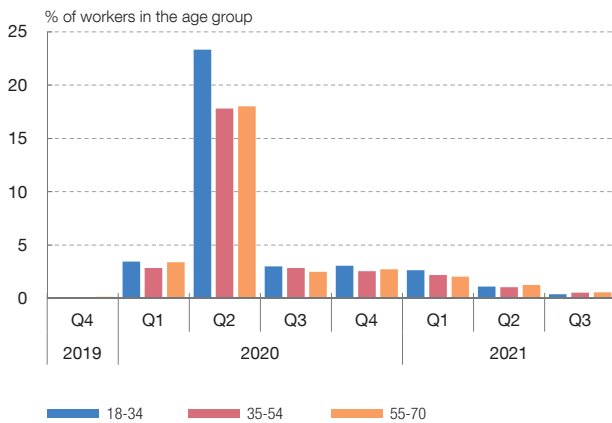
1 SHARE OF INDIVIDUALS WORKING ZERO HOURS BY INDUSTRY



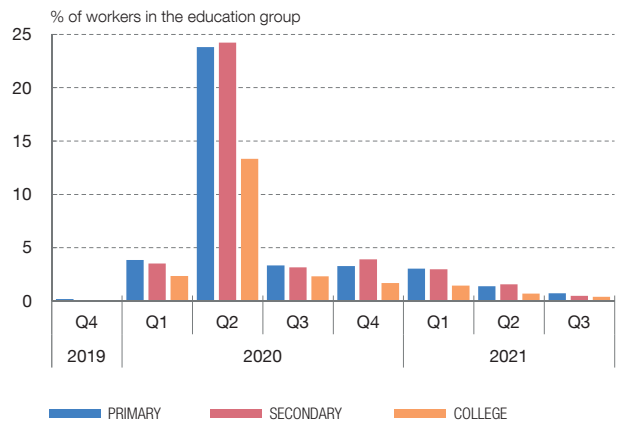
2 SHARE OF INDIVIDUALS WORKING ZERO HOURS BY GENDER



3 SHARE OF INDIVIDUALS WORKING ZERO HOURS BY AGE



4 SHARE OF INDIVIDUALS WORKING ZERO HOURS BY EDUCATION



SOURCE: Encuesta de Población Activa (EPA): 2019Q4 - 2021Q3.

increased to a striking 32% in the 2nd quarter of 2020 (compared to 12% employed in the rest of the industries).²³ This number subsequently remained at around 5% for the three following quarters for social industries and has decreased to almost 0% for the 3rd quarter of 2021. The share of women working zero hours increased slightly more than in the case of

²³ In order to define the “social industries”, we follow Kaplan et al (2020). In particular, social industries include retail, accommodation and food services, education and personal services. The rest of the industries include agriculture, manufacturing, construction, business services and financial intermediation, public administration, health services, and transportation and storage. See Adams-Prassl et al (2020) for a comparative analysis of workers affected by the pandemic in several countries according to the definition in Kaplan et al.

males (see Chart 4, Panel 2, 20% versus 18% in the 2nd quarter of 2020). Individuals aged 18-34 were also affected relatively more by ERTes (23% of this group worked zero hours in 2nd quarter of 2020, compared to around 18% of individuals aged 35-70) – see Chart 4, Panel 3. Finally, as Chart 4, Panel 4 illustrates, individuals with primary and secondary education were affected relatively more than college workers (the share of individuals working zero hours in 2nd quarter of 2020 was about 24%, compared to 13% among those with college education).

5 The role of changes in hours worked for changes in consumption: counterfactuals using the EFF 2017

This section estimates the contribution of the changes in the distribution of hours worked on expenditure by quantifying the following counterfactual: “What would have been the expenditure level in a year prior to the pandemic had the level and distribution of hours worked been the one observed in each of the quarters in 2020 and 2021 in the Spanish Labor Force Survey (EPA)?”

Fluctuations in hours during Covid-19 pandemic would have had a small or no effect on consumption if (a) income/earnings lost due to change in hours were fully or largely replaced by government support; (b) affected workers had sufficient financial buffer to absorb most of the changes in hours and earnings. In practice, those conditions may not have been fulfilled. On the onset of the pandemic, to compensate the inability of working and to provide support for workers affected the Spanish government introduced a furlough scheme called ERTes (or Expediente de Regulación Temporal de Empleo by its Spanish name) and at the height of the pandemic almost 3 million of workers were under this scheme.²⁴ The scheme allowed the workers to claim up to 70% of the salary, so even though the scheme compensated earnings losses to a large extent, the compensation was not full. In principle, those income falls could be absorbed if households had financial buffers. However, workers whose jobs were affected most by the pandemic were also in a relatively more fragile financial position: they had lower levels of savings and higher spending commitments than the rest of the population.²⁵ In sum, the lack of substantial buffers of affected workers lead to expect that consumption dynamics follow very closely the changes in the number of hours worked.

To estimate the fraction of the changes in individual expenditure during the pandemic that can be explained by the observed changes in the distribution of hours worked, this section combines information on hours, industry, gender, age and education from the Spanish Labor Force Survey (EPA) with data on consumption from the 2017 Banco de España’s Survey on Household Finances (EFF by its Spanish abbreviation).²⁶

There are several reasons to combine the information in the EFF prior to the pandemic and EPA to understand how changes in hours worked affected consumption during the pandemic, instead of only using the information in the ECB’s CES as in section 3. Firstly, the ECB-CES lacks pre-Covid data on consumption. As such, any link between consumption and hours identified using data starting with the 2nd quarter of 2020 in the CES could already have been contaminated by contemporaneous changes in health concerns, preferences, inability to consume, etc.²⁷ Second, the EFF allows exploring additional channels that are not

²⁴ See Izquierdo, Puente and Regil (2020).

²⁵ See Alvargonzález et al (2021).

²⁶ Other factors can include forced savings (some consumption items were not available for the consumption because of the restrictions), health concerns or other non-income reasons.

²⁷ For example, Christelis et al (2020) report a negative correlation between worries caused by the pandemic and consumption growth. Those worries could reflect either the financial problems caused by job or hours losses or other concerns about health.

available in the CES. These include, for example, individual information on industry worked, and individual information of the rest of the household members (education, labor status,...). Finally, CES lacks information on actual hours worked by the individuals, hence combining the information on consumption in the EFF with information on hours in the EPA allows to quantify the influence of the changes in hours worked on the consumption level of the respondent's household.

5.1 Counterfactual exercise

The impact on consumption of the changes in hours worked by each individual member of a household is estimated by means of counterfactuals. The exercise starts with the 2017 wave of the Encuesta Financiera de las Familias (EFF), a household survey with information about expenditure as well as detailed information about the labor market situation of each household member. As documented in Charts 3 and 4, the distribution of working hours across individuals varied markedly between 2019 and 2020. Hence, the estimated counterfactual answers the question: "What would have been the expenditure level in the EFF 2017 had the level and distribution of hours worked been the one observed in each of the quarters in 2020 and 2021 in the EPA?"

The methodology can be explained using a simple example in Table 2. The full population of adult individuals in the 2017 wave of the EFF can be divided into seven categories based on their labor market status – employees working between 1 and 30 hours, employees working above 30 hours, self-employed individuals working between 1 and 30 hours, self-employed individuals working more than 30 hours, short-term unemployed (up to one year), long-term unemployed and inactive. The category short-term unemployed includes also employees working zero hours (which are not identified separately in the EFF 2017 and which correspond to workers under an ERTE involving full suspension). Similarly, in the Labor Force Survey individuals unemployed for less than one year and individuals working zero hours because of furloughing are pooled into one category. The reason behind that pooling is that individuals who have been unemployed for less than a year typically receive about 70% of their earnings, a magnitude that matches the proportion of income that the furloughing employment protection scheme replaces.²⁸

For each of these labor market categories the average annual individual consumption is calculated by dividing household expenditure by the number of members (see column 2 in Table 2). For example, the average annual consumption expenditure per person for employees working more than 30 hours was about 6,054 euros, compared to 4,038 euros for long-term unemployed individuals, and 4,271 euros for individuals working zero hours.

²⁸ It is important to keep in mind that this approach isolates a pure composition effect. In particular, it answers the question: what would have been the consumption in 2017 had the distribution of hours observed in 2017 been the one observed in 2020? As such, by construction the procedure abstracts from possible changes in the Marginal Propensity to Consume (MPC) that are not associated to those composition effects. Of course, the MPC may well vary across periods. The procedure predicts how much of the dynamics of consumption can be predicted on the basis of the changes in hours alone. That is, it rests on the assumption that the link between consumption and hours worked of an individual that, for example, was working part-time voluntarily in the 2017 wave of the EFF stays the same for the individual that was forced to work part-time during the pandemic.

Table 2

CHANGES IN HOURS WORKED AND EXPENDITURE

	Annual consumption by individuals	EFF 2017	EPA 2020			
			Distribution of population			
			Q1	Q2	Q3	Q4
Employed persons						
Work more than 30 hours	6,054.2	39.8	41.3	32.2	40.8	39.7
Work less than 30	4,741.0	7.7	8.4	7.0	7.3	9.0
Self employed						
Work more than 30 hours	6,186.7	7.9	6.8	4.7	6.8	6.8
Work less than 30	6,077.2	1.4	0.9	1.3	1.0	1.1
More than a year unemployed (a)	4,038.8	8.6	5.8	4.8	6.0	6.4
Zero hours worked (b)	4,271.2	7.0	7.4	17.5	8.4	8.0
Inactives	6,391.1	27.6	29.6	32.5	29.6	29.1

	EFF 2017	EPA 2020			
		Q1	Q2	Q3	Q4
Average annual consumption by individuals	5,757.9	5,805.7	5,670.2	5,796.5	5,771.8
% of consumption variation (EFF/EPA)		0.83	-2.33	2.23	-0.43
% of consumption variation (CES)				12.27	6.89

SOURCES: Banco de España (EFF 2017) and Spanish Labour Force Survey.

- a** More than a year unemployed: includes those workers who has been in unemployment for more than a year (EFF and EPA).
- b** Zero hours worked: includes those workers who has been unemployment less than one year (EFF and EPA) and workers who work zero hours because they are in employment regulation or partial stop due to technical or economic reasons (EPA).

With the information on consumption for each of the groups in hand, using the relative share of each of the seven categories described above and shown in the third column of Table 2, the average annual individual consumption expenditure in the 2017 wave of the EFF is calculated to be around 5,758 euros – see Panel B, Table 2.

As stated before, our main counterfactual exercise is to analyze what would happen to consumption in the EFF 2017 if the distribution of hours was as it was during the pandemic? That is, if the relative share of the seven employment categories described above changed to reflect the shares of these during 2020. For example, in the EFF 2017 there were about 40% of the employees working more than 30 hours, while this number decreased to around 32% in the 2nd quarter of 2020 (see column 5 in the upper panel of Table 2). Similarly, the percent of individuals working zero hours increased from 7% to more than 17% for this period. If the only change in the economy in the 2nd quarter of 2020 had been associated to changes in the relative share of those employment categories, the average annual individual consumption would have been around 5,670 euros (see column 4 in the lower panel in Table 2), compared to 5,758 euros for the pre-pandemic level. Table 2 reports the counterfactual for each quarter in 2020.

Several considerations are worth mentioning about this procedure. First, in the example illustrated above individuals are divided into 7 employment categories. In subsequent counterfactual exercises presented below we consider the actual number of hours of the individuals, without any grouping. This means that the EFF 2017 will be reweighted taking into account the distributions of hours for each individual in each quarter of EPA (see Appendix 2). Second, consumption depends on the labor market situation of all household members, and not all of them may have experienced a reduction in the number of hours worked. To account for that possibility, the counterfactual exercises take into account the number of hours worked of each individual as well as his or her partner, if one exists, or of the head of the household, if that person is a parent of the respondent.²⁹ Section 6 analyzes the role of the household by comparing with what happens if only individual hours worked are taken into account. Finally, by construction, the procedure does not account for other changes, like the variation in household income during the pandemic that is unrelated to the number of hours worked (like reduction in hourly wages, bonuses or in the return of financial assets). That information is not available in EPA. For that reason, the focus on the exercise is the fraction of expenditure changes associated to the number of hours of work.

5.2 Results

Chart 5, Panel 1 plots the quarter-on-quarter consumption growth as measured in the CES (red bars) and predicted consumption growth using our counterfactual exercise (orange bars).³⁰ As the figure illustrates, the measure of consumption we construct for the CES grew by about 12pp between the 2nd and 3rd quarter of 2020, around 7pp between 3rd and 4th quarter of 2020, and decreased around 6pp between 4th quarter of 2020 and 1st quarter of 2021. The counterfactual exercise based on changes in hours worked predicts an increase of consumption of around 5.5pp between 2nd and 3rd quarter of 2020, that is the changes of hours predict almost 45% (or almost one-half) of the consumption recovery observed in the CES for this period. As there were no major changes in hours worked between 3rd and 4th quarter of 2020 and 4th quarter of 2020 and 1st quarter of 2021, the counterfactual exercise predicts a small decrease in consumption of 0.3pp between 3rd and 4th quarter of 2020 and of 0.29pp between 4th quarter of 2020 and 1st quarter of 2021.

The CES asks respondent to report expenditure during in the month prior to the quarterly interview so the change compare the change between two particular months, while our counterfactual exercise considers the average changes in hours worked during

²⁹ The intuition of the method is presented in Table 2: we calculate average consumption in 2017 according to the hours worked in 2017 and then change the probability of working each number of hours to reflect that predicted from the Labor Force Survey in 2020 and 2021. In formal terms, we use the methods of DiNardo et al (1996). Namely, we pool together all individuals between 25 and 70 years of age in each quarter of the EPA and in the EFF 2017 and run a Logit model predicting that a particular observation belongs to EFF as a function of the number of hours worked by the different household members as well as their labor market status. The predicted probabilities obtained serve to inverse-weight the EFF and obtain distributions of hours similar to those in EPA. We have experimented with further controls for industry, age and gender.

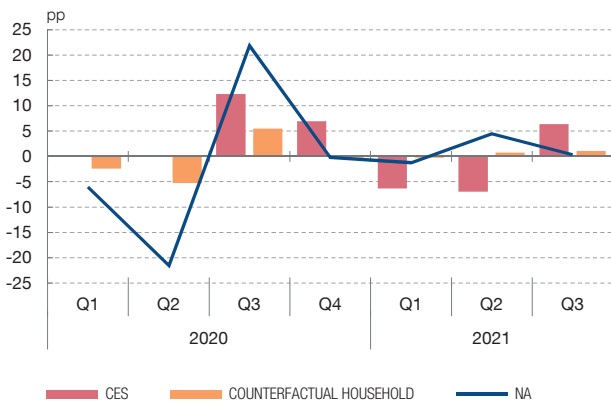
³⁰ As mentioned earlier, we use the more restrictive measure of the CES that is comparable to the consumption measured in the EFF.

Chart 5

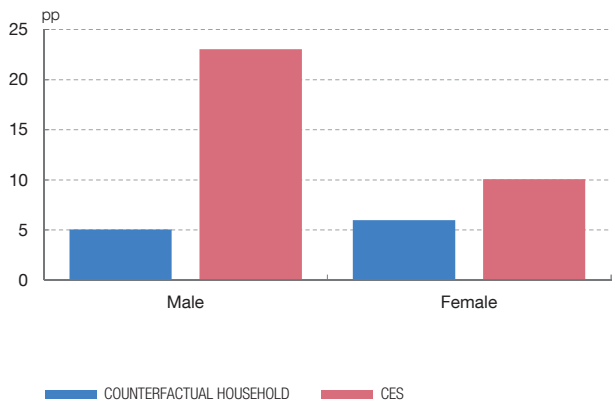
DISTRIBUTION OF ACTUAL CONSUMPTION GROWTH VS COUNTERFACTUAL 2017 CONSUMPTION WITH 2020 HOURS OF WORK

The increase in the hours of work within the household between 2020Q2 and 2020Q3 predicts that expenditure would increase by 5pp between 2020Q2 and 2020Q3 (see Panel 1). The quarterly increase in CES was 12,7pp, so hours of work would explain about 45% of the increase in expenditure between those two quarters, The increase in expenditure explained by the increase in hours of work is higher for households of female respondents (5,95pp, shown in Panel 2) and smaller among individuals between 55 and 70 years of age (only 2pp increase, shown in Panel 3) or respondents with a college degree (3,44pp increase, shown in Panel 4).

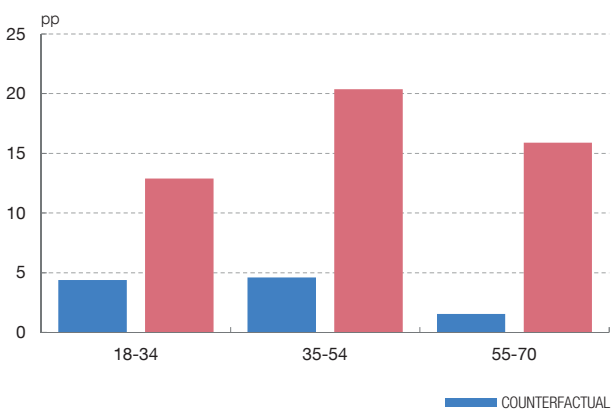
1 NA VS CES VS COUNTERFACTUAL CONSUMPTION



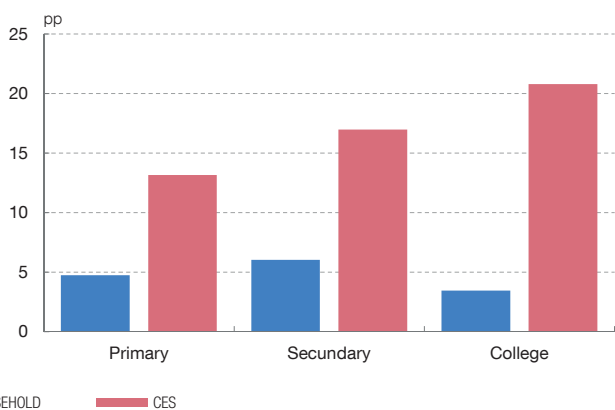
2 COUNTERFACTUAL CONSUMPTION CHANGE BY GENDER BETWEEN Q2 AND Q3 OF 2020



3 COUNTERFACTUAL CONSUMPTION CHANGE BY AGE BETWEEN Q2 AND Q3 OF 2020



4 COUNTERFACTUAL CONSUMPTION CHANGE BY EDUCATION BETWEEN Q2 AND Q3 OF 2020



SOURCES: National Accounts (NA, 2020 and 2021), Banco de España, combining information of the Spanish Survey of Household Finances (EFF 2017), Encuesta de Población Activa (EPA, 2020 and 2021) and the ECB-CES.

the quarter. In this respect, the blue line in Chart 5, Panel 1 also compares growth rates in the National Accounts. As the figure demonstrates, the shape of consumption growth in the counterfactual exercise follows that in the National Accounts quite well – a drop in consumption in the first two quarters of 2020 (2.4pp and 5.3pp in our simulation compared to 6.6pp and 20pp in National Accounts between 4th quarter of 2019 and 1st quarter of 2020 and 1st and 2nd quarter of 2020, respectively), recovery in the consumption between 2nd and 3rd quarter of 2020 (5.5pp in the simulation compared to 21pp in National Accounts), and essentially no growth in the remaining periods.

While there are discrepancies between the CES and the National Accounts already discussed in section 2, the CES also permits examining the evolution of consumption along several individual characteristics (gender, age and education) that National Accounts do not allow for. Given that those characteristics are available in the EFF and the EPA, a similar counterfactual exercise is conducted looking separately at the predicted consumption changes by gender, age and education. As the simulation exercise predicts nearly zero consumption change except for the 2nd and the 3rd quarter of 2020, in what follows the focus is on the counterfactual consumption recovery between the 2nd and the 3rd quarter of 2020.

5.3 Decomposition by age and gender.

Chart 5, Panels 2, 3 and 4 illustrate predicted consumption changes (blue bars) together with observed consumption changes (red bars) for these groups between 2nd and 3rd quarter of 2020, the latter being reweighted to match the characteristics of the Spanish population.³¹ Panel 2 shows that changes in hours predict a consumption increase for females of around 6pp, similar but higher than the 5pp increase predicted for males.

The counterfactual change in hours predicts around 21% of consumption changes for males while predicting almost 60% of consumption changes for females. Looking at the age dimension (Panel 3), changes in hours predict around 4.5pp of consumption increase for individuals aged 18-54, and around 1.53pp for those aged 55-70. A slightly larger variation of consumption for individuals aged 35-54 is not fully aligned with changes in hours – they were affected relatively less than those aged 18-34. With respect to observed consumption changes for different ages, changes in hours of work between the 2nd and 3rd quarters of 2020 predict around 35% of consumption change for individuals below age of 34, around 22% for those aged between 35-54, and less than 1% for those 55 and older.³²

Both partitions suggest that hours worked predict a higher fraction of the increase in consumption for groups experiencing large increases in hours: females and individuals below 55 years. In that sense, the dynamics of consumption of individuals above 55 years of age are most likely explained by subdued consumption during the lockdown or factors other than those occurring in the labor market.

5.4 Education

The counterfactual exercise predicts that changes in hours increased the consumption of the households of respondents with primary and secondary education by 4.7pp and

³¹ The CES over-represents individuals with higher education levels or employed. In that respect, some of the sample partitions may not be representative. For that reason, we elaborate a set of weights that calibrate the distribution of age, gender, schooling, region and family size to that observed in EPA. See Appendix 1.

³² Please note that the counterfactual exercise predicts the average consumption level for each group, rather than growth rate of average consumption. As such, the weighted average of consumption growth between different groups does not necessarily add up to total average consumption growth.

6pp, respectively. For college workers, changes in hours would predict an increase in expenditures of around 3.5pp. The pattern for those with secondary education and below generally follows that of the changes in hours – this group was affected relatively more than individuals with college education.

6 The role of the labor market situation of other household members for the consumption recovery

The previous section explained how household changes in hours worked affected consumption changes. The reason being that while worker-level hour supply is an individual outcome, consumption is generally a household decision. As such, the previous section estimated how the own hour changes as well as hour changes of the other household members affected consumption.³³ This section analyzes whether taking into account the labor market situation of other household members dampens or exacerbates consumption changes. For example, if one household member experiences a decline in hours worked as a result of the lockdown while another member does not, the per-capita consumption of the household will be affected less than if both members were affected – i.e., there would be intra-household insurance of the fall in income. Conversely, if all household members are affected as severely, the fraction of consumption changes explained by changes in hours could be even bigger.

This section examines how much would consumption change in a counterfactual that only considers consumption changes resulting from the change of individual hours. Comparing this counterfactual to the results in Chart 5, where the labor market situation of other members is taken into consideration, we can assess the degree of intra-household insurance during the pandemic – see Lekfuangfu et al, 2020.

As Chart 6 illustrates, on average, as well as for most of the groups of individuals we consider (gender, age and education), taking into account changes of hours worked of other household members (Chart 5) in fact increases the part of the evolution of expenditure explained by hours. For instance, the household-level counterfactual predicts a twice as high consumption growth between 2nd and 3rd quarter of 2020 (5.4pp vs 2.4pp), and increases the predictability of our exercise from almost 20% to 45%. That is, changes of hours worked of an individual when taking into account changes of hours worked of other household members accounts for a larger share for the variation in consumption – this can be thought of as a function of household structure as a factor that exacerbates the impact of labor market developments (among other factors, due to the positive correlation in income shocks within the household). To understand more this phenomenon, we look at different groups of individuals – based on their gender, age and education.

Along the gender dimension, the difference for both males and females between the two counterfactual exercises (see blue and red bars in Panel 2 of Chart 6) is substantial (5pp versus 1.6pp for males and 5.9pp versus 3.2pp for females). In other words, the exercise based on individual hours generates much less variation of consumption for both genders but the increase in consumption predicted by individual hours only is higher for females

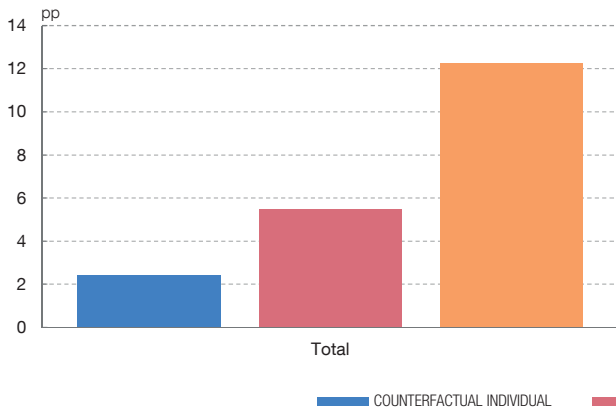
³³ In particular, in case of couples co-habiting together, the counterfactual exercise takes into account changes in hours for the partner, in case of single individuals – his or her hours only, and in case of single individuals living with – changes in hours of the parents.

Chart 6

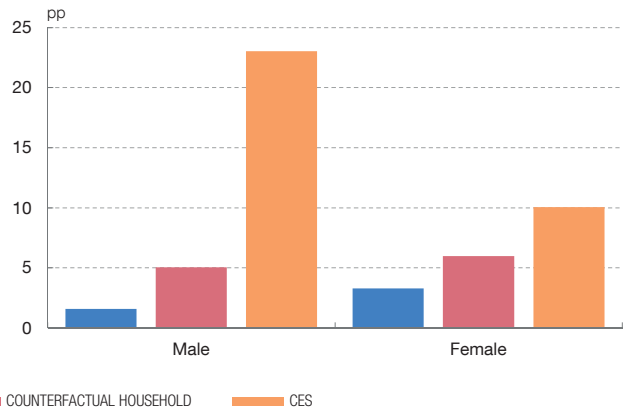
DISTRIBUTION OF ACTUAL CONSUMPTION GROWTH VS COUNTERFACTUAL 2017 EXPENDITURE WITH 2020 HOURS OF WORK - HOUSEHOLD VS INDIVIDUAL

Members of the same household were affected by the same labor market developments between 2020Q2 and 2020Q3. When household expenditure is predicted by each member's hours of work separately, only 2pp of the 12pp increase in per capita expenditure between 2020Q2 and 2020Q3 can be explained. However, taking into account that the labor market status of other members 5.5pp of the 12pp increase can be explained by the behavior of hours.

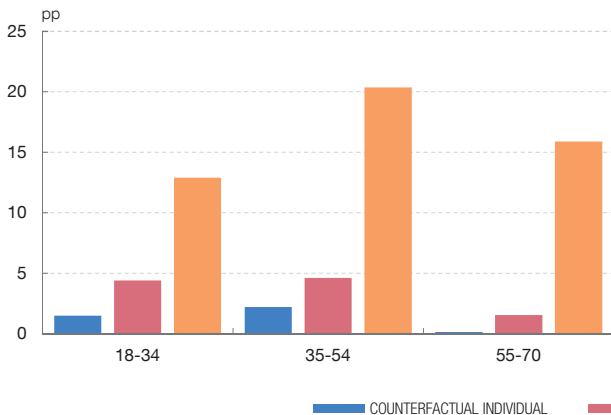
1 CES VS COUNTERFACTUAL CONSUMPTION



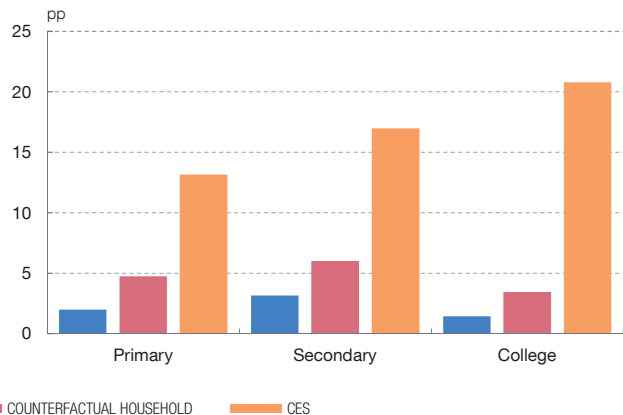
2 COUNTERFACTUAL CONSUMPTION CHANGE BY GENDER BETWEEN Q2 AND Q3 OF 2020



3 COUNTERFACTUAL CONSUMPTION CHANGE BY AGE BETWEEN Q2 AND Q3 OF 2020



4 COUNTERFACTUAL CONSUMPTION CHANGE BY EDUCATION BETWEEN Q2 AND Q3 OF 2020



SOURCES: Banco de España, combining information of the Spanish Survey of Household Finances (EFF 2017), Encuesta de Población Activa (EPA, 2020) and the ECB-CES.

(almost the double). What could be the driver behind these differences? Since males are more likely to be married to females (who are overrepresented in the social industries and who were affected relatively more), larger fluctuations of hours of the partner would have even larger effects on the consumption. Furthermore, it is worth noting that changes in females' hours already account for 3,26pp of their 5,95 consumption increase between 2020q2 and 2020q3. Conversely, for males, their own changes in hours predicts only 1,2pp of their 5pp consumption increase. Those responses would be missing in an analysis that ignores the labor market situation of other household members.

Results are similar looking at the consumption changes along the age dimension – see Chart 6, Panel 3. Not taking household structure into account, the consumption growth of individuals aged 18-34 decreases from 4.3pp to 1.4pp, decreasing the predictive power of the counterfactual exercise for this group from 34% to around 13%. Similarly, for individuals aged 35-54, consumption growth decreases from 4.5pp to 2.1pp (the predicted share of consumption growth falls from 22% to 10% for this group). For the oldest group in the sample (those aged 55-70), the consumption growth decreases from 1.5pp to around 0.1pp (predict around 1% of consumption changes for this group, compared to 10% when the situation of other household members can be taken into consideration). Individuals aged 18-34 were affected the most by changes in hours worked (see Panel 3 in Chart 4), and since they are most likely to co-habit with other household members of similar age (for example, their partner), effect of hours worked of household as a whole will be even more severe. Similarly, the same intuition applies to individuals aged 35-54, while not as severe (as the evidence on hours worked for this group suggests – see Panel 3 in Chart 4). Overall, the results in Chart 6, Panel 3 indicate that older households tend to be better insured against movements in hours worked – there is very little negative effect of other members' hours worked for this group.

Finally, not taking the labor market situation of other members into account substantially decreases predicted consumption growth for all education groups (from 4.7pp to 2pp for individuals with primary education, from 6pp to 3.1pp for individuals with secondary education, and from 3.4pp to 1.4pp for the individuals with college education) – see Chart 6, Panel 4. As a result, the share of consumption predicted by hours for individuals with primary education falls from a third of the observed growth to around 15%, for secondary education to almost 20%, and for college education from 15% to around 7%.

These results indicate the role of assortative mating for individuals with secondary education and below. Indeed, among couples, around 68% of individuals with primary education have a partner also with primary education. Similarly, 36% of individuals with secondary education have a partner with secondary education (only 32% have partner with upper secondary education). Since the sharp changes in hours worked affected relatively more individuals with primary and secondary education, having someone else in the household affected in an equally bad way exacerbates consumption responses. As a result, according to the results in Chart 6, households have had a limited ability to insure their members from the labor dynamics observed during the pandemic.

7 Expected consumption and implications for build-up savings

Results in section 3 suggest that the large swings in consumption observed in 2020 have reflected to a significant extent the impossibility to consume because of social distancing measures. Likewise, the fact that a substantial part of consumption swings is not explained by the hours worked (see sections 4 and 5) may indicate the predominant role of either precautionary saving – or a fall in consumption because of the unmaterialized fear of job losses – or (as seems to be suggested by the strong link found between consumption trends and income levels) restricted expenditure. In both cases, the household may have resources to dedicate to future expenses, either when the risk disappears (in the first case) or when social distancing is relaxed (in the second) – see Banco de España, 2021.

The results in Section 3 suggest that higher income groups have been those accumulating higher savings during the pandemic. Furthermore, the analysis in sections 5 and 6 suggest that the consumption of groups with higher education levels or with ages 55-70 was less explained by the fluctuations in the number of hours worked, indicating that those groups were less affected by changes in hours worked and possibly more able to save during the pandemic. Although accumulated savings during the pandemic by those typically high income groups could potentially help to boost consumption recovery once uncertainty dissipates, they typically show lower marginal propensity to consume (and hence are likely to be less prone to translate accumulated forced savings into future consumption). In this context, in this section information in the CES on household consumption expectations is exploited, in order to better assess consumption prospects. For this purpose, an index on consumption expectations over the next 12 months is constructed (in the same way as that constructed for recent consumption developments, and explained in Section 2) and an ordered probit model is estimated for household consumption expectations (similar to that presented in section 3 for annual consumption growth over the last year).³⁴ In the specification, the same regressors as those used to explain current consumption change are considered, adding the index on recent consumption as an additional covariate.

The results are shown in the third column of Table 1 and in Chart 7. The third column of Table 1 shows the estimated coefficients for the ordered probit, and the associated standard errors. Chart 7 depicts the marginal impact of those predictors showing the largest marginal impact on the probability that respondent anticipates a household consumption increase in the next 12 months, evaluated at the mean value of the rest of predictors.

The results allow to extract several conclusions. First, results in column 3 of Table 1 suggest that the translation into future consumption of the sizeable reservoir of forced

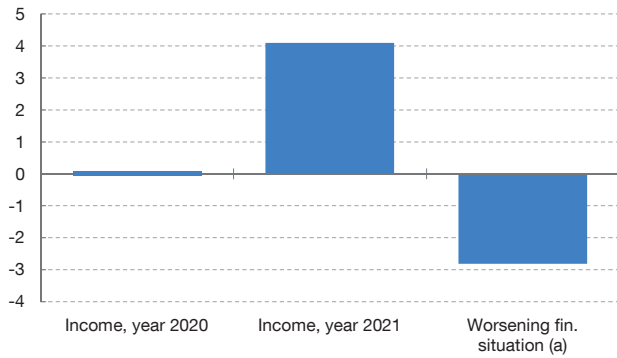
³⁴ The question on consumption expectations is formulated as follows: “During the next 12 months, how do you expect your household spending on all goods and services to compare with your spending in the past 12 months?”, with 5 possible answers: My household spending will increase a lot, My household spending will decrease a lot, My household spending will increase a little, My household spending will decrease a little, My household spending will remain exactly the same (that is 0% change).

Chart 7

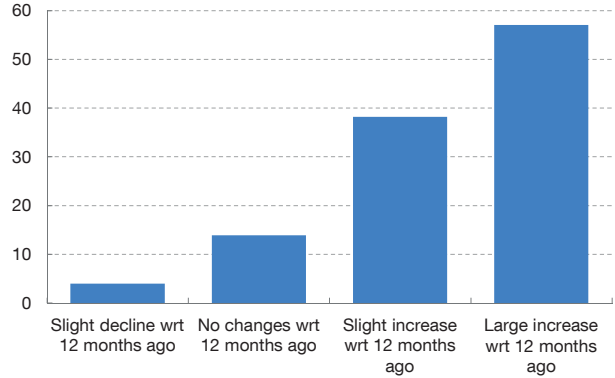
IMPACT OF SEVERAL HOUSEHOLD AND INDIVIDUAL CHARACTERISTICS ON THE PROBABILITY OF REPORTING AN EXPECTED INCREASE IN CONSUMPTION IN THE NEXT 12 MONTHS

The decline in the number of hours worked not only affects contemporaneous expenditure, but also has more persistent elements. Individuals who lost their jobs as a consequence of the pandemic show a 7pp lower probability of expecting an increase in future consumption in comparison to those workers not affected by the deterioration in the labour market.

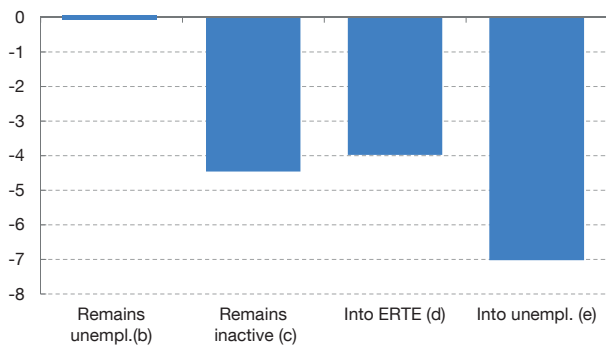
1 MARGINAL IMPACT OF CHANGES IN INCOME AND IN HOUSEHOLD FINANCIAL POSITION ON THE PROBABILITY OF EXPECTING A CONSUMPTION INCREASE



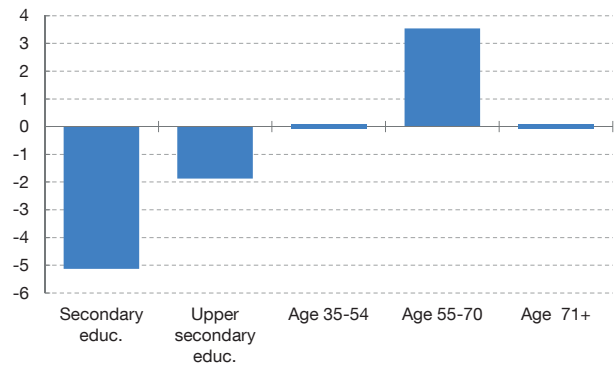
2 MARGINAL IMPACT OF CHANGES IN AGE GROUP ON THE PROBABILITY OF EXPECTING A CONSUMPTION INCREASE. REFERENCE GROUP: INDIVIDUALS THAT REPORT A LARGE DECLINE IN RECENT HOUSEHOLD CONSUMPTION



3 MARGINAL IMPACT OF CHANGES IN EMPLOYMENT SITUATION ON THE PROBABILITY OF EXPECTING A CONSUMPTION INCREASE. REFERENCE GROUP: FULL-TIME WORKERS



4 MARGINAL IMPACT OF CHANGES IN AGE AND EDUCATION OF THE RESPONDENT ON THE PROBABILITY OF EXPECTING A CONSUMPTION INCREASE. REFERENCE GROUP: AGE<35 AND PRIMARY EDUCATION



SOURCE: Survey on Consumer Expectations and own calculations. See also Table 1.

- a Individuals that belong to a household whose financial situation has deteriorated with respect to 12 months ago. Reference group: households whose financial situation has not deteriorated.
- b Individuals that are unemployed and the number of hours they work has not been negatively affected by the pandemic.
- c Individuals that did not work before the pandemic but do not want to work (retired individuals, students, people taking care of children, etc).
- d Includes workers underfurlough schemes.

savings accumulated during the pandemic³⁵ could be limited: when analyzing the whole sample period, no link between consumption expectations and income is found (see Table 1), despite the strong negative link found in section 3 between recent consumption changes and income. This result, that also holds when the other covariates are excluded

35 In 2020, Spanish household saving was almost 6 pp of GDP higher than the average for the previous five years (see Banco de España, 2021 and Cuenca et al, 2020).

from the estimation, could suggest that the translation of accumulated savings into future consumption might be weak. However, when allowing a different coefficient for income in year 2020 and 2021 (see column 4 in Table 1), the results indicate that although higher income groups did not have higher consumption growth expectations along year 2020, a positive link between both variables emerges for year 2021 (and, again, this result also holds when the other covariates are excluded from the estimation). This suggests that, once overcome the pandemic phase of higher uncertainty, individuals that have saved more (those with higher incomes) are also those showing better consumption prospects. Second, high uncertainty about labor market prospects can still weigh on consumption, even if restrictions are progressively lifted. As can be seen, individuals affected by a decline in the number of hours worked as a consequence of the pandemic (and particularly those that lost their jobs) show not only worse recent consumption developments (see Section 3) but also much worse consumption expectations than those that were not affected by the deterioration of the job market. Indeed, as can be seen in Table 1 and in panel 3 of Chart 7, individuals running into unemployment as a result of the pandemic are those that show worse consumption prospects. As can be seen in Chart 7, they show a probability of anticipating an increase in consumption 7 pp below than workers whose number of working hours is not below pre-pandemic levels. Also individuals under ERTes (as well as those who are inactive) show worse consumption prospects than workers that have not been negatively affected by the pandemic. These more negative consumption expectations for workers affected by the pandemic in their labor status are likely to be linked to their more pessimistic prospects on their labor situation. The CES includes a question that allows to analyze this issue. More specifically, individuals are asked whether, in the next 3 months, they expect that concerns about the coronavirus will affect their behavior in terms of the number of hours they work per week.

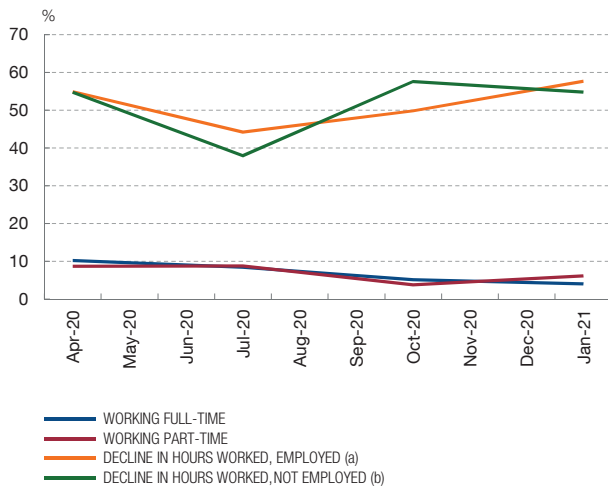
Indeed, although the share of workers affected by a decline in the number of hours worked has declined substantially from the peak observed in April-May 2020, at each point in time a large share of for those under this situation (progressively less frequent) anticipates that the pandemic would remain having a negative impact on the number of hours they worked months after being interviewed (see Chart 8). Hence, uncertainty about labor market prospects might hold precautionary savings at high levels for those workers who have not yet returned to their pre-pandemic labor situation-until they re-start in their previous job positions (or new ones), weighing on consumption developments. This could be the case specially for lower income groups, women and the younger population, which are those who have been more affected by the deterioration in the labor market driven by the health crisis, and which are also those showing more pessimistic perspectives about their job situation in relation to the pandemic (see Chart 8). In any case, the share of individuals showing negative perspectives about their job situation as a result of the pandemic has declined substantially since the start of the pandemic across population groups (see Chart 8), in line with the improvements observed in the labor market with respect to those periods in which lockdown measures were more stringent. Hence, this factor is likely to have weighted progressively less on aggregate consumption prospects.

Chart 8

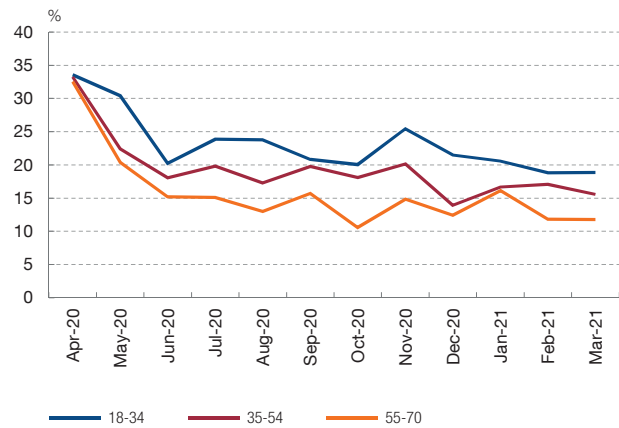
SHARE OF INDIVIDUALS THAT EXPECT A A NEGATIVE IMPACT OF THE PANDEMIC ON THE NUMBER OF HOURS WORKED IN THE NEXT THREE MONTHS. BREAKDOWN BY RESPONDENT AND HOUSEHOLD SOCIOECONOMIC CHARACTERISTICS

The expectations about future labour market developments were worse amongst workers most affected by the pandemic. Individuals between 18-34, whose hours worked fell most at the beginning of the lockdown, were more likely to expect a negative impact of the pandemic on the number of hours they work in the next three months, also at the end of the sample period. A similar pattern is observed for females and workers whose number of working hours has declined.

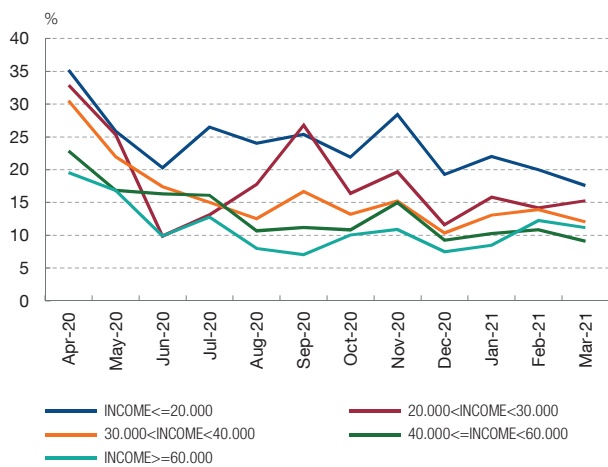
1 SHARE OF INDIVIDUALS THAT EXPECT A A NEGATIVE IMPACT OF THE PANDEMIC ON THE NUMBER OF HOURS WORKED IN THE NEXT THREE MONTHS. BREAKDOWN BY EMPLOYMENT STATUS



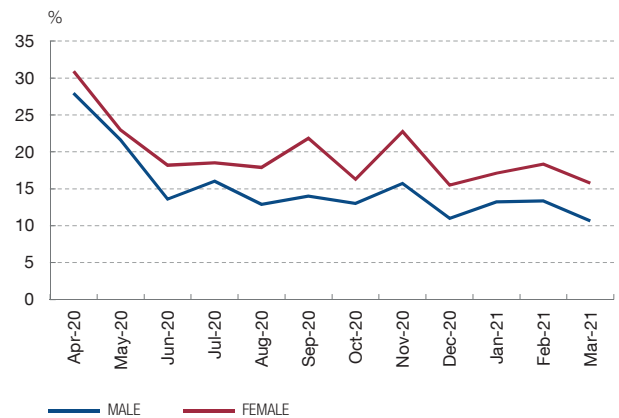
2 SHARE OF INDIVIDUALS THAT EXPECT A A NEGATIVE IMPACT OF THE PANDEMIC ON THE NUMBER OF HOURS WORKED IN THE NEXT THREE MONTHS. BREAKDOWN BY AGE



3 SHARE OF INDIVIDUALS THAT EXPECT A A NEGATIVE IMPACT OF THE PANDEMIC ON THE NUMBER OF HOURS WORKED IN THE NEXT THREE MONTHS. BREAKDOWN BY INCOME



4 SHARE OF INDIVIDUALS THAT EXPECT A A NEGATIVE IMPACT OF THE PANDEMIC ON THE NUMBER OF HOURS WORKED IN THE NEXT THREE MONTHS. BREAKDOWN BY GENDER



SOURCES: ECB-CES and own calculations.

a Includes workers underfurlough schemes.

b Mainly includes workers that turn into an unemployment situation, but also those that become inactive.

Our results also reflect that households whose financial situation has deteriorated show somewhat worse consumption perspectives, and that, after controlling for the rest of determinants, those reporting higher dynamism in recent consumption are also those showing more optimistic perspectives about their future spending trends. In particular, evaluated at the mean value for the rest of regressors, the probability of expecting a consumption increase

is 2,8 pp lower for those who report a recent deterioration in household financial position with respect to households whose financial position remained unchanged or improved (see Panel 1 in Chart 7), while the probability of expecting a consumption increase is around 55 pp higher for individuals indicating that their recent consumption increased a lot than for those whose indicate that it decreased a lot (Panel 2 in Chart 7).

Finally, the analysis presented in section 5 signals the groups for whom consumption more closely tracks income – that, under our interpretation, have limited capacity to build up saving. Namely, for groups below 55 years of age, with less than college education, changes in hours explain between 30% and 50% of their consumption changes in 2020. The build-up of saving would be more important among individuals with a college degree or with more than 55 years (and below 70) of age³⁶ The results of the probit model seem to point towards more positive expectations of household consumption in the group of individuals between 55 and 70 years old, but, instead, those with higher education do not show better consumption prospects.

³⁶ This pattern would be different from that observed during the previous recession (2008-2012) and the early stages of the subsequent recovery. As Anghel et al show, between 2007 and 2013, the group with tertiary education contributed in a similar share to the increase in aggregate savings than the group with the lowest educational attainment level, and by year of birth, the group aged under 45 in 2007 made the largest contribution to the increase in the saving rate during the downturn.

8 Conclusion

This paper analyzes consumption trends in Spain during the pandemic and assesses the role that various factors have had in explaining these spending developments. For this purpose, using both quantitative and qualitative data on consumption included in the Consumer Survey Expectations (CES) carried out by the European Central Bank and combining it with information on hours, industry, gender and age in the Spanish Labor Force Survey and consumption in the Spanish Survey of Household Finances (EFF) this study analyzes consumption determinants and simulates the potential change in expenditure associated with the change of hours worked for different population groups.

The results point towards both unsatisfied consumption (due to existing restrictions on consumption) and precautionary reasons (linked to the deterioration in the labor market and, specifically, the decline in the number of hours worked) being drivers of the consumption drop during the pandemic. The counterfactual exercise shows that changes in the number of hours worked, on average, can predict around 45% of changes in consumption observed in the 3rd quarter of 2020 (when most of the recovery in consumption took place, after the unprecedented drop that took place in the previous months, during the strict lockdown period). This study also shows that the link between consumption and hours is stronger for particular groups of individuals, in particular groups below 55 years of age, women and those with less than college education. Indeed, for individuals between 55 and 70 years of age or college changes in hours worked account for between 1pp and 3pp increase in consumption, while for the rest of the groups, hours explain 5pp or more. This paper also analyzes the role of household insurance in mitigating or exacerbating consumption changes. Our results show that taking into account hours worked by other household members increases the predictability of the counterfactuals exercise from 20% to almost 45%. In that sense, the results suggest that most household members have been exposed to similar shocks in the number of hours worked, and that households as such have provided little insurance.

The results based on the analysis of qualitative data in the CES regarding expected consumption developments indicate that once the phase of higher uncertainty has been overcome, higher income households, which are those showing larger increase in recent savings, are those showing more dynamic consumption prospects. This suggests that there might be some translation of accumulated savings during the pandemic into future consumption. Moreover, individuals suffering a decline in hours worked as a result of the pandemic seem to be also pessimistic about their labor situation perspectives in the forthcoming months, affecting their consumption expectations. This suggests that the consolidation of the recovery of the labor market observed recently is likely to have a key role in future consumption developments.

References

- Adams-Prassl, A., T. Boneva, M. Golin and C. Rauh (2020). "Inequality in the impact of the Coronavirus shock: evidence from real time surveys", *Journal of Public Economics*, 189, 104245.
- Alvargonzález, P., M. Pidkuyko and E. Villanueva (2020). "The financial position of the workers most affected by the pandemic: an analysis drawing on the Spanish Survey of Household Finances", *Economic Bulletin*, 3/2020, Banco de España.
- Anghel, B., C. Barceló and E. Villanueva (2019). "The household saving rate in Spain between 2007 and 2016: decomposition by population group and possible determinants", *Economic Bulletin*, 4/2019, Banco de España.
- Aspachs, O., R. Durante, A. Graziano, J. Mestres, M. Reynal-Querol and J. G. Montalvo (2021). "Tracking the Impact of COVID-19 on Economic Inequality at High Frequency", PLOS_ONE.
- Banco de España (2021). *Annual Report 2020*.
- Bounie, D., Y. Camara, E. Fize, J. Galbraith, C. Landais, C. Lavest, T. Pazem and B. Savatier (2020). "Consumption dynamics in the COVID crisis: Real-time insights from French transaction and bank data", *Covid Economics*, 59, pp. 1-39.
- Carvalho, V., S. Hansen, A. Ortiz, J. Ramón García, T. Rodrigo, S. Rodríguez Mora and J. Ruiz (2020). *Tracking the COVID-19 Crisis with High-Resolution Transaction Data*, London, Centre for Economic Policy Research.
- Chetty, R., J. Friedman, N. Hendren, M. Stepner and the Opportunity Insights Team (2020). *The Economic Impacts of COVID-19: Evidence from a New Public Database Built Using Private Sector Data*, NBER, Working Paper No. 27431.
- Christelis, D., D. Georgarakos, J. Jappelli and G. Kenny (2020). *The COVID-19 crisis and consumption: survey evidence from six EU countries*, European Central Bank, Working Paper No. 2507.
- Crossley, T., P. Fisher and H. Low (2021). "The heterogeneous and regressive consequences of COVID-19: Evidence from High Quality Panel Data", *Journal of Public Economics*, Vol. 193, January.
- Cuenca, J. A., C. Martínez-Carrascal and A. del Río (2021). 'Household saving during the pandemic and its possible effects on the future recovery in consumption', Box 4, "Quarterly report on the Spanish economy", *Economic Bulletin*, 1/2021, Banco de España.
- DiNardo, J., N. Fortin and T. Lemieux (1996). "Labor Market Institutions and the Distribution of Wages, 1973-1992: A Semiparametric Approach", *Econometrica*, Vol. 65, No. 5, pp. 1001-1044.
- Gambacorta, R., M. Lo Conte, M. Murgia, A. Neri, R. Rizzi and F. Zanichelli (2018). "L'uso di internet nelle indagini sulle condizioni economiche delle famiglie: futuro prossimo o remoto?", Manuscript, Banca d'Italia.
- Golec, P., G. Kapetanios, N. Neuteboom, F. Ritsema and A. Ventouri (2020). "Disentangling the effect of government restrictions and consumers' reaction function to the COVID-19 pandemic: Evidence from geo-located transactions data for the Netherlands", *Covid Economics*, 56, pp. 60-105.
- Izquierdo, M., S. Puente and A. Regil (2021). "Furlough schemes in the COVID-19 crisis: an initial analysis of furloughed employees resuming work", Analytical Articles, *Economic Bulletin*, 2/2021, Banco de España.
- Kaplan, G., B. Moll and G. Violante (2020). *The Great Lockdown and the big stimulus: tracing the pandemic possibility frontier for the US*. Becker Friedman Institute, Working paper, September.
- Lekfuangfu, W. N., S. Piyapromdee, P. Porapakkarm and N. Wasi (2020). "On COVID-19: New Implications of Job Task Requirements and Spouse's Occupational Sorting", Mimeo, Universidad Carlos III.

Appendix 1 Reweighting the CES

The ECB-CES survey relies mostly on Web-based interviews and comprises two different samples. The first subsample (about 2/3 of the total) is a random sample obtained by drawing random telephone numbers from registers. The second subsample (1/3 of the total) comes from a convenience sample held by the interviewing company. In both subsamples, individuals are contacted by phone, and invited to conduct Web-based interviews without help from an interviewer. Recent studies have documented that such interview mode is most appropriate for particular groups of the population, such as those with high schooling levels.¹

To maximize the comparability across sources like the Employment Survey (EPA) or the EFF, only the probability sample is used in Chart 1 and sections 5 and 6. Table A1 shows

Table A1.1

SUMMARY STATISTICS IN ECB-CES (APRIL-JULY 2020) VS SPANISH EMPLOYMENT SURVEY (EPA: 2020Q2-EPA2020Q3)

	ECB-CES (a)	EPA (b)	ECB-CES (reweighted like EPA) (c)
Gender and age of respondent			
Male	0.496	0.485	0.485
Age between 18 and 35	0.230	0.222	0.226
Age between 55 and 70	0.230	0.241	0.242
Age above 70	0.121	0.143	0.140
Education			
College	0.514	0.320	0.329
Secondary schooling	0.163	0.222	0.227
Region			
South	0.251	0.260	0.248
West	0.267	0.292	0.294
Labor market situation			
Unemployed	0.080	0.087	0.083
Inactive	0.247	0.431	0.421
Household composition			
One member	0.105	0.127	0.120
Three members	0.229	0.251	0.259
Four Members	0.340	0.333	0.324
One member below 18	0.123	0.171	0.166
Two members below 18	0.072	0.109	0.111
Three members below 18	0.013	0.025	0.025
Number of observations	2,798	122,489	2,798

SOURCE: Banco de España using ECB Consumer Expectations Survey and Labor Force Survey (EPA)

- a** Probabilistic subsample of the ECB-CES, quarterly samples (April and July 2020). Statistics weighted using calibrated weights.
- b** Cross-sectional EPA, second and third quarter of 2020, weighted statistics.
- c** Probabilistic subsample of ECB-CES, reweighted to match the distribution of education, employment, region, household composition and gender in EPA.

¹ See Crossley et al (2020) or Gambacorta et al (2018) for evidence on the United Kingdom and Italy, respectively.

the distribution of selected variables in the ECB-CES (column 1) and in the Labor Force Survey (column 2). The distribution of age, gender and region is very similar in both sources – unsurprisingly, as ECB-CES weights are calibrated to match that distribution. However, individuals with a college degree are overrepresented in ECB-CES (50% of respondents have college, while only 32% in EPA do). Similarly, ECB-CES underrepresents inactive individuals (24% of ECB respondents vs 42% in EPA) and individuals living in households with dependents (20% vs 30% in EPA).

To mitigate non-participation biases, a reweighting scheme is applied to the ECB-CES data so that the marginal distribution of employment, education and other variables matches the one observed in EPA.² Once the reweighting is done, the distribution of those variables in ECB-CES and EPA becomes aligned.

² The reweighting is done by pooling observations from both sources and fitting a logit model that predicts that one observation belongs to ECB-CES on the basis of education, age, labor market status, region of residence and household composition, as well as interactions between age and education and age and labor market status.

Appendix 2 Counterfactuals using EPA and EFF

The distribution of expenditure in the EFF as a function of the hours worked by each household member can be expressed as follows:

$$E(C_{2017}^{EFF} | \text{hours}_{2017}^{EFF}) = \sum_{i=1}^{i=N} E \left[C_i^{EFF} | \text{hours}_i = h \right] * P(\text{hours}_{2017}^{EFF} = h) * \pi_i$$

Where C_i^{EFF} is household expenditure in the EFF divided by the number of members, $\text{hours}_{2017}^{EFF}$ is the hours of work of the individual, $P()$ is an indicator function of the number of individuals working h hours and π_i is the sampling weight.

The relevant counterfactual is what would be the observed level of consumption in the EFF if the distribution of hours were that of the EPA in 2020. To achieve that counterfactual, we would want to estimate the previous expression as follows

$$E(C_{2017}^{EFF} | \text{hours}_{2020}^{EPA}) = \sum_{i=1}^{i=N} E \left[C_i^{EFF} | \text{hours}_i = h \right] * P(\text{hours}_{2020}^{EPA} = h) * \pi_i$$

The counterfactual is constructed by modifying the first expression by adding the following weights

$$\begin{aligned} E(C_{2017}^{EFF} | \text{hours}_{2020}^{EPA}) &= \sum_{i=1}^{i=N} E \left[C_i^{EFF} | \text{hours}_i = h \right] * \frac{P(\text{hours}_{2020}^{EPA} = h)}{P(\text{hours}_{2017}^{EFF} = h)} * P(\text{hours}_{2017}^{EFF} = h) \pi_i \\ &= \sum_{i=1}^{i=N} E \left[C_i^{EFF} | \text{hours}_i = h \right] * w_i * P(\text{hours}_{2017}^{EFF} = h) \pi_i \end{aligned}$$

Where the weight w_i is constructed separately for each EFF 2017 implicate by means of a Logit Model run on a sample that pools each implicate of the EFF 2017 and EPA. The independent variables in the Logit are the number of hours of work in the week of the survey, a separate intercept for inactive (for whom hours are zero), another for long-term unemployed (hours are zero as well), an additional one for unemployed for less than a year (hours are zero) and interactions between the number of hours worked and whether self-employed or employee as well as the main intercepts. Note that all categories are comparable between EFF 2017 and EPA 2020, once we make the assumption that furloughed workers and the unemployed for less than a year in EPA are equivalent to individuals with less than one year of unemployment in EFF 2017.

For specifications with two household members are considered, we augment the number of covariates with the hours and labor market situation of the second member.

BANCO DE ESPAÑA PUBLICATIONS

OCCASIONAL PAPERS

- 2030 ÁNGEL GÓMEZ-CARREÑO GARCÍA-MORENO: Juan Sebastián Elcano – 500 años de la Primera vuelta al mundo en los billetes del Banco de España. Historia y tecnología del billete.
- 2031 OLYMPIA BOVER, NATALIA FABRA, SANDRA GARCÍA-URIBE, AITOR LACUESTA and ROBERTO RAMOS: Firms and households during the pandemic: what do we learn from their electricity consumption?
- 2032 JÚLIA BRUNET, LUCÍA CUADRO-SÁEZ and JAVIER J. PÉREZ: Contingency public funds for emergencies: the lessons from the international experience. (There is a Spanish version of this edition with the same number).
- 2033 CRISTINA BARCELÓ, LAURA CRESPO, SANDRA GARCÍA-URIBE, CARLOS GENTO, MARINA GÓMEZ and ALICIA DE QUINTO: The Spanish Survey of Household Finances (EFF): description and methods of the 2017 wave.
- 2101 LUNA AZAHARA ROMO GONZÁLEZ: Una taxonomía de actividades sostenibles para Europa.
- 2102 FRUCTUOSO BORRALLO, SUSANA PÁRRAGA-RODRÍGUEZ and JAVIER J. PÉREZ: Taxation challenges of population ageing: comparative evidence from the European Union, the United States and Japan. (There is a Spanish version of this edition with the same number).
- 2103 LUIS J. ÁLVAREZ, M.ª DOLORES GADEA and ANA GÓMEZ LOSCOS: Cyclical patterns of the Spanish economy in Europe. (There is a Spanish version of this edition with the same number).
- 2104 PABLO HERNÁNDEZ DE COS: Draft State Budget for 2021. Testimony before the Parliamentary Budget Committee, 4 November 2020. (There is a Spanish version of this edition with the same number).
- 2105 PABLO HERNÁNDEZ DE COS: The independence of economic authorities and supervisors. The case of the Banco de España. Testimony by the Governor of the Banco de España before the Audit Committee on Democratic Quality / Congress of Deputies, 22 December 2020. (There is a Spanish version of this edition with the same number).
- 2106 PABLO HERNÁNDEZ DE COS: The Spanish pension system: an update in the wake of the pandemic. Banco de España contribution to the Committee on the Monitoring and Assessment of the Toledo Pact Agreements. 2 September 2020. (There is a Spanish version of this edition with the same number).
- 2107 EDUARDO BANDRÉS, MARÍA-DOLORES GADEA and ANA GÓMEZ-LOSCOS: Dating and synchronisation of regional business cycles in Spain. (There is a Spanish version of this edition with the same number).
- 2108 PABLO BURRIEL, VÍCTOR GONZÁLEZ-DÍEZ, JORGE MARTÍNEZ-PAGÉS and ENRIQUE MORAL-BENITO: Real-time analysis of the revisions to the structural position of public finances.
- 2109 CORINNA GHIRELLI, MARÍA GIL, SAMUEL HURTADO and ALBERTO URTASUN: The relationship between pandemic containment measures, mobility and economic activity. (There is a Spanish version of this edition with the same number).
- 2110 DMITRY KHAMETSHIN: High-yield bond markets during the COVID-19 crisis: the role of monetary policy.
- 2111 IRMA ALONSO and LUIS MOLINA: A GPS navigator to monitor risks in emerging economies: the vulnerability dashboard.
- 2112 JOSÉ MANUEL CARBÓ and ESTHER DIEZ GARCÍA: El interés por la innovación financiera en España. Un análisis con Google Trends.
- 2113 CRISTINA BARCELÓ, MARIO IZQUIERDO, AITOR LACUESTA, SERGIO PUENTE, ANA REGIL and ERNESTO VILLANUEVA: Los efectos del salario mínimo interprofesional en el empleo: nueva evidencia para España.
- 2114 ERIK ANDRES-ESCAJOLA, JUAN CARLOS BERGANZA, RODOLFO CAMPOS and LUIS MOLINA: A BVAR toolkit to assess macrofinancial risks in Brazil and Mexico.
- 2115 ÁNGEL LUIS GÓMEZ and ANA DEL RÍO: The uneven impact of the health crisis on the euro area economies in 2020. (There is a Spanish version of this edition with the same number).
- 2116 FRUCTUOSO BORRALLO EGEA and PEDRO DEL RÍO LÓPEZ: Monetary policy strategy and inflation in Japan. (There is a Spanish version of this edition with the same number).
- 2117 MARÍA J. NIETO and DALVINDER SINGH: Incentive compatible relationship between the ERM II and close cooperation in the Banking Union: the cases of Bulgaria and Croatia.
- 2118 DANIEL ALONSO, ALEJANDRO BUESA, CARLOS MORENO, SUSANA PÁRRAGA and FRANCESCA VIANI: Fiscal policy measures adopted since the second wave of the health crisis: the euro area, the United States and the United Kingdom. (There is a Spanish version of this edition with the same number).
- 2119 ROBERTO BLANCO, SERGIO MAYORDOMO, ÁLVARO MENÉNDEZ and MARISTELA MULINO: Impact of the COVID-19 crisis on Spanish firms' financial vulnerability. (There is a Spanish version of this edition with the same number).
- 2120 MATÍAS PACCE, ISABEL SÁNCHEZ and MARTA SUÁREZ-VARELA: Recent developments in Spanish retail electricity prices: the role played by the cost of CO₂ emission allowances and higher gas prices. (There is a Spanish version of this edition with the same number).

- 2121 MARIO ALLOZA, JAVIER ANDRÉS, PABLO BURRIEL, IVÁN KATARYNIUK, JAVIER J. PÉREZ and JUAN LUIS VEGA: The reform of the European Union's fiscal governance framework in a new macroeconomic environment. (There is a Spanish version of this edition with the same number).
- 2122 MARIO ALLOZA, VÍCTOR GONZÁLEZ-DÍEZ, ENRIQUE MORAL-BENITO and PATROCINIO TELLO-CASAS: Access to services in rural Spain. (There is a Spanish version of this edition with the same number).
- 2123 CARLOS GONZÁLEZ PEDRAZ and ADRIAN VAN RIXTEL: The role of derivatives in market strains during the COVID-19 crisis. (There is a Spanish version of this edition with the same number).
- 2124 IVÁN KATARYNIUK, JAVIER PÉREZ and FRANCESCA VIANI: (De-)Globalisation of trade and regionalisation: a survey of the facts and arguments.
- 2125 BANCO DE ESPAÑA STRATEGIC PLAN 2024: RISK IDENTIFICATION FOR THE FINANCIAL AND MACROECONOMIC STABILITY: How do central banks identify risks? A survey of indicators.
- 2126 CLARA I. GONZÁLEZ and SOLEDAD NÚÑEZ: Markets, financial institutions and central banks in the face of climate change: challenges and opportunities.
- 2127 ISABEL GARRIDO: The International Monetary Fund's view of social equity throughout its 75 years of existence. (There is a Spanish version of this edition with the same number).
- 2128 JORGE ESCOLAR and JOSÉ RAMÓN YRIBARREN: European Central Bank and Banco de España measures against the effects of COVID-19 on the monetary policy collateral framework, and their impact on Spanish counterparties. (There is a Spanish version of this edition with the same number).
- 2129 BRINDUSA ANGHEL, AITOR LACUESTA and FEDERICO TAGLIATI: 2021 Survey of Small Enterprises' Financial Literacy: Main Results. (There is a Spanish version of this edition with the same number).
- 2130 PABLO HERNÁNDEZ DE COS: Testimony before the Congress of Deputies Budget Committee on 25 October 2021 and before the Senate Budget Committee on 30 November 2021 in relation to the Draft State Budget for 2022. (There is a Spanish version of this edition with the same number).
- 2131 LAURA AURIA, MARKUS BINGMER, CARLOS MATEO CAICEDO GRACIANO, CLÉMENCE CHARAVEL, SERGIO GAVILÁ, ALESSANDRA IANNAMORELLI, AVIRAM LEVY, ALFREDO MALDONADO, FLORIAN RESCH, ANNA MARIA ROSSI and STEPHAN SAUER: Overview of central banks' in-house credit assessment systems in the euro area.
- 2132 JORGE E. GALÁN: CREWS: a CAMELS-based early warning system of systemic risk in the banking sector.
- 2133 ALEJANDRO FERNÁNDEZ CEREZO and JOSÉ MANUEL MONTERO: A sectoral analysis of the future challenges facing the spanish economy. (There is a Spanish version of this edition with the same number).
- 2201 MANUEL A. PÉREZ ÁLVAREZ: New allocation of special drawing rights. (There is a Spanish version of this edition with the same number).
- 2202 PILUCA ALVARGONZÁLEZ, MARINA GÓMEZ, CARMEN MARTÍNEZ-CARRASCAL, MYROSLAV PIDKUYKO and ERNESTO VILLANUEVA: Analysis of labor flows and consumption in Spain during COVID-19.