Macro and Micro Consumption Drivers in the Wake of the COVID-19 Pandemic*

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In this paper, we investigate the drivers of household consumption in the wake of the COVID-19 pandemic, focusing on Italy. We combine a macro and a micro approach and find that the deterioration in economic conditions can only explain about half of the slump in consumption, both at the aggregate and at the individual level; increased income and health risks significantly affect spending decisions, with heterogeneous impacts across expenditure categories and household types. At the micro level, the unemployed reduce spending for economic reasons, while the self-employed are mainly discouraged by health risks and uncertainty; restrictive measures play a minor role.

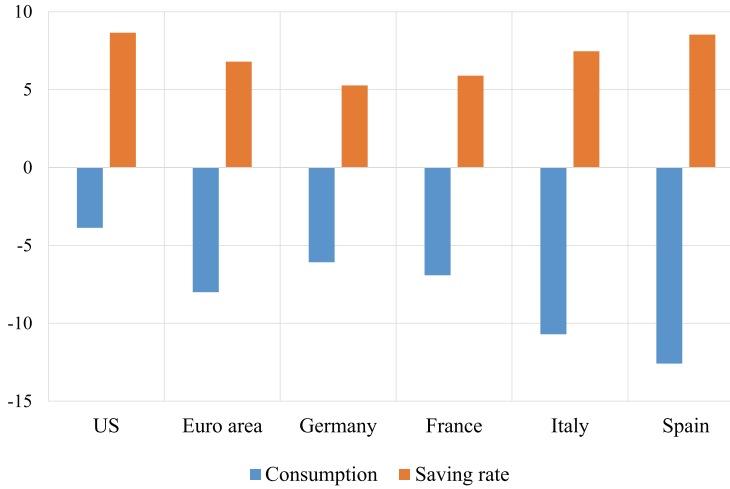
JEL Codes: D14, D15, E21.

1. Introduction

Following the outbreak of COVID-19, Italian private consumption fell dramatically (by about 10 percent), but the contraction in disposable income, which was sustained by the stimulus package implemented by the government since the outbreak of the pandemic, was somewhat smaller (about 3 percent). The saving rate then spiked and touched historically high levels, going above 20 percent in spring 2020. The spectacular increase in saving during the COVID-19 crisis was rather unusual, and seemed to contradict standard economic

*The views expressed herein do not reflect those of the Bank of Italy. We would like to thank, for their useful comments and suggestions, Francesco D'Acunto, Giuseppe Fiori, Luigi Guiso, Steffi Huber, Tullio Jappelli, Stefano Neri, Michaela Pagel, Daniele Terlizzese, and Michael Weber. Corresponding author: Concetta Rondinelli, concetta.rondinelli@bancaditalia.it. Bank of Italy, Economic Outlook and Monetary Policy Directorate, via Nazionale 91, Roma, 00184, Italy.

Figure 1. Changes in Household Consumption and Saving Rate between 2019 and 2020



Source: Federal Reserve Economic Data (FRED) database and Eurostat.
Note: Consumption is the percentage difference between the final consumption expenditure of households from the annual national accounts in 2019 and 2020. Saving is the change in the gross household saving rate from quarterly sectoral accounts between 2019 and 2020.

models that suggest that income falls more than consumption during recessions, as households attempt to smooth at least part of the negative shock, resulting in decreased saving rates (see Rodano and Rondinelli 2014 for the recent global financial crisis and sovereign debt crisis). Among the euro area countries, Italy, together with Spain, recorded the sharpest drop in consumption and the strongest increase in the saving rate (Figure 1); the unusual rise in saving affected the United States as well.

Given that the shock was exogenous, unexpected, and common to many countries, the recent health crisis is an ideal setting in which to study to what extent household spending is shaped by actual changes in economic fundamentals rather than by other, more subjective factors. During a health crisis the relevant household beliefs regarding consumption and saving choices include not only expectations about future income—most likely endogenous to the current economic

condition—but also other factors, such as the fear of infection and the desire to save more to face the considerable uncertainties about the evolution of the epidemic and its economic consequences. This makes pandemics different from standard recessions and likely to have more persistent macroeconomic effects (Jordà, Singh, and Taylor 2022), but it also provides useful variation in the motivations for cutting consumption that allows the role of subjective expectations for household spending to be identified.

In this paper, we investigate how economic conditions and other pandemic-related factors shaped consumption patterns in Italy during the COVID-19 pandemic, and we look into the contribution of these drivers across expenditure categories and household types. Several factors can be held responsible for these consumption and saving patterns. The first factor relates to the classical economic fundamentals: the fall in disposable income and the job losses may have induced households to cut spending; at the same time, the effect of economic hardship on savings is unclear, as liquidity constraints may have impaired the possibility of putting resources aside irrespective of the desire to save. Second, households might want to increase their saving buffer for precautionary reasons, because they were more uncertain about the evolution of their economic situation or because they perceived a higher health risk. Third, lockdown policies prevented some kinds of expenditure (restaurants and travel above all), generating forced savings. Fourth, the risk of infection may have discouraged households from consuming certain types of goods and services that require social contacts. All these factors likely played a role, albeit with different intensities for each spending category and for different types of households.

To tackle this issue, we combine a macro and a micro approach. On the macro side, we estimate a consumption equation à la Ando and Modigliani (1963) by regressing private consumption on its traditional determinants, such as income, wealth, interest rates, and expectations. We interpret the unexplained part of the consumption drop as being driven by pandemic-related factors not explicitly included in the regression, such as the fear of infection, lockdown policies, and increased uncertainty about the future. We find that standard economic factors can only explain about half of the slump in consumption, but the relative importance of each driver varies substantially across expenditure categories. As expected,

pandemic-related factors are more relevant for those items directly affected by lockdown policies and for which the perceived risk of infection is higher, such as restaurants, hotels, recreational activities, and clothing.

The macro approach allows us to distinguish the standard determinants of consumption relating to economic reasons, precautionary motives, and uncertainty, but it cannot single out the impact of the fear of infection and lockdown policies; by construction, these are included in the residual of the model. The pandemic event was a quite new type of recession in our sample, so time-series data do not provide us with sufficient variation to disentangle the impact of these specific factors. The macro framework therefore calls for an integration with micro data, which allows us to explore spending patterns by exploiting the cross-sectional variation. Hence we leverage data from the Bank of Italy's Special Survey of Italian Households (SSIH hereafter), which was launched after the onset of the COVID-19 pandemic. The survey contains questions on the respondent's financial situation, occupational status, saving possibilities, consumption choices, and expectations on future income changes and labor market prospects, which mimic the standard determinants of consumption used in the macro approach. Moreover, the survey asks questions about the changes in and motivations for spending behavior during the pandemic. Therefore, this unique data source allows us to build individual-level measures of the financial situation, uncertainty, and fear of infection, and to analyze their contribution to the expected evolution of consumption. Moreover, we capture the impact of containment measures by leveraging heterogeneous restrictions between Italian regions during the autumn of 2020.

To strengthen the link between the macro and micro approaches, the households interviewed in the SSIH were asked about spending on goods (non-durable, durable, and semi-durable) and services over the following three months. More precisely, the categories relating to food, clothing and footwear, home goods, and services in the SSIH were chosen to line up with those available at the aggregate level; this ensures comparability between the macro and micro approaches for the main outcome variable.

In line with the macro approach, the microeconometric evidence shows that the deterioration in economic conditions can only explain about half of the slump in consumption. Apart from economic

reasons, the fear of infection is the largest contributor to the probability of cutting spending in the following three months, followed by heightened uncertainty about the future due to economic and health concerns; once the previous factors have been controlled for, restrictive measures do not play a significant role. The micro approach can provide interesting insights into the importance of different pandemic drivers across households' characteristics, such as the occupational status and the expected possibility of saving: fears of infection and uncertainty account for a larger share of the drop in consumption for self-employed household heads; the fall in expenditure for unemployed household heads, instead, depends mostly on economic reasons. Moreover, uncertainty is a significant factor only for liquidity-constrained individuals, namely those who do not expect to be able to put resources aside in the following year.

The rest of the paper is organized as follows. Section 2 reviews the literature on consumption during the COVID-19 crisis and discusses the fiscal support Italian households received during the pandemic. In Section 3 we present the estimates of the aggregate consumption function by expenditure category. In Section 4 we describe the Bank of Italy's Special Survey of Italian Households and investigate the reasons for cutting spending using micro data. Section 5 concludes.

2. Consumption Patterns during the COVID-19 Pandemic

Our paper contributes to the long-standing research on consumption behavior, which acknowledges the important role of consumption risk and subjective expectations for explaining current spending decisions (Christelis et al. 2020b). In this paper, we exploit the unexpected and unprecedented nature of the COVID-19 crisis to quantify the importance of different factors in the response of consumption. Moreover, we can assess the relative importance of health and income risk by leveraging the individual-based measures constructed from the household survey.

We also provide novel evidence on consumption and saving patterns after the outbreak of COVID-19, which has been at the center stage of the academics' and policymakers' agenda since the burst of the pandemic. High-frequency bank and credit card transaction data show that households reacted to the spread of the virus with sizable

cuts in spending that were not evenly distributed across consumption categories (Andersen et al. 2020, Baker et al. 2020, Chetty et al. 2020, Cox et al. 2020). Furthermore, these cuts were much larger than those that could be explained by the job and income losses occurring at the same time and involved households across the whole income distribution (Chetty et al. 2020, Cox et al. 2020).[1] This evidence suggests that consumers' behavior during the pandemic was affected not only by economic factors but also by restrictive policies, infection concerns, and possibly by a precautionary attitude reinforced by the increase in both income and health risks. However, it is hard to discriminate between the latter factors: indeed, the extent to which spending on non-essential items was influenced by formal stay-at-home orders (lockdowns) is controversial (Andersen et al. 2020, Baker et al. 2020, Chetty et al. 2020, Alexander and Karger 2023). Using a different methodology applied to Italy, our work complements this evidence, highlighting the importance of the fear of contagion and precautionary motives for consumption choices, independently of government-mandated restrictions.

Finally, our work is closely connected to the literature that exploits household surveys carried out during the pandemic (Christelis et al. 2020a, Coibion, Gorodnichenko, and Weber 2020b, Coibion et al. 2021, Hodbod et al. 2021, Immordino et al. 2022). Based on the Consumer Expectations Survey (CES) conducted in the six largest euro area economies, Christelis et al. (2020a) find a strong effect of financial concerns due to COVID-19 on spending on non-durables, consistent with an important role of precautionary motives during the first peak of the pandemic and its immediate aftermath. Our results confirm and complement this evidence, as we highlight the importance of both economic reasons and idiosyncratic uncertainty for consumers' behavior. Our paper is close to that of Hodbod et al. (2021), who analyze the role of additional motivations for cutting consumption, such as the worries about the infection risk and permanent shifts in households' tastes. Like them,

[1] As pointed out by Cox et al. (2020), the spending drop in March 2020 is roughly eight times larger than the average household credit card spending drop in the first month of unemployment for unemployment insurance recipients in normal times, as estimated by Ganong and Noel (2019) on U.S. data.

we quantify the importance of different drivers for consumption patterns, but we also provide evidence of significant heterogeneity across household categories. Furthermore, our macro approach provides an estimate of the impact of pandemic-related factors on aggregate consumption and offers complementary evidence on their heterogeneous importance for different expenditure categories.

Household spending was deeply affected by the pandemic, despite the large-scale fiscal measures implemented by the governments around the world, such as direct payments to individuals in the form of stimulus checks (Coibion, Gorodnichenko, and Weber 2020a) or temporary cuts in consumption taxes (Bachmann et al. 2021). Moreover, central banks adopted large-scale unconventional measures, including large-scale asset purchase programs (D'Acunto et al. 2021). In Italy, public transfers to households rose by more than 10 percent in 2020, contributing to limiting the fall in household disposable income, which only contracted by 2.7 percent (against a GDP drop of 9 percent); the decrease in income from self-employment was more marked (more than 10 percent).

The SSIH provides additional granular information on the evolution of household income and fiscal support measures. One-third of households interviewed in November 2020 asserted that their income declined in 2020 compared with the previous year; this share rises to over half among households headed by a self-employed worker or by someone unemployed (Rondinelli and Zanichelli 2021a). The same data suggest that between March 2020 and April 2021 more than 40 percent of Italian households had access to at least one form of income support for workers (wage integration, benefits for the unemployed and self-employed or freelancers, and other bonuses) or for households (Reddito di cittadinanza, Reddito di emergenza, and baby-sitting vouchers); of these, about one-third stated that they benefited from two or more measures.[2] Moreover, other policies such as the extension of wage integration schemes (Cassa integrazione guadagni, or CIG), the freeze on dismissals for economic reasons,

[2]In April 2019, a new minimum income scheme (Reddito di cittadinanza) was introduced in favor of households suffering economic hardship. This measure was temporarily expanded by the introduction of the emergency income (Reddito di emergenza) that was established by Decree Law 34/2020 and renewed by Decree Laws 104/2020, 137/2020, and 41/2021. Access to this measure was conditional on the possession of certain income and capital requirements.

and business support measures contributed to limiting the decline in the number of employed persons.

Not only was the evolution of income and fiscal support measures heterogeneous across the household distribution, but the spending response was as well. In 2020, Italian consumption decreased for all households, but more markedly for those whose head was an entrepreneur or a self-employed and for the most affluent ones (Istat 2021), as they generally spend a greater part of their budget on the consumption items hit the most by the pandemic.

In this paper, we take into account the government's support measures both in the macro and in the micro approach. At the aggregate level, fiscal transfers are included in household disposable income, which we consider in the macro regression as one of the main determinants of household consumption. At the micro level, we know whether households have received any kind of income support and we can control for it (see Section 4.3).

3. The Macroeconomic Approach

3.1 The Econometric Strategy

In this section we investigate the consumption pattern during COVID-19 in Italy from a macro perspective, by estimating a consumption equation à la Ando and Modigliani (1963), as adapted to the Italian economy by De Bonis et al. (2020). Our goal is to broadly quantify to what extent standard drivers can explain consumption dynamics in 2020, rather than estimate the precise elasticity of household spending to each factor by taking into account their long-term relationships. Hence we estimate a simple OLS regression[3]:

$$c_t = \alpha + X_t'\beta + \varepsilon_t, \tag{1}$$

where c_t is the log of household consumption in real terms, α is a constant, and X_t is a vector of covariates including the log of permanent income, income volatility, the log of real wealth, the log of financial

[3]De Bonis et al. (2020) instead adopt a vector error correction model, as they are interested in providing precise estimates of the elasticity of consumption to different components of wealth using a longer sample period.

wealth, the interest rate, hours worked, unemployment expectations, and uncertainty.[4] In this way, we control for all the main determinants of consumption, which we can group in the following categories: (i) permanent income; (ii) current income, proxied by hours worked; (iii) wealth (both real and financial); (iv) the intertemporal rate of substitution, proxied by the interest rate; (v) unemployment expectations; and (vi) consumers' disagreement about the evolution of the economic situation.[5] The evolution of permanent income is given by the four-quarters moving average of the household real disposable income; we also control for its volatility, computed as the standard deviation of income growth on a rolling backward window of two years.[6] We capture current income through hours worked, which provides a better signal of the cyclical position of the economy compared to employment-based measures. This is of primary importance for 2020, when the government put restrictions on layoffs to safeguard jobs during the pandemic crisis.[7] Real wealth is the value of dwellings owned by households and thus depends on the evolution of housing prices. Financial wealth is the collection of net financial assets held by households, both liquid and illiquid. We use the same definition of De Bonis et al. (2020): liquid assets include deposits, bonds, mutual funds, and quoted shares net of total liabilities, whereas illiquid financial wealth is the sum of unquoted shares and other equity plus holdings of insurance and pension fund instruments. We include the long-term interest rate at 10-years maturity to control for borrowing conditions. Finally, we introduce other two

[4] Appendix A contains a detailed description of the data used in this section.

[5] Along the lines identified by De Bonis et al. (2020), we tested alternative specifications distinguishing liquid from illiquid wealth and further splitting liquid wealth into assets and liabilities. In other robustness checks we included a credit conditions index and the log of the interest rate, thus allowing for potential non-linear effects of this variable. None of these regressors had a significant effect on total consumption, and we thus excluded them from the baseline specification. Results are available upon request.

[6] Using different definitions of permanent income, such as the 8- or 12-terms moving average of household disposable income, leads to a reduced significance of the elasticity of consumption to this factor and to an increase in the magnitude of the coefficient on hours worked. The other results are almost unchanged.

[7] Even in normal times the fit of the consumption equation improves moving from an employment-based measure to the one based on hours worked.

variables that may hold back spending, namely consumers' expectations and their dispersion. Unemployment expectations, taken from the consumer survey of the European Commission, account for consumers' mood about the overall evolution of the labor market. A rise in unemployment expectations, everything else equal, suggests rising concerns about the economic situation that should induce households to save more. Lastly, we build a measure that reflects the dispersion of consumers' responses in the survey of the European Commission. We consider the principal component of such indices based on the expectations about their own financial situation, the national economic situation, and the labor market.[8]

Regarding the dependent variable, we consider several alternatives. First, we estimate Equation (1) on real consumption of resident households, from national accounts data. Then we consider a breakdown by six expenditure categories: (i) hotels and restaurants, (ii) recreation and culture, (iii) clothing and footwear, (iv) furnishing and house equipment; (v) personal care; (vi) food and beverage.[9] This distinction can provide interesting insights about the heterogeneous impact of the pandemic and the importance of different motives underlying spending patterns. Government restrictions should have the strongest impact on the travel and accommodation industry. Health concerns may possibly regard a wider range of goods and services that require social interactions. Changes in households' habits—above all, the surge in teleworking—may have also shifted their preferences towards different goods, like furnishing and house equipment. As shown by other works on U.S. data (Chenarides et al. 2021), food and beverage consumption could be positively affected by substitution effects between restaurants and home production and, at the outbreak of the pandemic, by consumers' panic about possible disruptions in the food supply chain. Moreover, food consumption should be the least affected by the plausible intensification of precautionary attitudes.

[8]The dispersion index for question q is computed as $I^q = \sum_{j=1}^{j=5} F_j^q(1 - F_j)$, where F_j^q is the cumulated frequency of responses of type j at question q, where j ranges from "very negative" to "very positive." Hence, the index ranges from 0 (no dispersion) to 1 (maximum dispersion). The indices are also standardized to have 0 mean and unitary standard deviation.

[9]For personal care spending we take the data from Confcommercio.

3.2 The Results

We estimate the model by OLS on quarterly data over the period 2001:Q2–2019:Q4 (74 observations).[10] We intentionally exclude the pandemic period from the estimation sample because it likely represents a structural break in the historical correlations among the selected variables that would distort the estimated coefficients if not properly taken into account. Our aim is to show how much of the drop in consumption can be explained by standard drivers according to their pre-pandemic relationships.[11] In this way the unexplained part of the spending cut can be interpreted as related to the pandemic, either directly through the fear of contagion, government-mandated restrictions, and heightened uncertainty about the future due to economic and health concerns, or indirectly through an amplification of the importance of standard drivers and changes in households' preferences. The estimates show that the income channel is stronger for non-essential items such as restaurants and furnishings, while food consumption is less sensitive to changes in permanent income or hours worked.[12] The impact of real and financial wealth is overall modest. The interest rate is negative and significant for total consumption, restaurants and hotels, and personal care. Unemployment expectations and consumers' disagreement about economic prospects weight negatively on all categories except furnishings and food.[13]

[10]The choice of the sample period is motivated by data availability. Household real disposable income is available since 1999:Q1, hence the quarter-on-quarter (q-o-q) growth rate starts in 1999:Q2 and the first observation of the volatility of income is two years later.

[11]Although the model is deliberately simple, it captures consumption dynamics considerably well in the pre-pandemic period. To see this, we estimated the model with data up to 2015 and obtained out-of-sample forecasts for the period 2016–20. The root mean squared forecast error (RMSFE) of our model on the year-on-year (y-o-y) growth rate of total consumption is 0.4, considerably smaller than the unconditional standard deviation of the time series (1.3 percent) and the RMSFE of a simple time-series model (an autoregressive process with two lags, selected to maximize information criteria), which yields an RMSFE of 0.7.

[12]The estimates of the model coefficients are reported in Appendix B, Table B.1.

[13]Food consumption is positively affected by unemployment expectations and negatively affected by consumers' disagreement.

To assess the contribution of the different factors to consumption dynamics during the pandemic, we apply the estimated β coefficients to the y-o-y changes of the covariates in the four quarters of 2020. In this way, we get the contribution of the different drivers to the predicted y-o-y change in household consumption.[14] We expect a modest impact of permanent income and wealth, as they are slow-moving variables, as well as of financial conditions, which could not be eased much further given the low interest rate environment in place already before the outbreak of the pandemic. In contrast, changes in hours worked and in the survey-based measures, which are more responsive to cyclical conditions, could have a stronger influence on spending patterns in 2020.

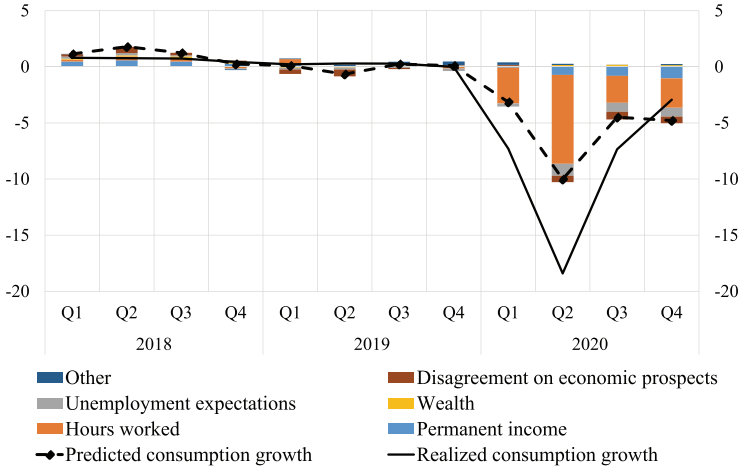
As expected, given the sharp economic contraction caused by the spread of the virus, the income effect proxied by hours worked explains about 70 percent of the predicted drop in spending in 2020 (Figure 2). Consumers' worries and divergent expectations about economic and labor market prospects also play a relevant role, accounting for more than 20 percent of the consumption cut. The accommodative monetary policy stance, which maintained interest rates low (here included in the "Other" factors), gave instead a small positive contribution. Notice that the model can only explain half of the dramatic slump in consumption in the first half of 2020 and about 60 percent of the y-o-y variation in 2020:Q3, while predicted consumption growth is much closer to the realized figure for 2020:Q4.[15]

The unexplained share of the drop in spending over the year is due to the peculiar features of the COVID-19 shock, which cannot be captured by the standard determinants of consumption included in the model. As in Dossche and Zlatanos (2020), we can interpret the residual of the estimated model as the contribution of pandemic-related factors, such as fears of contagion, restrictive

[14]We report the y-o-y instead of q-o-q changes to make more transparent the drop in spending compared to the previous year; in fact, for some consumption categories the q-o-q change is milder in Q2 than in Q1 just for a level effect.

[15]The difference between realized and predicted consumption growth rates (in absolute values) amounts to 4.1 percentage points in Q1, 8.4 points in Q2, 2.8 points in Q3, and 1.9 points in Q4. Realized and predicted growth rates for all consumption categories and for all quarters are reported in Appendix B, Table B.2.

Figure 2. Household Consumption Growth and Main Drivers



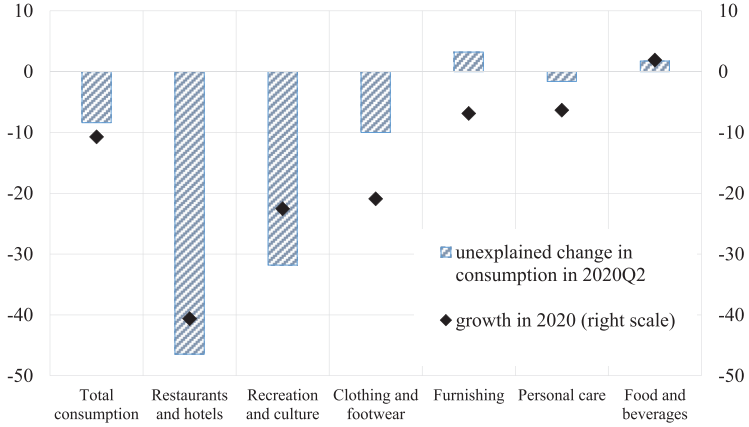
Source: Our computations on Istat, Bank of Italy, and ECB data.
Note: The solid line is the y-o-y realized growth in consumption. The dashed line represents y-o-y consumption growth predicted by regression (1). The bars represent the contribution of different factors to the predicted y-o-y consumption growth, expressed in percentage points. The category "Other" includes the volatility of income and the interest rate.

policy measures, and heightened uncertainty about the future associated with either economic or health concerns. Although this aggregate approach does not allow us to disentangle these factors, we can gather additional information by observing how the share of the unexplained spending drop varies by expenditure category (Figure 3).[16]

Given the nature of the shock, we expect the difference between predicted and actual growth rates in total consumption to be higher for the consumption categories which suffered the most from COVID-19. Focusing on the spring months of 2020, the residual is indeed very sizable for restaurants and hotels and for recreational

[16] Figure B.1 in Appendix B represents the unexplained drop in spending in all quarters.

Figure 3. Unexplained Consumption Growth in Macro Regressions (realized – predicted)



Source: Our computations on data from Istat, Bank of Italy, ECB, and Confcommercio.
Note: For each consumption item we estimate the regression (1) and compute the difference between realized and predicted y-o-y consumption growth (residual).

and cultural activities, whose expenditure decreased by almost 70 and 40 percent, respectively, compared to 2019:Q2 (in 2020, as a whole, spending in these categories declined by 40.6 and 22.5 percent, respectively). Additionally, the standard drivers cannot explain one-third of the drop in clothing and footwear in 2020:Q2 (about half in the first three quarters of the years). Expenditure in furnishings and house equipment reduced by about 7 percent in 2020, much less than what one would have expected on the basis of the historical correlations with hours worked and permanent income; the residual is hence positive for this category. This result is probably due to the change in life style determined by the COVID-19 shock, which forced households to spend more time at home, inducing them to reallocate some of their expenditures to furnishings. Spending in personal care items fell by 6.3 percent; in this case, however, the model would have predicted a milder drop, as evident from the negative residuals. Lastly, food and beverages consumption is the only spending category which registered a positive variation in 2020 (1.9 percent),

higher than the model prediction.[17] In conclusion, the model overestimates spending in restaurants and hotels, recreation and culture, clothing, and personal care; at the same time, it underestimates the expenditure in furnishings and food consumption. Notice that the "abnormal" fall in consumption was larger but not limited to the first half of the year, characterized by a strong lockdown, and to restaurants and hotels, the category mostly affected by the policy measures. This suggests that other factors, like the fear of contagion and uncertainty about the future, do play a role in the pattern of aggregate consumption. In what follows we dig deeper into these factors using micro data.

4. The Microeconomic Approach

Complementing the analysis with micro data allows us to overcome two limitations of the macro approach. First, we can dig deeper into the share of the exceptional drop in consumption not explained by the standard determinants and disentangle the relative importance of pandemic-related factors. Secondly, by building individual-level measures of such drivers, we can study how their contribution varies with households' characteristics.

4.1 The Bank of Italy's Special Survey on Households

Since April 2020, soon after the outbreak of the COVID-19 pandemic, the Bank of Italy has been conducting a Special Survey of Italian Households to collect information on the impact of the epidemic on the financial situation and expectations of Italian households.[18] Apart from the main demographic variables (sex, age, education, area of residence), the survey contains questions on the respondent's financial situation, occupational status, saving possibilities, consumption choices, and expectations on future income changes and labor market prospects.

[17]The fit of the macro regression is very high, with an adjusted R-squared above 0.9 for all categories except clothing and footwear (0.66). This is likely due to the higher volatility of the latter category (2.9 in the pre-pandemic period, against 1.3 for total consumption), which makes it harder to predict.

[18]See Appendix C for details on the SSIH.

In this work we use mainly the third wave of the survey that was conducted in the autumn of 2020, when the restrictive measures for the containment of the second pandemic wave were becoming more and more stringent, though less restrictive compared to April. Survey questions elicit consumption and saving expectations. In particular, households are asked about their saving intentions, i.e., whether over the next 12 months they plan to spend less than the entire yearly income and succeed in saving (see Appendix C for the exact wording). More than 40 percent of households expect to spend less than their annual income in the next 12 months (Table C.3). This share rises to 67 percent among households that expect their income to increase, but it is non-negligible (just under 20 percent) also among households that expect their income to fall. Two considerations are in order. First, this question provides information on the extensive margin of saving, allowing us to distinguish (expected) savers from non-savers. However, it does not tell anything about the intensive margin of saving, namely if the individual expects to save less or more compared to the past (conditional on being a saver). Second, the saving response is the net effect of income and consumption developments. Therefore, respondents may expect to succeed in saving for very different reasons: because they rely on a safe income which more than satisfies their usual needs, because they actively decide to save some resources to face unexpected events, or rather because they choose or are forced to cut consumption—for instance, because they fear being infected or because policy restrictions reduce the availability of some goods and services. Hence, to shed light on the channels through which the pandemic altered the saving behavior of Italian households, we start by focusing on the changes in spending decisions, which are more directly affected by the spread of the virus and fully under the households' control.

We thus exploit the question about expected spending in goods (non-durable, durable, and semi-durable) and services over the following three months.[19] A little less than one-third of Italian households think that they will reduce their consumption; about half of them plan to cut their spending by more than 20 percent (Table C.3). The decrease is seen largely among households in the regions most

[19]See Appendix C for the exact wording.

exposed to the health emergency. The reasons for cutting expenditure seem to be not only economic: over one-fourth of individuals that expect their income to increase in 2021 plan to cut spending.

Additional evidence on the reasons for cutting expenditure comes from a specific question introduced in the third wave of the survey, where households compare their spending in the previous month to that before the COVID-19 pandemic.[20] The question is asked separately for different categories: (i) food, (ii) clothing and footwear, (iii) personal services, (iv) furniture, and (iv) bars, restaurants, and hotels. Consistent with the macroeconomic evidence, around 80 percent of households report that they have patronized some establishments less regularly—"hotels, coffee bars, and restaurants"—and have made less frequent purchases in clothing stores than prior to the pandemic; about two-thirds have cut spending on beauty and personal care services.[21] The decline in these categories of consumption items is greater in the regions hit the most by the public health emergency; starting from the beginning of November 2020, Italian regions were differentiated on a weekly basis according to the degree of restrictions in place, identified either by a yellow, orange, or red color (with increasing severity).[22] If households report to have reduced spending in at least one category of clothing and footwear, personal services, bars, hotels, and restaurants, they are asked the

[20] Question 1 of the COVID-19 module (Appendix C).

[21] In the case of services, it is more realistic to associate less frequent visits with lower spending. In relation to the categories of food and clothing, instead, less frequent visits to the physical stores may be accompanied by larger volumes of purchases (go less, buy more) or by the use of other shopping modes that could compensate for less in-store shopping, such as curbside pickup, online shopping, and shopping by others (Ardizzi, Nobili, and Rocco 2020).

[22] Our data suggest that the decline in consumption was sharper in red and orange regions, which featured both high infection rates and more stringent restrictions, compared to yellow regions. There is also external evidence that supports this claim. The drop in overall and service consumption in 2020 at the regional level is negatively correlated with the cumulative sum of infections (rescaled by the population) in the same region; results holds when considering hospitalizations or deaths instead of infections. Moreover, Emiliozzi, Rondinelli, and Villa (2023), using high-frequency credit card data, show that (i) overall consumer spending dropped by more in the regions most hit by the pandemic and (ii) consumer spending dropped by more in those categories more exposed to the risk of infection.

motivations of this choice.[23] Just under half of the households say that the reduction in consumption is due to diminished economic resources (Table C.3). Among the other reasons given, fear of infection is the main driver, regardless of the severity of the restrictions imposed in the interviewees' regions of residence. The forced reduction in spending due to measures taken to contain the epidemic has a lesser impact overall, although it is greater for households that reside in "red zones." The average score assigned to putting money aside for unexpected events is 29, with a higher importance in "yellow zones."

4.2 Reasons for Cutting Expenditure

Despite being primarily a qualitative survey, SSIH allows us to estimate a micro version of Equation (1), with the goal of disentangling the drivers of the expected consumption pattern over the following three months at the individual level. We take advantage of the rich set of information included in the survey to control for both standard and pandemic-related determinants of consumption choices, all considered at the individual level. Among the standard factors, we control for (i) age and education, which capture the stage of the individual's life-cycle; (ii) actual income, proxied by the occupational status; (iii) liquid wealth, captured by the difficulties in making ends meets;[24] and (iv) expectations about future resources, which are assumed to be a function of individual expectations on income and labor market developments.

Moreover, we are interested in disentangling the other channels behind the exceptional drop in consumption and increase in saving. To do so, we build individual-level measures, which are either exacerbated by the pandemic (like economic reasons and uncertainty about the future) or directly linked to it (like the fear of contagion and containment measures). The three questions on the reasons that induced households to patronize some establishments less regularly help in this regard. Rather than using directly these responses as

[23]Questions 2–3 of the COVID-19 module (Appendix C).

[24]Households reporting to have difficulties in making ends meet are three times more likely to have not enough financial resources to face essential expenses for three months compared to households who easily make ends meet.

regressors, which would limit the sample size, we first try to isolate which other variables are mostly associated with the four reasons.

Households may want to put money aside for unexpected events to smooth the uncertainty they will face in the future. This uncertainty might be primarily affected by labor market events. For this reason we construct a measure of individual uncertainty as a dummy variable equal to one if the self-reported probability of (i) losing the job is higher than 25 percent for employed household members and (ii) finding a job is lower than 25 percent for unemployed individuals. Notice that, by construction, the uncertainty variable is only available for households who have at least one member in the labor force and hence it is missing for almost 80 percent of households whose head is a pensioner.[25] In what follows we will conduct robustness checks to take into account the possible selection bias generated by our definition of uncertainty.

Restrictive measures are more stringent in the regions most severely hit by the epidemic at the time of interview, the so-called red and orange zones.[26]

Households that decided to cut drastically spending in all types of non-essential goods and services requiring social interactions—like hotels, bars, and restaurants—and purchases in physical stores selling clothing and footwear or furniture and appliances, might be signaling a strong fear of contracting the virus. For this reason we create a variable indicating fear as a dummy variable equal to one when the household answers "1" to questions 1.2, 1.3, and 1.5 in Appendix C.1 (FEAR). As a robustness check, we also construct an alternative measure using a different survey question: in this case we consider how spending would vary depending on the number of infections per day in the own region. Fearful households would eliminate or strongly reduce their spending in hotels, coffee bars, and restaurants even in a more favorable epidemiological scenario. Our alternative measure of fear is thus a dummy variable equal to one if the

[25] In terms of observable characteristics, the pensioners for whom it is possible to compute the uncertainty variable are significantly more males, married, and with a higher number of household members, who thus have a higher probability of being in the labor force. There are no significant differences in terms of age or education.

[26] See Section C.4 in Appendix C for the classification of Italian regions in November 2020.

household decides to eliminate or strongly reduce spending in hotels, coffee bars, and restaurants even when in the region of residence there are fewer than 10 new cases per day (FEAR CASES).[27]

To select the households' characteristics associated the most with the reasons for cutting expenditure, we estimate probit regressions for the probability of reporting any of these motivations as particularly relevant. For the probit model related to economic reasons, the dependent variable is a dummy equal to one when the household reported to have reduced purchases because of lower financial resources (question 2 of the COVID-19 module). For the other motivations, we instead created dummy variables which take a value of 1 if the score that the respondent assigns to a given motivation is higher than the median.[28]

Table 1 reports the results of the probit models, where each of the four reasons for cutting expenditure is regressed against age, occupational status, making ends meets, expectations on income and labor market, and the three variables described above that we expect to be correlated with the motivations other than the economic ones. First, cutting expenditure because of economic reasons appears, as expected, to be positively correlated with occupational status: self-employed are about 22 percent more likely to cite economic reasons compared to pensioners, in line with the evidence that the pandemic affected self-employment the most. Those experiencing difficulty in making ends meets cite more frequently economic reasons compared with those not experiencing that difficulty. Additionally, compared to those with a more optimistic view, households with less favorable expectations for the labor market and income mention economic reasons 10 percent more often. Economic reasons are also positively correlated with the fear of contagion and uncertainty. Second, in the model for the probability of mentioning the fear of contagion as an important reason for reducing consumption, the variable FEAR is highly significant, as expected; the same evidence applies with a narrower definition of fear (FEAR CASES);

[27]See question 4 in Section C.1 of Appendix C. The question is the same irrespective of the size of the region of residence, but 10 new cases is considered low even in small regions.

[28]In theory we could classify individuals depending on the prevalent motivation; however, cases where the respondent assigns equal weights to at least two motivations are not infrequent.

Table 1. Determinants of the Reasons for Cutting Expenditure (probit models)

	Economic Reasons	Fears of Contagion	Fears of Contagion	Restrictive Measure	Deal with Unexpected Events
	(1)	(2)	(3)	(4)	(5)
Age	–0.001	–0.012	–0.012	0.008	–0.000
	(0.011)	(0.014)	(0.014)	(0.013)	(0.013)
Age Sq.	0.000	0.000	0.000	–0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Employee	0.108	–0.182**	–0.206**	–0.004	0.046
	(0.075)	(0.085)	(0.084)	(0.092)	(0.088)
Self-Employed	0.223***	–0.129	–0.144	–0.017	0.060
	(0.076)	(0.091)	(0.090)	(0.102)	(0.100)
Unemployed	0.130	–0.145	–0.161	–0.040	–0.051
	(0.088)	(0.110)	(0.107)	(0.122)	(0.120)
Making Ends Meet (Great Difficulty)	0.494***	0.012	0.002	–0.185**	0.036
	(0.041)	(0.093)	(0.092)	(0.089)	(0.091)
Making Ends Meet (Difficulty)	0.391***	–0.056	–0.052	–0.029	0.169***
	(0.047)	(0.061)	(0.062)	(0.062)	(0.059)
Making Ends Meet (Easily)	0.098*	–0.081	–0.078	–0.060	0.102*
	(0.055)	(0.054)	(0.054)	(0.055)	(0.054)
Expectation on Y (Decrease)	0.119***	0.006	0.005	–0.052	–0.009
	(0.045)	(0.068)	(0.068)	(0.063)	(0.068)
Expectation on LM (Decrease)	0.093**	0.021	0.028	–0.037	–0.037
	(0.038)	(0.044)	(0.044)	(0.044)	(0.045)

(*continued*)

Table 1. (Continued)

	Economic Reasons	Fears of Contagion	Fears of Contagion	Restrictive Measure	Deal with Unexpected Events
	(1)	(2)	(3)	(4)	(5)
Red Zone	0.031	0.027	0.046	0.160***	–0.011
	(0.048)	(0.055)	(0.054)	(0.053)	(0.055)
Orange Zone	0.072	0.071	0.066	0.077	0.061
	(0.047)	(0.057)	(0.057)	(0.054)	(0.058)
FEAR	0.098**	0.147***		–0.143***	0.050
	(0.041)	(0.052)		(0.052)	(0.052)
Uncertainty	0.144***	0.035	0.040	–0.008	0.114*
	(0.042)	(0.062)	(0.062)	(0.062)	(0.061)
FEARS CASES			0.080*		
			(0.044)		
Obs.	1,248	685	685	685	685
Pseudo R^2	0.194	0.037	0.031	0.035	0.022
Average Probability	0.48	0.46	0.46	0.59	0.54

Note: Marginal effects. *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Our calculations from wave 3 of SSIH. Dependent variable is a dummy equal to one when the household reported to have reduced purchases because of lower financial resources (question 2 in Appendix C.1; column 1). For the other motivations, the dependent variable is a dummy variable which takes value of 1 if the score that the respondent assigns to a given motivation is higher than the median (question 3 of the COVID-19 module in Appendix C; columns 2–5). Reference category for education is college and beyond. LM indicates labor market, Y indicates income; reference category for expectation on Y and LM is increase or stay the same. Reference category for occupational status is pensioner; the unemployed category includes students, housewives, and others. Reference category for making ends meet is very easily.

employees mention less often the fear of contagion compared to pensioners. Third, households mentioning that the drop in spending was related to the restrictive measures are more likely to live in red zones at the moment of the interview. We may be worried that our approach is not able to distinguish between households caring about the possibility of infection and those that are forced to reduce purchases because of the containment measures; however, the coefficient of FEAR is negative and significant, mitigating the concerns of a positive correlation between these two factors. Fourth, putting money aside for unexpected events is positively correlated with our uncertainty measure and the difficulty in making ends meets.

Thus, we can conclude that among the four reasons for cutting consumption, making ends meet, occupational status, and expectations are mainly correlated with the economic reasons; FEAR correctly captures the fear of contagion; the red zone is a good predictor for mentioning restrictive measures, and putting money aside to face unexpected events depends on the uncertainty on the own employment prospects, although the latter variable is also correlated with economic reasons.[29]

4.3 Disentangling the Drivers of Consumption

Having described the survey variables that capture both the standard and the pandemic-related factors that could affect consumption choices, we can now estimate a micro version of the consumption function[30]:

$$ncexp_i = \beta' Z_i + \gamma' Y_i + \delta' W_i + \eta' EXP_i + \Theta' reason_i + \varepsilon_i, \quad (2)$$

where $ncexp_i$ is a dummy variable equal to one for households expecting a decrease in their consumption for food, clothing and footwear, and home goods and services in the following three months (see Section C.4 in Appendix C) and Z_i is a deterministic component

[29] Results are broadly unchanged when we estimate a multinomial logit with all the reasons (Table D.1 in Appendix D).

[30] Other papers estimate a micro version of the consumption function for Italy (see, among others, Guiso, Paiella, and Visco 2006, Paiella 2007, and Paiella and Pistaferri 2017).

including both education and age, which captures different stages in the life-cycle consumption profile. Individual actual income Y_i is proxied by the occupational status (employee, self-employed, unemployed, pensioner), while liquid wealth (W_i) is approximated by self-reported difficulty in making ends meets. The individual expectations about income and the evolution of the labor market are other important determinants of spending decisions (EXP_i). Among the four reasons for cutting consumption, the economic ones are captured by income, liquid wealth, and the self-reported expectations about income and labor market developments. The other three reasons for cutting consumption ($reason_i$) are based on the variables identified in Section 4.2, namely the fear of contagion (FEAR), the restrictive measures (red and orange zone), and uncertainty.

In Table 2 we report the estimates of Equation (2), starting from a simple specification of a linear probability model and gradually enriching it.[31] In column 1 we see that expenditure has an inverse U-shaped profile over the life cycle, as demonstrated by the coefficients in age and age squared. Those with none or primary or middle school education are more likely to cut consumption compared to the highly educated. Unemployed and self-employed are more likely to expect a fall in consumption compared to pensioners. In column 2 we insert a variable aiming at capturing household liquid wealth, i.e., the capability in making ends meets: those finding it very difficult are more likely to expect a drop in consumption in the following three months compared to more affluent households; the introduction of this variable makes the one related to education not significant. In column 3 we also include individuals' expectations on income and the labor market: as expected, those foreseeing a drop in income or a worsening of the labor market mention more frequently a spending cut. Because education is not significant once controlling for the difficulty in making ends meets and expectations, we drop it from the other specifications, which include the other potential reasons for cutting expenditure. The fear of contagion is positively related to the drop in spending, both using the narrow and the broad definition of fear of contagion (columns 5 and 6);

[31]We estimate Equation (2) using a linear probability model to facilitate the disentangling of the drivers of consumption. Results, available upon requests, are confirmed using a probit model.

Table 2. Assessing the Channels in Cutting Expenditure (linear models)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Age	0.013**	0.011**	0.014***	0.013***	0.011	0.010	0.010	0.010
	(0.005)	(0.005)	(0.005)	(0.005)	(0.007)	(0.006)	(0.006)	(0.006)
Age Sq.	–0.000**	–0.000**	–0.000***	–0.000**	–0.000	–0.000	–0.000	–0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
None or Primary	0.146***	0.075*	0.056					
	(0.039)	(0.040)	(0.038)					
Middle School	0.075**	0.027	0.016					
	(0.033)	(0.033)	(0.031)					
High School	0.052	0.027	0.016					
	(0.033)	(0.033)	(0.031)					
Employee	0.053	0.049	0.045	0.045	0.074	0.080	0.082	0.081
	(0.035)	(0.035)	(0.033)	(0.033)	(0.057)	(0.055)	(0.055)	(0.055)
Self-Employed	0.124***	0.116***	0.059	0.059	0.084	0.091	0.091	0.090
	(0.043)	(0.043)	(0.040)	(0.040)	(0.059)	(0.058)	(0.058)	(0.058)
Unemployed	0.156***	0.130***	0.103***	0.108***	0.092	0.074	0.076	0.075
	(0.038)	(0.037)	(0.035)	(0.035)	(0.063)	(0.061)	(0.061)	(0.062)
Making Ends Meet (Great Difficulty)		0.206***	0.129***	0.136***	0.083**	0.071*	0.073*	0.073*
		(0.036)	(0.034)	(0.033)	(0.040)	(0.039)	(0.040)	(0.040)
Making Ends Meet (Difficulty)		0.198***	0.153***	0.161***	0.103***	0.100***	0.101***	0.101***
		(0.031)	(0.030)	(0.029)	(0.036)	(0.035)	(0.035)	(0.035)
Making Ends Meet (Easily)		0.071**	0.036	0.038	0.014	0.009	0.010	0.011
		(0.031)	(0.030)	(0.030)	(0.036)	(0.035)	(0.035)	(0.035)

(*continued*)

Table 2. (Continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Expectation on Y (Decrease)			0.336***	0.337***	0.301***	0.286***	0.286***	0.285***
			(0.025)	(0.025)	(0.029)	(0.029)	(0.029)	(0.029)
Expectation on LM (Decrease)			0.110***	0.109***	0.086***	0.064***	0.064***	0.064***
			(0.020)	(0.020)	(0.024)	(0.024)	(0.024)	(0.024)
FEARS CASES					0.091***			
					(0.024)			
Uncertainty					0.123***	0.116***	0.115***	0.114***
					(0.028)	(0.028)	(0.028)	(0.028)
FEAR						0.233***	0.228***	0.228***
						(0.027)	(0.027)	(0.027)
Red Zone							0.044	0.043
							(0.030)	(0.030)
Orange Zone							0.044	0.043
							(0.030)	(0.030)
Government Measures								0.021
								(0.025)
Constant	–0.141	–0.193	–0.356**	–0.328**	–0.294*	–0.279*	–0.312*	–0.321*
	(0.148)	(0.147)	(0.140)	(0.138)	(0.166)	(0.162)	(0.163)	(0.164)
Obs.	2,077	2,077	2,077	2,077	1,408	1,408	1,408	1,408
R^2	0.023	0.050	0.151	0.149	0.169	0.204	0.205	0.206

Note: $^*p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$. Our calculations from wave 3 of SSIH. Dependent variable equal to one for households expecting a drop in expenditure in the next three months. Reference category for education is college and beyond. LM indicates labor market, Y indicates income; reference category for expectation on Y and LM is increase or stay the same. Reference category for occupational status is pensioner; the unemployed category includes students, housewives, and others. Reference category for making ends meet is very easily.

according to the broader classification (FEAR), a household that attributes high importance to the fear of contagion is 23 percent more likely to reduce purchases. Individuals who are highly uncertain about their labor market prospects are significantly more likely to compress expenditure. The restrictive measures, i.e., being either in the red or orange zone at moment of the interview, are positively related to the fall in expenditure, but the coefficient is not statistically significant. Column 7 is our preferred specification of Equation (2), where we include standard demographic controls and reasonable proxies for the different motivations for cutting expenditure.

The question on spending in the previous month relative to before the COVID-19 pandemic, used to construct the reasons for cutting consumption, faces the issue that consumption patterns at the categorical level are seasonal and the month before the survey might be special. To control for these possible biases we conduct the analysis on different waves of the survey led in alternative months of the year (see Appendix C for a description of the survey period). Our results are unchanged when the analysis is conducted on wave 2 of the survey, on the pooled sample of wave 2 and 3, and on wave 4 (Table D.2 in Appendix D). Our results are also robust to the inclusion of other variables: the interaction of education with fear of contagion and uncertainty and the sector of activity turn out to be not statistically significant and leave the results unchanged. As discussed in the previous section, since the uncertainty variable presents some missing values, its inclusion reduces the sample size and may create a selection bias. By excluding uncertainty from our preferred specification, we find that several coefficients gain significance, including those related to non-economic variables (e g., age, red and orange zones). This suggests that our uncertainty measure is also related to a broad category of unexpected events, beyond the economic ones.[32]

As discussed in Section 2, more than 40 percent of households had access to at least one form of income support for workers or for households (Bank of Italy 2021c). The introduction of a dummy variable equal to one for households having received fiscal support to

[32]Results on the robustness exercises are available upon request.

income by the Italian government in our preferred specification is not statistically significant and leaves our results unchanged (column 8 of Table 2).

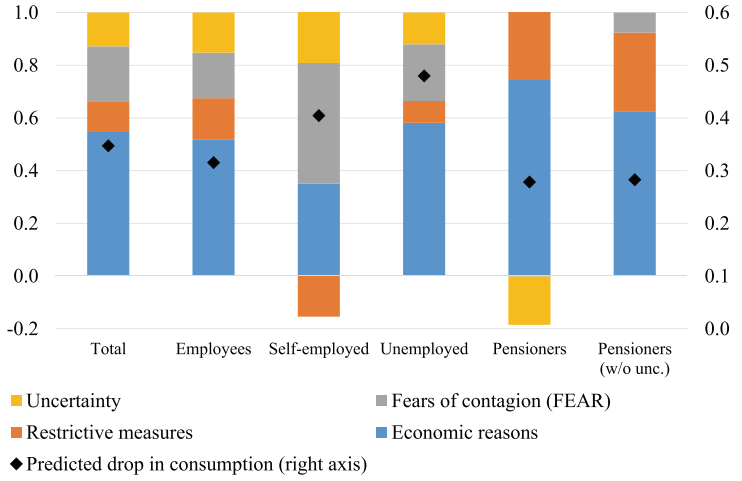
Using our preferred specification of Equation (2) (column 7 of Table 2), we compute the contributions of the different reasons for cutting expenditure for the average household in the sample.[33] The results are represented by the bar "Total" in Figure 4. The predicted probability of an expected drop in spending is equal to 0.35, which compares with an unconditional probability of 0.33. Among the four motivations, we find that when controlling for all the main determinants of consumption in Equation (2), the contribution of economic reasons is more than 50 percent; the fear of contagion accounts for about 20 percent and the weight assigned to unexpected events and to restrictive measures is slightly higher than 10 percent, though we know from Table 2 that the coefficient on restrictive measures is not statistically significant.

4.4 Heterogeneous Effects of the Pandemic

To investigate the heterogeneous impact of the pandemic across households, it is interesting to perform the same decomposition of Section 4.3 over different categories. One of the most relevant dimension of heterogeneity is represented by the job status, as already shown by the descriptive statistics: overall, one-third of households assert that they have suffered a decline in income in 2020, but this percentage rises to over half when the household is headed by a self-employed worker or by an unemployed individual. Hence we separately estimate our preferred specification of Equation (2) on individuals holding different occupations (Table D.3) and report the contributions of the reasons for cutting expenditure for the average household in each sub-sample (Figure 4). We find substantial heterogeneity across households depending on their job status. Forty percent of households headed by a self-employed individual expect a

[33]For instance, to compute the contribution of the fear of contagion, we multiply the coefficient for FEAR in column 7 of Table 2 (0.23) for the average value assumed by the variable FEAR in the estimation sample (0.26). We thus find a value of 0.06, which we compare to the sum of the contributions provided by economic reasons, fear of infection, restrictive measures, and precautionary motives, obtaining a relative contribution of FEAR of 0.21.

Figure 4. Contribution of the Reasons for Cutting Expenditure by Occupation



Note: Our calculations from wave 3 of SSIH. Contributions are computed at the sample means of each occupational category.

drop in expenditure: about half of the predicted fall is explained by fears of contagion, and more than one-third is explained by uncertainty on unexpected events, in line with the huge increase in volatility of small firms' stock returns during a recession (Perez-Quiros and Timmermann 2000). About half of unemployed households heads expect a decline in expenditure, mentioning economic reasons above all. The contributions of the reasons for cutting expenditure for employees are broadly in line with total households. For pensioners, precautionary reasons exert a negative effect on the probability of cutting consumption, which is reasonable given that they need to smooth these events on a relatively shorter period of time. Restrictive measures are mildly significant for the employees, the unemployed, and the pensioners.[34] As argued before, however, the regression for pensioners may suffer from a selection bias induced

[34]Results are confirmed when instead of estimating a different equation for each occupational status we estimate a unique equation interacting each job status with the fear of contagion and with uncertainty.

by the inclusion of the uncertainty variable, which is only available for a subset of them. To address this issue we re-estimate the model by excluding the uncertainty variable. Results confirm that the predicted probability of a drop in expenditure is lower for pensioners than for other occupational categories and economic reasons are the largest contributors; however, the fear of infection and the restrictive measures also gain relevance (last bar of Figure 4).

When we adopt the same decomposition based on the age of the household's head, we find that the probability of cutting consumption is relatively higher for people aged 55–64 and lower for older respondents (more than 65 years old).[35] The contribution of restrictive measures is higher for the elderly; when excluding the uncertainty variable, which considerably reduces the sample size for this category, economic reasons become more relevant, as in the rest of the population. Restrictive measures provide a negative contribution for younger individuals: this could reflect the desire of the youth to resume spending as soon as tight restrictions are eased.

As already explained in Section 4.1, it is not straightforward to estimate Equation (2) using as a dependent variable the probability of being able to save resources over the following year.[36] However, to connect the drop in consumption with the saving expectations, we estimate our baseline regression (column 7 in Table 2), splitting the sample between those who plan to spend less than their yearly income and succeed in saving ($S = 1$) and those who do not (see Table 3). Splitting the sample into the two subgroups reveals that uncertainty and labor market expectations play a role in explaining consumption drop only for households not expecting to save, presumably reflecting their liquidity constraints: 40 percent have indeed some difficulty in making ends meets.[37]

[35]See Figure D.1 in Appendix D.

[36]Only 10 percent of households expecting a fall in expenditure in the following three months foresee that they will be able to save some money in the following year.

[37]Results are confirmed when considering only households in the panel component of SSIH who respond, in wave 4 (February–March 2021), to the question as to whether they accumulated savings in 2020 (Table D.5).

Table 3. Connecting the Drop in Consumption with Saving Increase (linear models)

	Baseline	**Saving = 1**	**Saving = 0**
	(1)	**(2)**	**(3)**
Age	0.010	0.002	0.011
	(0.006)	(0.009)	(0.009)
Age Sq.	–0.000	–0.000	–0.000
	(0.000)	(0.000)	(0.000)
Employee	0.082	0.123	0.048
	(0.055)	(0.081)	(0.075)
Self-Employed	0.091	0.076	0.077
	(0.058)	(0.086)	(0.078)
Unemployed	0.076	0.169*	0.023
	(0.061)	(0.094)	(0.082)
Making Ends Meet (Great Difficulty)	0.073*	0.115*	0.042
	(0.040)	(0.059)	(0.067)
Making Ends Meet (Difficulty)	0.101***	0.098**	0.089
	(0.035)	(0.046)	(0.064)
Making Ends Meet (Easily)	0.010	–0.044	0.059
	(0.035)	(0.041)	(0.067)
Expectation on Y (Decrease)	0.286***	0.284***	0.253***
	(0.029)	(0.058)	(0.035)
Expectation on LM (Decrease)	0.064***	0.035	0.075**
	(0.024)	(0.033)	(0.034)
Red Zone	0.044	0.058	0.028
	(0.030)	(0.041)	(0.042)
Orange Zone	0.044	0.053	0.018
	(0.030)	(0.043)	(0.042)
FEAR	0.228***	0.159***	0.272***
	(0.027)	(0.040)	(0.037)
Uncertainty	0.115***	–0.017	0.172***
	(0.028)	(0.043)	(0.036)
Constant	–0.312*	–0.134	–0.295
	(0.163)	(0.229)	(0.238)
Obs.	1,408	617	791
R^2	0.205	0.120	0.223

Note: *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Our calculations from wave 3 of SSIH. Dependent variable equal to one for households expecting a drop in expenditure in the next three months; in columns 2 and 3 the sample of column 1 is split based on saving intentions. LM indicates labor market, Y indicates income; reference category for expectation on Y and LM is increase or stay the same. Reference category for occupational status is pensioner; the unemployed category includes students, housewives, and others. Reference category for making ends meet is very easily.

5. Conclusions

In this paper, we combine a macro and a micro approach to disentangle the different reasons behind the unprecedented drop in private consumption caused by the outbreak of the COVID-19 pandemic and experienced by Italian households. Both aggregate and individual analyses show that spending decisions are only explained in part by the deterioration in the economic fundamentals. The perception of higher income and health risks has a strong impact on spending decisions. The importance of different factors, however, varies by expenditure category and across the household distribution.

This disentangling is also important in order to understand the consequences of the pandemic in the medium run and to interpret actual consumption dynamics in 2021. Italian consumption rebounded with the easing of policy measures and the reduced health risk, consistent with our findings that some transitory factors—the fear of infection above all—played an important role. This is despite the fact that the recovery in household consumption was partial and uneven: goods expenditure has fully recovered pre-pandemic levels, while services still lag behind, as pressures coming from pent-up demand are limited for the latter category (Beraja and Wolf 2021). The saving rate has fallen from the peak levels attained during the recession, but it remains higher than pre-pandemic figures because of a heightened precautionary attitude. Households may prefer to preserve a saving buffer even when the epidemic is fully under control, as long as they remain uncertain about their economic situation and the risk of new pandemic events (Ercolani, Guglielminetti, and Rondinelli 2021).

Looking ahead, our findings suggest that during the ongoing recovery from the COVID-19 pandemic, policymakers could shore up private consumption not only via economic means but also by bringing the epidemic effectively under control and avoiding a widespread surge in the fear of being infected. More generally, precautionary motives and household expectations do play an important role in standard economic recessions as well, possibly slowing down consumption growth if they persist beyond the rebound in income. Moreover, since such factors weigh differently across the economy, this may lead to an uneven recovery, with persistent scarring effects on the hardest-hit sectors and on fragile households.

Appendix A. Macroeconomic Data

Table A.1 summarizes the data used for the analysis in Section 3. In the rest of this section we describe more in detail the main data sources of the macroeconomic time series.

A.1 National Accounts

Consumption data are taken (with the exception of personal care expenditures) from quarterly national accounts—in particular, from the tables reporting the final consumption expenditure of households by expenditure item (COICOP two digit). The two-digit COICOP (Classification of Individual Consumption According to Purpose) categories are 12 (in parentheses we report their share on total consumption in 2019): (i) food and non-alcoholic beverages (14.1 percent); (ii) alcoholic beverages, tobacco, and narcotics (4.1 percent); (iii) clothing and footwear (6.1 percent); (iv) housing, water, electricity, gas, and other fuels (22.6 percent); (v) furnishings, household equipment, and routine household maintenance (6.2 percent); (vi) health (3.5 percent); (vii) transport (12.7 percent); (viii) communications (2.6 percent); (ix) recreation and culture (6.8 percent); (x) education (1.0 percent); (xi) restaurants and hotels (10.2 percent); and (xii) miscellaneous goods and services (10.1 percent). In our analysis by expenditure category, we consider categories (i), (iii), (v), (ix), and (xi), which accounted for more than 43 percent of total household consumption in 2019. Notice that category (iv), which represents a large share of the consumption basket, includes imputed rents of owner-occupied homes.

A.2 Confcommercio

Confcommercio is an Italian confederation of small businesses. Their research group produces a monthly index of real household consumption (ICC), grouped in seven categories: (i) recreation; (ii) hotels and restaurants; (iii) transport; (iv) communication; (v) personal care; (vi) clothing and footwear; and (vii) furnishings, household equipment, and utilities. The total index represents more than 65 percent of total consumption from national accounts excluding imputed rents. In the macro analysis conducted in Section 3 we consider

Table A.1. Description and Sources of Macro Data

Time Series	Description	Source
Total Consumption	Total final consumption expenditure of resident households, chain-linked and seasonally adjusted (s.a.) data	Istat
Consumption: Food and Beverages	Final consumption expenditure of households by expenditure item (COICOP two digit), chain-linked and s.a. data—food and non-alcoholic beverages	Istat
Consumption: Clothing and Footwear	Final consumption expenditure of households by expenditure item (COICOP two digit), chain-linked and s.a. data—clothing and footwear	Istat
Consumption: Furnishings	Final consumption expenditure of households by expenditure item (COICOP two digit), chain-linked and s.a. data—furnishings, household equipment, and routine household maintenance	Istat
Consumption: Recreation and Culture	Final consumption expenditure of households by expenditure item (COICOP two digit), chain-linked and s.a. data—recreation and culture	Istat
Consumption: Restaurants and Hotels	Final consumption expenditure of households by expenditure item (COICOP two digit), chain-linked and s.a. data—restaurants and hotels	Istat
Consumption: Personal Care	Index of real household expenditure in personal care items, s.a. data	Confcommercio
Permanent Income	Four-quarters moving average of real gross disposable income, s.a. data	Our elaborations on Istat data
Income Volatility	Rolling standard deviation of the last nine terms of the q-o-q growth rates of the s.a. real gross disposable income	Our elaborations on Istat data
Hours Worked	Total hours worked from quarterly national accounts, s.a. data	Istat
Real Wealth	Housing wealth	Bank of Italy estimates
Financial Wealth	Financial activities held by households from financial accounts	Bank of Italy
Interest Rate	Long-term interest rate, 10 years maturity, new business coverage	ECB
Unemployment Expectations	Unemployment expectations from monthly consumer surveys, balances, s.a. data, quarterly averages	Istat
Disagreement	Principal component of the dispersion of the answers to three questions of consumer surveys, regarding expectations on the personal and general economic situation and on unemployment, quarterly averages	Istat

the indicator of personal care expenditures, as this category is not available in the COICOP 2 classification of the national accounts.

A.3 Consumer Surveys

The European Commission conducts harmonized business and consumer in the European Union (EU) and in the applicant countries at monthly frequency. Surveys are carried out at the national level by the national statistical institutes. For the purpose of this paper, we take the data from Istat (whose seasonally adjusted balances of responses can slightly differ from those taken from the European Commission due to a different treatment of the raw data) and exploit three questions included in the monthly consumer surveys. The questions are (in Italian in the original questionnaire):

1. *(Expectations on general economic situation)* In your opinion, in the next 12 months, the general economic situation of Italy:
   (a) Will markedly improve
   (b) Will slightly improve
   (c) Will remain unchanged
   (d) Will slightly worsen
   (e) Will markedly worsen
   (f) I don't know
2. *(Expectations on personal economic situation)* In your opinion, over the next 12 months, the economic situation of your family:
   (a) Will markedly improve
   (b) Will slightly improve
   (c) Will remain unchanged
   (d) Will slightly worsen

(e) Will markedly worsen

(f) I don't know

3. *(Unemployment expectations)* In your opinion, over the next 12 months, the number of unemployed in Italy:

(a) Will strongly increase

(b) Will slightly increase

(c) Will remain unchanged

(d) Will slightly decrease

(e) Will strongly decrease

(f) I don't know

From the three questions reported above, we exploit two measures that we include in the macro regression (1). First, we use the seasonally adjusted balances of responses regarding unemployment expectations ((a+b)–(d+e)), as provided directly by Istat. Second, for each of the three above-mentioned questions we build a measure of dispersion of responses (disagreement). Assume that F_j is the cumulated frequency of the answers up to j, starting from the most negative ones (hence from (e) to (a)). Our measure of dispersion in the answers to question x is

$$d_x = \sum F_e(1 - F_e) + F_d(1 - F_d) + F_c(1 - F_c) + F_b(1 - F_b) + F_a(1 - F_a).$$

This indicator takes values between 0 (no dispersion) and 1 (maximum dispersion). We then standardize the disagreement indicators d_1, d_2, and d_3 (we subtract the mean and divide by the standard deviation) and take the first principal component. This is the measure of disagreement we include in the macro regression (1).

Appendix B. Macroeconomic Evidence: Additional Results

Table B.1. Results of the Macro Regression for Different Consumption Categories

	Total	Restaurants and Hotels	Recreation and Culture	Clothing and Footwear	Furnishings	Personal Care	Food and Beverages
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Log Permanent Income	0.381***	–0.303	0.249	0.114	0.607*	–0.215	0.388**
	(0.119)	(0.222)	(0.303)	(0.301)	(0.313)	(0.140)	(0.150)
Income Volatility	0.00755	0.0490***	0.00744	0.00437	0.00153	0.0354***	–0.00989*
	(0.00458)	(0.00856)	(0.0121)	(0.0116)	(0.0121)	(0.00538)	(0.00576)
Hours Worked	0.345**	0.780***	0.542	0.629*	0.724*	0.692***	0.155
	(0.143)	(0.268)	(0.365)	(0.363)	(0.378)	(0.168)	(0.180)
Log Real Wealth	0.0515***	0.154***	0.269***	0.0428*	–0.0804***	0.231***	–0.0728***
	(0.00910)	(0.0170)	(0.0231)	(0.0230)	(0.0240)	(0.0107)	(0.0114)
Log Financial Wealth	–0.0189	–0.155***	–0.183***	–0.139***	–0.00806	–0.140***	0.176***
	(0.0181)	(0.0337)	(0.0461)	(0.0457)	(0.0476)	(0.0212)	(0.0227)
Interest Rate	–0.0029*	–0.0151***	–0.00184	0.008*	0.0058	–0.0059***	0.0059***
	(0.00171)	(0.00319)	(0.00446)	(0.00432)	(0.00450)	(0.00200)	(0.00214)
Unemp. Exp.	–0.0036**	–0.0195***	–0.0125***	–0.0176***	–0.0053	–0.0093***	0.0046***
	(0.00137)	(0.00256)	(0.00349)	(0.00347)	(0.00361)	(0.00161)	(0.00172)
Disagreement	–0.0031***	–0.0061***	–0.0091***	–0.00285	–0.00227	0.0001	–0.00264**
	(0.000834)	(0.00156)	(0.00212)	(0.00211)	(0.00220)	(0.000979)	(0.00105)
Constant	1.425	0.188	–4.833	–1.507	–8.358**	–2.841**	2.839*
	(1.201)	(2.242)	(3.088)	(3.039)	(3.162)	(1.409)	(1.508)
Observations	74	74	74	74	74	74	74
Adjusted R-squared	0.91	0.90	0.91	0.66	0.91	0.97	0.96

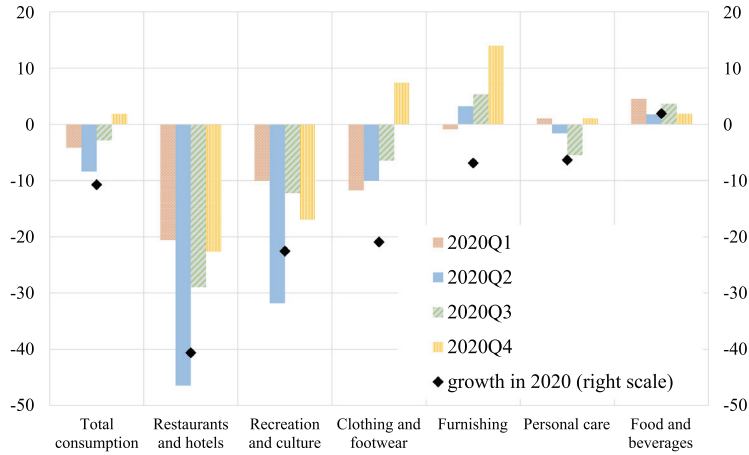
Source: Our computations on data from Istat, Bank of Italy, ECB, and Confcommercio.

Table B.2. Realized and Predicted y-o-y Growth from Macro Regressions

	2020:Q1		2020:Q2		2020:Q3		2020:Q4	
	Real.	**Pred.**	**Real.**	**Pred.**	**Real.**	**Pred.**	**Real.**	**Pred.**
Total Consumption	–7.3	–3.1	–18.4	–10.0	–7.3	–4.5	–2.9	–4.8
Restaurants and Hotels	–25.7	–5.1	–66.0	–19.6	–29.0	–0.1	–21.7	0.9
Recreation and Culture	–9.6	0.4	–36.6	–4.8	–16.2	–3.9	–20.5	–3.6
Clothing and Footwear	–18.9	–7.1	–29.5	–19.5	–13.7	–7.2	–0.2	–7.6
Furnishing	–8.0	–7.2	–15.3	–18.5	–1.4	–6.8	6.4	–7.5
Personal Care	–3.8	–4.8	–16.4	–14.8	–4.0	1.4	2.8	1.8
Food and Beverages	3.3	–1.2	0.7	–1.0	0.9	–2.7	–1.5	–3.4

Source: Our computations from Equation (1).

Figure B.1. Unexplained Consumption Growth in Macro Regressions (realized – predicted)



Source: Our computations on data from Istat, Bank of Italy, ECB, and Confcommercio.
Note: For each consumption item we estimate the regression (1) and compute the difference between realized and predicted y-o-y consumption growth (residual).

Appendix C. The Bank of Italy's Special Survey of Italian Households (SSIH) Questionnaire

In 2020, because of the spread of the COVID-19 epidemic, the Bank of Italy suspended the fieldwork activities of the surveys on households carried out through personal interviews, in order to ensure the health of both households and interviewers. To fill the information gap and gather timely information on the economic situation of households during the pandemic crisis, the Bank of Italy launched a Special Survey of Italian Households, administered using remote devices.

In the first edition of the survey, carried out between the end of April and the start of May 2020, two other survey techniques (namely interviews over the phone and the web) were used in addition to the touchscreen device, which was the only method used for the second, third, and fourth editions. The main findings and the methodology of SSIH are described in Neri and Zanichelli (2020)

and in the box "Italian Households' Assessments and Expectations during the Current Public Health Emergency" (Bank of Italy 2020b).

The Survey is representative of the Italian population. The system of sample weights was calibrated to the information provided by the National Institute of Statistics (Istat) on gender, age group, geographical area (North, Center, South, and Islands), and degree of education and employment status (employee, self-employed, retired, unemployed, other) of the Italian population aged 18 and over.

C.1 The COVID-19 Module in Wave 3 of SSIH

The third wave of the survey was conducted at the end of November 2020, and the total sample amounted to more than 2,000 households, which had also been interviewed in the second edition of the survey. The main findings and the methodology used are described in Rondinelli and Zanichelli (2021a) and in the box "Italian Households during the Epidemic: The Bank of Italy's Survey" (Bank of Italy 2021a).

1. Compared to before the COVID-19 pandemic, in the last month how frequently you did these activities?

   1= never done or much less often; 2= less often; 3= with the same frequency, 4= often, 5= more often

	1	2	3	4	5
1. shop for food and other essential goods in stores					
2. make purchases in stores of clothing, footwear, etc.					
3. go to the hairdresser, beautician and other personal services					
4. go out to shop for furniture, appliances, etc.					
5. go to hotels/bars/restaurants					

2. (If you answered 1 or 2 to at least one of 1.2, 1.3, and 1.5) Why did you make some expenses less often?
   - Lower financial resources
   - Other reasons

3. (If "Other reasons" at previous question) Distribute 100 points between these three alternatives, based on what you think are most likely: give a high score to those you think are most likely, a low one to those you deem least likely.
    - Given the containment measures, some purchases were hindered/impossible
    - Fears of contagion
    - Put money aside for unexpected events

4. Compared to normal times, how frequently would you carry out the aforementioned activities if the daily number of infections in your region were (a) less than 10, (b) between 10 and 100, (c) between 100 and 1000, (d) greater than 1000?
   For each of the cases (a), (b), (c), (d) choose between 1= never done or much less often; 2= less often; 3= with the same frequency, 4= often, 5= more often

	1	2	3	4	5
1. shop for food and other essential goods in stores					
2. make purchases in stores of clothing, footwear, etc.					
3. go to the hairdresser, beautician and other personal services					
4. go out to shop for furniture, appliances, etc.					
5. go to hotels/bars/restaurants					

C.2 The COVID-19 Module in Wave 2 of SSIH

The second wave of the survey was conducted from late August to early September 2020; the total sample amounted to more than 2,300 households. The main findings and the methodology are described in Rondinelli and Zanichelli (2020) and in the box "Italian Households during the Epidemic: The Bank of Italy's Survey" (Bank of Italy 2020a).

1 As in the COVID-19 module of the wave 3 of SSIH.

2 Not included

3 Not included

4 As in the COVID-19 module of the wave 3 of SSIH.

C.3 The COVID-19 Module in Wave 4 of SSIH

The fourth wave of the survey was conducted between February and March 2021, and the total sample amounted to more than 2,000 households; almost 1,800 had also been interviewed in the third edition of the survey. The main findings and the methodology used are described in Rondinelli and Zanichelli (2021b) and in the box "Italian Households during the Epidemic: The Bank of Italy's Survey" (Bank of Italy 2021b).

1 As in the COVID-19 module of the wave 3 of SSIH.

2+3 (If you answered "1" or "2" to at least one of 1.2, 1.3, and 1.5 of the COVID-19 module) Why did you spend some expenses less often? Distribute 100 points between these three alternatives, based on what you think are most likely: give a high score to those you think are most likely, a low one to those it deems least likely.

- Lower financial resources
- Given the containment measures, some purchases were hindered/impossible
- Fears of contagion
- Put money aside for unexpected events

4 Not included

Accumulated Saving: Did your household spend less than your annual income in 2020, putting aside some savings? Yes/No

C.4 Construction of the Relevant Variables

Expected Spending: Consider the expenditure for food, clothing and footwear, home goods and services. How will your household change total expenditure for these items in the next 3 months? It will increase; stay the same; decrease

Expected Drop in Spending: (If expected spending "will decrease") By how much? Less than 10%; Between 10% and 20%; Between 20% and 30%; More than 30%

Saving Intentions: In the next 12 months, do you expect to: spend less than the entire yearly income and succeed in saving; spend the entire yearly income and not to manage to save anything; spend more than the entire yearly income, drawing on savings or borrowing

Making Ends Meet: Before the start of the pandemic, your household income allowed you to reach the end of the month with: great difficulty, difficulty, some difficulty, easily enough, easily, very easily

Expectation on Y: How do you expect your household income to change in 2021 compared to 2020? It will increase, stay the same, decrease

Expectation on LM: In your opinion, how will the labor market situation in Italy develop over the next 12 months? It will: considerably improve, slightly improve, stay the same, slightly deteriorate, considerably deteriorate, don't know

FEAR: Dummy variable equal to one whether the households answered "1" to questions 1.2, 1.3, and 1.5 of the COVID-19 module

FEAR CASES: Dummy variable equal to one whether the households answered "1" or "2" to question 4.5(a) of the COVID-19 module, i.e., if households decided to eliminate or strongly reduce their spending in hotels, bars, and restaurants even when in the region of residence there were fewer than 10 new cases of COVID-19 per day.[38]

Uncertainty: Dummy variable equal to one if the self-reported probability of (i) losing the job is higher than 25% for employed household members and (ii) finding a job is lower than 25% for unemployed individuals.

(i) (If "Employee" or "Self-employed") What is the probability that you will lose your job over the next 12 months? (Answer between a minimum of "0" if you are sure you are working and a maximum of "100" if you are sure you are not working.)

(ii) (if "Unemployed") What is the probability that you will find a (new) job over the next 12 months? (Answer between a minimum

[38] Despite the fact that the reference to the number of cases is in absolute terms, 10 can be considered a sufficiently small number, even in smaller regions.

of "0" if you are sure you are not working and a maximum of "100" if you are sure you are working.)

Red/Orange/Yellow Zone: Dummy variables equal to one for regions in red/orange/yellow areas at the moment of the interview. Starting from the beginning of November 2020, Italian regions were differentiated on a weekly basis according to the degree of restrictions in place, identified either by a yellow, orange, or red color (with increasing severity). When wave 3 of SSIH began, the red zones were the Autonomous Province of Bolzano and the regions of Calabria, Campania, Lombardy, Piedmont, Tuscany, and Valle d'Aosta; the orange zones were Abruzzo, Basilicata, Emilia-Romagna, Friuli Venezia Giulia, Liguria, Marche, Puglia, Sicily, and Umbria. All the other regions and the Autonomous Province of Trento were designated yellow zones (Prime Minister's Decree of 3 November 2020 and subsequent ordinances).

Government Measures: A dummy variable equal to one for households having received fiscal support to income by the Italian government.

Table C.3. SSIH Data: Summary Statistics

Variable	Mean	Std. Dev.	Obs.
20–34	0.07	0.255	2,077
35–54	0.368	0.482	2,077
55–64	0.208	0.406	2,077
65+	0.355	0.478	2,077
None or Primary	0.191	0.393	2,077
Middle School	0.373	0.484	2,077
High School	0.295	0.456	2,077
College and Beyond	0.141	0.348	2,077
Male	0.684	0.465	2,077
Female	0.316	0.465	2,077
North	0.489	0.5	2,077
Center	0.203	0.402	2,077
South	0.308	0.462	2,077
Employee	0.403	0.491	2,077
Self-Employed	0.092	0.288	2,077
Unemployed	0.14	0.347	2,077
Pensioner	0.365	0.482	2,077
Making Ends Meet (Great Difficulty)	0.188	0.391	2,077
Making Ends Meet (Difficulty)	0.351	0.477	2,077
Making Ends Meet (Easily)	0.305	0.46	2,077
Making Ends Meet (Very Easily)	0.156	0.363	2,077
Expectation on Y (Increase)	0.146	0.353	2,077
Expectation on Y (Stable)	0.658	0.475	2,077
Expectation on Y (Decrease)	0.197	0.398	2,077
Expectation on LM (Increase)	0.207	0.405	2,077
Expectation on LM (Stable)	0.147	0.354	2,077
Expectation on LM (Decrease)	0.583	0.493	2,077
Expectation on C Less Y in 12 Months ($S = 1$)	0.419	0.493	2,077
Expectation on C in 3 Months (Decrease, $ncexp = 1$)	0.328	0.47	2,077
Expected C Will Decrease $< 10\%$	0.146	0.353	675
Expected C Will Decrease 10–20%	0.348	0.477	675
Expected C Will Decrease 20–30%	0.208	0.406	675
Expected C Will Decrease $> 30\%$	0.297	0.457	675
Survey Questions on the Reasons for Cutting Expenditure			
Lower Financial Resources; % of Households	0.464	0.499	1,838
Restrictive Measures; Points Assigned Mean (Median)	31.64 (30)	22.537	1,032
Fears of Contagion; Points Assigned Mean (Median)	39.016 (40)	23.292	1,032
Unexpected Events; Points Assigned Mean (Median)	29.344 (25)	21.007	1,032

(*continued*)

Table C.3. (Continued)

Variable	Mean	Std. Dev.	Obs.
Built-in Questions on the Reasons for Cutting Expenditure			
FEAR	0.277	0.448	2,077
FEARS CASE	0.58	0.494	2,077
Uncertainty	0.316	0.465	1,408
Red Zone	0.405	0.491	2,077
Orange Zone	0.37	0.483	2,077
Yellow Zone	0.225	0.417	2,077

Note: Our calculations from wave 3 of SSIH, using sample weights. See Appendix C for the variable construction. The unemployed category includes students, housewives, and others. LM indicates labor market, Y indicates income, C indicates expenditure, S indicates saving.

Appendix D. Microeconomic Evidence: Additional Results

Table D.1. Determinants of the Reasons for Cutting Expenditure (multinomial logit)

	Economic	Fears	Deal with Unexpected Events
Age	–0.029	–0.047	–0.021
	(0.049)	(0.051)	(0.049)
Age Sq.	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)
Employee	–0.107	–0.702**	–0.394
	(0.349)	(0.356)	(0.342)
Self-Employed	0.268	–0.729*	–0.398
	(0.364)	(0.387)	(0.359)
Unemployed	–0.023	–0.550	–0.484
	(0.422)	(0.453)	(0.430)
Making Ends Meet (Great Difficulty)	1.814***	–0.010	0.035
	(0.292)	(0.319)	(0.300)
Making Ends Meet (Difficulty)	1.587***	0.092	0.503**
	(0.244)	(0.243)	(0.235)
Making Ends Meet (Easily)	0.309	–0.239	0.166
	(0.223)	(0.214)	(0.208)
Expectation on Y (Decrease)	0.354*	–0.016	–0.052
	(0.211)	(0.244)	(0.216)
Expectation on LM (Decrease)	0.259	0.053	–0.088
	(0.167)	(0.180)	(0.163)
Red Zone	0.011	–0.126	–0.089
	(0.194)	(0.208)	(0.191)
Orange Zone	0.361*	0.053	0.226
	(0.207)	(0.224)	(0.207)
FEAR	0.765***	0.566***	0.502**
	(0.199)	(0.210)	(0.200)
Uncertainty	0.841***	0.371*	0.499**
	(0.212)	(0.223)	(0.212)
Constant	0.128	2.017	1.239
	(1.265)	(1.353)	(1.252)

Note: $^{**}p < 0.05$, $^{***}p < 0.01$. Number of observations: 1,238. Reference for the multinomial model is "restrictive measures." Our calculations from wave 3 of SSIH. LM indicates labor market, Y indicates income; reference category for expectation on Y and LM is increase or stay the same. Reference category for occupational status is pensioner; the unemployed category includes students, housewives, and others. Reference category for making ends meet is very easily.

Table D.2. Channels for Cutting Expenditure (different waves, linear models)

	Wave 3	Wave 2	Waves 2 and 3	Wave 4
	(1)	(2)	(3)	(4)
Age	0.010	0.014**	0.011**	0.013***
	(0.006)	(0.006)	(0.004)	(0.004)
Age Sq.	–0.000	–0.000*	–0.000**	–0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
Employee	0.082	0.001	0.042	–0.016
	(0.055)	(0.048)	(0.036)	(0.031)
Self-Employed	0.091	0.074	0.081**	–0.004
	(0.058)	(0.051)	(0.038)	(0.036)
Unemployed	0.076	0.051	0.067*	–0.009
	(0.061)	(0.051)	(0.040)	(0.036)
Making Ends Meet (Great Difficulty)	0.073*	0.179***	0.126***	0.025
	(0.040)	(0.038)	(0.027)	(0.030)
Making Ends Meet (Difficulty)	0.101***	0.067*	0.083***	0.060**
	(0.035)	(0.035)	(0.025)	(0.026)
Making Ends Meet (Easily)	0.010	0.033	0.019	0.008
	(0.035)	(0.035)	(0.025)	(0.026)
Expectation on Y (Decrease)	0.286***	0.263***	0.274***	0.176***
	(0.029)	(0.026)	(0.019)	(0.023)
Expectation on LM (Decrease)	0.064***	0.097***	0.082***	0.094***
	(0.024)	(0.023)	(0.016)	(0.017)
Red Zone	0.044	–0.016	0.014	0.025
	(0.030)	(0.028)	(0.020)	(0.018)
Orange Zone	0.044	–0.070**	–0.011	–0.102
	(0.030)	(0.029)	(0.021)	(0.071)
FEAR	0.228***	0.145***	0.186***	0.213***
	(0.027)	(0.026)	(0.019)	(0.021)
Uncertainty	0.115***	0.082***	0.098***	0.111***
	(0.028)	(0.026)	(0.019)	(0.020)
Constant	–0.312*	–0.334**	–0.309***	–0.275***
	(0.163)	(0.157)	(0.113)	(0.106)
Obs.	1,408	1,512	2,920	2,400
R^2	0.205	0.193	0.191	0.140

Note: *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Our calculations from wave 2 (April–May 2020), wave 3 (November 2020), and wave 4 (February–March 2021) of SSIH (see Appendix C). Dependent variable equal to one for households expecting a drop in expenditure in the next three months. LM indicates labor market, Y indicates income; reference category for expectation on Y and LM is increase or stay the same. Reference category for occupational status is pensioner; the unemployed category includes students, housewives, and others. Reference category for making ends meet is very easily.

Table D.3. Channels for Cutting Expenditure by Job Status (linear models)

	Baseline	Employed	Self-Employed	Unemployed	Pensioners
	(1)	(2)	(3)	(4)	(5)
Age	0.013**	0.001	–0.011	0.044***	–0.029
	(0.006)	(0.009)	(0.020)	(0.016)	(0.072)
Age Sq.	–0.000*	0.000	0.000	–0.000***	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)
Making Ends Meet (Great Difficulty)	0.074*	0.104**	–0.130	0.193*	–0.143
	(0.040)	(0.049)	(0.116)	(0.113)	(0.124)
Making Ends Meet (Difficulty)	0.104***	0.067	–0.067	0.242**	0.453***
	(0.035)	(0.043)	(0.100)	(0.113)	(0.108)
Making Ends Meet (Easily)	0.010	0.003	–0.068	0.065	0.073
	(0.035)	(0.042)	(0.101)	(0.149)	(0.096)
Expectation on Y (Decrease)	0.284***	0.264***	0.268***	0.317***	0.307***
	(0.029)	(0.038)	(0.070)	(0.079)	(0.080)
Expectation on LM (Decrease)	0.064***	0.067**	0.080	0.038	–0.019
	(0.024)	(0.029)	(0.066)	(0.082)	(0.073)
Red Zone	0.044	0.037	0.015	0.165*	0.107
	(0.030)	(0.036)	(0.082)	(0.097)	(0.090)
Orange Zone	0.043	0.074*	–0.083	–0.051	0.212**
	(0.030)	(0.038)	(0.079)	(0.096)	(0.091)
FEAR	0.228***	0.186***	0.339***	0.265***	–0.002
	(0.027)	(0.035)	(0.071)	(0.075)	(0.087)
Uncertainty	0.117***	0.157***	0.195***	0.077	–0.297***
	(0.026)	(0.035)	(0.069)	(0.094)	(0.092)
Constant	–0.289*	–0.038	0.579	–1.197***	1.013
	(0.162)	(0.232)	(0.518)	(0.416)	(2.528)
Obs.	1,408	904	212	143	131
R^2	0.204	0.181	0.287	0.394	0.344

Note: $^*p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$. Our calculations from wave 3 of SSIH. Dependent variable equal to one for households expecting a drop in expenditure in the next three months. LM indicates labor market, Y indicates income; reference category for expectation on Y and LM is increase or stay the same. Reference category for making ends meet is very easily. The unemployed category does not include students and housewives.

Table D.4. Channels for Cutting Expenditure by Age (linear models)

	Baseline	**<35**	**35–54**	**55–65**	**>65**
	(1)	**(2)**	**(3)**	**(4)**	**(5)**
Age	0.010	1.092***	–0.036	0.483*	–0.397**
	(0.006)	(0.375)	(0.049)	(0.291)	(0.164)
Age Sq.	–0.000	–0.018***	0.000	–0.004*	0.003**
	(0.000)	(0.006)	(0.001)	(0.002)	(0.001)
Employee	0.082	0.359*	0.160	–0.036	0.055
	(0.055)	(0.188)	(0.339)	(0.090)	(0.100)
Self-Employed	0.091	0.493**	0.145	0.013	–0.020
	(0.058)	(0.215)	(0.341)	(0.099)	(0.096)
Unemployed	0.076	0.000	0.131	0.066	–0.015
	(0.061)	(.)	(0.342)	(0.105)	(0.123)
Making Ends Meet (Great Difficulty)	0.073*	0.214	0.058	0.027	0.069
	(0.040)	(0.160)	(0.052)	(0.080)	(0.126)
Making Ends Meet (Difficulty)	0.101***	0.080	0.063	0.079	0.178*
	(0.035)	(0.136)	(0.046)	(0.074)	(0.106)
Making Ends Meet (Easily)	0.010	–0.063	0.013	0.061	–0.100
	(0.035)	(0.135)	(0.046)	(0.076)	(0.102)

(*continued*)

Table D.4. (Continued)

	Baseline	**<35**	**35–54**	**55–65**	**>65**
	(1)	**(2)**	**(3)**	**(4)**	**(5)**
Expectation on Y (Decrease)	0.286***	0.042	0.330***	0.282***	0.319***
	(0.029)	(0.121)	(0.038)	(0.059)	(0.086)
Expectation on LM (Decrease)	0.064***	0.093	0.078**	0.085*	–0.055
	(0.024)	(0.092)	(0.031)	(0.048)	(0.073)
Red Zone	0.044	–0.206*	0.059	0.117**	0.117
	(0.030)	(0.114)	(0.039)	(0.058)	(0.093)
Orange Zone	0.044	–0.078	0.069*	0.082	0.094
	(0.030)	(0.117)	(0.040)	(0.059)	(0.097)
FEAR	0.228***	0.312**	0.260***	0.185***	0.115
	(0.027)	(0.121)	(0.035)	(0.054)	(0.084)
Uncertainty	0.115***	0.348***	0.099***	0.102*	0.016
	(0.028)	(0.125)	(0.036)	(0.054)	(0.091)
Constant	–0.312*	–16.385***	0.461	–13.700	14.959**
	(0.163)	(5.616)	(1.129)	(8.682)	(6.174)
Obs.	1,408	88	775	386	159
R^2	0.205	0.370	0.252	0.230	0.246

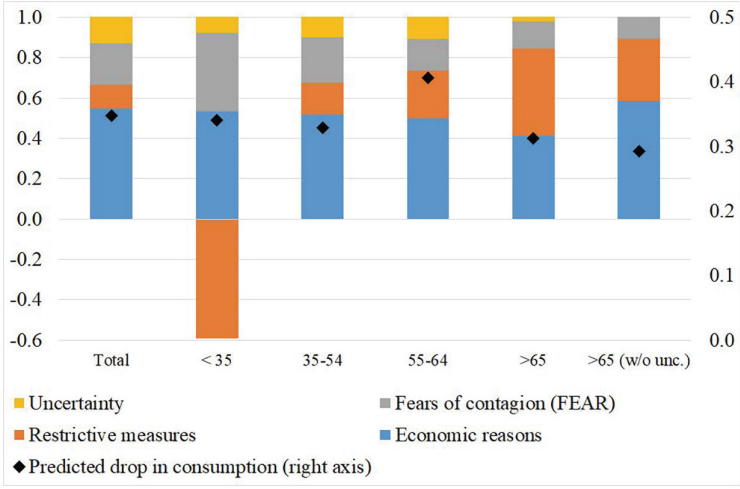
Note: *$p < 0.1$, **$p < 0.05$, ***$p < 0.01$. Our calculations from wave 3 of SSIH. Dependent variable equal to one for households expecting a drop in expenditure in the next three months. LM indicates labor market, Y indicates income; reference category for expectation on Y and LM is increase or stay the same. Reference category for making ends meet is very easily. The unemployed category includes students, housewives, and others.

Table D.5. Connecting the Drop in Consumption with Saving in 2020 (linear models)

	Baseline	Accumulate Savings in 2020	Did Not Accumulate Savings in 2020
	(1)	(2)	(3)
Age	0.010	–0.003	0.017*
	(0.006)	(0.010)	(0.009)
Age Sq.	–0.000	0.000	–0.000
	(0.000)	(0.000)	(0.000)
Employee	0.082	0.047	0.083
	(0.055)	(0.082)	(0.081)
Self-Employed	0.091	0.067	0.074
	(0.058)	(0.087)	(0.083)
Unemployed	0.076	0.054	0.069
	(0.061)	(0.103)	(0.085)
Making Ends Meet (Great Difficulty)	0.073*	0.041	–0.022
	(0.040)	(0.073)	(0.070)
Making Ends Meet (Difficulty)	0.101***	0.041	0.052
	(0.035)	(0.050)	(0.067)
Making Ends Meet (Easily)	0.010	–0.036	0.024
	(0.035)	(0.043)	(0.070)
Expectation on Y (Decrease)	0.286***	0.276***	0.281***
	(0.029)	(0.053)	(0.037)
Expectation on LM (Decrease)	0.064***	0.067*	0.052
	(0.024)	(0.036)	(0.035)
Red Zone	0.044	0.023	0.030
	(0.030)	(0.045)	(0.043)
Orange Zone	0.044	0.007	0.066
	(0.030)	(0.048)	(0.043)
FEAR	0.228***	0.156***	0.274***
	(0.027)	(0.043)	(0.039)
Uncertainty	0.115***	0.072	0.132***
	(0.028)	(0.047)	(0.037)
Constant	–0.312*	0.111	–0.442*
	(0.163)	(0.252)	(0.233)
Obs.	1,408	514	751
R^2	0.205	0.128	0.217

Note: $^*p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$. Our calculations from wave 3 of SSIH considering households interviewed also in wave 4 (see Appendix C) and replying to the question on the savings accumulated in 2020. Dependent variable equal to one for households expecting a drop in expenditure in the next three months for column 1. Dependent variable equal to one for households (i) accumulating savings in 2020 for column 2 and (ii) non-accumulating savings in 2020 for column 3. LM indicates labor market, Y indicates income; reference category for expectation on Y and LM is increase or stay the same. Reference category for making ends meet is very easily. The unemployed category includes students, housewives, and others.

Figure D.1. Contribution of the Reasons for Cutting Expenditure by Age



Note: Our calculations from wave 3 of SSIH. Contributions are computed at the sample means of each age category.

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