

How has COVID-19 affected the financial situation of households in Austria?

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This study discusses the potential effects of the COVID-19 crisis on the finances of households in Austria. Different individuals and households have been exposed to the crisis in very different ways and to varying degrees. In the first part of this study, we discuss different types of households and different channels through which the COVID-19 crisis may affect households' financial situation. The second part of the study uses data from the Austrian Corona Panel Project (ACPP) carried out by the University of Vienna as well as data from the Eurosystem Household Finance and Consumption Survey (HFCS) for Austria to analyze (potential) impacts of the crisis. We find that those households who had already found themselves in a difficult social, economic and financial situation before the COVID-19 crisis were the ones suffering the largest income losses (e.g. low-income households or households with an unemployed reference person).

JEL classification: I18, H12, D14, G5

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The COVID-19 crisis started as a health crisis and remains a health crisis. Thus, the end of COVID-19 will depend on healthcare solutions, i.e. a vaccine and/or effective treatment. However, the coronavirus (SARS-CoV-2) that causes the COVID-19 disease has also had economic and financial effects, basically through the following two channels: First and foremost, individuals might contract COVID-19 and become contagious, which interferes with usual life activities. They can no longer take care of their children, nor of others in need of care. They can no longer go to work, and they have to restrict their social life to get healthy and/or to protect others. Second, governments have imposed various restrictions to stop the spread of the disease, to save lives and to prevent the health systems from collapsing under the pressure of COVID-19. Moreover, both channels have also had an impact on individuals' expectations not only of their private lives but also as managers and owners of companies. This, in turn, has led to a change in behavior, i.e. people have aligned their behavior with their expectations, which have mostly been accompanied by increased uncertainty about the future state of the world.

Taken together, the effects caused by the coronavirus pandemic amount to a huge negative shock. The latter has already led to lower (than before) income for some households, as will be explained in more detail later on, and will lead to lower income (relative to a potential trajectory if it were not for the COVID-19 crisis) for most households. Households must deal with lower income and their

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ability to cope with this situation depends on their financial resources. The latter consist of households' private financial wealth, income and potential public transfers. Also, the possibility of having access to private financial resources of relatives and friends can play an important role.

To understand which households have been affected in what way and in line with the debate on possibly rising inequalities due to COVID-19 (see e.g. Schnabel, 2020), it is important to analyze income changes beyond the national aggregate, which reflects an income-weighted mean of changes at the household level. Furthermore, economic expectations at the firm, household and individual level are formed based on the corresponding income trajectories and not only based on the trajectory of aggregate developments. Therefore, to analyze households' economic expectations and behavioral changes in response to the crisis, we need to take into account the disaggregated level of the economy.

The problems that households face and the speed of economic recovery once the health crisis is over are closely related to how well households can cope with this shock and how much economic, social and human capital has been destroyed or has simply not been created. We take the above-mentioned microeconomic, empirical perspective and ask which households are affected by the COVID-19 crisis and in what way. Moreover, we look at how financially resilient households are in weathering the crisis.

The remainder of this study is structured as follows. Section 1 introduces the two datasets we use. In section 2, we describe households in Austria from the perspective of the potential channels through which they are affected by the COVID-19 crisis, before characterizing their financial resilience to the crisis in section 3. In section 4, we analyze and hypothesize about actual financial developments during the pandemic, putting an emphasis on households' consumption and savings preferences. Section 5 discusses the problem of household finances in times of crisis from a more general point of view and concludes.

1 Data

To analyze the impact COVID-19 has had on Austrian households to date, we use data from the Austrian Corona Panel Project (ACPP) carried out by the University of Vienna (Kittel et al., 2020a). Starting at the end of March 2020, the project has generated panel survey data recording the social, political and economic impacts of the COVID-19 crisis on the Austrian population. Particular attention has been paid to changes over the course of the crisis with the aim of answering questions such as: (i) what psychosocial consequences have the lockdown periods had; (ii) what effects have the relaxations of lockdown measures had on people's risk assessments, behavior and consumption patterns and (iii) according to the Austrian population, how should the government deal with coronavirus. In the panel survey, around 1,500 people over the age of 14 living in Austria were surveyed initially on a weekly basis (from March to June), then on a bi-weekly basis (from June to July) and finally on a monthly basis (from July onward). Respondents were invited to participate in the survey using a commercial online access panel provided by Marketagent and a quota sampling procedure. To ensure that the results are representative of the Austrian population, the data are weighted by gender, age, level of education and region. In the case of incomplete surveys, we apply pairwise deletion of missing values. For details on sampling, representativeness, weighting

and data access, see Kittel et al. (2020b). For the survey questions of the variables used in this study, see the annex.

In addition to data from the ACP, we use data from the third wave of the Eurosystem Household Finance and Consumption Survey (HFCS) for Austria to examine several aspects of households in Austria. The HFCS is a euro area-wide project that gathers information on household balance sheets including detailed measurements of wealth and income along with a rich set of socio-economic variables. The unit of observation is the household. The HFCS data have been used extensively by the Eurosystem, international organizations such as the OECD and the IMF as well as numerous academic researchers for a large variety of topics. They are gathered using the highest quality standards in terms of sampling, weighting and multiple imputations. For the corresponding first results report of the third wave, see Fessler et al. (2018), and for the methodological report including the HFCS questionnaire, see Albacete et al. (2018) as well as the online appendix available at www.hfcs.at.² The third wave (2017) of the HFCS gives us a clear and concise picture of the financial situation of households in Austria before the COVID-19 crisis. As the distributions of income, wealth and debt were very stable in Austria between 2010 and 2017, we assume that the 2017 data describe quite well households' financial situation in 2020 before the COVID-19 crisis. The fourth wave, which should have been carried out during the first half of 2020, was postponed due to the crisis. To still be able to analyze its impact, we therefore use additional data provided by the ACP.

Both datasets allow us to simulate the potential financial impact of the coronavirus crisis on Austrian households, with the ACP data providing an input for the assumptions needed for the simulations based on HFCS data on household balance sheets and characteristics. Hence, we integrate the information obtained from both datasets to enrich the analysis of the impact resulting from the COVID-19 crisis (for more details, see section 3).

2 Who is affected and in what way?

To better understand how individuals are affected financially by the COVID-19 crisis, it is advisable to take the household perspective, as the household is the economic unit in which individuals share most of their financial resources. It is crucial to know on how many sources of income household members rely and what types of income they receive, as the latter go hand in hand with the actual risks brought about by this crisis. For example, a household consisting of a single mother and her child who rent their home and whose household income only consists of the income the mother earns as a waitress and the child allowance the child receives from the state is at a higher risk than a household consisting of a retired couple who live in their own home. While the mother can lose her job and with that most of the household income, the retired couple will continue to receive their pensions. While the mother has to pay rent and may even be at risk of losing her home, the retired couple owns their home and receives imputed rent in the form of non-cash capital gains. On top of that, the mother may have to pay for childcare or may even have to stop working if childcare facilities are closed due to COVID-19. Such examples illustrate in what ways one household can be more exposed and/or less

² For international results, see ECB (2020a) and ECB (2020b).

resilient to the COVID-19 shock than another household. In what follows, we demonstrate the heterogeneity in exposure to different channels of the shock by shedding light on the variety of household structures and the level of exposure that comes with the shock.

If a household member is infected with the coronavirus, transmission of the virus to other household members is possible, if not likely, and self-quarantine measures are imposed. In such cases, the size of living space is even more important. Chart 1 shows the living space in square meters per household member broken down by household structure and province. On average, larger households with children as well as single parents have less than half the space per household member compared to single households. Moreover, households living in densely populated areas like Vienna have less living space per household member than those living in areas with low population density like the province of Burgenland. Hence, the severity of potential quarantine measures is strongly related to the region households live in as well as household structure.

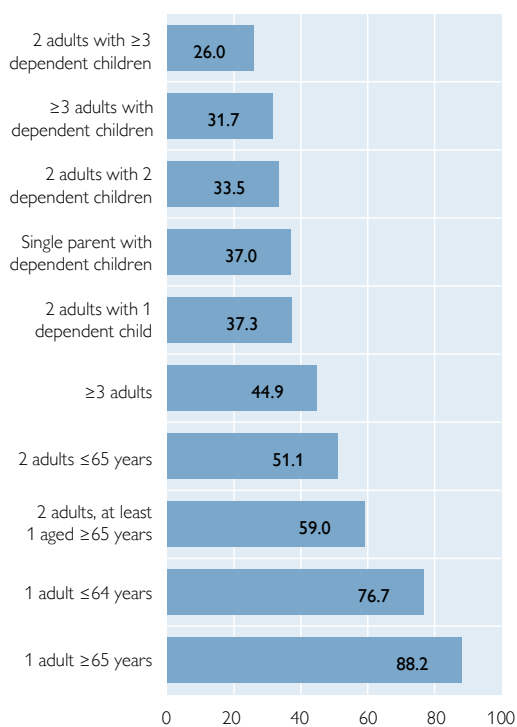
Table 1 shows the mean number of household members in different age groups broken down by household size. Almost 40% of Austrian households consist of only one person, and less than 30% consist of more than two persons. Less than every fifth household has children below the age of 16. Most children live in larger households with four or more household members. Living alone potentially comes

Chart 1

Living space of households

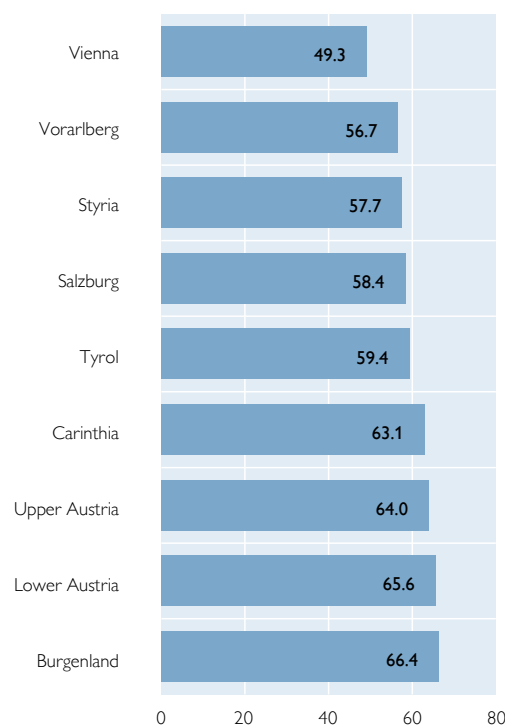
Household structure

Average m² per household member



Province

Average m² per household member



Source: HFCS Austria 2017, OeNB.

Table 1

Household structure by household size and age

	Share %	Average number of persons aged...				% of households with persons aged...			
		16 or below	16 to 25	25 or over	Total	16 or below	16 to 25	25 or over	Total
1 person	37.0	0.00	0.06	0.94	1.0	0.0	6.4	93.6	100
2 persons	35.1	0.04	0.14	1.82	2.0	2.0	6.8	91.2	100
3 persons	12.7	0.57	0.43	2.00	3.0	19.1	14.3	66.6	100
4 persons	9.6	1.28	0.57	2.15	4.0	31.9	14.3	53.7	100
5 or more persons	5.6	1.98	0.92	2.45	5.3	37.0	17.2	45.7	100

Source: HFCS Austria 2017, OeNB.

– together with psychological hardship³ – with a large impact resulting from a shock on household income, particularly if people lose their job.

In table 2, Austrian households are grouped into categories relative to the national median equivalized net income.⁴ 10% of Austrian households have an income below 60% of the median equivalized net income, a threshold commonly used to determine whether a household lives in poverty. Households with an equivalized income above 60% but below 100% of median income are almost equally distributed between the category with an equivalized income of 60% to 80% of median income (19% of households) and that with an equivalized income of 80% to 100% of median income (about 21% of households). The income distribution is more skewed above the median, with almost 37% of households having an equivalized income between 100% and 150% of median income, but only 3.5% of households having an equivalized income of more than 200% of median income. Lower-income households are somewhat smaller in size and have far fewer household members in active employment. Moreover, they are more likely to be tenants who do not own their home. While some 56% of households who are in the lowest income category (classed as households in poverty) rent their home, only about 31% rent in the highest income category. Net wealth is also related positively to income, as is financial wealth. Tenants have much less median financial wealth than homeowners. Thus, financial wealth and real wealth are, overall, complements and not substitutes. We selected these variables for a reason. During the COVID-19 pandemic, many households have experienced income shocks. As capital income and public transfers proved more resilient to the COVID-19 crisis than labor income, the probability of households being hit by additional income shocks was higher the more household members were employed (including self-employed). Given similar household income and household size, it also matters for households whether they have to pay rent from their income or whether they generate non-cash income (imputed rent) as owner-occupiers instead. Financial wealth also plays a role in how well households weather periods of potentially lower income. While households with lower equivalized income are smaller in size and have fewer employed household members and are therefore less likely to be hit by an income shock due to the COVID-19 crisis, they more often rent

³ See, for example, Stolz et al. (2020).

⁴ We use the (new) OECD scale.

Table 2

Household characteristics by equivalized net income categories in % of median income

	Share	Household members	Employed household members	Tenants	Net wealth	Financial wealth	Financial wealth (tenants only)
	% of households	Mean (number)	Mean (number)	% of households	Median (EUR thousand)	Median (EUR thousand)	Median (EUR thousand)
below 60% of median	10.0	1.9	0.4	56.4	8.0	2.5	1.0
60% to below 80%	19.0	2.1	0.8	56.0	19.0	6.3	4.2
80% to below 100%	21.2	2.2	1.0	45.5	80.0	12.9	8.2
100% to below 150%	36.8	2.2	1.2	43.8	136.2	20.9	15.0
150% to below 200%	9.5	2.0	1.3	39.1	238.3	38.8	32.2
200% or more	3.5	2.1	1.4	30.5	514.6	92.7	75.9

Source: HFCS Austria 2017, OeNB.

their main residence and pay for it from their income. Furthermore, low-income households hold less financial wealth than households in the same income category who own their home, which reduces their ability to compensate for losses in income by using their savings. On top of that, tenants tend to suffer more from lockdown restrictions, as their main residence usually is an apartment which less often includes direct access to a garden, terrace, balcony or other outdoor space. In sum, tenants seem to be less well equipped to overcome the COVID-19 crisis than homeowners.

Table 3 illustrates the composition of annual gross household income, again broken down by income categories. More specifically, we show the mean value for each source of income within the income categories, as they sum up to the total average gross household income. One reason for lower household income in lower equivalized net income categories is, among other things, the fact that fewer household members are employed.

While all values of the different income sources (except for the one of other social transfers) rise strongly with equivalized net income in absolute terms, income from pensions and other social transfers plays a less important role in relative terms the higher the equivalized net income is. Pensions and other public transfers

Table 3

Composition of annual gross household income by equivalized net income categories in % of median income

	Share	Labor		Pension		Other social transfers		Capital		Total	
	% of households	Mean (EUR thousand)	%	Mean (EUR thousand)	%	Mean (EUR thousand)	%	Mean (EUR thousand)	%	Mean (EUR thousand)	%
below 60% of median	10.0	10.4	(52.5 +)	6.8	(34.4 +)	2.2	(11.1 +)	0.4	(2.1 =)	19.8	(100)
60% to below 80%	19.0	18.2	(61.5 +)	8.9	(30.1 +)	2.0	(6.6 +)	0.5	(1.8 =)	29.6	(100)
80% to below 100%	21.2	26.6	(64.2 +)	12.3	(29.8 +)	1.5	(3.5 +)	1.0	(2.5 =)	41.5	(100)
100% to below 150%	36.8	40.0	(70.9 +)	13.9	(24.6 +)	1.2	(2.2 +)	1.3	(2.4 =)	56.5	(100)
150% to below 200%	9.5	58.5	(72.6 +)	18.9	(23.5 +)	0.7	(0.9 +)	2.4	(3.0 =)	80.5	(100)
200% or more	3.5	126.9	(78.4 +)	20.3	(12.5 +)	0.7	(0.5 +)	13.9	(8.6 =)	161.8	(100)

Source: HFCS Austria 2017, OeNB.

serve as a financial buffer for poorer households against potential impacts of the COVID-19 crisis, as pensions and other public transfers have not (yet) been exposed to the effects of the crisis. As pensions and other social transfers as a share of income decrease with household income, the effect of shocks of labor and capital income of similar size across the income distribution is stronger for those with higher income.

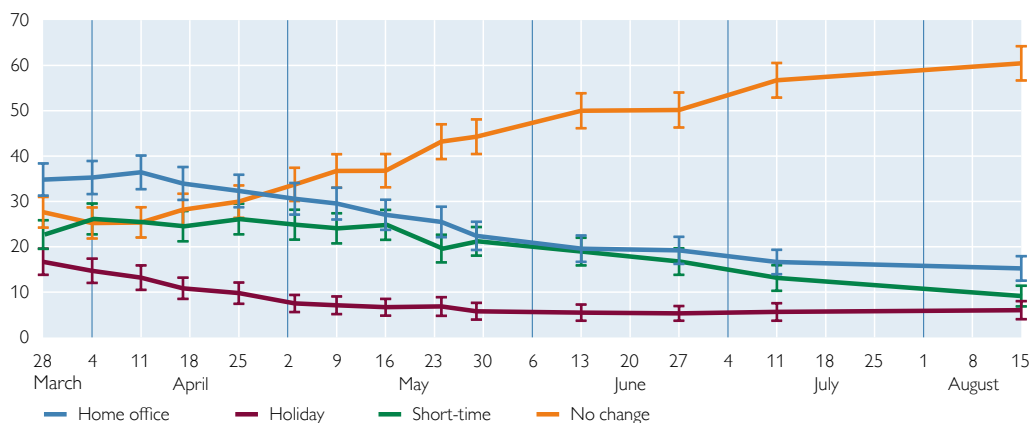
Looking at the data obtained from the ACPP allows us to gain insights into how employees were affected by the COVID-19 crisis. Chart 2 shows that during the first peak of the crisis in mid-April 2020, almost 40% of employed respondents were working from home. Although this rate has since fallen significantly, about 17% of respondents were still working from home in mid-August. Furthermore, the high proportion of people on vacation at the beginning of the crisis shows that taking vacation was one of the strategies to be able to react to the crisis at short notice. How often this approach was used becomes particularly evident when comparing the number of employees on vacation in spring with that during popular vacation times, such as during the summer months, which trails behind the 17% share of employees on vacation at end-March. Despite the increasing normalization of everyday life and the easing of several coronavirus restrictions in the summer, only 60% of respondents surveyed in August stated that their working conditions were the same as before the coronavirus outbreak (as measured by the proportion of people who said that they did not experience any unusual working conditions). This shows that for many employees everyday working life has been heavily influenced by the crisis, even if government protection programs, such as short-time working, or Kurzarbeit in German, were less widely used.

Despite better labor market conditions in the summer, respondents' expectations of how long the crisis would last (as measured by the time it takes until life in Austria is back to normal) were still consistently high and have even increased again since June (see chart 3). By mid-August, over 80% of those questioned expected that it would take more than six months until Austria would find its way back to "normality".

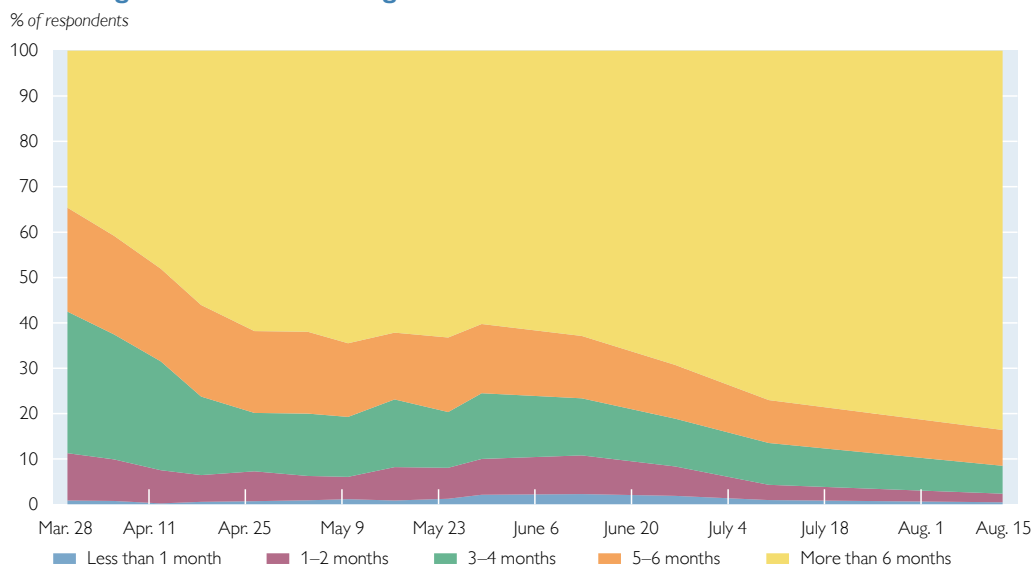
Chart 2

Employment status

% of employed persons



Source: Austrian Corona Panel Project (ACPP) 2020.

How long will it take until life gets back to normal?

Source: Austrian Corona Panel Project (ACPP) 2020.

As people's expectations about the duration of the crisis increased and summer did not bring back regular employment situations and conditions for a significant share of Austrians, it is crucial to ask how long household finances would last in case of different types of income disruptions. For this, we turn back to the information obtained from the HFCS in the next section.

3 How financially resilient are households to the COVID-19 crisis?

Table 4 identifies financially vulnerable households based on their financial margin, which we define (following Ampudia et al., 2016) as net income after deducting basic living costs⁵, debt service for debtors and net rent (i.e. rent excluding utilities) for tenants. Austrian households' median financial margin amounts to around EUR 900 per month. This is the amount households can spend on additional consumption (other than basic consumption needs; see footnote 5) or save each month. It increases strongly with household income, net wealth or the education level of the household reference person.⁶ Households with a particularly low median financial margin are those composed of a single parent with dependent children (about EUR 100) or those with an unemployed reference person (about –EUR 400). The latter is also the group with the highest proportion of households holding a negative financial margin (78%).

⁵ According to the European Commission (2011) and Ampudia et al. (2016), basic living costs in Austria come to 40% of median net household income. In addition, the basic living costs are adjusted by the number of members for each household, in line with the new OECD-modified scale.

⁶ The household reference person is defined according to the UN/Canberra definition (UNECE, 2011), i.e. this person is uniquely determined by applying sequentially the following steps: household type (one of the partners in a de facto or registered marriage with, then without dependent children, lone parent with children, the person with the highest income, and finally the eldest person).

Table 4

Vulnerability of households by household characteristics

	Share	Financial margin	Negative financial margin	Liquid assets	Liquid assets-to-financial margin ratio
	% of households	Median (EUR thousand)	% of households	Median (EUR thousand)	Median (number of months)
All	100.0	0.9	19.0	13.9	11.6
Age					
16–34	15.1	0.3	31.3	6.5	5.5
35–44	16.2	0.9	21.5	14.4	9.2
45–54	20.2	1.2	15.3	16.8	10.8
55–64	18.1	1.1	17.1	18.9	13.2
65–74	16.7	0.9	13.5	18.2	15.4
75+	13.6	0.5	17.1	12.6	15.7
Gender					
Male	64.9	1.1	15.0	17.2	12.3
Female	35.1	0.4	26.3	9.1	9.5
Level of education					
Primary education	0.8	0.1	35.3	9.0	0.8
Lower secondary or second stage of basic education	12.0	0.2	34.8	7.1	6.6
Upper secondary education	61.4	0.8	18.9	12.9	11.4
Post-secondary education	2.0	0.0	14.6	0.0	¹
Short-cycle tertiary education	23.8	1.5	11.0	23.7	13.8
Employment status					
Employed	51.4	1.0	15.0	14.5	11.1
Self-employed	6.9	1.8	15.7	22.8	10.2
Unemployed	3.6	−0.4	78.1	0.3	0.0
Retired	36.6	0.7	17.2	14.1	15.0
Other	1.4	−0.4	72.6	4.8	−2.7
Household structure					
Two adults younger than 65 years	18.3	1.5	11.0	18.4	11.1
Two adults, at least one aged 65 years or over	14.5	1.3	9.1	22.0	14.8
Three or more adults	5.6	2.4	3.2	23.0	9.8
Single parent with dependent children	3.4	0.1	43.4	5.0	0.7
Two adults with one dependent child	7.4	1.2	13.2	16.7	11.8
Two adults with two dependent children	7.1	1.2	16.5	22.8	14.3
Two adults with three or more dependent children	3.0	0.1	47.1	17.5	3.9
Three or more adults with dependent children	3.6	1.7	13.7	22.5	10.3
One adult, younger than 64 years	21.2	0.3	31.2	6.1	6.6
One adult, older than 65 years	15.9	0.4	21.1	10.8	18.2
Gross income					
1 st quintile	20.0	−0.1	64.3	3.3	−0.5
2 nd quintile	20.0	0.4	18.3	8.5	14.6
3 rd quintile	20.0	0.9	8.6	14.2	15.0
4 th quintile	20.0	1.5	3.0	20.3	13.9
5 th quintile	20.0	3.0	0.6	36.2	12.3
Net wealth					
1 st quintile	20.0	0.0	48.1	1.3	0.0
2 nd quintile	20.0	0.6	17.2	11.2	12.2
3 rd quintile	20.0	1.0	14.1	22.6	15.4
4 th quintile	20.0	1.3	8.8	21.5	13.3
5 th quintile	20.0	2.0	6.7	50.3	23.1
Homeownership status					
Owner/free user	53.2	1.3	11.2	21.4	14.5
Tenant	46.8	0.5	27.8	8.3	7.7
Province					
Vorarlberg	4.2	1.2	9.6	18.5	13.7
Tyrol	8.3	0.5	28.3	17.9	15.0
Salzburg	6.3	0.8	21.2	15.6	12.9
Upper Austria	15.9	0.9	14.6	16.6	14.7
Carinthia	6.4	0.5	23.2	8.0	9.0
Styria	13.8	0.7	26.7	7.9	6.8
Burgenland	3.1	1.2	7.4	16.0	10.7
Lower Austria	18.9	1.0	13.8	16.3	13.9
Vienna	23.0	0.8	19.8	12.9	10.4

Source: HFCS Austria 2017, OeNB.

¹ Results are suppressed because of too few observations.

Notes: Financial margin = monthly net income – debt service – basic living costs – net rent. Liquid assets = deposits + mutual funds + bonds + value of non self-employment private businesses + publicly traded shares + managed accounts.

Table 4 furthermore shows the amount of liquid assets⁷ held by the households. Households' median liquid assets amount to about EUR 14,000. Households with higher financial margins tend to have higher amounts of liquid assets, with the median financial margin of homeowners being almost three times higher than that of tenants (EUR 1,250 vs. EUR 450) and their liquid assets being almost three times higher, too (EUR 21,000 vs. EUR 8,000). However, there are also exceptions to the positive correlation between financial margins and liquid assets: Households composed of two adults with three or more dependent children have a relatively low median financial margin but a relatively high amount of liquid assets (EUR 60 vs. EUR 18,000). Finally, in the table, households' financial margin and liquid assets are combined into a single ratio to determine the number of months during which a median household would be able to compensate for potential financial margin losses by drawing on its liquid assets. As can be seen from the table, the median household has the financial capacity to compensate for such losses for more than 11 months. However, there are households who cannot compensate for such losses at all (e.g. households in the lowest income quintile or those with an unemployed reference person), and there are households who can cope with such losses for an even a longer period (e.g. households in the highest net wealth quintile or those with a retired reference person). This finding connects nicely with respondents' expectations of how long it will take to get back to normal times. It shows that the median household might be able to compensate for financial losses for a relatively long time. Focusing on those households who are not able to make up for losses as a result of the COVID-19 crisis seems warranted.

4 How have households been affected by the COVID-19 crisis?

4.1 Simulation results

To give some indication of the extent to which households have been affected by the COVID-19 crisis, we extended the microsimulation model by Albacete and Fessler (2010) and Albacete et al. (2014) to take into account shocks experienced not only at the level of households but also at the level of household members. The microsimulation model is based on the third wave of the HFCS.

The information obtained from the ACPP regarding the socio-economic characteristics (specifically the education level) of employees on short-time work together with the current short-time and unemployment statistics (across NACE sectors) compiled by the Public Employment Service Austria (AMS) provide the input for the simulations based on HFCS data on household balance sheets and characteristics.

Based on this input, several working household members are simulated to be either newly unemployed or on short-time work. While unemployed workers are chosen randomly according to an unemployment probability distribution estimated using a logit regression, short-time workers are chosen randomly according to the parameters coming from the ACPP and AMS data. The final step of the simulations consists in aggregating the household member level to the household level and it is after this step that it becomes clear whether the losses in income have been substantial or not and how many households (and household members) have been

⁷ Liquid assets include deposits, mutual funds, bonds, non-self-employment private businesses, publicly traded shares and managed accounts.

Table 5

Microsimulation of the potential impact of shocks on household income

	Affected households	Net household income	Income loss	
			Absolute	Relative to household income
	% of households	Mean (EUR thousand)	Mean (EUR thousand)	Mean (%)
Baseline scenario: situation before the COVID-19 crisis	0.0	3.2	0.0	0.0
Scenario 1: +32 percentage points (short-time workers) and +5 percentage points (unemployed workers)	29.0	3.1	0.4	11.9
Scenario 2: identical to scenario 1, but one-third of short-time workers becomes unemployed	29.0	3.1	0.9	25.3

Source: HFCS Austria 2017, OeNB and authors' calculations.

affected. The simulations follow the commonly used Monte Carlo approach, as the simulation steps are repeated 1,000 times before the means are calculated.

Table 5 shows the simulated potential impact of two COVID-19 scenarios on household income. In the first scenario, the rate of short-time workers in the total labor force population increases by 32 percentage points and the unemployment rate by 5 percentage points. According to the microsimulation model, 29% of households are affected in some way (placed on short-time work, laid off or both) in such a scenario which is comparable to the situation observed during the lockdown in April 2020. Overall, the monthly mean net household income decreases from EUR 3,200 to EUR 3,100. Among the households affected, the average income loss amounts to EUR 500 per month or about 12% of household income before the crisis. In the second scenario, we assume that one-third of the short-time workers in scenario 1 becomes unemployed in addition to those already unemployed in scenario 1. Thus, the second scenario shows an extreme situation that could materialize in Austria in the future and that would lead to average income losses twice as high as in the previous scenario both in absolute and relative terms. This is mainly due to unemployment benefits in Austria being lower than short-time work subsidies (55% vs. 85%⁸ of income).

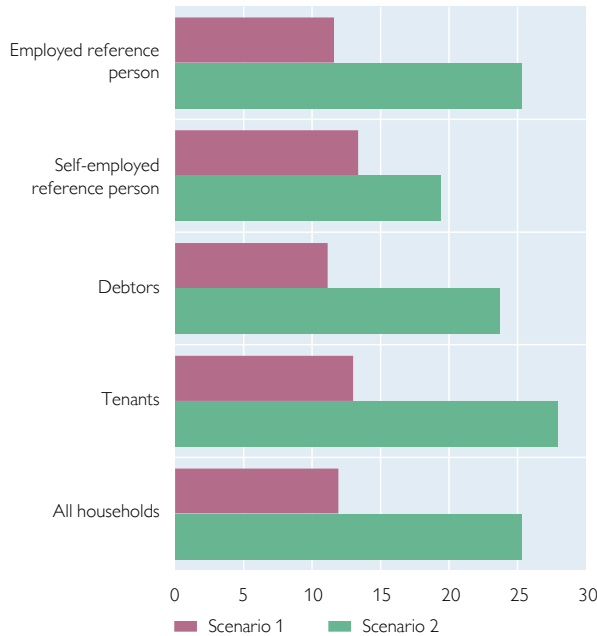
Chart 4 shows that the predicted relative income losses differ across households. For example, tenants suffer relatively large income losses, losing around 28% of their monthly net household income (about EUR 800) on average in the second scenario. Furthermore, households with a self-employed reference person suffer above-average relative income losses in the first scenario (–13%), but below-average relative income losses in the second scenario (–19%). The reason is

⁸ Our microsimulation model assumes that the rate of short-time work subsidies comes to 85% of employees' disposable income. However, in reality, the exact rate of short-time work subsidies depends, on the one hand, on employees' income level: It comes to 90% if disposable income is less than EUR 1,700, to 85% if disposable income lies between EUR 1,700 and EUR 2,685 and to 80% if disposable income is higher than EUR 2,685. On the other hand, the exact rate of subsidies depends on the amount of short-time working hours: The rates listed above only apply if the amount of short-time working hours is less than 100% of the work time; otherwise, the rate of short-time work subsidies would come to 100% of disposable income.

Chart 4

Microsimulation of income losses of affected households by household characteristics

% of household income



Source: HFCS Austria 2017, OeNB and authors' calculations.

that self-employed workers have lower unemployment probabilities than other workers (e.g. employees).

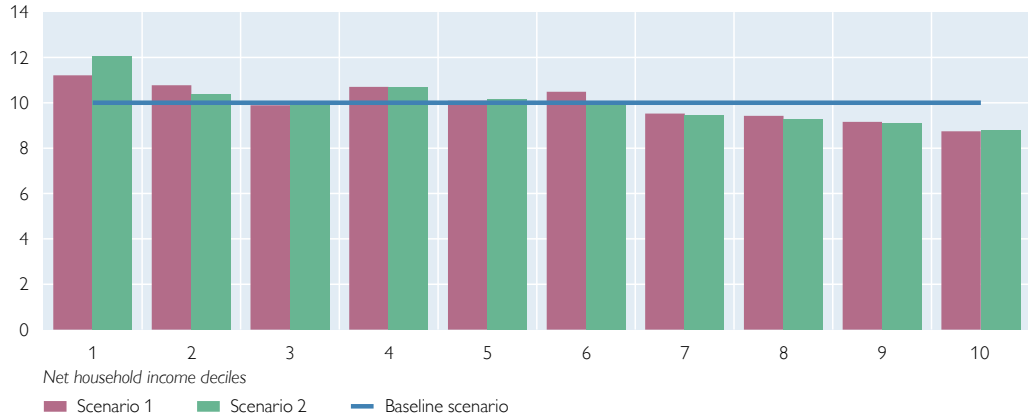
Chart 5 displays the potential impact of the two COVID-19 scenarios on the distribution of net household income. We first divide the household income distribution into deciles based on the situation before the COVID-19 crisis (baseline scenario). Then, after having simulated each of the two COVID-19 scenarios, we compute for each household its new income and, if applicable, reassign the household, according to its new income, to one of the ten decile groups. On the one hand, chart 5 shows that the COVID-19 crisis has led to a decrease in the number of households in the upper income deciles. For example, the proportion of households in the

highest income group drops from 10% to 8.7% under the first COVID-19 scenario (and remains stable under the second scenario). On the other hand, the chart shows that the COVID-19 crisis has caused the number of households in the lower income

Chart 5

Microsimulation of the impact of COVID-19 scenarios on the net household income distribution

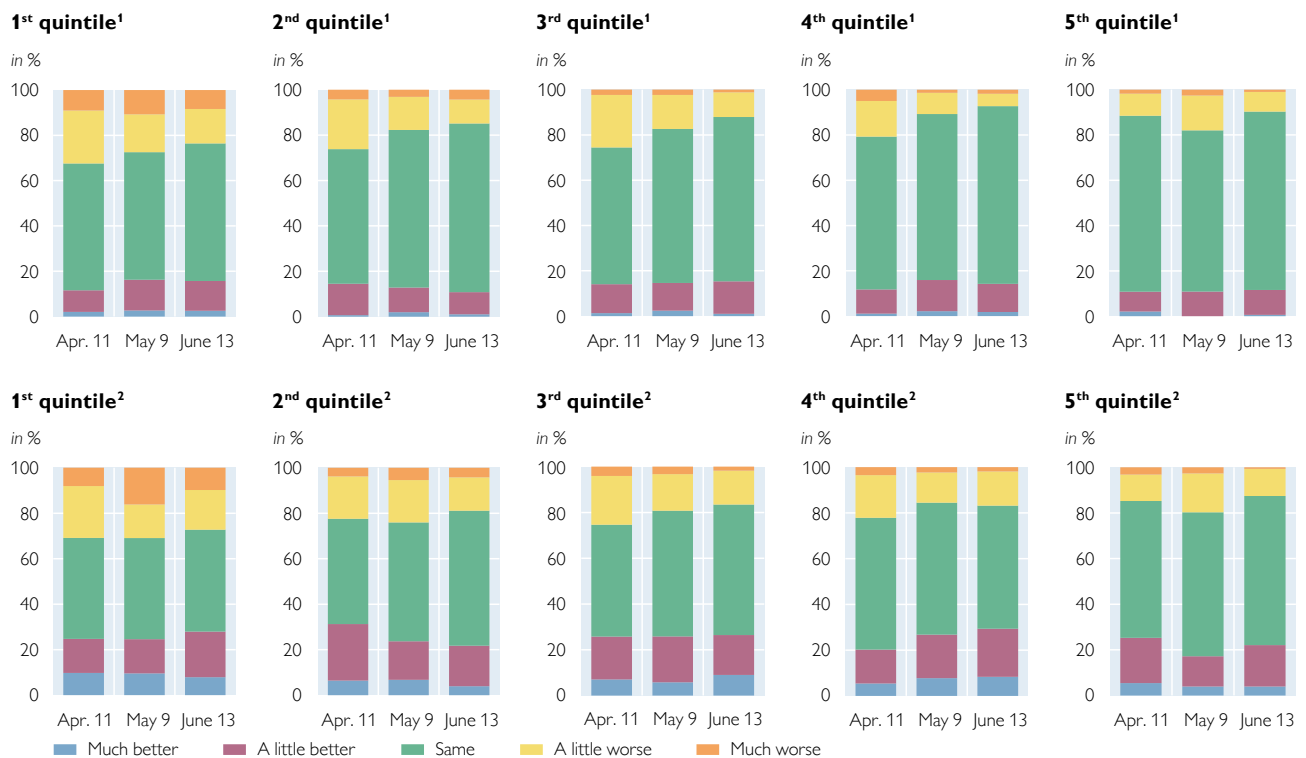
% of households



Source: HFCS Austria 2017, OeNB and authors' calculations.

Chart 6

Economic expectations of the financial situation by income quintiles



Source: Austrian Corona Panel Project (ACPP) 2020.

¹ Own financial situation in 3 months.

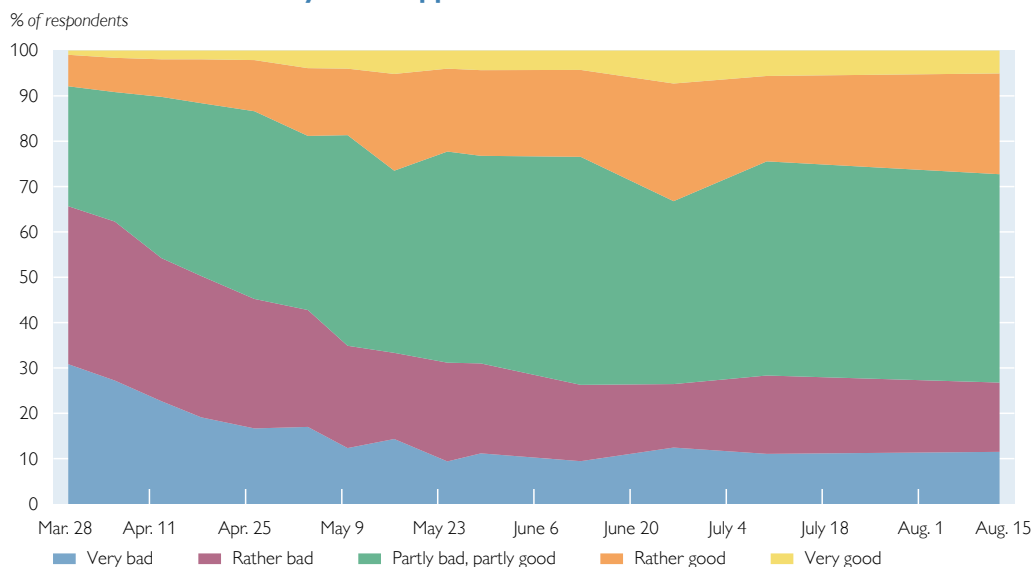
² Own financial situation in 1 year.

deciles to increase, especially in the lowest one. The proportion of households in the lowest income group increases from 10% to 11.2% under the first scenario and to 12.1% under the second scenario. These results suggest that unemployment represents a real threat for many households.

Looking again at data from the ACPP, we can see whether these simulations are also reflected in the financial expectations of Austrian households during the coronavirus crisis. Chart 6 shows that the largest shares of those expecting a slightly or much worse financial situation looking three months or one year ahead can be found in the lowest disposable household income quintile.

In the medium term (i.e. in three months' time), more respondents expected to be worse instead of better off. However, economic expectations were not only negative. In the long term (i.e. in one year's time), the number of respondents expecting to be financially better off was nearly as high as the number of those expecting financial losses. This long-term perspective highlights the high level of income volatility expected by respondents in the lowest income quintile, as the share of those expecting income stability in this quintile is smaller than in any of the other quintiles. When looking at changes over time, we found that the level of negative expectations decreased slightly between April and June 2020, as the general economic situation improved during that period.

Chart 7

Good or bad time to buy home appliances?

Source: Austrian Corona Panel Project (ACPP) 2020.

4.2 Consumption and saving in times of crisis

Modeling the impact of potential crisis scenarios on household income is only one part of the analysis in this study. As the crisis distorts income and income expectations of households, which, in turn, are expected to affect households' consumption and saving behavior, we should also look at the latter two. The ACPP provides additional information on this topic.

In chart 7, we see that early on in the crisis, a majority of households considered it a rather bad or very bad time to buy home appliances, which we take as an example for larger purchases. Over time, this attitude changed to the point where in August, the share of respondents who thought that it was a rather good or very good time for such purchases was as high as the share of those who considered it to be a bad time. A large fraction, however, was still unsure. This increase in consumer confidence could result from improved labor market conditions in the summer which stabilized incomes; yet, consumer sentiment could also be affected by the possibility to go out and do some shopping (i.e. by shutdowns and reopenings). It was only after some time that eased lockdown restrictions allowed consumers to go to shops and over time, perceived risks associated with shopping (potential additional health costs due to consumption) decreased (see e.g. Chetty et al., 2020). Thus, at this point, it remains difficult to isolate the effect of reduced income expectations on household consumption and consumption intentions.

Unlike consumption, saving money is not within reach of every household. According to the HFCS, about one-quarter of Austrian households does not save regularly.⁹ Table 6 shows that these are mainly households with an equalized net income below 60% of median income. The unconditional median saving rate amounts to 8.4% and the unconditional median amount of money saved by

⁹ These households indicate that they can neither save regularly nor do they currently have any outstanding debt to be serviced.

Table 6

Household saving rates by age and equivalized net income categories in % of median income

	Share of households able to save	Saving amount per month	Saving rate
	%	Unconditional median (in EUR)	Unconditional median (%)
All	75.0	200	8.4
Age			
16–34	68.5	159	7.1
35–44	77.3	300	9.2
45–54	79.6	349	10.1
55–64	73.9	264	7.9
65–74	75.5	200	7.3
75+	73.8	150	8.5
Income categories			
below 60% of median	64.0	100	5.9
60% to below 80%	82.0	300	9.4
80% to below 100%	85.4	400	11.0
100% to below 150%	91.5	518	13.4
150% to below 200%	91.5	1,500	21.1
200% or more	98.7	3,129	22.0

Source: HFCS Austria 2017, OeNB.

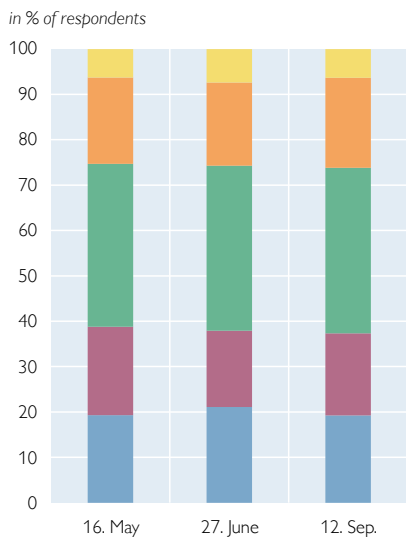
households is around EUR 200 per month. Table 6 also shows that both the amount saved and the saving rate rise with income. Low-income households need to spend a higher share of their income on consumption. Therefore, they save less in absolute terms and relative to their income. While the bottom income group has a median saving rate of less than 6%, the median saving rate of the top income group amounts to 22%. The bottom income group saves about EUR 100 per month at the median, while the top income group saves more than EUR 3,100 per month at the median.

Furthermore, the relationship between both the amount saved and the saving rate and age is hump-shaped. First, the saving rate increases with the household reference person's age up to 54 years or less; second, the rate clearly decreases afterwards (see table 6). This pattern is consistent with the life cycle hypothesis (see Modigliani and Brumberg, 1954), which states that individuals seek to smooth consumption throughout their lifetime by borrowing when their income is low and saving when their income is high. This would mean low saving rates when individuals are young, increasing saving rates during middle age and decreasing saving rates during old age. However, note that, as we look at a cross section of the population, age patterns have to be interpreted with caution, as they are likely to reflect some combination of age and cohort effects (which they actually do; see Fessler and Schürz, 2017).

To analyze changes in Austrian households' attitudes toward saving money over time, we again draw on data from the ACPP 2020. In three ACPP survey waves, respondents were asked whether they thought that it was a good time to save money, which allows insights into respondents' attitudes toward saving shortly after infection numbers had gone down and employment started to pick up in mid-May, at the end of June and when infection numbers started to rise again in mid-September.

Saving preferences by income and age categories

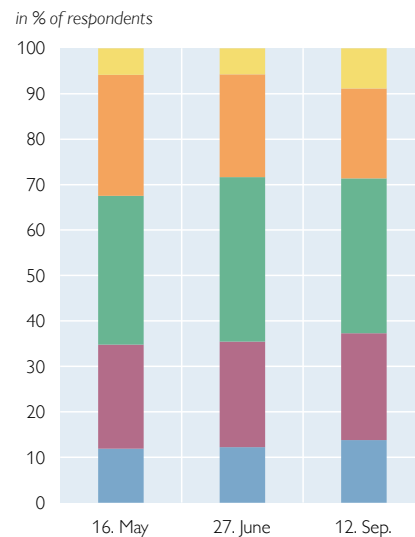
Below 80% of median income



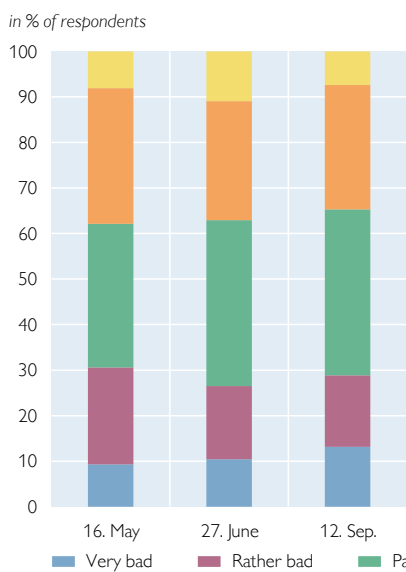
80 to 150% of median income



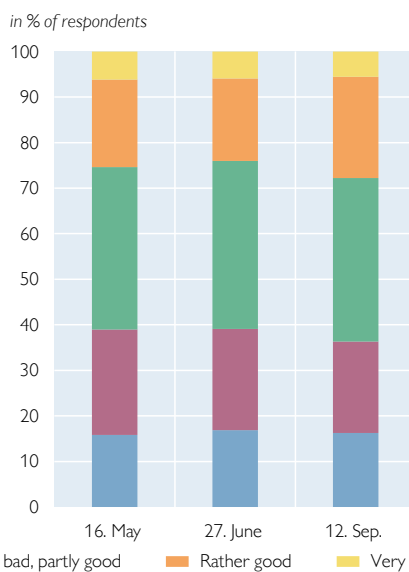
Above 150% of median income



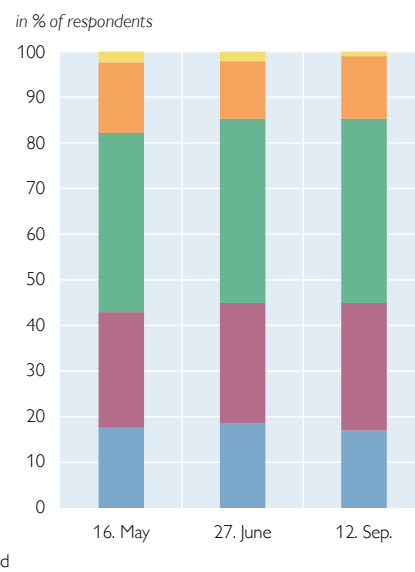
14 to 34 years



35 to 64 years



More than 65 years



Source: Austrian Corona Panel Project (ACPP) 2020.

We distinguish between three income groups¹⁰ and three age groups. As is shown in chart 8, respondents' attitudes toward saving money remain quite stable over time. Thus, little seems to have changed on average between May and September; yet, we cannot rule out that attitudes have improved compared to earlier points in time during the lockdown in April for which we lack comparable data. However,

¹⁰ Household income was measured based on ten income categories that roughly resemble Austrian households' income deciles. We calculate absolute income using the midpoints of the closed intervals as scores for those categories. The midpoint of the open-ended top category is extrapolated from the next-to-last category using a formula based on the Pareto curve (Hout, 2004). Afterwards, we calculate groups relative to the median equivalized net income of the first ACPP survey wave (EUR 1,650) using the (new) OECD scale.

one small difference we did observe between income groups was that respondents in the highest income category exhibited an increasing propensity over time to say that it was a very good time to save money. This indicates that changes in attitudes toward saving money over time could be related to income. This pattern becomes more evident when the highest income category is even more narrowly defined. However, this comes at the cost of a very low number of cases in this category (not shown in chart 8).

Similar to the breakdown by income groups, the answer patterns broken down by age groups also remain quite stable over time, with differences between the individual age groups being large, however. As can be seen, the share of respondents who thought that it was a rather good time to save money slightly decreased for the youngest and oldest age group over the three survey waves. Contrary to that, respondents aged between 35 and 64 were increasingly inclined (between May and September) to answer that it was a rather good time to save money.

5 Conclusions

This study discussed the potential effects of the COVID-19 crisis on household finances in Austria. In the first part of this study, we illustrated the heterogeneity in exposure to different channels of the COVID-19 shock by shedding light on the variety of household structures and the level of exposure that comes with the shock. Households with little living space per household member, such as larger households with children, households with single parents or households living in densely populated areas like Vienna, are more exposed to disruptions stemming from COVID-19. As regards household income, pensions and other public transfers serve as a financial buffer for poorer households against potential impacts of the COVID-19 crisis, as pensions and other public transfers have not (yet) been exposed to the effects of the crisis. As far as households' financial vulnerability is concerned, we find that the median household might be able to compensate for financial losses for a relatively long time by drawing on their liquid assets. This finding suggests that focusing on those households who are not able to make up for losses as a result of the COVID-19 crisis, such as single-parent households or those with unemployed household members, seems warranted.

In the second part of the study, we used data from the Austrian Corona Panel Project (ACPP) carried out by the University of Vienna as well as data from the Eurosystem Household Finance and Consumption Survey (HFCS) for Austria to analyze potential impacts of the crisis. Our analysis suggests that household income losses averaged about 12% during the lockdown in April 2020; this percentage would double if one-third of short-time workers became unemployed. Tenants are among those suffering in particular from large income losses. Although households' attitudes toward consumption were negatively affected at the onset of the COVID-19 crisis, they have improved over time. However, uncertainties are still high. Also, saving attitudes are surrounded by high uncertainties, but we find some weak evidence of increasingly positive attitudes for high-income households over time.

References

- Albacete, N., S. Dippenaar, P. Lindner und K. Wagner. 2018.** Eurosystem Household Finance and Consumption Survey 2017: Methodological notes for Austria. Monetary Policy & the Economy Q4/18 – Addendum. OeNB.
- Albacete, N., J. Eidenberger, G. Krenn, P. Lindner and M. Sigmund. 2014.** Risk-bearing capacity of Households – Linking micro-level data to the macroprudential toolkit. In: OeNB Financial Stability Report 27. 95–110.
- Albacete, N. and P. Fessler. 2010.** Stress Testing Austrian Households. In: Financial Stability Report 19. 72–91.
- Ampudia, M., H. van Vlokhoven and D. Żochowski. 2016.** Financial fragility of euro area households. In: Journal of Financial Stability. Volume 27, Pages 250–262.
- Chetty, R., J. Friedman, N. Hendren, M. Stepner and the Opportunity Insights Team. 2020.** How Did COVID-19 and Stabilization Policies Affect Spending and Employment? A New Real-Time Economic Tracker Based on Private Sector Data. In: NBER Working Paper Series. No. 27431. June 2020.
- ECB. 2020a.** The Household Finance and Consumption Survey: Methodological report for the 2017 wave. Statistical Paper Series No. 35. March 2020.
- ECB. 2020b.** The Household Finance and Consumption Survey: Results from the 2017 wave. Statistical Paper Series No. 36. March 2020.
- European Commission. 2011.** The Measurement of Extreme Poverty in the European Union.
- Fessler, P., P. Lindner and M. Schürz. 2018.** Eurosystem Household Finance and Consumption Survey 2017: First Results for Austria. In: Monetary Policy & the Economy Q4/18. OeNB. 36–66.
- Fessler, P. and M. Schürz. 2017.** Zur Verteilung der Sparquoten in Österreich. In: Monetary Policy & the Economy Q4/17. OeNB. 13–33.
- Hout, M. 2004.** Getting the Most Out of the GSS Income Measures. GSS Methodological Report 101.
- Kittel, B., S. Kritzinger, H. Boomgaarden, B. Prainsack, J.-M. Eberl, F. Kalleitner, N. Lebernegg, J. Partheymueller, C. Plescia, D.W. Schiestl and L. Schlogl. 2020a.** Austrian Corona Panel Project (SUF Edition). <https://doi.org/10.11587/28KQNS>.
- Kittel, B., S. Kritzinger, H. Boomgaarden, B. Prainsack, J.-M. Eberl, F. Kalleitner, N. Lebernegg, J. Partheymueller, C. Plescia, D.W. Schiestl and L. Schlogl. 2020b.** The Austrian Corona Panel Project: Monitoring Individual and Societal Dynamics amidst the COVID-19 Crisis. European Political Science. <https://doi.org/10.1057/s41304-020-00294-7>.
- Modigliani, F. und R. H. Brumberg. 1954.** Utility analysis and the consumption function: an interpretation of cross-section data. In: Kurihara, K. K. (Hrsg.). Post-Keynesian Economics. Rutgers University Press. New Brunswick. 388–436.
- Schnabel, I. 2020.** Unequal scars – distributional consequences of the pandemic. Speech 18 September, Frankfurt am Main. <https://www.ecb.europa.eu/press/key/date/2020/html/ecb.sp200918~8aaf49cd79.en.html>
- Stolz, E., H. Mayerl and W. Freidl. 2020.** The impact of COVID-19 restriction measures on loneliness among older adults in Austria. Working Paper. <https://www.medrxiv.org/content/10.1101/2020.09.08.20190397v1>
- United Nations Economic Commission for Europe. 2011.** Canberra Group Handbook on Household Income Statistics. 2nd edition. Geneva. United Nations.

Annex: Selected questions, Austrian Corona Panel Project

Chart 2: Employment status

Which of the following aspects apply to your current professional situation? Please select all answers that apply. (multiple choice)

- a. I am in home office.
- b. I am reducing hours, in compensatory time-off and on holiday.
- c. I have been dismissed.
- d. I have an increase of working hours.
- e. I am on short-time.
- f. I receive unemployment benefits.
- g. I receive money from the hardship fund.
- h. I receive Bridge-Finance-Guarantees.
- i. I get social benefits (minimum income, emergency).
- j. No change.
- k. No answer.

Chart 3: How long will it take until life gets back to normal?

What is your estimate: How long will it take until life in Austria returns to normal, i.e. to the way it was before the crisis? (single mention)

- a. Less than 1 month.
- b. 1–2 months.
- c. 3–4 months.
- d. 5–6 months.
- e. More than 6 months.
- f. Don't know.
- g. No answer.

Chart 6: Economic expectations by household income categories

How will the financial situation of your household develop in the future compared to your current situation? (matrix question)

- a. In 3 months.
- b. In 12 months.

Matrix labels:

- 1 = Much better.
- 2 = A little better.
- 3 = Same.
- 4 = A little worse.
- 5 = Much worse.
- Don't know.
- No answer.

Chart 7: Good or bad time to buy home appliances?

Do you think now is a good or bad time to buy larger household items such as furniture, a refrigerator, a stove, a television and the like? (single mention)

- a. 1 = Very bad time
- b. 2 = Rather bad time
- c. 3 = Partly bad/good time
- d. 4 = Rather good time
- e. 5 = Very good time
- f. Don't know.

Chart 8: Saving preferences by income and age categories

Do you think now is a good or bad time for you personally...? (matrix question)

- a. to save money or leave it on the account?

Matrix labels:

- 1 = Very bad time
- 2 = Rather bad time
- 3 = Partly bad/good time
- 4 = Rather good time
- 5 = Very good time
- Don't know.