Wittgenstein Centre

FOR DEMOGRAPHY AND GLOBAL HUMAN CAPITAL

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Challenges and uncertainty

The COVID-19 pandemic has brought about many societal challenges. People's health, family dynamics, economies and migration were all deeply affected. One of the key challenges of the COVID-19 pandemic is the uncertainty in measurement and estimates, that are in turn needed to understand the effectiveness of policies and show which population groups are most affected. Accurate case- and death-reporting rely on consistent testing policies and the ability of governments in detecting cases. Studies can provide different ways to more accurately estimate the number of people ever infected and to raise awareness towards the sensitivity of widely used indicators. A better understanding about people's behavior, such as adherence to COVID-19 rules and the impact of the pandemic on family behavior, can help to find better ways to tackle and adapt to the new challenges and find adequate policy responses.

Assessing the number of infected

In the beginning of the pandemic and previous to widespread vaccination, seroprevalence studies were regarded as the gold-standard to retrospectively assess the number of infections. However, because these studies are expensive and time-intensive, their availability was very restricted across populations. Wittgenstein Cen-

tre researchers developed a complementary approach to indirectly estimate the fraction of people ever infected (from the total population) and detected (from the ever infected). Applied in the case of Austria, it was found that less than 7% of the total population had been infected in the pre-vaccination period, which implied that relying on herd immunity as a policy was not advisable. The approach can be a valuable tool for future new virus outbreaks, as it provides a reliable estimate of the total number of infections amidst uncertainty.

The importance of testing

As vaccines were shown to be effective in reducing hospitalizations and preventing deaths, testing has been often dismissed by individuals and governments. Studies have shown that it is nonetheless still crucial to detect cases among both vaccinated and unvaccinated persons for assessing immunity duration, booster shot requirements, and emergence of more contagious variants. The case-fatality rate (CFR), an indicator frequently used to monitor the pandemic, is sensitive to how breakthrough cases are being accurately detected. By the end of December 2021, a little over 90% of persons aged 84 and over were fully vaccinated in Austria while at the same time the CFR remained stable across the whole year of 2021. However, this does not imply that vaccines were not effective in prevent-

ing deaths. In the absence of information on infections among both the vaccinated and the unvaccinated, the CFR may be misleading, especially when used to assess the effectiveness of vaccines in reducing deaths or virus transmission. As a consequence, the CFR needs to be used with caution. Hence, widespread testing is still a key policy strategy to detect asymptomatic or mild infections among both the vaccinated and unvaccinated populations.
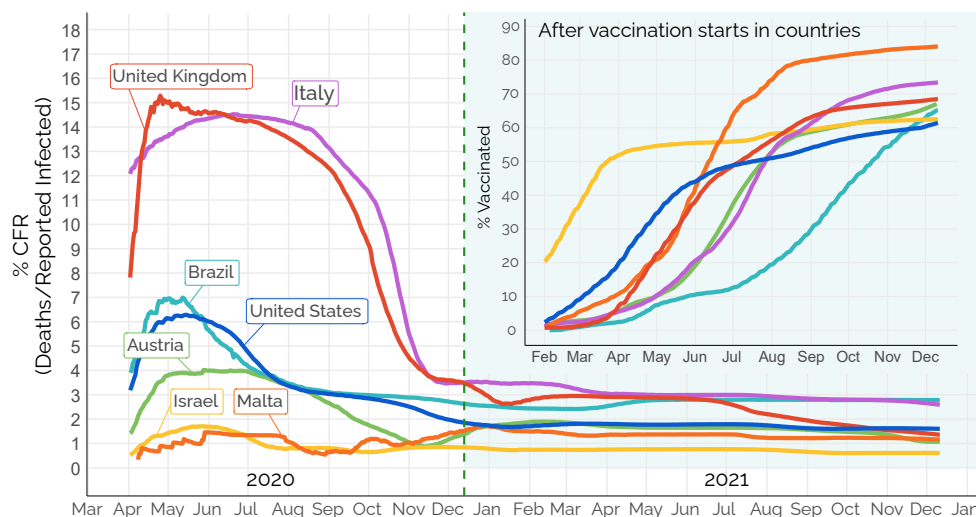
Optimal lockdown policies

To prevent the spread of the COVID-19 virus, governments implemented many non-pharmaceutical interventions before vaccines were widely available, first and foremost the introduction of lockdowns. However, the intensity and duration of the lockdowns have greatly varied across countries. Wittgenstein Centre studies show that different strategies can perform similarly well when the impact of COVID-19 on work and life are simultaneously taken into account. Moreover, the developed economic and epidemiological models show that the optimal lockdown intensity varies over time, depending on the evolution of the pandemic, the importance of economic outcomes and life losses.
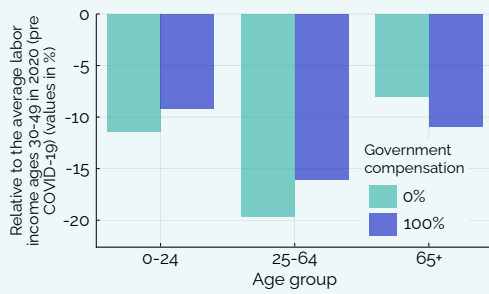
Refugees and migrants amidst COVID-19

Reliable data on infections and deaths in connection with COVID-19 in the migrant population are currently not available for Austria. Although single COVID-19 clusters were reported in connection with returnees in the media in the summer of 2020, valid and sufficient data are required to determine any differences in infections or analyze associated deaths. To improve data on refugees and migrants amidst COVID-19 pandemic, a research project on COVID-19 and migration background investigated the impact among migrants and refugees, how they deal with the COVID measures, and their socio-economic challenges during the pandemic. The study identified target group-specific barriers to accessing and complying with health information (such as language barriers and homeschooling), as well as provided concrete solutions to strengthen the accessibility and thus the resilience of the migrant population (such as close cooperation with community associations and expansion of target group-specific information dissemination about vaccinations and regulations).

Case-fatality rate (CFR) during observed time period

Source: di Lego V, Sanchez-Romero M, Prskawetz A (2022)

Impact of the COVID-19 pandemic on the remaining lifetime consumption in Austria

Relative to the average labor income ages 30-49 in 2020 (pre COVID-19) (values in %)

Government compensation
- 0%
- 100%

Age group: 0-24, 25-64, 65+

Source: Sánchez-Romero (2022)

The impact of COVID-19 on the economic situation of different cohorts

How did the pandemic impact different generations economically? An economic model built for assessing the generational impact of COVID-19 takes into consideration that individuals of different ages are tightly linked through private (family) and public transfers. The results show that COVID-19 is affecting the financial situations of people aged 25 to 64 and their children more than those of older people. As the figure shows, by compensating workers for their income losses, the economic impact of COVID-19 has been more evenly distributed across cohorts, reducing the burden on people aged zero to 64, and increasing the burden on people aged 65 and older. Moreover, the simulation results show that a 1% decline in labor income leads to an average increase in the debt-to-total labor income ratio of between 1.2% (without fiscal policy) and 1.6% (when the government fully compensates for the labor income lost).

Adherence to COVID-19 rules

Does health perception play a role in explaining health behavior during the pandemic? Health beliefs are important for the adoption of preventive health behaviors. Research shows that older adults who perceive themselves as being less healthy than they actually are show more adaptive behavior related to mobility reductions (e.g. they are more likely to stay at home, shop less, and go for walks less often), while those who perceive themselves as being more healthy than they actually are show no difference compared to those who estimate their health correctly. Protective behavior in public spaces and adopting hygiene measures also does not vary systematically between health perception groups. Future health literacy campaigns should consider differences in health perception among people, its effect on health behavior, and how to tackle biased beliefs in one's own health, to form better public messaging in health crisis. While adaptive behavior helps to contain the virus, exaggerated mobility reduction in those who underestimate their health might be contributing to the already high social isolation and loneliness of older adults during the pandemic.
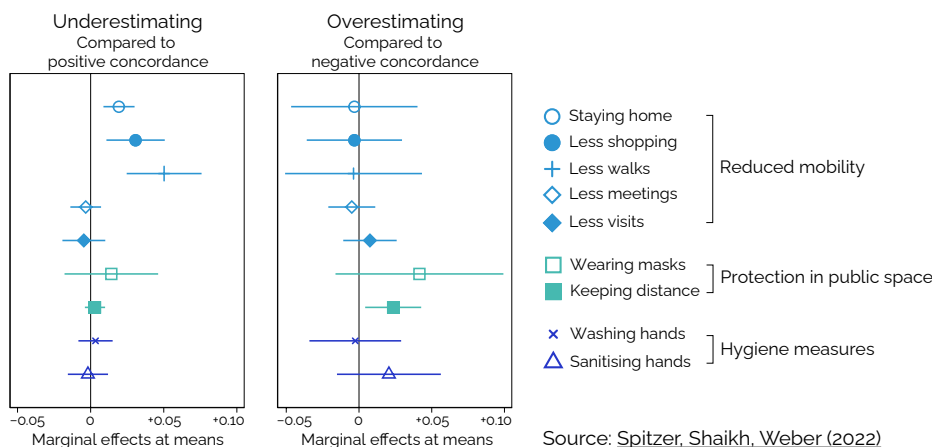
Fertility fluctuations

How did birth trends shift during the course of the pandemic? The Short-Term Fertility Fluctuations Data Series – covering 41 countries and territories – has shown, that with a few exceptions, the first wave of the pandemic was associated with a downturn in the number of births in December 2020 and January 2021. These declines were especially sharp in Southern Europe, but also in Central-Eastern and South-Eastern Europe. Austria experienced an annual drop in the number of births by 3% as measured in January 2021. Subsequently, birth rates in most countries increased in March 2021. This recovery was closely linked with the end of the first wave of the pandemic in late Spring and early Summer 2022. Thereafter, the trends became diverse across countries, often displaying slight rises between July and November 2021.

The impact on partnerships

Did people change their family plans due to the pandemic? A study on women and men aged 20-45 years in Austria and France showed that partnership dissolution was less frequent during 2020/21 than in the two preceding years. Compared to their peers with children, couples without children below age 18 in the household consistently had a higher dissolution risk, but it declined more strongly during the pandemic. A precarious economic situation was also related to a higher dissolution risk. The observed convergence in the dissolution risk between couples with and without children suggests that families with children faced higher strain and more conflicts during the pandemic. In addition, the pandemic had almost no effect on the (long-term) family plans of women and men in Austria: Only 4.3% stated to have changed their family plans due to the pandemic, 1.5% want less children or no children any longer, and 2.1% wanted an (additional) child later than previously planned.

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• Spitzer S, Shaikh M, Weber D (2022) Older Europeans' health perception and their adaptive behavior during the COVID-19 pandemic. European Journal of Public Health 32(2): 322–327.

Effects (at means) of health perception on COVID-19-related adaptive behavior

Underestimating
Compared to positive concordance

Overestimating
Compared to negative concordance

○ Staying home
● Less shopping
+ Less walks
◇ Less meetings
◆ Less visits
} Reduced mobility

□ Wearing masks
▩ Keeping distance
} Protection in public space

× Washing hands
△ Sanitising hands
} Hygiene measures

Marginal effects at means

Source: Spitzer, Shaikh, Weber (2022)

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