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Article

Eurozone: voluntary social distancing weaker in second wave

In addition to official measures, voluntary social distancing played an important role in reducing mobility during the first wave of the Covid-19 pandemic. The higher the number of cases, the stronger the voluntary response. We find that this is still the case in the second wave, but to a much lower degree. The weaker voluntary response reduces the short-term economic effect of the virus and plays a role in the smaller hit to GDP in 4Q. The long-term impact is less certain, as this also increases the risk of longer or stricter official lockdowns

Content

GDP growth in the fourth quarter of 2020 remained surprisingly strong despite a second wave of the coronavirus. Eurozone GDP fell by just -0.7%, while Germany, Belgium and Spain even posted positive growth rates. The smaller drop in GDP compared to the first wave is related to a variety of factors. The rest of the world was more open in the second wave, industry and construction was kept open in some countries, online solutions were adopted where possible and the decline in mobility was smaller. The latter was strongly correlated to GDP in the first wave, as we showed here. In this piece, we will focus on how less voluntary social distancing has caused mobility to hold up better in the second wave thus far.

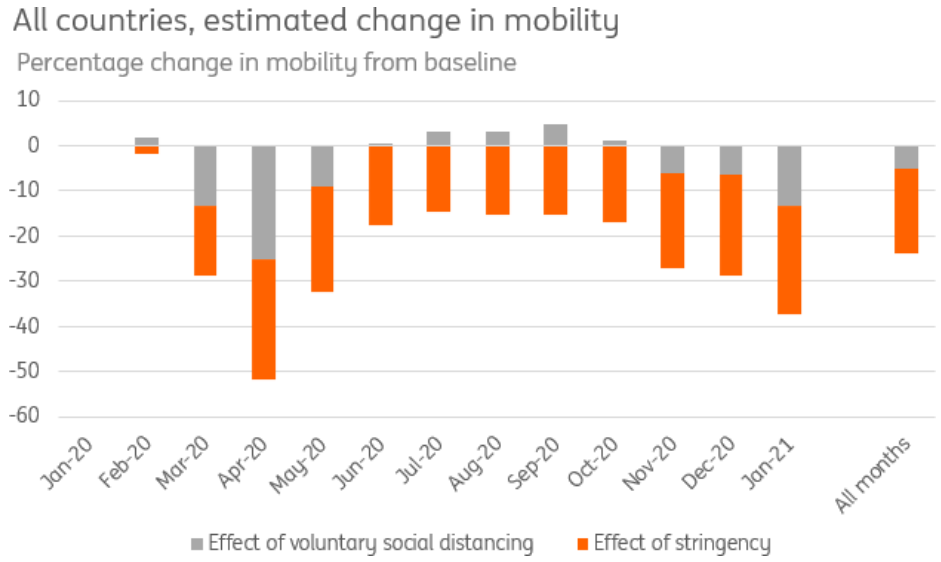
Voluntary social distancing became much weaker as the pandemic progressed

The economic impact of the virus is related both to government measures as well as behavioural changes in response to the virus. In April, the IMF found that voluntary social distancing – reductions in mobility in excess of lockdown measures – was responsible for a slightly larger decline in mobility in advanced economies than the official government lockdown measures themselves. Where and when the virus flared up, there was a strong decline in mobility, beyond what could be explained by government measures.

Especially during the first wave, mobility was strongly related to GDP, so this indicated that a significant part of the historic economic contraction in the first wave could be attributed to voluntary distancing. In a crisis so novel, a few more months' worth of data, including the start of a new wave, makes the world of difference and allows us to revisit the relationship between mobility and the virus. This analysis can help to explain the current impact of the virus on the economy and provide insight into the economy for the period in which the virus has not been contained.

Looking at eurozone data, we take a slightly adapted approach to the IMF's to allow for a longer time period of testing (please see the annex for detailed methodology, data and results). With this, we find similar results as the IMF for the first lockdown, though a somewhat larger effect for lockdown measures than the IMF finds. Significant drops in mobility during the first wave are related to both the effect of restrictive measures and voluntary social distancing in roughly equal parts for March and April. The relationship is far from steady as the pandemic unfolds though, and we find that voluntary social distancing in the second wave has declined compared to the first wave. So, people are now more active in the second wave even if similar restrictive measures are in place.

Voluntary social distancing is lower in the second wave



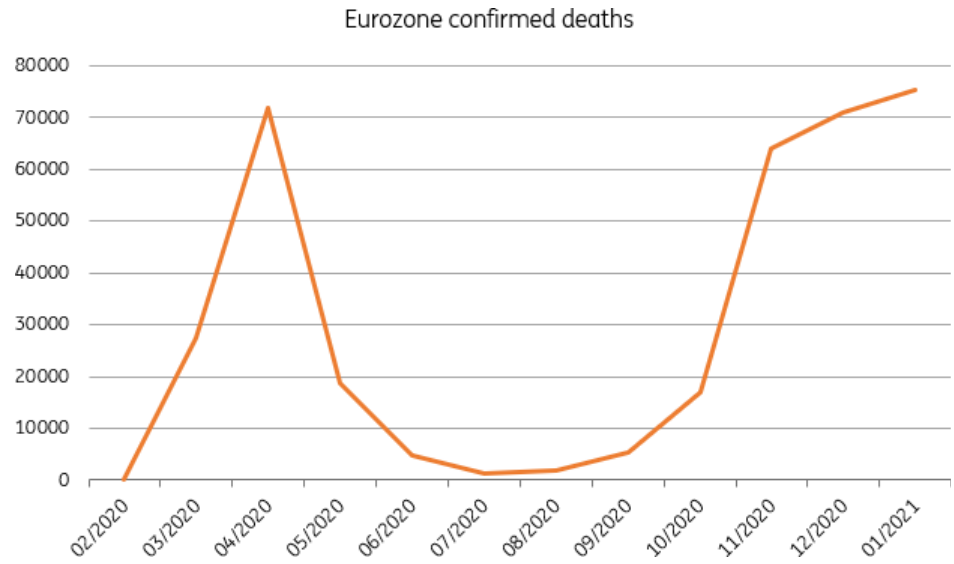
Source: ING Research

What happened over time?

As the first wave subsided, we find that voluntary social distancing declined, and even contributed positively to mobility between June and October. While there were still restrictive measures in place over the summer months, mobility remained relatively high. This helped the surprisingly strong recovery of the economy as domestic demand returned quickly.

As the second wave progressed, voluntary social distancing increased again, but by a lesser extent than in the first wave, while the rise in deaths, and restrictiveness of lockdowns, have been similar to the first wave. November and December were both months with less voluntary social distancing than March, April and May. For January, we do find stronger voluntary social distancing again, but this effect is still much smaller than in April, despite a similar severity of the virus. We do have to be careful with January data as we only have partial data for the month included in our model.

Severity of the virus as measured in new deaths has risen again during the second wave



Source: University of Oxford, ING Research

Less voluntary social distancing can therefore partly explain the smaller decline in mobility, and therefore in part economic activity, observed over the second wave so far. That also adds to the stronger economic performance in the second wave. The downside to this smaller reduction in mobility is that it means the virus is less easily contained. Therefore it may require a longer period of lockdowns or stricter measures if governments want to achieve a similar decline in cases compared to the first wave. A more contagious mutation would of course increase the required measures even further.

What is voluntary distancing?

We use the same term as the IMF, voluntary social distancing, to describe changes in mobility that are not explained by lockdown measures. This happens because of a variety of factors, but for the largest swings in mobility, it will relate to 'fear of the virus'. Think of people visiting the supermarket less, people not going to shop for clothes even though stores are open or people working from home even though there are no restrictions on workplace visits. This adds to declines in mobility and (usually) has economic consequences.

What does this mean for the remainder of the pandemic?

Weak and unpredictable voluntary social distancing hurts the economy unevenly

While vaccines provide light at the end of the tunnel, eurozone countries are currently still experiencing problematic case counts. Also, mutations of the virus make the near-term outlook very uncertain. Less voluntary social distancing than in the first wave means that the economy continues to record higher levels of economic activity with similar lockdown measures in place, but these higher levels of activity also mean that cases are not coming down as quickly as in the spring. This increases the risk that strict lockdowns will be extended.

Continued weak voluntary social distancing is not a given though. The relationship as we find it for the past year is not stable over time. The relationship could weaken further, for example once the most vulnerable have been vaccinated. On the other hand, we could yet see mobility driven down further by voluntary social distancing due to fear of the virus mutating. That could result in quick decreases in mobility and therefore also contribute to another sharp GDP contraction on the back of the mobility declines. Finally, it is also hard to predict what would happen to voluntary social distancing if the spread of the virus is much larger than currently seen. All in all, this leaves the impact of the virus on mobility rather uncertain for the remainder of the crisis, in turn confirming large uncertainty around the eurozone economic outlook.

Reopening will be a tightrope exercise for policymakers

There are also noteworthy conclusions for the period of reopening. We find that voluntary social distancing remerges as cases flare up again. This suggests that while the pandemic continues, opening up economies will not result in a complete recovery in economic activity. When the virus retreats enough, however, a lack of voluntary social distancing could push up mobility again, as we saw during the summer months. That would help the economy to bounce back quickly but also poses a risk. It could result in mobility returning too quickly, adding to risks of a third wave of the virus if vaccinations have not yet resulted in herd immunity.

A true tightrope exercise awaits policymakers with large implications for the path of economic recovery. They will have to manage the reopening of the economy while keeping restrictions tight enough not to be surprised by 'negative voluntary social distancing' effects at the end of the second wave that could increase the risk of a new wave of infections.

Appendices

Methodology

To assess the impact of the coronavirus on mobility over the course of the past year, we use a panel regression with cross-country information on changes in mobility, the scale of the outbreak (proxied by number of deaths), and lockdown stringency, to isolate the changes in mobility (and therefore economic activity). By estimating the mobility corrected for contribution of the stringency index we isolated the changes in mobility that can be thought of as 'voluntary' – and how this has changed as the pandemic has progressed.

Our equation is an adapted form of the IMF equation as described in Chapter 2 Annex 2.3. This equation allows for a decomposition of mobility changes into an isolated lockdown measure effect and an effect that captures voluntary social distancing.

The specification below details the precise equation, which differs from the IMF's in the measure for scale of the outbreak, where we use deaths in place of cases. As testing has become more widely available over time, there is a huge difference in reported cases between the first and second wave that does not reflect the scale of the outbreak. We have therefore chosen new deaths as the variable tracking the phase of the outbreak, which has been tracked more consistently over the course of the crisis.

Data

As a proxy for mobility, we use the Google COVID-19 Community Mobility Reports, which tracks visits and lengths of stay for different types of places to a baseline taken from 3 January to 6 February, 2020. We take an average of the data for grocery & pharmacy, retail & recreation, transit stations, and workplaces as our dependent variable in our specification.

For the restrictive measures to proxy the state of the lockdown that countries have imposed, we use the Stringency Index from the Oxford Covid-19 Government Response Tracker. This index consists of a range of containment and closure policies taken, which has been quantified to allow for country comparison.

To proxy the stage of the pandemic, we use new deaths caused by Covid-19 from the Oxford COVID-19 Government Response Tracker. As mentioned above, we have chosen new deaths as a measure of the stage of the pandemic to allow for more consistent tracking over time compared to new cases which have been hugely influenced by testing capacity. New deaths do occur with a lag compared to the new cases used by the IMF, but running the regression with a 14-day lead for new deaths did not give significantly different results from the ones reported in this note.

We limit this study to the eurozone economy, which means that we create our panel dataset for all eurozone economies, excluding Cyprus for which Google mobility data is not available. For those 18 countries, we have data for the period 15 February, 2020 to 24 January, 2021.

Specification

To assess the dynamic response of mobility to the developing pandemic, we estimate the following panel regression:

$$mob_{i,t} = \alpha_i + \tau_t + \sum_{p=0}^{P} \beta_p \Delta deaths_{i,t-p} + \sum_{p=0}^{P} \delta_p lock_{i,t-p} + \sum_{p=1}^{P} \rho_p mob_{i,t-p} + \varepsilon_{i,t}$$

Mob is the Google mobility average for country i at time t; deaths is the log of daily Covid-19 deaths, which is used to track the stage of the pandemic; and lock is the index measuring lockdown stringency. The specification also features lags of the dependent variable to account for pre-existing trends, and country and time fixed effects to control for country characteristics and global factors. The estimation includes a week worth of lags to account for pre-existing trends. Standard errors are clustered at the country level.

Results

The results from the panel regression that we have performed generate strong significant results for the stringency index and for the state of the wave represented by the new deaths variable. Both show the expected sign as an increase in stringency and new deaths result in a decline in mobility. We also find that the lags of mobility are very significant while that is not the case for the lags of the two other independent variables, which confirms that existing trends are relevant and which therefore rightly reduces explanatory power from the stringency and new death variables.

For the results presented in Chart 1, we use the coefficients from the panel regression below and use the monthly data for the respective independent variables to estimate the decomposition of the mobility into a lockdown stringency and a voluntary social distancing effect. We have also estimated the monthly effects using an interaction effect with a dummy variable for each month and the stringency index which yielded similar results. We also split the sample into quarters, which also gave similar results to the ones presented here.

VARIABLES	(1) Mobility
Mobility -1 day	0.290***
	(0.0379)
Mobility -2 days	0.153***
	(0.0158)
Mobility -3 days	0.109***
	(0.0270)
Mobility -4 days	0.0977***
	(0.0261)
Mobility -5 days	0.0611***
	(0.0203)
Mobility -6 days	0.129***
	(0.0256)
Stringency index	-0.242***
	(0.0426)
Stringency index -1 day	0.0164
	(0.0292)
Stringency index -2 days	0.0457
	(0.0475)
Stringency index -3 days	0.0384
	(0.0541)
Stringency index -4 days	0.0550
	(0.0473)
Stringency index -5 days	-0.0319
	(0.0280)
Stringency index -6 days	0.0650*
	(0.0333)
New deaths -1 day	-0.00529***
	(0.00156)
New deaths -2 days	9.44e-05
	(0.00154)
New deaths -3 days	-0.00117
	(0.000943)
New deaths -4 days	0.000489
	(0.00125)
New deaths -5 days	0.000461
	(0.00102)
New deaths -6 days	0.00242
	(0.00143)
New deaths -7 days	0.000949
	(0.00209)
Constant	-0.229
	(0.599)
Country fixed effects	YES
Time fixed effects	YES
Observations	5,803
Number of x	18
R-squared	0.893

Discussion

Cases and deaths

As described above, we use the daily change in confirmed deaths to proxy for the stage of the pandemic in our equation. New cases rise before deaths, so we check to see if the two-week lead of new deaths changes our results. We find similar effects for voluntary social distancing inthis specification.

Multicollinearity

Lockdowns and their severity are a response to the stage of the pandemic, as is the 'voluntary' element of any change in mobility. News about the pandemic is likely to reach people through lockdown announcements as well as the number of deaths. In practical terms, the two variables are correlated and this adds uncertainty to our estimates. There is no easy solution, but other approaches have also found a significant role for voluntary social distancing.

Seasonality

Our dependent variable, mobility, is measured relative to a pre-pandemic baseline, the median value for a five-week period between 3 January and 6 February, 2020. Even in the absence of the pandemic, seasonal variations in mobility, such as holidays, will cause changes in mobility on this measure. Because Community Mobility Reports have only become available in 2020, there is not enough data to correct for the seasonal variation that therefore remains in our dependent variable.

We use time fixed effects in our regression to control for global shocks, but some effects may work differently for the countries in our sample. Think of summer holidays for example, increasing mobility in countries that experience net inflows of tourists and reducing it in countries with net outflows. As a robustness check to seasonality, we also estimated the monthly effects using individual monthly samples, which generated similar results to the ones presented above. We also split the sample into quarters, which also gave similar results to the ones presented here.

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