

Global Economy Social Welfare and COVID-19

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- While there are enormous differences between economies, international evidence shows that countries where the disease is more under control generally show a smaller decline in GDP per capita.
- This Economic Watch assesses the decline in social welfare resulting from the reduction in GDP per capita and in life expectancy caused by COVID-19.
- The results reveal vast differences between countries, both in the overall decline in social welfare and in the breakdown of its causes. While the decline in welfare is practically non-existent in certain countries, in others it is equivalent to a decrease in consumption per capita of over 14 percentage points.
- There is great uncertainty surrounding the temporal dynamics of the pandemic and its ultimate economic impact. Meanwhile, the prospect of effective vaccines being available in the short term instills hope that the effect of COVID-19 on life expectancy will be temporary. However, its effects on consumption per capita, employment and inequality need to be minimized so that social welfare recovers as rapidly as possible, especially in those societies where the decline is greatest.

Introduction

COVID-19 has enormous health, economic and social consequences. The metrics normally used to quantify its social impact are the increase in infections, hospitalizations and deaths, from a health perspective, and the fall in GDP and employment, from an economic perspective. A recent example is the study by Fernández-Villaverde and Jones (2020, FVJ hereafter), in which, for a sample of countries, they present evidence of the loss of human lives per million inhabitants due to COVID-19 and the economic cost stemming from the fall in annual GDP and the raise in unemployment.

Figure 1 shows evidence similar to that of FVJ for EU and OECD countries, except that we use the IMF autumn forecasts for the whole of 2020 in order to have a homogeneous source across this large sample of countries. The expected decline in GDP is expressed in per capita terms. The cumulative number of deaths to October 17, 2020 comes from the OurWorldinData database.

As one would expect, the messages obtained from Figure 1 coincide with those from FVJ. It is often argued that there is a trade-off between economic cost and health cost. If such trade-off existed, economies that choose to impose fewer restrictions on activity and less severe lockdown or social distancing rules would fare better in economic terms but worse in terms of health. In fact, what we see in the figure is that there are significant differences between countries along these two dimensions. However, a simple regression exercise reveals a significant negative correlation of -0.46, which contradicts the previous argument, which would imply a positive one. In other words, there seems to be no such dichotomy between the economy and health.



Figure 1. Forecasts of the decline in GDP per capita in 2020 and mortality due to COVID-19: Regression line



Figure 2. Relationship between mortality due to COVID-19 and decreased life expectancy



Source: BBVA Research, based on IMF and Our World in Data

Source: BBVA Research based on Goldstein and Lee (2020), FT, Centers for Disease Control and Prevention (CDC) and Gapminder

What Figure 1 tells us is that countries that have best controlled the disease show on average a smaller fall in GDP per capita. *FVJ* warn that it is still too early to say to what extent the overall results are due to good/bad management rather than good/bad luck. For example, a country might have taken too long to impose restrictions to curb infections, not have done enough tracing or designed applications that are useless when it comes to detecting infections in the personal environment (mismanagement), leading to a surge in hospitalizations and deaths. This would have forced the authorities to enforce a strict lockdown of the population, with a significant negative impact on economic activity. However, it is also possible that deaths in some countries have been lower because they have been affected by a less virulent strain of the virus, because the virus has spread more among the younger population for random reasons or because the neighboring countries have been more diligent about crisis management from the outset (good luck). To these we can add other factors such as the production structure, sectoral composition, regional dispersion of the population or demography. In any case, going beyond possible views on each country's handling of the health and economic crisis, it is helpful to try to construct a homogeneous metric for the social cost of COVID-19. This is especially true since the evidence now reflects the effects of the second wave and any lessons that may have been learned from the first wave.

Comparing countries such as Spain, Belgium, UK, Italy and France (lower right quadrant) to Korea, Norway and Germany (upper left quadrant) is simple. In the first group of countries the loss of GDP per capita in 2020 and human life is much higher than in the second, which most likely implies a higher welfare cost, regardless of the metric used to measure it and whether these differences are due to worse management, bad luck, country-specific conditions or a combination of all these factors.

However, there are other comparisons between countries that do not provide such clear outcomes. This is the case, for example, when comparing Spain with Belgium, or comparing Greece, Canada, Sweden and the United States. In these cases, we are comparing countries with a larger (lower) fall in GDP with others with a lower (higher) loss of human life. How can we establish a metric, based on these two dimensions, that we can use to compare countries in terms of the loss of social welfare? Below we explain our methodological approach to this issue and give quantitative results by country.

Creating Opportunities



An approach to social welfare loss

Jones and Klenow (2016, *JK* hereafter) proposed a social welfare measure that depends on per capita public and private consumption, leisure, income inequality and life expectancy. As with other alternatives such as the measures of happiness proposed by Helliwell, Layard, Sachs and De Neve (2020), this social welfare indicator goes beyond GDP per capita as an indicator of countries' economic performance (see Doménech and Ferri, 2017a and 2017b, or Andrés and Doménech, 2020). However, the *JK* methodology has the advantage of being a quantitative approach that can be derived from the kind of individual preferences functions normally used in economic welfare analysis.

We approach the measure of welfare loss in the spirit of the *JK* indicator, although the availability of data has forced us to make some simplifications. First, fall in GDP per capita is used as a proxy for the expected fall in consumption for 2020, since a homogeneous measure of the latter is not available for all countries in the sample. Secondly, we have to ignore how COVID-19 affects the number of leisure hours, as we do not have any information on this for 2020. Moreover, changes in demand for leisure may be of a more structural nature and it is not clear how the current crisis could end up influencing this decision. Thirdly, we do not have current and comparable information either on the evolution of inequality during the pandemic. This effect is, however, very important in the short term because it is likely that changes in economic activity and unemployment will have a very significant impact on income distribution and inequality in the short run. The lack of data forces us to set aside this component for the time being, although one might expect those countries suffering a more severe economic crisis to experience a greater increase in inequality. For example, according to the results of Palomino, Rodríguez and Sebastián (2020), COVID-19 could increase the Gini coefficient of income for the average of the 29 European countries they analyze between 3.5% and 7.3% depending on the scenario considered. Finally, we need to have an estimate of the impact of mortality due to COVID-19 on life expectancy, which is one of the variables that determines social welfare.

To this end we rely on the study of Goldstein and Lee (2020) who, using data for the United States, estimate the effects of COVID-19 on life expectancy at birth for two mortality rate scenarios. In the first, the mortality rate is 0.076% per million inhabitants and the decline in life expectancy is 0.84 years. In the second, higher-risk scenario, mortality is 0.609% per million inhabitants and the decline in life expectancy is 5.08 years. These two scenarios, along with the point of origin (0% deaths and 0 years), allow us to approximate the curve shown in Figure 2, in which we have shown the estimated fall in life expectancy for the United States in mid-October and that for Spain, if instead of using the number of confirmed deaths due to COVID-19 shown in Figure 1, excess mortality to September 25 is used. For illustrative purposes, we have also shown the transitory effects of the 1918 flu pandemic on life expectancy in the United States, which fell by nearly two more years than seen in the risk scenario estimated by Goldstein and Lee.

Social Welfare and COVID-19 / November 27, 2020

Social welfare loss in advanced economies

Research

The *JK* social welfare function allows us to calculate how much per capita consumption society would be willing to give up in order to increase life expectancy by, for example, one year and maintain social welfare. This trade-off is shown in Figure 3 using the iso-welfare curve, which has been anchored to the average of the countries in the sample. The iso-welfare curve therefore offers us all the combinations of deaths and GDP declines that generate the same social welfare loss as that associated with the average across the sample of countries. Countries below this curve have experienced above-average declines in welfare during the crisis. For example, this curve (which given the scale in the axes is practically a straight line) shows us that, in terms of welfare loss, the position of Greece, Canada, Sweden and the United States is very similar, despite their very different results in terms of GDP per capita declines and mortality rates.

Figure 3. Forecasts of decline in GDP per capita in 2020 and mortality due to COVID-19 through to October 17: Iso-welfare curve



Source: BBVA Research, based on IMF, AMECO, OECD and Our World in Data

Figure 4. Loss of social welfare due to COVID-19 in 2020, in equivalent per capita consumption terms



Source: BBVA Research, based on Goldstein and Lee (2020), Jones and Klenow (2016), IMF, AMECO, OECD and Gapminder

4

More generally, our approach also allows us to show (see Figure 4) the equivalent welfare loss in terms of a reduction in GDP. Whether it is a matter of social discipline, good management, initial conditions or pure luck, Figure 4 makes it possible to distinguish between the social welfare loss due to the fall in GDP and that caused by the mortality due to COVID-19. As we can see, there are vast differences between countries, both in the overall decline in social welfare and the breakdown of its underlying causes.

Some final considerations

A few words of caution to conclude. As we have already emphasized, the iso-welfare curve shown in Figure 3 and the quantification of the welfare loss shown in Figure 4 are based on a simplification of the *JK* approach. A more precise estimation of the welfare loss across countries would require more and better information on the effects of COVID-19 on inequality, real mortality versus official mortality and the real decline in consumption rather than forecasts of the fall in GDP. For example, to give an idea of the implications of the effect of a rise in inequality, an



increase in the Gini index such as that seen in Spain in the Great Recession would result in an additional reduction in the social welfare in Figure 4 equivalent to a 4.4 point fall in per capita consumption. It is also foreseeable that, as was the case with the 1918 flu pandemic, the effects on life expectancy will be temporary. Similarly, per capita consumption should recover, assuming the absence of hysteresis. This (the rebound effect) is one of the reasons for using the expected decline for 2020 instead of the actual figure for the first half of the year.

There is indeed great uncertainty about the temporal dynamics of the pandemic. We know little about how COVID-19 mortality and the economy are likely to evolve over the coming quarters. Some countries that seemed to have the disease under control in August and September have seen exponential growth in the second wave. What seems clear is that, as of today, and with the above limitations, Spain, Belgium, Italy, the United Kingdom and France are at the top of the list of countries that have performed worst among the advanced economies in terms of the epidemic's impact on welfare.

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