

# Mandatory business closures drove the economic decline during COVID-19 pandemic: Study

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Involuntary business closures have been the leading cause of a massive decline in U.S. GDP during the COVID-19 pandemic, although personal

voluntary behaviors to avoid infection also play a role, according to a new study by USC faculty.

The multidisciplinary study, which was published in *Economic Modelling*, estimates that the pandemic cut \$12.2 trillion from U.S. GDP as of the end of 2022, with total losses expected to top \$14 trillion by the end of this year—four years since the outbreak of the pandemic. The findings were based on a disaster economic analysis framework refined by one of the study's authors.

"I'm still amazed at how powerful a negative impact COVID is projected to have on the U.S. economy compared to previous man-made and natural disasters. COVID's impact on GDP is estimated to be nearly 100 times more than the previous largest disaster of the 21st century—the September 11, 2001, World Trade Center attacks," said study co-author Adam Rose, a research professor at the USC Price School and a senior research fellow at the USC Center for Risk and Economic Analysis of Threats and Emergencies (CREATE).

## **Three factors drove economic losses during COVID-19**

A trio of factors have driven the [economic decline](#): deaths and illnesses, voluntary avoidance of activities that stimulate [economic activity](#) but which avoid infection, and mandatory [business](#) closures.

Business closures have had by far the greatest impact. During the first six months of the pandemic beginning in early 2020, for example, business closures accounted for a 26.3% decline in U.S. GDP, compared to a 12.2% decline through work avoidance.

Deaths and illnesses had the least effect because people who were no

longer able to work were replaced by the large number of people who were unemployed by COVID.

According to the study, growth rose in late 2020 as businesses continued to reopen, but dipped again slightly in early 2021 with the re-introduction of some mandatory business closures and further voluntary avoidance in response to another wave.

Losses were partially offset by economic activity in [health care](#), pent-up demand for goods and services and, in most but not all cases, government stimulus spending.

The fiscal stimulus rounds during the Trump administration helped alleviate some of the losses in economic growth due to the pandemic, study authors found. However, the \$1.9 billion [stimulus package](#) signed during the Biden Administration in early 2021 had the opposite effect by crowding out private investment and the requirement to repay businesses loans.

## **Many people voluntarily changed behaviors to reduce COVID-19 risk**

While news reports glommed onto stories about people who refused to wear masks or get vaccinated, study authors found many people voluntarily adopted behaviors to avoid getting sick. Avoidance behaviors included working from home, keeping children out of school, and steering clear of doctors, dining out, and certain forms of travel and leisure activities.

"A very surprising finding is the magnitude of voluntary avoidance behavior during the pandemic. We hear a lot about noncompliance with health guidelines and restrictions, but we found that many people

voluntarily changed their behavior to reduce the chances of infection, even when there were no requirements to do so," said Richard John, professor of psychology at the USC Dornsife College and associate director of CREATE.

But avoidance behavior came with a cost to business. During the height of the pandemic, international and domestic airline travel dropped by nearly 60%, indoor dining by 65% and in-store shopping by 43%.

The study was conducted using an economic consequence analysis (ECA), which, unlike many standard macroeconomic analyses, identifies fundamental drivers of impacts on the economy. Although the technique has been around since the 1990s, Rose refined it to include exaggerated human responses that worsen [economic losses](#) and, conversely, people's resilience in effectively recovering from a crisis and thereby reducing losses.

"Nearly all previous COVID-19 studies used macroeconomic or statistical models that are a top-down approach," Rose said. "We used a bottom-up approach to identify fundamental causal factors, or drivers, of impacts."

**More information:** Terrie Walmsley et al, Macroeconomic consequences of the COVID-19 pandemic, *Economic Modelling* (2022). [DOI: 10.1016/j.econmod.2022.106147](https://doi.org/10.1016/j.econmod.2022.106147)

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