

gary vay • ner • chuk

LEARN MORE



As sketched in the WSJ

WHY NOW IS THE TIME TO
CRUSH IT!
CASH IN ON YOUR PASSION

Dow Jones Reprints: This copy is for your personal, non-commercial use only. To order presentation-ready copies for distribution to your colleagues, clients or customers, use the Order Reprints tool at the bottom of any article or visit www.djreprints.com

[See a sample reprint in PDF format.](#)

[Order a reprint of this article now](#)

THE WALL STREET JOURNAL

WSJ.com

OPINION | MAY 5, 2009

Pandemics and Depressions

History shows the swine flu could take an economic toll.

By **ROBERT J. BARRO** and **JOSE F. URSUA**

Here we are, struggling to find a way out of the worst financial crisis since the 1930s, when along comes the possibility of a global influenza epidemic. Though the first concern about the new strain of A/H1N1 virus involves health, we also have to worry that a full-blown flu pandemic would intensify the world's economic problems.

Our ongoing study of economic disasters for 36 countries since 1870 suggests that this concern is well founded. In this sample, we have isolated 158 depressions -- defined as declines in a country's real per capita gross domestic product (GDP) by at least 10%. The most prominent features of these depressions are wars and financial crises. But the fourth-worst global macroeconomic event since 1870 seems to be the Great Influenza Epidemic of 1918-20. This "health shock" accounts for 13 of the depression events. In contrast, World War II is associated with 25, World War I with 23, and the Great Depression of the early 1930s with 21.

The Great Influenza Epidemic (aka the Spanish Flu) began in spring 1918, went through three or four waves, and lasted into 1920. The spread of the disease was propelled by international travel, much of which involved troop movements in 1918 because of World War I. Estimates of world-wide flu deaths cover a wide range but are typically around 50 million.

We have, thus far, compiled estimates of excess deaths from the flu in 1918-20 for 32 of our 36 countries. The median excess mortality rate was 0.7 per 1,000 people, with a range from 0.1 for Argentina to 4.4 for India and South Africa. (The mean rate was 1.1 per 1,000.) Spain, forever associated with the flu, had a mortality rate of 1.2 per thousand, well above the median. The United States, at 0.65, was close to the median (there were 675,000 American deaths). When applied to today's U.S. population, this rate would translate into two million fatalities.

As many commentators have observed, the 1918-20 flu was unusual in that a large fraction of the deaths were in persons of prime working age, especially 20-40. This suggests that the epidemic would have had more serious economic implications than just the large number of flu cases and deaths.

The troughs in macroeconomic activity that we associate with the Great Influenza Epidemic were typically in 1920 or 1921. Not all of our 36 countries showed economic declines in this period. But on average the fall in real per capita GDP from the previous peak in 1918 (or sometimes 1919 or 1920) was 6.6%. (For the 24 countries with data, the average decrease in real consumer spending per person was similar to that for real per capita GDP.) Notable declines in GDP among the 13 depression cases were Canada and South Africa at 24% and Italy at 22%. For the U.S. from 1918 to 1921, the falls in per capita GDP and consumer spending by 12% and 14%, respectively, meant that this contraction was second in size since 1870 only to the Great Depression.

Ironically, given the name Spanish Flu, Spain performed better than average. Per capita GDP rose during the epidemic,

though real consumer spending per person fell in 1920-21.

The years between 1918 and 1920 or 1921 also featured sharp declines in stock prices in many countries. We have data on real rates of return on stocks in these years for 18 of the 36 countries in our sample. Among these 18, 11 had stock-market crashes, defined as a cumulated real rate of return of minus 25% or worse. The weakest markets for this period include Italy at minus 69%; Denmark, minus 57%; Switzerland, minus 54%; Japan, minus 52%; and France and Spain, both minus 46%. Germany saw a rate of return of minus 78%, but this reflected in part the reparations payments imposed by the Versailles Treaty at the end of World War I. The U.S. stock market performed better than average, but the real return in 1920 was still a dismal minus 22%.

It seems unlikely that the 2009 influenza epidemic will be anywhere near as bad as the 1918-20 pandemic in illness or mortality. For more recent comparisons, one can begin with the flu pandemics of 1957-58 and 1968-70, which were serious in terms of deaths but not comparable to 1918-20. In these cases, stock prices fell temporarily in some countries, until the limited scope of the pandemics became clear. In 1976, a swine-flu scare prompted a fall in stock prices in some countries and a massive U.S. immunization campaign. However, the disease was soon found to be mild, and the overall effects on financial markets were minor.

The most recent event is the outbreak of SARS in late 2002. This pandemic caused a widespread fall in stock prices, until the limited nature of the disease threat became evident in the spring of 2003. The economic impacts of the four post-World War II flu events are difficult to pin down and are surely much smaller in magnitude than those from the 1918-20 pandemic.

For most countries -- with Mexico as a likely exception -- the swine-flu epidemic of 2009 may turn out not to have greater macroeconomic consequences than the other four post-World War II flu crises. However, we already have substantial depression risks, arguably 20%-30% in the U.S., due to the global financial crisis that began in 2008. The potential for a flu pandemic surely adds to the depression odds, particularly since -- like the 1918-20 epidemic -- the current strain disproportionately impacts persons of prime working age.

As Max Weber, a founding father of sociology, wrote in "Science as a Vocation": "Our age is characterized by rationalization and intellectualization, and above all, by the disenchantment of the world." Thus, the modern thinker relies on "technology and calculation" -- even going so far as to use historical data to calculate probabilities of flu pandemics, financial crises and depressions. Weber clearly would have supported this kind of quantitative analysis. Sadly, his own work was cut short at the age of 56 by the Great Influenza Epidemic, of which he died in 1920 in Germany.

Mr. Barro is a professor of economics at Harvard University and a senior fellow of Stanford University's Hoover Institution. Mr. Ursua is a Ph.D. student in economics at Harvard.

Please add your comments to the [Opinion Journal forum](#).

Printed in The Wall Street Journal, page A17

Copyright 2009 Dow Jones & Company, Inc. All Rights Reserved
This copy is for your personal, non-commercial use only. Distribution and use of this material are governed by our [Subscriber Agreement](#) and by copyright law. For non-personal use or to order multiple copies, please contact Dow Jones Reprints at 1-800-843-0008 or visit www.djreprints.com

