

Household Spending in the United States During the 1918 Influenza Pandemic

Johannes Norling
Mount Holyoke College

October 2, 2020

Short abstract

In 1918 and 1919, 25 million Americans contracted influenza and 675,000 died. These infections and deaths were far in excess of typical annual counts and were concentrated in the early fall of 1918 through the early spring of 1919. At the same time, the Bureau of Labor Statistics conducted a Cost of Living survey that recorded household spending in 99 US cities. This paper uses these survey records to show that there was little change in overall household spending during the pandemic. Households observed at the start, middle, and end of the pandemic reported similar levels of spending. This finding holds when accounting for variation in household income and city-level variation in pandemic mortality. Even for categories of spending that might be expected to be most responsive to a pandemic, such as life insurance, there was little substantial change.

Extended abstract

In 1918 and 1919, 25 million Americans contracted influenza and 675,000 died (Crosby 1989, Almond 2006). These infections and deaths were far in excess of typical annual counts and were concentrated in the early fall of 1918 through the early spring of 1919. As with typical cases of the flu, young children and the elderly were especially susceptible to dying. However, working-age adults were also especially likely to die of the flu in 1918, and this unusual age-curve of mortality was known at the time. Many families lost their breadwinner, and others likely have worried about losing theirs. It is therefore plausible that families would have reduced spending, shifting away from durable goods and luxury items and towards medical needs and life insurance.

Between July 1918 and February 1919 – the same time as the largest wave of deaths – the Bureau of Labor Statistics conducted a Cost of Living survey (United States Department of Labor 1917–1919). The survey recorded spending on 2,224 categories of goods and services for a cross-section of 12,817 households in 99 cities. Spending was recorded for the previous 12 months, meaning that households observed in late summer 1919 had spending recorded for a period entirely before the surge in deaths began, while households observed in early 1919 completed much of their spending during the pandemic. All surveys in a city were typically completed within a few weeks of each other. Average family size remained roughly the same as the survey moved from city to city.

I use the Cost of Living survey to answer the question, did household spending change during the 1918 influenza pandemic? The answer to this question is no, at least overall. Among households observed when the large wave of deaths began in September, average spending over the previous 12 months was \$1,450. Average spending declined slightly for households observed in October and November, but then rose for households observed in December through February. Had spending actually declined during the pandemic, the observed decline in early fall 1919 would have continued. Instead, households that completed the bulk of their spending during the pandemic reported the highest average spending.

One explanation for this finding is that households observed later happened to have higher income, and would therefore be expected to have higher spending. As with spending, income fell at the start of the pandemic in the fall but then rose through the winter. To account for these changes, I split the entire sample by quintile of income, but again household spending remained nearly

constant over the pandemic for the richest households, for the poorest households, and for every group of households in between.

Alternatively, households may have reallocated spending in response to the pandemic. Across a variety of categories of spending, including life insurance and medical expenses, there was little consistent change as the pandemic progressed. The only category of spending that I have so far found to have a consistent change is liquor: spending on liquor declined over this period across households at all levels of income. (In more recent years, there is evidence that alcohol use peaks in the winter [Uitenbroek 1996], so seasonality may not explain this pattern. Prohibition, which started in 1920, also cannot explain this change in late 1918 and early 1919.)

Finally, though, the pandemic did not affect all cities equally. For example, compared to the previous 12 months, deaths rose by 16 percent in Atlanta, Georgia in the 12 months ending February 1919. Over the same period, deaths rose by more than 55 percent in Trenton, New Jersey. Using monthly Mortality Statistics reports (Department of Commerce 1917–1919), I similarly calculate changes in the 12-month death rate for most cities and months in which the Cost of Living survey was conducted. I then regress household expenditure on the percentage change in mortality in that city and month. (The regression includes month of survey fixed effects and conditions on household income, household size, and race of the household head.) A one percentage point increase in mortality over the previous twelve months was associated with a 58-cent increase in household spending. This change is small relative to average household spending of about \$1,400, but statistically significant. Perhaps surprisingly, the change is positive, suggesting that households exposed to greater risk of death had greater spending. I repeat the regression for various categories of spending. As might be expected when large numbers of wage earners die, spending on life insurance and funerals increased, and spending on amusement declined. However, medical expenses declined while spending on outings increased. All of these changes are small, and suggest a mixed spending response to the pandemic.

The main finding of this research – that household spending changed little as the 1918 influenza pandemic progressed – is surprising given the dramatic reductions in and reallocations of spending during the 2020 COVID-19 pandemic. But, this finding is confirmed by other recent research on the 1918 pandemic at the macro level. Velde (2020) shows that a brief recession accompanied the pandemic, but there was little change in the retail sector and few business failures. The small changes that I find in household spending are consistent with Velde’s finding of relatively small changes in the economy as a whole.

Works cited

- Almond, Douglas. 2006. “Is the 1918 Influenza Pandemic Over? Long-Term Effects of *In Utero* Influenza Exposure in the Post-1940 U.S. Population.” *Journal of Political Economy*, 114 (4): 672–712.
- Crosby, Alfred W. 1989. *America’s Forgotten Pandemic: The Influenza of 1918*. New York: Cambridge University Press.
- Department of Commerce, Bureau of Labor Statistics. 1917–1919. *Mortality Statistics*. Government Printing Office: Washington, D.C.
- United States Department of Labor. 1917–1919. *Cost of Living in the United States, 1917-1919*. Inter-university Consortium for Political and Social Research [distributor].
- Velde, François R. 2020. “What Happened to the US Economy During the 1918 Influenza Pandemic? A View Through High-Frequency Data.” Federal Reserve Bank of Chicago working paper 2020-11.
- Uitenbroek, D. G. 1996. “Seasonal Variation in Alcohol Use.” *Journal of Studies on Alcohol*, 57 (1): 47–52.