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The effect of natural disasters on local economies

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When people think of natural disasters that had a lasting impact on the United States, events such as Hurricane Katrina, the Chicago heat wave of 1995, and the 1906 San Francisco earthquake come to mind. But what about other, lesser known events? What about events that don't seem extreme on the surface at all? How do they impact their local economies?

This is the question posed by Leah Platt Boustan, Matthew E. Khan, Paul W. Rhode, and Maria Lucia Yanguas, all of the National Bureau of Economic Research (NBER), in their May 2017 NBER working paper no. 23410, "The effect of natural disasters on economic activity in U.S. counties: a century of data."

The authors created a new long-run disaster database that includes information on a full spectrum of natural disasters in the United States from 1920 to 2010. The team studied the data to determine how events shaped local economies and populations. They specifically looked at how these disasters affected migration rates, home prices, and local poverty rates.

The study's unit of analysis is the county. The goal is to analyze if counties that faced natural disasters lost population through net outmigration and experienced rising poverty rates and, if they did, whether the changes were statistically significant.

In the paper, a severe disaster is defined as a natural disaster that caused 10 or more deaths. A "super-severe" disaster is defined as an event that caused 100 or more deaths. All human-related disasters—such as mine collapses, transportation accidents, and arson—are not included in the study.

Data on natural disasters were found using the international Emergency Events Database, referred to as EM-DAT, and death counts from the American Red Cross. Migration was estimated for U.S. counties using 1950–2010 data from the University of Wisconsin–Madison and 1930–50 data from the Inter-university Consortium for Political and Social Research.

The average county within the sample experienced two disasters in a typical decade, with floods being the most common event type, followed by storms and hurricanes. In each decade, 1 in 3 counties experienced a severe disaster and 1 in 10 counties experienced a super-severe disaster.

There was a correlation found between outmigration and poverty rates. As outmigration of the nonpoor population in areas hit by super-severe disasters grew, poverty rates in those areas rose. This can be attributed to the fact that the poorest people are least likely to have the financial means or ability to leave the area.

The strongest migration response was found to be from volcanos, hurricanes, and forest fires.

The paper also touched on the Federal Emergency Management Agency (FEMA) and the “moral hazard”—that is, an individual’s willingness to take on more risk because someone else bears the cost of the risk—that has been attributed to their creation in 1978. FEMA was created to help populations affected by natural disasters, including potentially offering financial assistance to those directly affected. However, the data show that migration out of an area in response to natural disasters has actually risen in recent decades. The reason may be that disasters have become more frequent. Also, transfer payments following disasters tend to not be based on where the recipient lives, which allows the recipient to move to another county while still receiving the financial assistance.

In conclusion, the authors found that relatively mild disasters had little effect on local economies, but counties hit by severe disasters experienced increased outmigration, lower home prices, and higher poverty rates. Lower demand to live in an area leads to lower rent and attracts those with lower incomes. In this case, major natural disasters shake up socioeconomic norms in affected regions, causing those who are able to move to relocate to more stable, safer areas, while those who do not have the means to leave remain.

The authors end the paper by comparing natural disasters with war. They contend that populations quickly recover after an area is bombed, because the effects of war end when a peace treaty is made.

Natural disasters, in contrast, are prevalent in certain areas. As a result, the likelihood of disinvestment in labor and capital is higher in these areas. The authors leave us with an open-ended question about whether the federal government will continue to bolster natural-disaster-prone areas and what impact that support would have on labor and capital.