

Recessions result in lower birth rates in the long run

September 29 2014



While it is largely understood that birth rates plummet when unemployment rates soar, the long-term effects have never been clear. Now, new research from Princeton University's Woodrow Wilson School of Public and International Affairs shows that recessions result in lower birth rates both in the short and long run.

The researchers find that women in their early 20s during the Great Recession are likely to have fewer children in both the short and long term. This result is driven largely by an increase in the number of women who will remain childless at age 40.

The paper, published Sept. 29 in the *Proceedings of the National*

Academy of Sciences, is the first to show that recessions have long-term effects on fertility, which actually increase exponentially over time.

"We find it remarkable that macroeconomic conditions have such a powerful effect on individual women's lives," said co-author Janet Currie, the Henry Putnam Professor of Economics and Public Affairs and director of the Center for Health and Wellbeing (CHW). "This paper provides further evidence of how profoundly recessions and economic cycles alter personal decisions."

To properly understand the long-term effects of high unemployment rates on fertility, women must be followed over time. That's why Currie and Hannes Schwandt, a postdoctoral research associate at CHW, undertook the task of analyzing 140 million U.S. birth records from the U.S. Vital Statistics Natality data between 1975 and 2010. These records provide information about the state and date of a child's birth, gestation length, the age of the mother and the mother's own state of birth. The time period examined covers five recessions varying in strength and timing across states.

The researchers divided the women into groups based on age and their own state of birth. Following groups by age allowed the researchers to analyze effects over time. And using women's own birth state allowed linkage to state-level unemployment rates as well as tracking of women who move from state to state between births.

In the end, their methodology was really quite simple, Currie said, yet hadn't been done before. She and Schwandt counted up the total number of births among the groups between ages 15 and 40, focusing only on [live births](#) and the year of conception. To obtain rates, the researchers divided live births by population estimates based on data from the decennial U.S. Census.

"We chose the year of conception rather than the year of birth because economic conditions at the time of conception are likely more relevant to the decision to have a child," said Schwandt. "We also treat multiple births as a single conception because it's a single fertility choice."

Their calculations show that a one-percentage point increase in the [unemployment rate](#) experienced between ages 20 and 24 reduces the short-term fertility of women by six conceptions per 1,000 women. When following these women to age 40, the same unemployment rate increase leads to an overall loss of 14.2 conceptions per 1,000 women. This increasing effect over time is largely accounted for by an increase in the fraction of women who remain unmarried and childless at age 40. These women not only forego first births, but forego later births as well.

In terms of the Great Recession, the researchers estimate that the increase in unemployment rates experienced between 2008 and 2013 will result in an additional 151,082 women who will remain childless at age 40, leading to a long-term loss of 420,957 conceptions (and 426,850 live births) – a 2.4 percent decrease.

But what are the economic mechanisms driving these results? Currie and Schwandt cite recent empirical studies showing that young adults – especially young men – who enter the job market during an economic downturn are likely to have persistently lower earnings as they age. This phenomenon may make young men less attractive matches for women, explaining the increase in the number of women who forego childbearing.

"If it's your choice to not have children, that's one thing. If you're just unlucky and hit by high unemployment rates – causing you to stay childless – that's a whole other thing entirely," Schwandt said.

While the researchers can track cohorts (or groups) over time – for

example, all women born in Louisiana in 1982 – some women may relocate and give birth in another state. This creates uncertainty in terms of which unemployment rate should be matched to women at various ages. Currie and Schwandt find that the results are similar whether they use the unemployment rate that prevailed in the woman's state of birth at the time she was between 20-24, or the unemployment rate in the state where she gave birth as of the time she was age 20-24. This similarity is not surprising, the researchers said, because a large majority of women are still located in their own state of birth at this age.

The researchers acknowledge that it is possible that the number of live births falls with unemployment because more [women](#) may seek abortions or suffer pregnancy losses. Therefore, their results only pertain to the cyclicity of conceptions resulting in live births rather than to all conceptions.

"Overall, our work highlights the personal costs of recessions even in as intimate a sphere as the decision to marry and have children, and hence emphasizes once again how important it is to have policies in place to avoid [recessions](#)," said Currie, who also is chair of Princeton's Department of Economics.

More information: Short- and long-term effects of unemployment on fertility, *Proceedings of the National Academy of Sciences*, www.pnas.org/cgi/doi/10.1073/pnas.1408975111

Provided by Princeton University

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