Economics and Human Biology 27 (2017) 241–247

Contents lists available at ScienceDirect

Economics and Human Biology

journal homepage: www.elsevier.com/locate/ehb

Short communication

# Recessions and health revisited: New findings for working age adults☆

Benjamin Crost[a], Andrew Friedson[b,*]

[a] Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, 326 Mumford Hall, 1301 W. Gregory Drive, Urbana, IL 61801, United States

[b] Department of Economics, University of Colorado Denver, Campus Box 181, Denver, CO 80217-3364, United States

ARTICLE INFO

*Article history:*
Received 30 January 2017
Received in revised form 14 July 2017
Accepted 14 July 2017
Available online 9 August 2017

*JEL classification:*
E32
I10
I13

*Keywords:*
Mortality
Unemployment
Recessions

ABSTRACT

A series of influential papers have documented that state level mortality rates decrease during economic downturns. In this paper, we estimate the effect of education specific unemployment rates on mortality, which provide a more exact measure of the likelihood of being directly impacted by a recession. We find that the unemployment rate of an education group in a given state is positively related to mortality in that group. A 1% increase in the group-specific unemployment rate is associated with an approximately 0.015% increase in the group-specific mortality rate, which is consistent with the hypothesis that, while state-level unemployment may have indirect health benefits, being personally affected by a recession has a detrimental effect on health.

© 2017 Elsevier B.V. All rights reserved.

## 1. Introduction

A large literature on the relationship between recessions and health has shown that health outcomes improve when the economy worsens. This result has been demonstrated in the United States for mortality (Ruhm, 2000, 1211), as well as for various other metrics of health such as infant health (Dehejia and Lleras-Muney, 1130), hospitalizations (Ruhm, 2003), and risky behaviors such as smoking (Ruhm, 2005a,b).[1] Recent work on the topic has shown that over time this effect has attenuated, and even reversed for some health outcomes (McInerney and Mellor, 2012; Ruhm, 2015), with recent recessions having the opposite effect on health as found in the earlier studies.

Additional recent papers have attempted to explain why bad economic times improve health. Miller et al. (2009) analyze age, gender and ethnicity specific unemployment and mortality rates to study which demographics drive the overall result of countercyclical mortality. They find two main results. First, the countercyclical effect of state-level unemployment is concentrated among the elderly. Second, own-group (age, sex or demographic) unemployment has little effect on mortality. These findings suggests that the mechanism by which a poor economy improves mortality is not through a decrease in the value of an individual's time, which should be most concentrated among working age people in groups that are most strongly affected by a downturn. Stevens et al. (2015) find that the increase in elderly deaths during good economic times is larger in places with a high concentration of nursing homes and that staffing levels in skilled nursing facilities decline in good economic times. In addition, Haaland and Telle, 2015 find that much of the countercyclical increase in mortality is driven by those who are already health impaired. These findings are consistent with the hypothesis that much of the previously discovered countercyclical mortality is driven by the quality of care for the elderly and those not in the labor market.

In this study, we estimate the effect of education-specific unemployment rates on mortality in the working-age population during the time-period in which strong countercyclical mortality

☆ The authors would like to thank Ryan Brown, Thomas Kniesner, Melinda Pitts, Dan Rees, and seminar participants at the Federal Reserve Bank of Atlanta and 2014 ASHEcon conference for their helpful comments, as well as Monicque Aragon and Stella Min for excellent research assistance.

* Corresponding author.
*E-mail addresses:* bencrost@illinois.edu (B. Crost), Andrew.Friedson@ucdenver.edu (A. Friedson).

[1] Decreases in mortality during recessions have also been shown to exist in Germany (Neumayer, 1047), Spain (Granados, 2009), and across 23 OECD countries (Gerdtham and Ruhm, 2006). Better health behaviors during recessions have been shown in Iceland (Asgeirsdottir et al., 2016). Worse child mortality was found during recessions in the least developed countries (Prez-Moreno et al., 2016), and increased drug usage during recessions was found in Spain (Bassols and Castell, 2016).

http://dx.doi.org/10.1016/j.ehb.2017.07.002
1570-677X/© 2017 Elsevier B.V. All rights reserved.

was previously discovered. We focus on the working age population to isolate the effect of labor market conditions, which should not be affected for individuals who are too young or old to be involved in the labor market. Research by Hoynes et al. (1795) has shown that recessions differentially affect the employment opportunities of working-age individuals with different levels of education, and that this differential is greater than that created by any other single demographic. To exploit this variation, we calculate education group specific unemployment rates: the percentage of individuals of a particular level of education who are unemployed in a given state and year. These group-specific unemployment rates are likely to be a more precise measure of the labor market conditions facing an individual than the state-wide unemployment rate.[2]

Our approach makes two main contributions to the literature. First, it allows us to disentangle the direct effect of labor market conditions, proxied by the group-specific unemployment rate, from the effect of the wider economic climate, proxied by the state-level unemployment rate. This sheds light on the mechanism through which recessions affect health. If recessions affect health directly by affecting individuals' employment opportunities, we would expect a strong association between group-level unemployment and mortality. If recessions affect health indirectly, perhaps by increasing the quality of health care services or the environment, we would expect state-level unemployment to affect mortality, even after controlling for the group-level unemployment rate. Our second contribution is methodological. Since the group-specific variation in unemployment is at a finer level than the state-year, we can estimate specifications that include state by year fixed effects, which control for unobserved changes to state health policies and other factors that may affect mortality. This improves on studies based entirely on state-level unemployment rates, which generally only include state and year fixed effects and rely on the assumption that states with different trajectories of unemployment do not experience systematically different unobserved shocks. Our results show that education specific unemployment is positively related to mortality, which suggests that decreases in individual employment opportunities are associated with increased mortality among the working aged population. This holds when we include state by year fixed effects, across multiple causes of death, and for most age groups within the working age population.

We do not find statistically significant evidence that the state specific unemployment rate affects mortality when the education specific unemployment rate is included in the analysis. This is consistent with the results of Miller et al. (2009), who found that the pro-cyclical mortality effect of the state-specific unemployment rate is concentrated among the elderly. Since our analysis focuses on the working-age population only, we would not expect to find a substantial effect of state-level economic conditions for this age group.

As a robustness test, we extend our analysis to the elderly population. Here, we find that an increase in the state-level unemployment rate leads to a lower mortality rate, while the education-specific unemployment rate is not related to mortality. This is consistent with the results of Ruhm (2000) and others that state-level economic conditions are pro-cyclically related to mortality, as well as those of Miller et al. (2009) who find that this effect is concentrated among the elderly. It is also consistent with the hypothesis that the effect of education-specific unemployment is due to labor-market conditions, which would explain the absence of an effect for the elderly, who have low rates of labor-market participation.

Our results are consistent with recent evidence that the positive effect of recessions on health has attenuated over time and may even have reversed for some outcomes (McInerney and Mellor, 2012; Ruhm, 2015), which is suggestive that perhaps the effect from the working population has been growing relative to the effect from the non-working population. Our results are thus also consistent with the findings of Miller et al. (2009), Stevens et al. (2015), Haaland and Telle (2015), which suggest that original countercyclical mortality result is not due to changes in the individual behavior of those who are directly affected by downturns via an increased likelihood of job loss. Rather, they suggest that being directly affected by a downturn leads to increased mortality, consistent with the sizable literature on the negative health effects of job loss (Eliason and Storrie, 2009; Rege et al., 2009; Sullivan and von Wachter, 2009).[3]

## 2. Empirical strategy

Our analysis follows that of Ruhm (2000) and estimates the relationship between unemployment rates and mortality rates. Our main contribution is that, in addition to looking at the aggregate relationship at the state level, we analyze education-specific unemployment and mortality rates. In particular, we begin by estimating the following regression:

$$Y_{est} = \beta_1 U_{est} + \beta_2 U_{st} + \theta_{et} + \gamma_{es} + \varepsilon_{est}$$

$Y_{est}$ denotes the natural logarithm of the mortality rate in education group $e$ in state $s$ in year $t$.[4] $U_{st}$ and $U_{est}$ are unemployment rates at the state-year and state-year-education-group level, respectively. The regression also includes education-group-by-state and education-group-by-year fixed effects.

To control for unobserved state-level variables that may be correlated with unemployment rates, we also estimate regressions that control for state-specific linear time trends:

$$Y_{est} = \beta_1 U_{est} + \beta_2 U_{st} + \tau_s t + \theta_{et} + \gamma_{es} + \varepsilon_{est}$$

and for state-by-year fixed effects:

$$Y_{est} = \beta_1 U_{est} + \theta_{et} + \gamma_{es} + \alpha_{st} + \varepsilon_{est}$$

The last regression allows us to control for time-variant state level unobservable characteristics, such as labor market and health care policies. In it, the parameter $\beta_1$ is solely identified from within-state, within-year differences in the unemployment and mortality rates of different education groups. This is feasible since the unit of observation in our data is a state-education-group year, which is a finer level of aggregation than our fixed effects. In all regressions, we weight observations by the number of individuals in the given education-state-year cell and cluster standard errors at the state level to account for serial correlation of the error term.

[2] This paper can be seen as a similar exercise to that done by Lindo (2015), who looked at differences in the estimate of unemployment on health outcomes based on the level of geographic disaggregation. We are instead looking at a different level of demographic disaggregation.

[3] Our result is also consistent with recent work that shows show negative health consequences from worsening individual financial states such as studies by Currie and Tekin (2015) and by Argys et al. (2016).

[4] To avoid taking the logarithm of zero in cells with no deaths in a given year, we add 0.5 to the number of deaths in each cell. There were very few cases in which there were zero cells, they only occurred when we disaggregated by cause of death. There were 20 zeroes for motor vehicle deaths, 19 for suicides, and 3 for other internal causes. To ensure that zero inflating was not inappropriately influencing our results, we also used an inverse hyperbolic sine transformation as an alternate method of dealing with zero cells. Results were similar across both methods.

Download English Version:

https://daneshyari.com/en/article/5056778

Download Persian Version:

https://daneshyari.com/article/5056778

Daneshyari.com