



Health and health inequality during the great recession: Evidence from the PSID[☆]

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ABSTRACT

We estimate the impact of the Great Recession of 2007–2009 on health outcomes in the United States. We show that a one percentage point increase in the unemployment rate resulted in a 7.8–8.8% increase in reports of poor health. In addition, mental health was adversely impacted. These effects were concentrated among those with strong labor force attachments. Whites, the less educated, and women were the most impacted demographic groups.

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1. Introduction

Recessions are a major source of systematic risk to households. Because they affect large groups of people at once, they are very difficult to insure. Moreover, due to moral hazard problems, public insurance schemes like unemployment insurance only provide limited recourse to the unemployed. As a consequence, recessions can have serious, adverse impacts on household and individual welfare.

One of the more commonly studied of these potential impacts is the effect of recessions on human health. Early work on the topic indicated that poor macroeconomic conditions raised mortality rates substantially (e.g. Brenner, 1979). However, seminal work by Ruhm (2000) pointed out severe methodological shortcomings in this earlier work and he showed that, once these issues are

corrected, mortality rates tend to *decline* during recessions so that mortality rates are actually pro-cyclical in the aggregate data.¹ Improved health-related behaviors due to relaxed time constraints and tightened budget constraints were cited by Ruhm (2000, 2005) as a mechanism driving these results, although subsequent work by Stevens et al. (2015) suggested that higher rates of vehicular accidents and poor nursing home staffing during robust economic times were the primary mechanisms. Notably, more recent work by Ruhm et al. (2015) has shown that mortality rates for many causes of death did not decline during the Great Recession and that mortality due to accidental poisoning actually increased. However, other recent work by Crost and Friedson (2017) shows, in aggregate data, that mortality rates increase with the unemployment rate when both are calculated by education group. All of these studies utilize aggregate state-level mortality and unemployment rates and so their unit of analysis is a state/time observation.

On the other hand, studies that are based on individual-level data mostly show that health and health-related behaviors worsen during recessions. For example, Gerdtham and Johannesson (2003,

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¹ This result has been replicated in other countries such as Canada (Ariizumi and Schirle, 2012), France (Buchmueller et al., 2007), OECD countries (Gerdtham and Christopher, 2006), Spain (Granados, 2005), Germany (Neumayer, 2004), and Mexico (Gonzalez and Quast, 2011).

2005) use micro-data and show that mortality risks increase during recessions for working-aged men. Similar evidence over the period 1984–1993 is provided for the United States by Halliday (2014) who used the Panel Study of Income Dynamics (PSID). Browning and Heinesen (2012) use Danish administrative data and show that involuntary job displacement has large effects on mortality, particularly, from cardiovascular disease which is similar to results in Halliday (2014).² In a similar vein to these studies, Jensen and Richter (2004) showed that pensioners who were adversely affected by a large-scale macroeconomic crisis in Russia in 1996 were five percent more likely to die within two years of the crisis. Related, Charles and DeCicca (2008) use the National Health Interview Survey (NHIS) and MSA-level unemployment rates to show that increases in the unemployment rate were accompanied by worse mental health and increases in obesity. Hence, while the macro-based studies tend to be somewhat conflicted, the micro-based studies indicate that the uninsured risks posed by recessions have real, adverse impacts on human health. That said, there are some micro-based studies that show that health improves during recessions e.g. Ruhm (2003) who uses a sample from the NHIS from 1972 to 1981.

In this study, we consider how the Great Recession impacted the health of Americans. Specifically, we ask three questions. First, did the Great Recession impact health in the United States? Second, how did it impact health? Third, who did it impact?

The first and most important contribution of this study to the literature is that we estimate the relationship between the Great Recession and health at the individual level rather than the state level. We contend that this is more appropriate since as has been shown by Arthi et al. (2017) and argued by Halliday (2014), migration can severely bias aggregate health measurements such as mortality rates.

This bias works in two opposing ways. One on hand, out-migration from depressed areas will lower the count of people who die in a given time period within a region which will tend to mechanically lower the measurements of mortality rates. This will create a spurious relationship in which high unemployment is accompanied by lower mortality rates. On the other hand, the people that exit economically depressed areas tend to be healthier as shown in Halliday (2007) which results in a spurious relationship in the opposite direction *ceteris paribus*. Notably, Arthi et al. (2017) state that one solution to this is to employ individual-level panel data which is what we do in this paper.

This paper makes other contributions to the literature, as well. First, in contrast to many other studies that use individual level data, we do not rely on epidemiological surveillance data sources such as the Behavioral Risk Factor Surveillance System (BRFSS) or the NHIS which may have more sample variability from year-to-year due non-response than the PSID. Second, we employ granular information on economic conditions at the county-level whereas many other studies that employ individual level data are conducted at the state level. The main benefit of doing this is that county-level indicators necessarily have more geographic variation than state-level indicators which results in more precise estimates. Third, like Lindo (2015) does in an aggregate context, we are able to investigate how using economic indicators at different levels of aggregation affects our results albeit in the context of an analysis at the individual level. Fourth, we compare how our estimates differ if we employ the unemployment rate or the employment/population (E/P) ratio. As far as we can tell, this has

not been done by any other studies that employ individual-level data. Fifth, because we investigate the impact of the Great Recession on different demographic subgroups, we provide additional detail about how the recession widened or narrowed important health inequalities.

The Great Recession is an important episode to study since this recession was the deepest and longest recession during the post-war period. In fact, Farber (2015) estimates that, over this period, one in six workers lost their job at least once. From trough to peak, the unemployment rate increased from 4.6 to 9.3% which is the largest increase during the post-war period. To illustrate, we present Fig. 1 which shows the unemployment rate during this period. This figure clearly indicates that the recession of 2007–2009 was the most severe. In addition, as shown in Fig. 2, unemployment duration during the most recent recession was also, by far, the longest of any recession since World War II peaking at just over 40 weeks.

Aside from being the deepest recession in the post war period, another reason to focus on the Great Recession is that some important work suggests that the relationship between recessions and health may have changed during the most recent recession. For example and as already discussed, Ruhm et al. (2015) shows that the relationship between state-level unemployment and mortality rates has been severely dampened during the past ten years, although deaths due to accidental poisoning did increase. These are the deaths that Case and Deaton (2015) often refer to as “deaths of despair” which have been increasing over the past 15 years among whites with low levels of education.

There are also some important papers that have investigated how the Great Recession impacted well-being. In one paper, Deaton (2011) investigates how a rich set of subjective measures of well-being collected by Gallup responded to various events during the recession period. One of the main findings of this work is that many of these indicators track the stock market surprisingly well which the author suggests might be due to the well-being measures and the stock market responding to the same news events during this period. Another recent study that considers the health impact of the Great Recession is Tekin et al. (2013). They use the BRFSS and find little impact of the Great Recession on health outcomes using state-level unemployment rates. This is the study from the literature that is closest to our own.

However, our study offers two innovations upon the Tekin et al. (2013) study. First, because we employ panel data from the PSID, we have a reliably consistent sample across years and are not subject to the notoriously high non-response rates in many epidemiological surveillance data sources. For example, during the

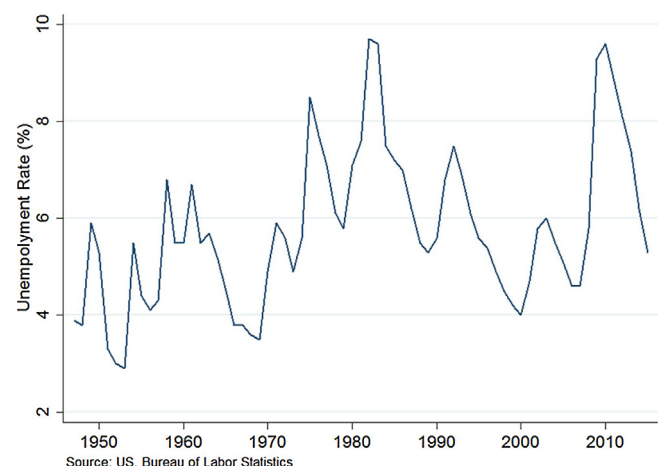


Fig. 1. Total Unemployment Rate in Each Recession since WWII.

² Browning and Heinesen (2012) builds on earlier work by Browning et al. (2006) that does not find any impact of displacements on hospitalization by using more outcomes including mortality, a sample with stronger labor force attachments, as well as a substantially larger data set.

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