



Fear itself: The effects of distressing economic news on birth outcomes[☆]



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ABSTRACT

I use new administrative data on mass layoffs and plant closings to study the effects of distressing economic news. Exposure to stressful events during pregnancy can impair fetal development. I find that announcement of impending job losses leads to a transient decrease in the mean birth weight within the firm's county one to four months before the job losses. A loss of 500 jobs corresponds roughly to a decrease of 15–20 g and 16 percent greater risk of low birth weight. Layoffs announced late in pregnancy are most strongly linked to decreased birth outcomes.

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Anne Hubbard has not lost her job, house or savings, and she and her husband have always been conservative with money. But a few months ago, Ms. Hubbard, a graphic designer in Cambridge, Mass., began having panic attacks over the economy, struggling to breathe and seeing vivid visions of “losing everything,” she said. She “could not stop reading every single economic report,” was so “sick to my stomach I lost 12 pounds” and “was unable to function,” said Ms. Hubbard, 52, who began, for the first time, taking psychiatric medication and getting therapy. — The New York Times, April 9, 2009¹

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¹ Belluck, Pam. “Recession Anxiety Seeps Into Everyday Lives.” (2009, April 9). *The New York Times*, p. A1.

1. Introduction

Each year in the United States some 20 million jobs are lost through layoffs or discharges. Workers who lose employment face serious problems, including long-term loss of earnings and damaged health, which have been documented in the economics literature.² However, each time someone loses employment, he first receives the unfortunate news of the impending event. And, each time a firm announces the decision to lay off workers or shut down, those residing nearby must consider how the change might affect the local economy and their future livelihoods. Many forms of distressing news appear as a part of the normal course of economic activity, but we know relatively little about the effects and costs associated with these messages.

Economic research on bad news and distress is nascent and promising. For example, Deaton (2012) reports a surprisingly strong relationship between negative hedonic experience and the

² Displaced workers' long-term earnings losses can range from 10 to 25 percent (Ruhm, 1991; Jacobson et al., 1993; Couch and Placzek, 2010). Recently displaced workers are likely to drop out of the labour force (Huttunen et al., 2011) and can experience enormously elevated mortality risk (Sullivan and von Wachter, 2009). A parent's job loss can also reduce the health of subsequently born children (Lindo, 2011).

S&P 500 index during the recent financial crisis. He conjectures that the index functioned as a highly salient channel for pessimistic news, which drove up mental and physical symptoms on a large scale. The present study investigates a similar relationship but focuses on many, localized news shocks rather than a nationwide crisis. These news shocks are announcements of mass layoffs and plant closings at specific sites. Such events are considered in light of the human capital literature which studies the damaging effects of stress experienced by women during pregnancy. Shocking events, such as terrorism and natural disasters, can decrease birth weights and shorten gestation (see, for example, [Camacho, 2008](#) or [Simeonova, 2011](#)). These findings suggest that brief events can have serious health consequences that may even affect the next generation. However, these studies' quasi-experimental designs exploit very unusual events that may have effects different from those of common economic stressors.

The conjunction of stress and economic news is exceptionally appropriate. Perhaps the most common stressors are personal finances, jobs, and economic conditions ([American Psychological Association, 2012](#)). To address the question of causal identification, I construct a novel data set containing the dates of major job loss events and information about the amount of forewarning given to the local community. These data allow me to analyze the particularly interesting period in which news of job losses is taking effect, but the job losses *themselves* have not yet occurred. My empirical model is constructed to rule out the direct consequences of job loss and isolate *anticipatory effects*. Such effects include the immediate, physiological effects of stress but also behavioral responses in anticipation of economic change. For example, pregnant women who receive negative information about the future might decrease consumption of healthful goods, increase consumption of unhealthy goods, become more neglectful of their health in other ways, experience stress as a result of initiating a job search, or be burdened with extra responsibilities when another member of the household initiates a job search. Many of these channels cannot be isolated with the present data.

I study mass layoffs and plant closings using administrative data from Alabama, New York, Texas, and Washington. These data, derived from notices filed under the Worker Adjustment and Retraining Notification (WARN) Act, are merged with natality data at the county-by-month level to link each birth with job losses occurring in the mother's community. The results indicate that mean birth weights drop by 15–20g during a brief period *before* a large job loss event (defined as one at the 95th percentile or approximately 500 workers in an average U.S. county). However, the effect is almost entirely restricted to job losses where the firm in question provides a large amount of forewarning rather than little, suggesting that bad news is the driving factor. These negative effects also appear in analyses of individual-level birth data, which reveal that WARN notices occurring in the mother's county of residence just around the time of birth are linked to significant decreases in birth weight and gestational age. The strongest effects are associated with exposure to notices in the third trimester.

The study has several limitations. Births and dislocations are linked only by time and place, because the identities of the mothers and the people affected by WARN notices are unknown. Therefore like other studies of wide-scale stressors, the estimates represent only effects averaged over the affected community. In addition, the arrival time of the bad news about worker dislocations is only approximately known, which "blurs" the estimated form of the response. Finally, caution is required when interpreting the results and considering policy implications. One should not conclude that WARN notices or worker notification laws are harmful on the basis of this study. Others have found that displaced

workers can find new jobs more quickly when protected by notification laws ([Friesen, 1997](#); [Jones and Kuhn, 1995](#)). Compared to job losses without any notice, notices might have some negative effects upfront but provide benefits over a longer time span. Any policy is bound to have unintended consequences. My results should instead be considered evidence that announcements of common business decisions are associated with substantial psychological and physiological costs that occur before the decision takes effect.

2. Background

2.1. Stress due to economic conditions

Several studies report that workers' physical and mental conditions deteriorate in anticipation of job loss events. Evidence from quasi-experimental designs with large samples is reported by [Hamilton et al. \(1990\)](#) and [Ferrie et al. \(1995, 2002\)](#). The latter presents strong evidence from longitudinal data on self-reported and physiological measures of health in about 3500 workers. Earlier studies, although smaller and weaker in some design aspects, also report physiological effects before job loss events ([Kasl and Cobb, 1970, 1980](#)). Overall, these studies cover a variety of workers, including both blue collar and white collar workers along with both sexes. However, a notable shortcoming is that each study considers only one employer.

Individuals who do not lose employment can still suffer from layoffs. Workers remaining at firms that have conducted layoffs can exhibit worsened health and increased absenteeism as evidenced by studies of survey data ([Moore et al., 2004](#)), administrative records ([Vahtera et al., 1997](#)), and interviews with managers ([Maki et al., 2005](#)). Although these studies also examine just one employer each, the link between pessimistic job expectations and poor health is broad enough to appear in representative survey data ([Kalimo et al., 2003](#)). Finally, numerous studies of a variety of sizes report that a wife may feel stress due to her husband's layoff or job troubles ([Dew et al., 1987](#); [Rook et al., 1991](#); [Vinokur et al., 1996](#); [Westman et al., 2001](#)). For example, [Dew et al. \(1987\)](#) report that wives of laid-off steel workers experience stress increases which depend on the husband's mental health. However, direct, person-to-person transmission—sometimes called contagion—is generally difficult to isolate from empirically similar effects, for example, the effect of a common environment. This caveat is important: A community's economic and social characteristics can have especially strong effects on mental health and subjective well-being, as found in the well-known Moving to Opportunity experiment ([Ludwig et al., 2012](#)). However, to support the hypothesis of this study it is enough to document that the effects of layoffs can spread broadly. In general, it is likely that news of layoffs will spread and induce stress through a variety of channels, which include being at a directly affected employer, having a household member or family member affected, word-of-mouth, or local media coverage.

2.2. Prenatal stress

Research from a large variety of approaches links stress experienced by the mother during pregnancy with effects on fetal development, birth outcomes, and health later in life. Causal effects of prenatal stress are well-supported by evidence from animal experiments (for a review, see [Weinstock, 2005](#)). Ethics strongly constrain exogenous stress manipulations in human subjects, but there are converging lines of evidence to support effects in humans.

Birth weight and gestational age are the most commonly studied outcomes in this literature because they are easily available

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