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# The 2008 Economic Stimulus Payments Increased Emotional Well-Being

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## Do Recessions Accelerate Routine-Biased Technological Change?

fewer of them at any given time, and with more time in which to do it. Instead, large numbers of workers can find their skills depreciated at the same time, with limited prospect of finding comparable reemployment. Public policy has yet to figure out how to reallocate workers on a large scale following a recession, or provide training in the new skills demanded by employers, but the need to do so is likely only to grow.

### NOTE

1. We rank 381 MSAs in the United States according to the predicted change in employment growth between 2006 and 2009. For ease in interpretation, we define a “hard-hit” MSA as one that experienced an employment shock at the 90th percentile (in absolute value, so that 1 in 10 MSAs had a worse shock), and compare this “hard-hit” MSA to one that experienced a 10th percentile shock (so that 1 in 10 MSAs had a milder shock).

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# The 2008 Economic Stimulus Payments Increased Emotional Well-Being

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Over the past few decades, economists have become more interested in understanding the determinants of subjective well-being (SWB).<sup>1</sup> For example, SWB has been used to study the welfare trade-off between inflation and unemployment (Di Tella, MacCulloch, and Oswald 2001), welfare costs of business cycles (Wolfers 2003), the need to interact with others (Krueger and Schkade 2008), and mental costs of job loss (Clark and Oswald 1994). However, perhaps the best-known application of SWB in economics has been to answer the question, “Does more income make you happier?”

This article highlights findings recently published in the *Journal of Human Resources*, in which Lachowska (2017) estimates the effect of income on SWB using exogenous variation in the timing of the 2008 economic stimulus tax rebate payments. Because the rebates were disbursed using a close-to-random schedule of payment, the tax rebate program offers an attractive setting for identifying the effect of a medium-sized income change on SWB, measured as life satisfaction, health satisfaction, or emotional well-being (also known as affect).

As the United States entered the Great Recession in February 2008, the Bush administration proposed an economic stimulus package that included tax rebates to low- and middle-income families with the goal of increasing household spending. Eligibility for the tax rebates was determined by the previous year’s tax returns. The payments ranged between \$300 and \$600 for individual tax filers and between \$600 and \$1,200 for joint filers, and the average value of the tax rebate payment was about \$1,000.

An interesting feature of the economic stimulus package was that the U.S. Treasury did not disburse the rebates all at once, but instead opted for a sequential payment schedule that depended on the last two digits of the filer’s Social Security number (SSN). As these two digits of the SSN are assigned randomly, the timing of when someone received a payment was also as good as random.

The randomized timing of rebate disbursement is valuable for at least two reasons. First, it allows me to estimate if rebates actually cause well-being to increase. Second, several papers have shown that the rebates had a positive effect on household

### ARTICLE HIGHLIGHTS

■ *This research estimates the effect of income on emotional well-being using the close-to-random variation in the timing of the disbursement of the 2008 tax rebate payments.*

■ *The findings show that receiving the rebate had a very positive effect on emotional well-being, mainly stemming from a reduction in stress and worry.*

spending; see, for example, Parker et al. (2013). Hence, given that the rebates had a causal effect on actual choices (such as spending), finding that the rebates also had an effect on a subjective assessment of well-being can be viewed as a way to validate the usefulness of SWB as an economic measure. To measure the rebate effect on SWB, I use the Gallup-Healthways Daily Poll, a survey that collects information on several measures of subjective well-being on a day-to-day basis, as well as a question on whether the respondents had received a tax rebate. To answer whether the tax rebates had an effect on SWB, I use regression analysis to compare the SWB of rebate recipients to the SWB of nonrecipients.

There are two main findings. The results show that receiving the rebate increased emotional well-being by 0.60 of a standard deviation, which is a substantial gain.<sup>2</sup> Furthermore, the observed increase in emotional well-being is even stronger—over one standard deviation—for lower-income respondents. Finding that lower-income respondents react more strongly to the rebates suggests the presence of binding credit constraints, although this test is only indirect. For the remaining two measures, life satisfaction and health satisfaction, the results do not turn out to be statistically significant or robust and are omitted from this newsletter.

Figure 1 shows which emotions are responsible for the large increase in emotional well-being. This is done by separately estimating the effect of receiving the tax rebate on each of the seven components of emotional well-being (worry, stress, anger, pain, sadness, enjoyment, or happiness). Although the estimates show that receiving the rebate increased feelings of enjoyment and happiness and decreased daily feelings of pain, sadness, anger, worry, and stress, only the last two changes are statistically different from zero. Hence, the results

show that the increase in emotional well-being stems from a statistically significant decrease in the probability that respondents experience feelings of stress and worry. These decreases are also economically meaningful: among rebate recipients, the likelihood of reporting worry is reduced by 41 percentage points, and the likelihood of reporting stress is reduced by 40 percentage points. Together these findings suggest that additional income may temporarily improve emotional well-being.

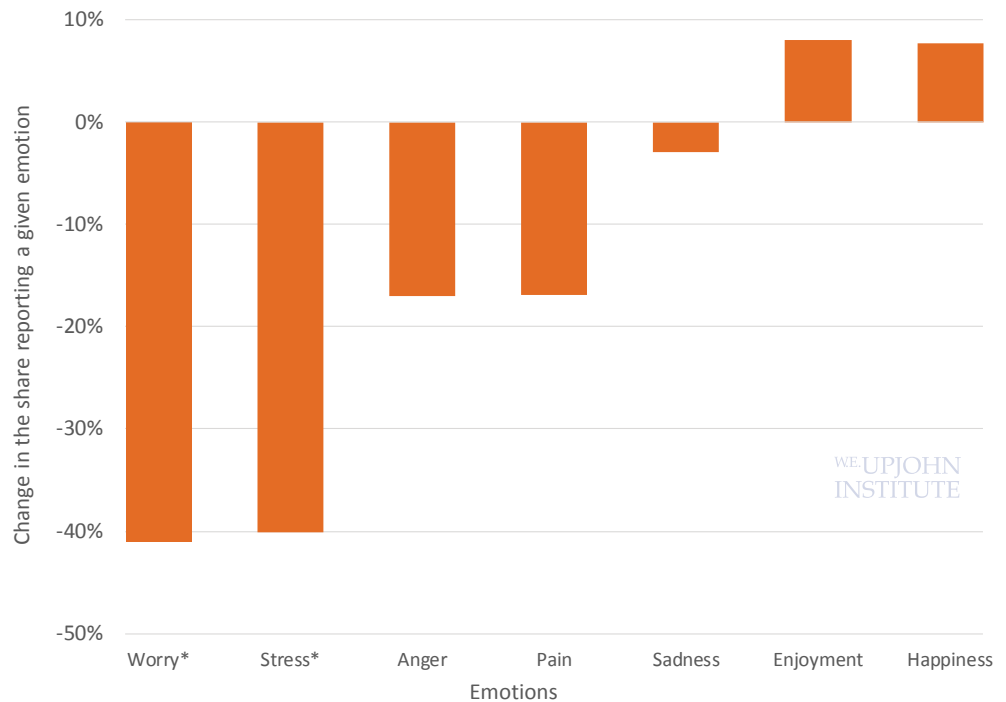
That the tax rebates had an impact on reducing stress and worry is interesting because research in behavioral economics has argued that better emotional well-being, at least in the short run, can increase patience, improve the short-run ability to make informed economic decisions, and strengthen cognitive capacity. Interestingly, low-income

people in particular seem to benefit from better emotional well-being. For example, Mani et al. (2013) show that experimentally inducing low-income people to think about a hypothetical

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financial problem leads to a decrease in their cognitive abilities. Mullainathan and Shafir (2013) discuss the results of this study and draw broader implications for the effects of liquidity constraints. The authors hypothesize

**Figure 1 The Effect of Receiving Rebate on Various Emotions**



NOTE: The estimates come from the last two columns of Table 5 in Lachowska (2017). \* denotes that the change in the share reporting a given emotion is statistically significant at a 5 percent level.  
SOURCE: Lachowska (2017).

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that reminding low-income subjects about money may reduce their cognitive capacity because it increases distress, which in turn limits the subject's capacity for processing problems. In fact, a link between liquidity constraints and emotional

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distress may explain why low-income people sometimes make poor financial decisions (Shah, Mullainathan, and Shafir 2012). Support for this is also echoed in other psychological research. Isen (2001) states in her literature review that “positive affect enhances problem solving and decision making.”

If relaxing liquidity constraints increases emotional well-being, and if this increase in emotional well-being can in turn improve economic decision making, then the results suggest that the rebates may have had a yet unaccounted-for benefit that should be considered in the discussions of proposed policies such as the universal basic income. A natural extension of this research would be to examine the effects of other income-replacement policies on emotional well-being. More broadly, future research should focus on gaining a better understanding of the mechanisms that generate the interdependency between income, emotional well-being, and economic behavior.

### NOTES

1. This article draws heavily on Lachowska (2017). An earlier version of this paper is available as an Upjohn Institute working paper; see Lachowska (2015).

2. Emotional well-being is an index based on seven emotions (“Did you experience

the following feelings a lot yesterday: enjoyment, happiness, physical pain, worry, sadness, stress, anger?”), each measured as either a “yes” or a “no.” Emotional well-being is computed by subtracting the average of questions on negative emotions from the average of questions on positive emotions.

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