

Financial hardship and obesity[☆]Susan L. Averett^{*}, Julie K. Smith

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ABSTRACT

There is a substantial correlation between household debt and health. Individuals with less healthy lifestyles are more likely to hold debt, yet there is little evidence as to whether this is merely a correlation or if financial hardship actually causes obesity. In this paper, we use data from the National Longitudinal Survey of Adolescent Health to test whether financial hardship affects body weight. We divide our sample into two groups: men and women, explore two different types of financial hardship: holding credit card debt and having trouble paying bills, and three outcomes: overweight, obese and body mass index (BMI). We use a variety of econometric techniques: Ordinary Least Squares, Propensity Score Matching, Sibling Fixed Effects, and Instrumental Variables to investigate the relationship that exists between financial hardship and body weight. In addition, we conduct several robustness checks. Although our OLS and PSM results indicate a correlation between financial hardship and body weight these results appear to be largely driven by unobservables. Our IV results suggest that there is no causal relationship between credit card debt and overweight or obesity for either men or women. However, we find suggestive evidence that having trouble paying bills may be a cause of obesity for women.

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Can you afford to be fat? There's a link between weight gain and financial drain. So get ready for some belt tightening because in order to trim your waist you need to trim your debt. ~Dr. Oz

If you had credit card debt...the next thing I found about them was they were overweight, it was like this burden, created this excess that wanted to make them eat and eat and eat. So when you're not doing well with your money it shows up in your health. ~Suze Orman¹

1. Introduction

There is a substantial correlation between household debt and health. Individuals with less healthy lifestyles are more likely to hold debt (Grafova, 2007). However, unlike what discussions in the popular media may imply, a causal

¹ "See <http://www.doctoroz.com/videos/suze-orman-lose-weight-get-rich-pt-1>".

link between debt and health has not been firmly established. Economic theory suggests that a causal relationship between debt and health outcomes could run in either direction or both debt and health could be caused by unobserved common factors such as risk aversion, self-control (impulsiveness) and time preferences (Grafova, 2007; Komlos et al., 2004).

In this paper, we use data from the National Longitudinal Survey of Adolescent Health (Add Health) to test whether financial hardship affects body weight. We divide our sample into two groups: men and women, explore two different types of financial hardship: holding credit card debt and having trouble paying bills, and three health (body weight)² outcomes: overweight, obese and body mass index (BMI). We use a variety of econometric techniques: Ordinary Least Squares (OLS), Propensity Score Matching (PSM), Sibling Fixed Effects (FE), and Instrumental Variables (IV) to investigate the relationship that exists between financial hardship and body weight.

2. Previous research on financial hardship and health outcomes

Theoretically, there are competing explanations that may explain the relationship between financial hardship and body weight. A direct causal relationship running from financial hardship to body weight is possible if those experiencing financial hardship must cut back on food expenditures and thus rely on more calorie dense foods hence gaining weight (Averett, 2012). In addition, there is mixed evidence that women with lower incomes who use the food stamp program and thus are more likely to have financial hardship are heavier (Zagorsky and Smith, 2009; Ver Ploeg et al., 2007). Along similar lines, indebtedness can cause substantial stress and this may manifest itself in excess caloric intake (Wardle et al., 2012). Komlos et al. (2004) hypothesize that an increase in the marginal rate of time preference has contributed to rising obesity rates since individuals increasingly discount the future more heavily. They present some empirical evidence consistent with this hypothesis using data on private consumer debt which has been trending upwards along with the obesity rates. Lastly, those in debt may also suffer from food insecurity and behavioral biology indicates that those who are food insecure may develop eating habits that lead to being overweight (Smith et al., 2009). Consistent with these explanations, we would expect a positive relationship between financial hardship and obesity.

On the other hand, the “new consumerism” as postulated by Schor (1998) may lead even wealthier individuals to consume beyond their financial means. Under this explanation, individuals who accrue debt may not necessarily gain weight (since appearances may matter more to this group and they can afford to join a gym) indicating that a negative relationship between financial hardship and body weight may exist.

Finally, an unobserved factor such as impulsivity might cause an individual to become indebted and also overweight. In other words, the link between obesity and financial hardship may be spurious in that an unobserved factor might be the cause of both. For example, there is some evidence that both over eating and over spending can be impulsive behaviors (e.g. Bearden and Haws, 2012; Hermans et al., 2013).

Many studies have examined socio-economic status (indicated by education, occupation, wealth and income) and its relationship to health and health behaviors but determining a direction of causality can be elusive.³ Recently, several papers have specifically examined the link between health and debt (Drentea and Lavrakas, 2000; Lyons and Yilmazer, 2005; Grafova, 2007; Smith et al., 2009; Keese and Schmitz, 2010; Lau and Leung, 2011). These authors investigate the relationship between financial hardship and health using a variety of econometric techniques.

Drentea and Lavrakas (2000) test whether credit card debt and stress regarding debt are associated with health using a 1997 representative survey of adults in Ohio. They investigate several questions; (1) how are credit card debt and stress related to debt correlated with health, (2) is the effect stronger than income on health measures, (3) if an effect exists is it stronger for blacks than whites? The health outcomes they use include own health, BMI, smoking, and drinking. The debt indicators they use include debt/income ratio, carrying an unpaid balance, amount of credit line used, charging on more than two cards, and a constructed debt stress index. Using OLS hierarchical regression analysis, Drentea and Lavrakas find that having a higher debt/income ratio is associated with worse health either measured or self-reported. They find little evidence that credit card debt is more important than income in explaining health outcomes and behaviors. Finally, there is no evidence to support that credit card debt or stress due to debt can explain the correlation between race and health outcomes.

Lyons and Yilmazer (2005) use data from the Survey of Consumer Finances (SCF) to examine the relationship between financial strain (measured at the household level) and the self-reported health of the head of household. The issue of endogeneity is addressed by using IV and a representative sample of the US population. They define financial strain as one of the following: (1) delinquent on any loan payment for two months or more, (2) high leverage, (3) little cash on hand. The measure of health used is self-reported health. Lyons and Yilmazer use two-stage probit models to account for the possibility that financial strain can be both the cause and the consequence of poor health. They do not find evidence that any of the three financial strain measures considered leads to poor health; therefore in their sample it is unlikely that the causality runs from financial strain to worse health.

Grafova (2007) uses a sample of married working age couples from the Panel Study of Income Dynamics (PSID)

² Throughout the paper, we refer to our two treatments (having credit card debt and having trouble paying bills) as financial hardship and our three outcomes (BMI, overweight/obese and obese) as body weight.

³ See Deaton (2002) for a discussion of the issues.

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