



# The Impact of Obesity on Consumer Bankruptcy



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## ABSTRACT

Over the last two decades, both bankruptcy and obesity rates in the U.S. have seen a steady rise. As obesity is one of the leading causes of medical and morbidity related economic costs, its influence on personal bankruptcy is analyzed in this study. Using the National Longitudinal Survey of Youth 1979, we employ a duration model to investigate the relative importance of obesity on the timing of bankruptcy. Even after accounting for possible endogeneity of BMI and controlling for a wide variety of individual and aggregate-level confounding factors, being obese puts one at a greater risk of filing for bankruptcy.

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## 1. Introduction

Consumer bankruptcy is traditionally viewed as a last resort that a consumer considers when the debt burden is too large. However, as Zywicki (2004) points out, bankruptcy filings have been increasing over the last two decades even during periods of economic prosperity. In 1985, there were less than 350,000 non-business bankruptcy filings in the United States, and 82 percent of the total filings were consumer bankruptcies. In 2004, there were over 1.5 million non-business bankruptcy filings, where consumer bankruptcy constituted 98 percent of the total filings.<sup>2</sup> During

the same period, obesity has sharply risen. In 1985, no state had an obesity rate exceeding 20 percent, whereas in 2010, Colorado was the only state to have an obesity rate below this number.

Obesity is associated with a variety of economic costs, such as health costs.<sup>3</sup> Sturm (2002) argues that obesity is linked to healthcare costs that are higher than those of smoking and drinking. Obesity is a major cause of workday loss and disability incidents (Tucker and Friedman, 1998), and obese individuals may be subject to social stigma and discrimination (Carr and Friedman, 2005). The additional economic costs that an obese individual must bear impose a financial burden that may result in a higher probability of bankruptcy compared to a non-obese individual.

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<sup>2</sup> American Bankruptcy Institute, <http://www.abiworld.org/AM/Template.cfm?Section=Home>.

<sup>3</sup> We use both self-reported BMI and corrected BMI. For the health costs of obesity, see [http://www.nhlbi.nih.gov/guidelines/obesity/ob\\_gdlns.pdf](http://www.nhlbi.nih.gov/guidelines/obesity/ob_gdlns.pdf).

Most studies have focused on the increased financial burden that the prevalence of obesity imposes on the nation or state. To the best of our knowledge, no study addressed whether individual obesity contributes to personal bankruptcy. In this paper, we address this question and find that being obese increases the probability of bankruptcy. We find that obese individuals are more likely to declare bankruptcy compared to normal-weight individuals. Our conservative estimate is that, all else equal, the proportion of individuals who declare bankruptcy within the obese group is 22 percent greater than the proportion of individuals who declare bankruptcy within the group of individuals with normal weight (see Section 4 for details).

According to the Center for Disease Control and Prevention (CDC), in 2009–2010, more than one-third of U.S. adults (35.7 percent) were obese. Our finding, therefore, is a serious cause for concern: the group of obese individuals, who now constitute a significant portion of the population, not only face mounting medical expenditures and other economic costs<sup>4</sup> but are more likely to face future financial hardship and credit constraints (because they have a higher risk of filing for bankruptcy). Although bankruptcy at the national level remains a rare event, and less than 1 percent of the population files each year, the consequences of bankruptcy are numerous and long lasting. As [Han and Li \(2011\)](#) state, “Bankruptcy filers generally have more limited access to credit and pay higher interest rates on all types of debt. While credit access and borrowing costs improve as time passes after filing, compared to the non-filers, filers remain more prone to financial distress: they accumulate less wealth and use expensive credit sources even beyond 10 years after filing.”

The three main contributions of this paper are as follows: reviewing the effects of obesity on bankruptcy, estimating a duration model that appeals to the dynamics of the bankruptcy process (unlike a static model), and accounting for potential endogeneity of the key explanatory variable, obesity.

Although numerous surveys and a few empirical studies have shed lights on the effects of medical bills and subsequent debts, there is a general lack of empirical work that studies the financial impact of specific health

conditions. Obesity is one of the most widespread health conditions in the United States and merits attention. Additionally, the obesity variable itself has an important practical application. Obesity-related financial costs vary, many of which are either extremely difficult to measure (e.g., absenteeism) or virtually impossible to identify accurately (e.g., discrimination).<sup>5</sup> We use obesity as a summary measure for all these costs. Obesity (using the BMI criterion) is a well-defined measure that is clearly identified for each individual.

For more than a decade, bankruptcy literature has been investigating the increasing trend in personal bankruptcy. Adverse shocks are typically considered triggers for bankruptcy filings. Many earlier studies viewed divorce and unemployment as the main bankruptcy-causing shocks ([Sullivan et al., 2001](#)). Over the last decade, there has been a slight shift in focus with medical shocks coming to the forefront. A 2014 Kaiser Foundation study found that 20 percent of non-elderly reported that someone in their household had trouble paying their medical bills in the past year.<sup>6</sup> They also found that the majority of those with medical debt suffered significant damage to their credit. A 2008 report by the Center for Studying Health Systems Change (HSC) observed the following finding: about one in five Americans under the age of 65 lived in families that had problems paying medical bills in 2007 (a sizeable increase from one in seven in 2003), and about 2.2 million people with medical bill problems were in families that filed for bankruptcy as a result of their medical bills.<sup>7</sup> [Mathur \(2006\)](#) used the Panel Study of Income Dynamics to examine the relationship between medical debt and bankruptcy. She found that up to 27 percent of all filings involve cases where medical bills were the *primary* form of debt. [Himmelstein et al. \(2005\)](#) and [Himmelstein et al. \(2009\)](#) estimated that medical bankruptcies account for somewhere between 46 percent and 62 percent of all filings.<sup>8</sup>

Bankruptcy is not simply a response to shocks but a complex decision affected by a web of factors ([Fay et al., 2002a,b](#)). It is a dynamic decision that the household arrives at *over a period* ([Shumway, 2001](#)). Financial insolvency is typically the result of a series of events not necessarily occurring at once. Similarly, obesity-related costs, whether for items such as medical treatments, absenteeism, or discrimination, are processes that gradually feed into the decision to file for bankruptcy. It is, therefore, more meaningful to view bankruptcy as an optimal stopping problem and to employ survival analysis to estimate the contribution of obesity to the “timing” of bankruptcy.

<sup>4</sup> [Hammond and Levine, 2010](#). “The Economic Impact of Obesity in the United States,” *Journal of Diabetes, Metabolic Syndrome, and Obesity*, 3(28), 5–295.

<sup>5</sup> If we were to attempt to decompose and estimate various individual costs of obesity on bankruptcy, the data requirement would be enormous and, perhaps, prohibitive. We would require data on health costs and earnings losses specifically caused by obesity alone. Obesity is rarely the sole cause of an illness. Data would be required on the costs of the contributing factors to health problems; for example, factors contributing to a stroke include stress, obesity, and genetics. Similarly, for an individual calling in sick, we would require information on the contributing factors such as obesity-related illnesses, illnesses not related to obesity (say, Influenza), and family issues. For earnings loss due to discrimination at work, we would need data on the contributing factors, such as obesity-related discrimination, discrimination due to other reasons, and lack of qualifications. The NLSY does not include such information, and it is not clear whether obtaining such information is even feasible.

<sup>6</sup> Medical Debt among People with Health Insurance: <http://kaiserfamilyfoundation.files.wordpress.com/2014/01/8537-medical-debt-among-people-with-health-insurance.pdf>.

<sup>7</sup> HSC ([www.hschange.com](http://www.hschange.com)).

<sup>8</sup> The Himmelstein studies, however, have been criticized primarily because they identify health shocks as events ranging from more than \$1000 in medical bills to a relative being sick ([Himmelstein et al., 2005, 2009](#)). [Dranove and Millenson \(2006\)](#) also contest the Himmelstien method; their reexamination of Himmelstein data finds that the contributing factor of medical bankruptcy is 17 percent.

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