

# HEALTH INSURANCE AND BANKRUPTCY RISK: EXAMINING THE IMPACT OF THE AFFORDABLE CARE ACT

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## I. INTRODUCTION

The passage of the Patient Protection and Affordable Care Act (“ACA”)<sup>1</sup> in 2010 represented a watershed moment for healthcare in the United States.<sup>2</sup> The goal of the ACA “was to achieve nearly universal health insurance coverage in the United States through a combination of insurance market reforms, mandates, subsidies, health insurance exchanges, and Medicaid expansions.”<sup>3</sup> Approximately 20 million Americans have gained access to health insurance coverage since the implementation of the ACA, mostly between 2013 and 2016.<sup>4</sup> The ACA “regulates a huge swath of the nation’s economy and affects the healthcare decisions of millions of Americans.”<sup>5</sup> Nevertheless, the ACA has unquestionably been a central concern and flashpoint for the nation’s political debates for nearly a decade, particularly for its opt-in regulations towards the expansion of Medicaid across states.<sup>6</sup>

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<sup>1</sup> Patient Protection and Affordable Care Act, Pub. L. No. 111-148, 124 Stat. 119 (2010).

<sup>2</sup> See Ryan M. McKenna et al., *The Affordable Care Act Attenuates Financial Strain According to Poverty Level*, 55 J. HEALTH CARE, ORG., PROVISION, & FINANCING 1, 1 (2018) (noting that the ACA “represented the largest legislative change to health care financing since the 1960s”).

<sup>3</sup> Charles Courtemanche, et al., *Early Impacts of the Affordable Care Act on Health Insurance Coverage in Medicaid and Non-Expansion States*, 36 J. POL’Y ANALYSIS & MANAGEMENT, 178, 178 (2017). According to The Commonwealth Fund, more than half of Americans under age 65 obtain their health insurance coverage through their employer while about one-quarter either have an insurance plan through Medicaid or the individual insurance exchange market established by the ACA. Sara R. Collins, Herman K. Bhupal & Michelle M. Doty, *Health Insurance Coverage Eight Years After the ACA: Fewer Uninsured Americans and Shorter Coverage Gaps, But More Underinsured* (Commonwealth Fund, Feb. 2019), <http://doi.org/10.26099/penv-q32>.

<sup>4</sup> Ryan M. McKenna et al., *The Affordable Care Act Attenuates Financial Strain According to Poverty Level*, 55 J. HEALTH CARE, ORG., PROVISION, & FINANCING 1, 13 (2018). See also Kyle J. Caswell & Timothy A. Waidmann, *The Affordable Care Act Medicaid Expansions and Personal Finance*, 76 MED. CARE RES. & REV. 538, 538 (2019).

<sup>5</sup> Texas v. United States, 945 F.3d 355, 369 (5th Cir. 2019).

<sup>6</sup> Congress created Medicaid as an entitlement program in 1965 through amendments to Title XIX of the Social Security Act. The legislation was premised upon a cooperative partnership between the states and the federal government whereby the federal government would match state expenditures for the costs of providing public medical insurance to individuals who qualified based on a combination of financial and categorical eligibility requirements. See generally Christina M. Andrews, *The Relationship of State Medicaid Coverage to Medicaid Acceptance Among Substance Abuse Providers*

As is well-noted, the federal courts are still wrangling over the constitutionality of the law, and there is significant uncertainty regarding the extent to which the ACA will survive these legal battles.<sup>7</sup> Proponents of the ACA argue that the legislation helps to reduce healthcare costs in the United States and makes health insurance more available for those who need insurance and cannot afford to purchase it individually or through an employer.<sup>8</sup> Opponents object to the scope of government involvement in the health care system and point to the substantial increases in health care premiums among populations who purchase their own health insurance but do not qualify for premium subsidies under the ACA.<sup>9</sup>

Unquestionably, the ACA has expanded access to health insurance for many millions of Americans.<sup>10</sup> Prior to the advent of the ACA, Medicaid income eligibility for adults without dependents was approximately 61% of the Federal Poverty Line (“FPL”).<sup>11</sup> As others have observed, “[t]his rendered many poor and ‘near poor’ adults ineligible for Medicaid, while still not having the means to afford coverage in the private insurance market.”<sup>12</sup> Without access to adequate and affordable health insurance coverage, individuals and families can quickly become inundated with uncovered medical expenses that they simply cannot afford to pay; after all, the growth

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*in the United States*, 41 J. BEHAV. HEALTH SERVICES & RES. 460 (2014).

<sup>7</sup> See, e.g., *Texas v. United States*, 945 F.3d 355, 369 (5th Cir. 2019) (holding that the individual mandate component of the ACA is unconstitutional “because it can no longer be read as a tax, and there is no other constitutional provision that justifies this exercise of congressional power”).

<sup>8</sup> *Texas v. United States*, 945 F.3d 355, 371 (5th Cir. 2019) (“The [ACA] sought to lower insurance costs for some consumers through policy ‘carrots,’ providing tax credits to offset the cost of insurance to those with incomes under 400 percent of the federal poverty line.”) (citation omitted). See also Ryan M. McKenna et al., *The Affordable Care Act Attenuates Financial Strain According to Poverty Level*, 55 J. HEALTH CARE, ORG., PROVISION, & FINANCING 1, 2 (2018) (“A hallmark feature of the ACA is that it aims to improve population health by reducing barriers to health care and improving insurance coverage, quality, and affordability”).

<sup>9</sup> See Julie Rovner, *Overlooked by ACA: Many People Paying Full Price for Insurance “Getting Slammed,”* Kaiser Health News (October 9, 2017) available at <https://khn.org/news/overlooked-by-aca-many-people-paying-full-price-for-insurance-getting-slammed/>. According to one analysis firm, as of 2017, roughly 43% of individuals who purchase insurance on the individual market are in this group. *Id.*

<sup>10</sup> See e.g., Stacey McMorro, Jason A. Gates, Sharon K. Long & Genevieve M. Kenney, *Medicaid Expansion Increased Coverage, Improved Affordability, and Reduced Psychological Distress for Low-Income Parents*, 36 HEALTH AFFAIRS 808, 812 (2017) (noting that the uninsurance rate for families in both Medicaid expansion states and nonexpansion states fell from 2012-2015). See also Sara R. Collins, Herman K. Bhupal & Michelle M. Doty, *Health Insurance Coverage Eight Years After the ACA: Fewer Uninsured Americans and Shorter Coverage Gaps, But More Underinsured* (Commonwealth Fund, Feb. 2019), <http://doi.org/10.26099/penv-q32> (“U.S. working-age adults are significantly more likely to have health insurance since the ACA became law in 2010.”).

<sup>11</sup> See Ryan M. McKenna et al., *The Affordable Care Act Attenuates Financial Strain According to Poverty Level*, 55 J. HEALTH CARE, ORG., PROVISION, & FINANCING 1, 2 (2018).

<sup>12</sup> See Ryan M. McKenna et al., *The Affordable Care Act Attenuates Financial Strain According to Poverty Level*, 55 J. HEALTH CARE, ORG., PROVISION, & FINANCING 1, 2 (2018).

in Americans' incomes has not kept pace with the exponential increase in health care costs.<sup>13</sup> For many, this leads to financial calamity and the possibility of resorting to filing for bankruptcy relief to shed existing medical debt. To remedy the financial burdens many poor, "near poor," and perhaps even middle-income Americans have in affording health care coverage,

[s]liding scale subsidies in the form of tax credits are available to consumers in every state with incomes between 100 and 400 percent of the Federal Poverty Line (FPL) who do not qualify for other affordable coverage, such as Medicaid. In states that opted to expand Medicaid via the ACA, Medicaid is available up to 138 percent of the FPL with subsidies available for those between 138 and 400 percent of the FPL. In contrast, in non-expansion states Medicaid is only available to those at much lower levels, particularly for adults without dependent children, with subsidies available for those between 100 and 400 percent of the FPL.<sup>14</sup>

It is well-documented that a deep connection exists between family finances and the obtaining of adequate healthcare and health insurance.<sup>15</sup> More particularly, scholars in both law and the social sciences have often attributed overwhelming medical debt (and the consequent inability to pay) as a decisive factor in an individual or family's decision to file for bankruptcy

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<sup>13</sup> Sara R. Collins, Herman K. Bhupal & Michelle M. Doty, *Health Insurance Coverage Eight Years After the ACA: Fewer Uninsured Americans and Shorter Coverage Gaps, But More Underinsured* (Commonwealth Fund, Feb. 2019), <http://doi.org/10.26099/penv-q32>.

<sup>14</sup> Charles Courtemanche, et al., *Early Impacts of the Affordable Care Act on Health Insurance Coverage in Medicaid and Non-Expansion States*, 36 J. POL'Y ANALYSIS & MANAGEMENT, 178, 179 (2017).

<sup>15</sup> See generally Bhashkar Mazumder & Sarah Miller, *The Effects of the Massachusetts Health Reform on Household Financial Distress*, 8 AM. ECON. J. ECON. POL'Y 284 (2016) (providing empirical inquiry regarding financial distress and illness by "evaluating how the provision of health insurance through major state-level health policy reform affected a variety of financial measures such as . . . personal bankruptcy"); Luoia Hu et al., *The Effect of the Affordable Care Act Medicaid Expansions on Financial Wellbeing*, 163 J. PUB. ECON. 99 (2018) (discussing the relationship between uninsured individuals and bankruptcy filings); Amy K. Yarbrough & Robert J. Landry, III, *Navigating the Social Safety Net: A State-level Analysis of the Relationship Between Medicaid and Consumer Bankruptcy*, 35 POL'Y STUD. J. 671, 674 (2007) ("Although very little empirical research has been conducted related to medical expenses and consumer bankruptcies, a recent study of medically related consumer bankruptcies revealed that 25 percent of those filing has no insurance at the onset of the illness causing the bankruptcy."); Donald D. Hackney, Daniel Friesner & Erica H. Johnson, *Did the Time Frame Associated with the Implementation of the Patient Protection and Affordable Care Act Noticeably Impact Consumer Bankruptcy Filings?*, 44 INT'L J. SOC. ECON. 1957 (2017) (examining the relationship between health insurance and medical debts accumulated by bankruptcy filers); Tal Gross & Matthew J. Notowidigdo, *Health Insurance and the Consumer Bankruptcy Decision: Evidence from Expansions of Medicaid*, 95 J. PUB. ECON. 767 (2011) (discussing health insurance and examining the effect of medical costs on bankruptcy risk).

relief.<sup>16</sup> In fact, “[t]he ACA was passed in large part because of the view that universal insurance coverage would reduce the financial strain on individuals and consequently the need for bankruptcy protection.”<sup>17</sup> Indeed, it was out of a concern that the lack of affordable health insurance for millions of Americans was leading to financial ruin which prompted President Barack Obama to justify his plan for the ACA in the following way in the 2009 State of the Union Address: “we must address the crushing cost of health care. This is a cost that now causes a bankruptcy in America every thirty seconds.”<sup>18</sup> Thus, when the ACA was passed in 2010 it was with the hope that it would “ensure that all citizens would have affordable access to healthcare via some form of health insurance coverage under the bill.”<sup>19</sup>

The link between possessing health insurance and financial risk is not an all-or-nothing proposition. That is, it is not necessarily a state of being insured or uninsured. Rather, tens of thousands of individuals “churn” on and off or between health insurance coverage each year.<sup>20</sup> This dynamic of churning can be manifested in several ways, such as switching: i) into or out of employer-sponsored insurance plans due to a job change; ii) between sources of subsidized health care coverage due to eligibility (*e.g.*, Medicaid to marketplace exchange or vice versa); iii) between plans of the same coverage type; or iv) from some form of insurance to becoming uninsured.<sup>21</sup> Research performed prior to the ACA estimated annual rates of churning (*i.e.*, coverage changes) at 12% for those with employer-sponsored insurance, 43% for those covered by Medicaid, and 58% for individuals covered by privately-purchased health insurance.<sup>22</sup> Significantly, it has been estimated that

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<sup>16</sup> *See, e.g.*, Daniel A. Austin, *Medical Debt as a Cause of Consumer Bankruptcy*, 67 MAINE L. REV. 1, 2 (2014) (“The issue of medical bankruptcies continues to be a focal point in the healthcare debate.”); Brian K. Bucks, *Out of Balance? Financial Distress in U.S. Households*, in BROKE: HOW DEBT BANKRUPTS THE MIDDLE CLASS 60 (2012) (“Bankrupt households are much more likely to have medical debt than any of the other groups of financially vulnerable households.”); Laura McCloud & Rachel E. Dwyer, *The Fragile American: Hardship and Financial Troubles in the 21st Century*, 52 SOC. Q. 13, 15 (2011) (“Studies of vulnerability to bankruptcy identify four types of hardship that appear to contribute most to financial troubles: health problems, family dissolution, job loss, and income disruption”).

<sup>17</sup> Brook E. Gotberg & Michael D. Sousa, *Moving Beyond Medical Debt*, 27 AM. BANKR. INST. L. REV. 93, 114-15 (2018).

<sup>18</sup> President Barack Obama, State of the Union Address (Feb. 24, 2009), *available at* <http://www.whitehouse.gov/the-press-office/remarks-president-barack-obama-address-joint-session-congress>.

<sup>19</sup> Amy Y. Landry & Robert J. Landry, III, *Medical Bankruptcy Reform: A Fallacy of Composition*, 19 AM. BANKR. INST. L. REV. 151, 168 (2011) (citation omitted).

<sup>20</sup> Benjamin D. Sommers, et al., *Insurance Churning Rates for Low-Income Adults Under Health Reform: Lower Than Expected but Still Harmful for Many*, 35 HEALTH AFFAIRS 1816, 1817 (2016).

<sup>21</sup> Benjamin D. Sommers, et al., *Insurance Churning Rates for Low-Income Adults Under Health Reform: Lower Than Expected but Still Harmful for Many*, 35 HEALTH AFFAIRS 1816, 1817 (2016).

<sup>22</sup> Benjamin D. Sommers, et al., *Insurance Churning Rates for Low-Income Adults Under Health Reform: Lower Than Expected but Still Harmful for Many*, 35 HEALTH AFFAIRS 1816, 1817 (2016).

approximately 25% of low-income families churn annually.<sup>23</sup>

While churning, and intermittent coverage more generally, can be problematic in terms of access to care, becoming uninsured due to a gap or intermittency in coverage can be financially disastrous.<sup>24</sup> Churners with a coverage gap have more problems paying outstanding medical bills<sup>25</sup> and a prior study published by one of this Essay's authors found that an interruption in health insurance coverage significantly increases the likelihood of an individual filing for bankruptcy relief.<sup>26</sup>

Empirical studies since the advent of the ACA have generally proven positive in exploring the relationship between the expansion of available health insurance upon personal finances. By way of example, relying upon data from the annual National Health Interview Survey ("NHIS"), one study has found that the "national implementation of the ACA was associated with significant improvements" in "financial strain and vulnerability" for lower-income Americans, as measured by the ability to afford: i) prescription medications, ii) medical care, and iii) medical bills not otherwise covered by insurance.<sup>27</sup> Moreover, another study examining the impact of acquiring health insurance (through Medicaid) upon personal finances found a decline in the probability of having unpaid medical bills sent to collections as well as a decline in the probability of needing to borrow money or skip paying other bills in order to pay previously unmet medical expenses.<sup>28</sup> Most recently, another study utilizing national credit bureau data found that for individuals between the ages of 18-64, the ACA Medicaid expansions resulted in improved credit scores, reduced balances of past due debt, a reduction in the probability of having a medical bill sent to collections, a reduction in the probability of having a negative credit balance of \$1,000 or more, and a 2.8% reduction in the probability of a new bankruptcy filing.<sup>29</sup> Such findings are crucial as some policymakers continue to invest energy and resources in trying to repeal the ACA despite the positive impact researchers are

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<sup>23</sup> Benjamin D. Sommers, et al., *Insurance Churning Rates for Low-Income Adults Under Health Reform: Lower Than Expected but Still Harmful for Many*, 35 HEALTH AFFAIRS 1816, 1817 (2016).

<sup>24</sup> Benjamin D. Sommers, et al., *Insurance Churning Rates for Low-Income Adults Under Health Reform: Lower Than Expected but Still Harmful for Many*, 35 HEALTH AFFAIRS 1816, 1817 (2016).

<sup>25</sup> Benjamin D. Sommers, et al., *Insurance Churning Rates for Low-Income Adults Under Health Reform: Lower Than Expected but Still Harmful for Many*, 35 HEALTH AFFAIRS 1816, 1818 (2016).

<sup>26</sup> Brook E. Gotberg & Michael D. Sousa, *Moving Beyond Medical Debt*, 27 AM. BANKR. INST. L. REV. 93, 125 (2018).

<sup>27</sup> Ryan M. McKenna et al., *The Affordable Care Act Attenuates Financial Strain According to Poverty Level*, 55 J. HEALTH CARE, ORG., PROVISION, & FINANCING 1, 2 (2018).

<sup>28</sup> Amy Finkelstein et al., *The Oregon Health Insurance Experiment: Evidence from the First Year*, 127 Q. J. ECON. 1057, 1090, 1092 (2012).

<sup>29</sup> Kyle J. Caswell & Timothy A. Waidmann, *The Affordable Care Act Medicaid Expansions and Personal Finance*, 76 MED. CARE RES. & REV. 538, 562 (2019).

uncovering in the association between possessing health insurance and financial strain.

This Essay is one of the first empirical efforts to specifically address the association between the ACA and the rate of bankruptcy filings across the country.<sup>30</sup> The studies just described tended to focus on medical bills, rather than bankruptcy specifically. Similarly, most legal scholars have focused primarily on the causal relationship between the presence of overwhelming medical *debt* and the need to file for bankruptcy relief.<sup>31</sup> Years of research have proven inconclusive on this front, largely because of the difficulties associated with defining and measuring “medical debt.” To be clear, there is no doubt that the presence of uncovered medical bills can contribute to an individual or family’s financial ruin and ultimate decision to file for bankruptcy protection.<sup>32</sup> Nonetheless, given the expressed intent behind the ACA to reduce the number of individuals filing for bankruptcy relief as a consequence of inadequate or non-existent health insurance, studies like ours, which looks specifically at the correlation between health insurance and bankruptcy filings, are essential to understanding the impact of the ACA on the rate of bankruptcy filings.

Our study adds to the existing literature surrounding the important topic of health insurance and bankruptcy more generally, and in relation to the ACA more specifically, by finding that the ACA has had an important role on the relationship between intermittent health care coverage (*i.e.*, churning) and the risk of filing for bankruptcy protection. Stated differently, our findings suggest that by more robustly providing health insurance coverage for low-income Americans, the ACA has had some effect on the risk of filing

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<sup>30</sup> In a similarly-focused study, Tal Gross and Brad Trenkamp found that being allowed onto Social Security Disability Insurance lowered the risk of bankruptcy within a one-year period after acceptance into the program. Tal Gross & Brad Trenkamp, *Risk of Bankruptcy Among Applicants to Disability Insurance*, 26 J. HEALTH CARE FOR THE POOR & UNDERSERVED, 1149, 1152 (2015).

<sup>31</sup> Approximately one million individuals file for bankruptcy relief each year. Robert J. Landry, III, *An Empirical Analysis of Causes of Consumer Bankruptcy: Will Bankruptcy Reform Really Change Anything?*, 3 RUTGERS BUS. L.J. 2, 8 (2006). The vast majority of individuals who file for bankruptcy choose to file for either Chapter 7 or Chapter 13. Andrew P. MacArthur, *Pay to Play: The Poor’s Problem in the BAPCPA*, 25 EMORY BANKR. DEV. J. 407, 413 (2009) (noting “most individuals will file under either chapter 7 or chapter 13”). Of all consumer bankruptcy cases filed annually, approximately 70% are Chapter 7 proceedings. Brook E. Gotberg & Michael D. Sousa, *Moving Beyond Medical Debt*, 27 AM. BANKR. INST. L. REV. 93, 99 (2018). In Chapter 7 bankruptcy, “the debtor receives a discharge of his or her debt following the liquidation of all of the debtor’s non-exempt assets (if any) for the collective benefit of the creditor body. The debtor is permitted to retain exempt assets and is permitted to keep his or her post-petition income out of the reach of creditors.” *Id.* (internal citations omitted).

<sup>32</sup> See Tal Gross & Brad Trenkamp, *Risk of Bankruptcy Among Applicants to Disability Insurance*, 26 J. HEALTH CARE FOR THE POOR & UNDERSERVED, 1149, 1149 (2015) (“Many households that file for bankruptcy report filing due to medical costs.”).

for bankruptcy protection. Although future research is still needed to uncover causal mechanisms on the role possessing health insurance may have on an individual's ultimate decision to file for bankruptcy relief, our preliminary findings suggest that the ACA may lower one's risk for bankruptcy.

This Essay will proceed as follows. Part II will discuss the available literature regarding the association between health insurance and finances, including other efforts to tease out the effects of the ACA upon bankruptcy. Part III will set forth our methodology underlying this study and present the main findings. Part IV will discuss our findings and offer our theoretical insights regarding the data, including avenues for future research on this timely topic. Part V will offer a brief conclusion.

## II. EXISTING LITERATURE ON THE RELATIONSHIP BETWEEN HEALTH INSURANCE, BANKRUPTCY, AND PERSONAL FINANCES

As noted above, most empirical research on the connection between healthcare and bankruptcy has focused on the prevalence of medical debt upon individuals who choose to file for bankruptcy relief. That said, previous efforts have been made to explore an arguably more difficult research question, namely, the connection between health insurance and consumer bankruptcy. Prior to the advent of the ACA, studies examined the relationship between health insurance (including Medicaid) and consumer bankruptcy. In 2007 Amy K. Yarbrough and Robert J. Landry III, relying upon a collection of different data sets including the United States Census Bureau's Current Population Survey and the Kaiser Commission on Medicaid and the Uninsured, demonstrated a statistically significant relationship between the "benefit richness" of a state's Medicaid program and the total number of bankruptcy filings in a particular state.<sup>33</sup> More specifically, Yarbrough and Landry found that "a state's lack of a copayment for inpatient hospitalization was shown to significantly influence consumer bankruptcy filings in a negative direction,"<sup>34</sup> thereby providing partial support for their hypothesis that "states with richer Medicaid benefits have a lower number of consumer bankruptcy filings."<sup>35</sup>

In 2011, Tal Gross and Matthew Notowidigdo published a study that

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<sup>33</sup> Amy K. Yarbrough & Robert J. Landry III, *Navigating the Social Safety Net: A State-Level Analysis of the Relationship Between Medicaid and Consumer Bankruptcy*, 35 POL'Y STUD. J. 671 (2007). Yarbrough and Landry created dummy variables to account for "benefit richness," tied to whether a state's Medicaid program required an inpatient hospital copayment and a required prescription copayment. *Id.* at 679.

<sup>34</sup> *Id.* at 680.

<sup>35</sup> *Id.*

suggests an expansion of public health insurance could significantly reduce consumer bankruptcy filing rates.<sup>36</sup> The study examined the relationship between Medicaid expansion and rates of consumer bankruptcy using public health insurance data from the 1992-2004 Current Population Survey and the bankruptcy filing rates published by the Administrative Office of U.S. Courts.<sup>37</sup> The researchers found that while consumer bankruptcy filings generally increased during the 1990s, the rate of increase was slower in states with larger expansions of Medicaid benefits, with the relative reduction in personal bankruptcies concentrated most strongly in households with children and in zip codes with low-income households.<sup>38</sup> In all, Gross and Notowidigdo concluded from their statistical models that “a 10 percentage-point increase in eligibility for Medicaid reduces personal bankruptcies by 8%.”<sup>39</sup> Although the study is limited in its predictive value by virtue of the data it uses (now two decades old) and its use of aggregate-level data (because of the ecological fallacy), it supports the argument that expanded public health insurance could reduce bankruptcies related to medical issues.<sup>40</sup>

In the same year as the Gross and Notowidigdo study, David U. Himmelstein, Deborah Thorne, and Steffie Woolhandler published a study of Massachusetts bankruptcy filing rates following the state’s passage of health care reform, which concluded that the number of bankruptcies caused by medical issues had not decreased as a result of the reform.<sup>41</sup> By way of background, in 2006 Massachusetts launched a health reform initiative that “expanded its Medicaid program, created a new subsidized program through a health insurance exchange, instituted insurance market reforms,” and required individuals to purchase health insurance if they were not otherwise

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<sup>36</sup> Tal Gross & Matthew J. Notowidigdo, *Health Insurance and the Consumer Bankruptcy Decision: Evidence from Expansions of Medicaid*, 95 J. PUB. ECON. 767 (2011).

<sup>37</sup> See *id.* at 769 (“Our investigation into bankruptcy and public health insurance requires accurate measures of both variables.”).

<sup>38</sup> See *id.* at 768 (finding Medicaid expansions disproportionately reduced bankruptcies in zip codes with a large share of low-income households).

<sup>39</sup> *Id.* at 767.

<sup>40</sup> See *id.* (finding states with larger expansions of Medicaid eligibility experienced lower consumer bankruptcy filing rates).

<sup>41</sup> David U. Himmelstein, Deborah Thorne & Steffie Woolhandler, *Medical Bankruptcy in Massachusetts: Has Health Reform Made a Difference?*, 124 AM. J. MED. 224 (2011). This main finding was bolstered by a subsequent study which concluded that the number of bankruptcy filings in the State of Massachusetts did not decrease after the implementation of the state’s health care reform, but actually increased by 0.2 percentage points, controlling for various factors. Kayla D. Badding, E. Frank Stephenson & Melissa M. Yeoh, *Health-Care Reform and Bankruptcy: Evidence from Massachusetts*, 19 APPLIED ECON. LETTERS 1741, 1742 (2012).



covered.<sup>42</sup> By 2008, the state had nearly universal insurance coverage.<sup>43</sup> Despite the success in expanding health insurance coverage, according to the Himmelstein, Thorne, and Woolhandler study, there was no corresponding success in reducing the need for bankruptcy.<sup>44</sup> Methodologically, Himmelstein and colleagues surveyed random samples of Massachusetts bankruptcy filers in 2009.<sup>45</sup> They found that roughly half of the surveyed filers reported that illness or medical bills contributed to their decision to file for bankruptcy, but of this group, nearly 99% had health insurance for themselves and all dependents at the time they filed.<sup>46</sup> Himmelstein and colleagues concluded that their findings were “incompatible with claims that health reform has cut medical bankruptcy filings significantly[,]”<sup>47</sup> and theorized that this was due to the fact that “[h]igh premium costs and gaps in coverage—copayments, deductibles, and uncovered services—often left insured families liable for substantial out-of-pocket costs.”<sup>48</sup>

Himmelstein and colleagues produced a similar study in 2019 with respect to the ACA for the time period of 2013 to 2016 (*i.e.*, pre- and post-effective date) by randomly sampling bankruptcy filers nationwide.<sup>49</sup> According to their data, the authors concluded that the “share of debtors reporting a medical contributor” to their bankruptcy filings were similar in percentage in both the pre- and post-ACA period.<sup>50</sup> Specifically, Himmelstein and colleagues found that little had changed in the time period before and after the commencement of the ACA, with over 65% of debtors citing a medical factor for the bankruptcies just prior to the January 1, 2014

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<sup>42</sup> See Michael T. Doonan & Katharine R. Tull, *Health Care Reform in Massachusetts: Implementation of Coverage Expansions and a Health Insurance Mandate*, 88 MILBANK Q. 54, 55–56 (2010) (summarizing the health reform initiative in Massachusetts).

<sup>43</sup> See Sharon K. Long, Allison Cook & Karen Stockley, *Health Insurance Coverage in Massachusetts: Estimates from the 2008 Massachusetts Health Insurance Survey*, MASS. DIVISION OF HEALTH CARE FIN. AND POL’Y 1 (2009), <https://www.urban.org/sites/default/files/publication/32276/411815-Health-Insurance-Coverage-in-Massachusetts.pdf> (showing only 2.6% of the state’s population was uninsured in 2008).

<sup>44</sup> David U. Himmelstein, Deborah Thorne & Steffie Woolhandler, *Medical Bankruptcy in Massachusetts: Has Health Reform Made a Difference?*, 124 AM. J. MED. 224, 227 (2011).

<sup>45</sup> David U. Himmelstein, Deborah Thorne & Steffie Woolhandler, *Medical Bankruptcy in Massachusetts: Has Health Reform Made a Difference?*, 124 AM. J. MED. 224, 224 (2011) (relying on information gathered from questionnaires mailed to debtors immediately after their bankruptcy filing and publicly available court records).

<sup>46</sup> See *id.* at 226 (explaining even though the majority of debtors in the sample had health insurance at the time of their filing, “45.6% . . . had high medical bills or specifically cited illness as a cause of their bankruptcy”).

<sup>47</sup> *Id.* at 227.

<sup>48</sup> *Id.* at 227.

<sup>49</sup> David U. Himmelstein et al., *Medical Bankruptcy: Still Common Despite the Affordable Care Act*, 109 AM. J. PUB. HEALTH 431 (2019).

<sup>50</sup> David U. Himmelstein et al., *Medical Bankruptcy: Still Common Despite the Affordable Care Act*, 109 AM. J. PUB. HEALTH 431, 432 (2019).

implementation of the ACA, and over 67% mentioning the same in filings after implementation of the ACA.<sup>51</sup> They theorized that although the ACA's expansion of health insurance coverage "might attenuate the risk of medical bankruptcy, increasing medical costs and stagnant incomes could have the opposite effect."<sup>52</sup>

Concentrating on the State of Massachusetts once again, in a study published in 2016 Bhashkar Mazumder and Sarah Miller analyzed the effect of health insurance coverage on various financial outcomes by collecting data from individual-level credit reports both before and after the expansion of public health insurance in the state.<sup>53</sup> Mazumder and Miller sought to determine whether expanded health insurance coverage effected individuals along several financial variables, including total amount of past due debt, the amount of third-party debt in collections associated with an account, and the presence of a bankruptcy filing in the past twenty-four months.<sup>54</sup> With respect to personal bankruptcy, Mazumder and Miller found that a one percentage point increase in the potential effect of health insurance reform (*i.e.*, increased overall coverage) "is associated with a significant reduction in the probability of having a bankruptcy of about 0.03 percentage points."<sup>55</sup> In other words, increased insurance coverage across the population in Massachusetts suggested a slight reduction in the probability of future bankruptcy filings. However, a nationwide expansion of this study by Mazumder and Miller seeking to examine the effect of the ACA on financial well-being found that the national expansion of 2014 did not have a significant effect on the probability of filing for bankruptcy.<sup>56</sup>

Finally, in a study published by one of this Essay's authors in 2019 with data from the NLSY79 collected by the Department of Labor, we<sup>57</sup> found that

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<sup>51</sup> David U. Himmelstein et al., *Medical Bankruptcy: Still Common Despite the Affordable Care Act*, 109 AM. J. PUB. HEALTH 431, 432 (2019).

<sup>52</sup> *Id.*

<sup>53</sup> See Bhashkar Mazumder & Sarah Miller, *The Effects of the Massachusetts Health Reform on Household Financial Distress*, 8 AM. ECON. J. ECON. POL'Y 284 (2016).

<sup>54</sup> *See id.*

<sup>55</sup> *Id.* at 305.

<sup>56</sup> See Luojia Hu, Robert Kaestner, Bhashkar Mazumder, Sarah Miller & Ashley Wong, *The Effect of the Affordable Care Act Medicaid Expansions on Financial Wellbeing*, 163 J. PUB. ECON. 99 (2018). In a somewhat related study, Donald D. Hackney, Daniel Friesner, and Erica H. Johnson found that the ACA impacted the presence and distribution of medical debts in bankruptcy. See Donald D. Hackney, Daniel Friesner & Erica H. Johnson, *Did the Time Frame Associated with the Implementation of the Patient Protection and Affordable Care Act Noticeably Impact Consumer Bankruptcy Filings?*, 44 INT'L J. SOC. ECON. 1957 (2017). Specifically, the authors found that post-ACA Chapter 13 debtors were more likely to report medical debts on their bankruptcy schedules than Chapter 7 filers prior to the ACA, suggesting that in the aftermath of the ACA consumers who were plagued by medical debt were choosing to file for Chapter 13 as opposed to Chapter 7. *See id.*

<sup>57</sup> *See generally* Brook E. Gotberg & Michael D. Sousa, *Moving Beyond Medical Debt*, 27 AM.

possessing health insurance has an impact on a person's odds of filing for bankruptcy relief.<sup>58</sup> More particularly, we found that experiencing an interruption in health insurance coverage in the immediate two-year time period significantly increases one's chances of filing for bankruptcy relief.<sup>59</sup> This past study relied upon NLSY79 data through 2014 and was aimed at uncovering the association between possessing health insurance and bankruptcy more generally. Given that this present study includes data extending for an additional two years (*i.e.*, through 2016), we are able to go beyond looking at the health insurance/bankruptcy relationship generally and start teasing out the effects that the ACA expansion had on bankruptcy filings.

Other empirical research measures the effects of the ACA on consumers' financial health more generally rather than just its relationship to consumer bankruptcy. For example, Heidi Allen and colleagues examined the use of payday loans in relation to the expansion of Medicaid in California for the time period of 2009 to 2014 (*i.e.*, pre- and post- ACA).<sup>60</sup> Utilizing a data set comprised of all payday loans generated by five national storefront payday lenders, Allen and co-researchers compared several California counties that expanded Medicaid to counties nationwide to determine whether the reliance on this form of "risky borrowing" changed after the expansion of Medicaid in California due to the rollout of the ACA.<sup>61</sup> The researchers "found large relative reductions in borrowing after the Medicaid expansion among people younger than age sixty-five."<sup>62</sup> More specifically, in counties that expanded Medicaid, the number of payday loans taken out (per month) by individuals under the age of 65 dropped by 11%, and for those between the ages of 18-34, the drop in new payday loans amounted to 21%.<sup>63</sup> Controlling for various factors, Allen and her colleagues attributed this dynamic to the expansion of Medicaid benefits generally and not to a pre-existing economic trend.<sup>64</sup> Allen and her co-researchers could not, however, "identify precisely how and for whom Medicaid reduces payday borrowing"<sup>65</sup> because data does not exist to answer this more granular research question.

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BANKR. INST. L. REV. 93, 125 (2018).

<sup>58</sup> Brook E. Gotberg & Michael D. Sousa, *Moving Beyond Medical Debt*, 27 AM. BANKR. INST. L. REV. 93, 125 (2018).

<sup>59</sup> Brook E. Gotberg & Michael D. Sousa, *Moving Beyond Medical Debt*, 27 AM. BANKR. INST. L. REV. 93, 125 (2018).

<sup>60</sup> Heidi Allen, Ashley Swanson, Jialan Wang & Tal Gross, *Early Medicaid Expansion Associated with Reduced Payday Borrowing in California*, 36 HEALTH AFFAIRS 1769 (2017).

<sup>61</sup> *Id.* at 1770.

<sup>62</sup> *Id.* at 1772.

<sup>63</sup> *Id.* at 1774.

<sup>64</sup> *Id.* at 1775.

<sup>65</sup> *Id.* at 1774.

Together, these studies point to the importance of health insurance in shaping the financial well-being of individuals and families and to the role of government in facilitating access to health insurance. The current project builds on this body of work by assessing the influence of various characteristics, including different levels of health insurance coverage, on bankruptcy, which is perhaps the best indicator of poor financial well-being. By utilizing statistical techniques that allow us to examine how the influence of coverage changes over time we are able to examine the role that the ACA has played in shaping these relationships.

### III. METHODS, DATA AND ANALYSIS

As noted at the outset, most studies on this topic have approached the issue by examining the extent to which health insurance does or does not affect levels of medical debt. There are some studies that have taken a more direct approach, either by comparing bankruptcy filing rates among states with varying standards for Medicaid,<sup>66</sup> or by examining rates before and after major expansions of health insurance within a single state.<sup>67</sup> However, studying bankruptcy debtors on either an aggregate or individual-level basis has historically been a challenge for researchers since so few large-scale data sets inquire about bankruptcy filings.<sup>68</sup> While bankruptcy petitions themselves are court documents that are publicly available and have been used by researchers to study certain elements of the consumer bankruptcy system, the financial and personal information debtors must disclose on their bankruptcy petitions are insufficient to study discrete, granular issues such as medical debt and insurance coverage.<sup>69</sup> Even more problematic, court

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<sup>66</sup> See, e.g., Amy K. Yarbrough & Robert J. Landry III, *Navigating the Social Safety Net: A State-Level Analysis of the Relationship Between Medicaid and Consumer Bankruptcy*, 35 POL'Y STUD. J. 671 (2007). See also Tal Gross & Matthew J. Notowidigdo, *Health Insurance and the Consumer Bankruptcy Decision: Evidence from Expansions of Medicaid*, 95 J. PUB. ECON. 767 (2011).

<sup>67</sup> See, e.g., David U. Himmelstein, Deborah Thorne & Steffie Woolhandler, *Medical Bankruptcy in Massachusetts: Has Health Reform Made a Difference?*, 124 AM. J. MED. 224 (2011). See also Kayla D. Badding, E. Frank Stephenson & Melissa M. Yeoh, *Health-Care Reform and Bankruptcy: Evidence from Massachusetts*, 19 APPLIED ECON. LETTERS 1741, 1742 (2012).; Bhashkar Mazumder & Sarah Miller, *The Effects of the Massachusetts Health Reform on Household Financial Distress*, 8 AM. ECON. J. ECON. POL'Y 284 (2016).

<sup>68</sup> Scott Fay, Erik Hurst & Michelle J. White, *The Household Bankruptcy Decision*, 92 AM. ECON. REV. 706, 706 (2002) ("Until very recently, studying the household bankruptcy decision was very difficult, because no household-level data set existed that included information on bankruptcy filings."); see also Ian Domowitz & Robert L. Sartin, *Determinants of the Consumer Bankruptcy Decision*, 54 J. FIN. 403, 403 (1999) (noting that "[r]esearch in the area of consumer bankruptcy is largely based on the analysis of aggregate filing data").

<sup>69</sup> Melissa B. Jacoby & Mirya Holman, *Managing Medical Bills on the Brink of Bankruptcy*, 10 YALE J. HEALTH POL'Y, L. & ETHICS 239, 243(2010) (noting that the court record method of collecting data "is incapable of capturing some of the most significant medical obligations incurred before

documents can only be used to study those who have filed for bankruptcy, and not to identify patterns of those who file for bankruptcy from the larger population. In other words, studying only those consumers who have already filed for bankruptcy protection is problematic because of sampling on the outcome variable of interest, namely, bankruptcy.

To assess whether health insurance coverage impacts the likelihood of filing for bankruptcy, and whether the relationship between bankruptcy and health coverage has changed with the ACA, we use data from the NLSY79, collected by the Bureau of Labor Statistics.<sup>70</sup> “The NLSY79 originated as a household probability sample of 12,686 adolescents in the age range 14-21 on December 31, 1978, thus born between 1957 and 1964.”<sup>71</sup> Annual follow-up interviews were conducted through 1986, with interviews occurring biennially since.<sup>72</sup> Questions regarding healthcare coverage and bankruptcy filings were added to the survey in 2004, scaled back in 2006, and then re-introduced and remained relatively constant between 2008 through 2016. Our analyses focus on the 2004 and 2008 through 2016 data from 7,863 respondents who had complete data on bankruptcy filings and medical coverage in at least one survey wave during this time period. We omit data from 2006 due to the elimination of key survey questions in that year that are used in other waves to construct the main outcome (bankruptcy filing) and explanatory variable (medical insurance coverage). Based upon the years we focus on in this study, the NLSY79 respondents were between the ages of 40 and 63 at the time of their surveys.

These data are unique in that they provide information on bankruptcy and health insurance coverage for a nationally representative sample of middle age adults, the age group most likely to file for bankruptcy.<sup>73</sup> Importantly, the NLSY79 survey directly asks respondents about whether they are covered by health insurance and from where this coverage originates. Because the NLSY79 is a longitudinal survey, we can characterize respondents as either having consistent health care coverage, interrupted coverage, or no coverage at all by examining whether their coverage changed since the previous wave (as well as using self-reported survey data about lapses in coverage since the last wave); we can also differentiate between coverage types (*e.g.*, public or

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bankruptcy”).

<sup>70</sup> See generally <https://www.bls.gov/nls/nlsy79.htm>.

<sup>71</sup> Joseph L. Rodgers et al., *The NLSY Kinship Links: Using the NLSY79 and NLSY-Children Data to Conduct Genetically-Informed and Family-Oriented Research*, 46 BEHAV. GENETICS 538, 539 (2016).

<sup>72</sup> Joseph L. Rodgers et al., *The NLSY Kinship Links: Using the NLSY79 and NLSY-Children Data to Conduct Genetically-Informed and Family-Oriented Research*, 46 BEHAV. GENETICS 538, 539 (2016).

<sup>73</sup> Leslie E. Linfield, *The Composite Consumer Debtor*, 31 AM. BANKR. INST. J. 26, 26-27 (2012).

employer-based). Since the survey also asks respondents whether they have filed for bankruptcy since the last wave of data collection, we can differentiate between those who have ever filed for bankruptcy and those who filed within each two-year period. Past research has typically relied on proxies for health insurance coverage and has not been able to temporally situate changes in coverage with bankruptcy filings. To our knowledge, the NLSY79 is the only data set available for examining bankruptcy and health care coverage at the individual level before, during, and after the implementation of the ACA.

#### A. MEASURES

We rely on self-reports of new filings for personal bankruptcy (*i.e.*, debtors choosing to file under either Chapter 7 or 13 of the Bankruptcy Code) since the last interview for our outcome variable of interest. Respondents are asked at each wave whether they have ever declared bankruptcy, and if so, the month and date of the filing. If the most recent bankruptcy occurred in the time since their last interview date, respondents were coded as having filed. In total, 533 bankruptcies were reported throughout the study period, with 69 in 2004, 70 in 2008, 103 in 2010, 121 in 2012, 91 in 2014, and 79 in 2016.

Our primary measure of health insurance coverage comes from respondent reports of whether they were covered by any kind of private or governmental health insurance (including hospitalization plans), and whether they report any time since their last interview in which they were not covered by health insurance. Participants who reported having some form of insurance at both the current interview and their last interview, and who reported no time where they were not covered in between, were coded as having full coverage for the two-year period and serve as the reference group in all of our models. Those who reported having insurance at one time point but not the other (*e.g.*, at their last interview, but not the current one), or who reported having no coverage at some time in the interim were classified as having had interrupted coverage. We initially coded differently those who lost, gained, or simply failed to maintain coverage between interviews, but found little variation in bankruptcy filing rates and other study variables between these groups, which prompted us to adopt the broader classification of respondents having interrupted coverage. Respondents who reported having no coverage at both the time of the current interview and at the previous interview, and who also reported no intermittent coverage between waves, were coded as having no coverage.

To determine whether the association between health insurance coverage and bankruptcy filing changed with the implementation of the ACA, we coded survey waves as pre-recession (2004-2008), recession (2010-2012), or post-ACA (2014-2016). The recession period serves as the reference group in our models because the rate of bankruptcy filings was markedly higher in these waves than in the pre-recession or post-ACA periods, and because it serves as a proximate point of comparison for the changes that happened immediately afterwards with the passing of the ACA. We differentiate between the pre-recession and post-ACA periods despite evidence of similar bankruptcy filing rates in the data because of the changes in health care policy introduced with the ACA that we hypothesize reduced the incidence of no or intermittent coverage and the potential bankruptcy risk of not having full coverage. Thus, period definitions were based on a combination of empirical evidence (*i.e.* apparent bankruptcy filing rates), theory, and the legal, social and economic contexts of the United States at the time of the surveys.

The data also contain information about many other potential contributors to bankruptcy or health insurance coverage. Basic demographic information includes respondent age, gender, marital status (*i.e.*, married, never married, separated, widowed, or divorced), race/ethnicity (*i.e.*, Hispanic, black, or non-black/non-Hispanic), and whether the respondent has a dependent child (*i.e.*, yes or no). The NLSY79 also measures risk and protective factors related to bankruptcy including respondents' household income (in \$1,000 increments and top-coded at \$500,000), personal debt (*i.e.*, a sum of all reported credit card debt, personal debts, and debts owed to private businesses or medical service providers, in \$1,000 increments and top-coded at \$500,000, but not including the amount owed on mortgages), employment (*i.e.*, the percentage of weeks that the respondent reported working over the past year), and whether a health issue limited the respondent's ability to engage in routine activities (*i.e.*, yes or no, since last interview).

## B. ANALYSIS AND FINDINGS

We primarily used multilevel logistic regression (growth curve) models to examine the association between health care coverage, period, debt, sociodemographic and other risk/protective factors, and new bankruptcy filings since the last biennial survey.<sup>74</sup> Traditional logistic regression models are inadequate for analyzing the association between time-varying covariates and outcomes in longitudinal data because observations (and associated error

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<sup>74</sup> This strategy allowed us to more clearly determine how the timing of coverage and other factors relate to the odds of filing, while avoiding the need for complex three-way interactions between multiple time-varying factors to examine these associations in a repeated measures analysis.

terms) are clustered within the same individuals, violating the assumption of independent error terms necessary for Ordinary Least Squares analysis (“OLS”). In other words, when pooling data from the same set of individuals over time, the observations coming from the same respondent will be more alike than one would expect by random chance, with a high likelihood of responses being related to past or future observations of the same characteristics for the same person. Multilevel growth curve models address this problem by instead explicitly modeling the remaining differences in explanatory variables between-persons as fixed effects after adjusting for random within-person variation. In the current analysis, we do this by including a random intercept that allows each individual to exhibit their own trajectory of bankruptcy filing and insurance coverage over time, with the reported coefficients and standard errors summarizing the mean relationships and trajectories that remain between individuals once individual variation is accounted for.

First, we fit baseline models (Model 1) that predict the odds of filing for bankruptcy between respondents with no coverage and interrupted coverage, compared to those with full coverage, in the pre-recession and post-ACA periods compared to the recession period. Next, we tested whether differences in filing rates by coverage and period remain after controlling for basic demographic and economic characteristics including marital status, age, gender, race/ethnicity, parenthood, employment, debt, income, and health limitations (Model 2). In Model 3 we added interaction terms between levels of coverage and time period. This allowed us to examine whether any potential effects of insurance coverage on bankruptcy differ depending on the time period.

Table 1 provides descriptive statistics by time period for the NLSY79 variables that we included in our models. We can see that about .9% of the NLSY79 sample filed for bankruptcy during the pre-recession period.<sup>75</sup> This frequency increases by almost 50% during the recession (to 1.6%) and then decreased to 1.3% during the post-ACA period. These rates are substantially higher than the national bankruptcy filing rates, likely due to both the NLSY79’s original oversampling of lower-income individuals<sup>76</sup> and its current focus on an age group that is more likely to file for bankruptcy relief

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<sup>75</sup> Approximately 1% of the overall population files for bankruptcy protection each year. Tal Gross & Brad Trenkamp, *Risk of Bankruptcy Among Applicants to Disability Insurance*, 26 J. HEALTH CARE FOR THE POOR & UNDERSERVED, 1149-1152 (2015).

<sup>76</sup> See Joseph L. Rodgers et al., *The NLSY Kinship Links: Using the NLSY79 and NLSY-Children Data to Conduct Genetically-Informed and Family-Oriented Research*, 46 BEHAV. GENETICS 538, 539 (2016) (noting that approximately 42% of the original sampling contained a “poor white oversample”).



more generally (*i.e.*, middle-age individuals),<sup>77</sup> but follow a pattern that is somewhat similar to national trends with higher rates immediately following the economic recession of 2008-09. During this time period, national bankruptcy filing rates ranged from a high of .67% in 2010 to a low of .31% in 2016.<sup>78</sup>

Turning to rates of health insurance coverage, we see some, but much less, variation across the waves of the NLSY79 data set. The percentage of the population with full coverage rose from 71.9% pre-recession to 72.9% during the recession, and up to 79.3% post-ACA. This increase was most likely the result of the ACA, which mandated that all citizens and legal residents in the United States possess some form of health insurance or pay a financial penalty.<sup>79</sup> While the proportion of the sample that had full health coverage increased substantially during this time-period, we also saw a large decrease in the percentage of the population that had no coverage (from a high of 12.6% during the recession to 7.4%) and a corresponding decrease in interrupted coverage (from 17% to 13.3%). While national data make it hard to estimate the percentage of the population that had full, as opposed to interrupted coverage, estimates from the National Health Interview Survey suggest that the percentage of the NLSY79 sample with no insurance is somewhat lower than a national sample of adults whose rates of uninsurance dropped from 16.8% in 2008 to 10.3% in 2016.<sup>80</sup>

Table 2 offers a series of models that demonstrate the relationship between health insurance coverage and the likelihood of filing for bankruptcy before and after the advent of the ACA, controlling for a variety of demographic, economic, and health-related characteristics. Model 1 in Table 2 demonstrates that without controlling for other factors, respondents with no coverage were no more likely to file for bankruptcy, but those with interrupted coverage were almost twice as likely to file for bankruptcy as their counterparts with full coverage (OR=1.95,  $p < .001$ ).<sup>81</sup> There is a slight

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<sup>77</sup> TERESA A. SULLIVAN, ELIZABETH WARREN & JAY LAWRENCE WESTBROOK, *THE FRAGILE MIDDLE CLASS: AMERICANS IN DEBT* 38-39 (2000).

<sup>78</sup> Bankruptcy filings are tracked by the U.S. Courts and reported at <https://www.uscourts.gov/statistics-reports>. In 2004, the adult population of the United States was estimated by the U.S. Census to be 214,700,000. See <https://www.census.gov/data/tables/2004/demo/age-and-sex/2004-age-sex-composition.html>. During that year, the U.S. Courts reported 1,563,145 non-business bankruptcy filings, which amounts to 0.73% of the population. Using the same data sources, national bankruptcy filing rates were 0.48% in 2008, 0.67% in 2010, 0.50% in 2012, 0.38% in 2014, and 0.31% in 2016.

<sup>79</sup> Donald D. Hackney, Daniel Friesner & Erica H. Johnson, *Did the Time Frame Associated with the Implementation of the Patient Protection and Affordable Care Act Noticeably Impact Consumer Bankruptcy Filings?* 14 INT'L J. SOC. ECON. 1957, 1958 (2017).

<sup>80</sup> See generally <https://www.cdc.gov/nchs/fastats/health-insurance.htm>.

<sup>81</sup> In their 2005 study, Himmelstein and colleagues also found that a "lapse in health insurance

attenuation of the influence of having interrupted coverage on the likelihood of bankruptcy in Model 2 after controlling for the sociodemographic variables of age, marital status, gender, race, whether the respondent had dependent children, along with measures of employment, debt and income and health limitations; nevertheless the relationship is still both substantively (OR=1.65) and statistically significant ( $p < .001$ ). We can also see that never having been married, being separated and having a higher income decrease the likelihood of filing while having one or more children, working more weeks in a given year, and having a health limitation increase the likelihood.

In Model 3 we added interaction terms to examine whether the influence of no coverage or intermittent coverage on the likelihood of filing for bankruptcy is significantly different depending on the time period. The results are mixed. The relationship between not having any medical insurance and filing for bankruptcy does not vary across the time periods. Quite simply, and somewhat surprisingly, not having any medical insurance is not a predictor of filing for bankruptcy in our sample, and this is true both before and after the implementation of the ACA.<sup>82</sup> However, the same cannot be said for intermittent coverage. While our first two models in Table 2 demonstrated the relationship between intermittent coverage and bankruptcy, the interaction terms in Model 3 show that this relationship is drastically reduced post-ACA to the point where intermittent coverage no longer significantly predicts filing for bankruptcy relief after the implementation of the ACA. To help clarify the extent to which the relationship between intermittent coverage and bankruptcy is reduced in the post-ACA period, we graph the predicted probabilities of bankruptcy by coverage and period from Model 3, holding all other variables at their means, in Figure 1. Comparing the predicted probabilities by period for those with intermittent and full coverage, it is clear that the elevated risk of bankruptcy displayed during the recession by those with intermittent coverage completely goes away post-ACA, falling well within the 95% confidence interval of those with full coverage in the same period.

#### IV. DISCUSSION AND AVENUES OF FUTURE RESEARCH

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coverage during the two years before filing was a strong predictor of a medical cause of bankruptcy.” David U. Himmelstein, Elizabeth Warren, Deborah Thorne & Steffie Woolhandler, 24 *Illness and Injury as Contributors to Bankruptcy*, HEALTH AFFAIRS W5-63, W5-65 (2005). This pattern was also uncovered in their 2007 study. See David U. Himmelstein, Deborah Thorne, Elizabeth Warren & Steffie Woolhandler, *Medical Bankruptcy in the United States, 2007: Results of a National Study*, 122 AM. J. MED. 741, 744 (2009).

<sup>82</sup> One possible explanation for this observation is that some individuals are simply “too poor” to file for bankruptcy and are “judgment proof.” Pamela Foohey, Robert M. Lawless, Katherine Porter & Deborah Thorne, “No Money Down” *Bankruptcy*, 90 S. CAL. L. REV. 1055, 1100 n.158 (2017).

Based upon the NLSY79 data, we can make several general observations. First, the ACA did reduce the percentage of individuals who had either no health insurance or intermittent coverage (Table 1). Second, and quite significantly, the association between intermittent coverage as a predictor for filing a bankruptcy petition in the pre-ACA waves is no longer statistically significant post-ACA (Table 2). While it is tempting to point to the end of the recession as an explanation for why intermittent coverage is no longer associated with filing for bankruptcy, it is important to note that the relationship between intermittent coverage and filing bankruptcy was present during and *before* the recession, and only went away after the implementation of the ACA. This new finding suggests that the ACA had an important impact on the relationship between experiencing intermittent coverage and filing for bankruptcy; that is, better access to health insurance may be a mechanism to prevent financial ruin and an individual or family's eventual turn to the bankruptcy process to shed unmanageable debt.

Third, we found that the largest proportion of those experiencing intermittent coverage in the post-ACA period (69.4%) are those individuals earning between \$0-30,000, namely the poor and "near poor"<sup>83</sup> (Table 3). While this may at first blush seem problematic and counterintuitive, we speculate that this represents lower-income Americans *gaining* health care coverage following the ACA where they previously did not possess health care coverage in previous waves. This observation coincides with existing research. For example, Blavin and colleagues found that from 2010-2015, the uninsurance rate for near-poor adults between the ages of 19-64 declined by 16.4% in Medicaid expansion states and by 11.7% in non-expansion states (in part due to the availability of purchasing health insurance subsidized by tax credits through a marketplace exchange plan).<sup>84</sup>

That said, we cannot demonstrate with the NLSY79 data precisely why intermittent coverage carries less bankruptcy risk in the post-ACA period. However, a couple of factors related to the data used in the present study may explain why this is. As Medicaid expanded in some states, but not others, in the post-ACA period, it makes sense that some proportion of "near-poor"

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<sup>83</sup> Researchers define the "near poor" as consisting of adults with family incomes of 100-138% of the federal poverty line. Fredric Blavin et al., *Medicaid Versus Marketplace Coverage for Near-Poor Adults: Effects on Out-of-Pocket Spending and Coverage*, 37 HEALTH AFFAIRS 299, 299 (2018). See also Stacey McMorro, Jason A. Gates, Sharon K. Long & Genevieve M. Kenney, *Medicaid Expansion Increased Coverage, Improved Affordability, and Reduced Psychological Distress for Low-Income Parents*, 36 HEALTH AFFAIRS 808, 813 (2017) (conceptualizing the "near poor" as adults whose income is no more than 138% of FPL).

<sup>84</sup> Fredric Blavin et al., *Medicaid Versus Marketplace Coverage for Near-Poor Adults: Effects on Out-of-Pocket Spending and Coverage*, 37 HEALTH AFFAIRS 299, 302 (2018).

respondents would have benefitted from expansion and become eligible for coverage. These individuals would have been coded as having either full or intermittent coverage in the post-ACA period in our data, depending on the timing of survey response and expansion in their state. As demonstrated in Table 3, a descriptive analysis of the characteristics of the people who are coded as having intermittent coverage by period does show that a somewhat larger portion of people with intermittent coverage had incomes less than \$30,000 a year post-ACA, so this may be the case. However, because the NLSY79 data lack state identifiers, we are unable at this point to disentangle which respondents were coded as having intermittent coverage for this reason, though we would expect these people to have less risk of bankruptcy nonetheless.

Further, according to a 2019 report issued by The Commonwealth Fund, while the proportion of individuals who have experienced a gap in health insurance coverage has not statistically changed from 2010 to 2018, the reported gap periods are generally shorter on average since the advent of the ACA. As noted by The Commonwealth Fund:

In 2018, 61 percent of people who reported a coverage gap said it has lasted for six months or less, compared to 31 percent who said they had been uninsured for a year or longer. This is nearly a reverse of what it was like in 2012, two years before the ACA's major coverage expansion. In that year, 57 percent of adults with a coverage gap reported it was for a year or longer, while one-third said it was a shorter gap.<sup>85</sup>

Unfortunately, we do not have the ability to measure the timing or length of insurance lapses among the intermittent coverage group from the NLSY79 data. This makes it impossible to determine if the reduction in bankruptcy risk post-ACA for people with intermittent coverage is because of reductions in their average time without coverage, or if people elect to forego insurance when they do not need it to protect against imminent medical catastrophe. Perhaps intermittent coverage post-ACA is more commonly due to an informed choice, rather than being a result of negative circumstances in other periods, which makes it less of a risk for bankruptcy because people chose to keep insurance more often when they really need it in order to prevent large medical costs and forego it at other times when they do not. Nonetheless,

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<sup>85</sup> Sara R. Collins, Herman K. Bhupal & Michelle M. Doty, *Health Insurance Coverage Eight Years After the ACA: Fewer Uninsured Americans and Shorter Coverage Gaps, But More Underinsured* (Commonwealth Fund, Feb. 2019), <http://doi.org/10.26099/penv-q32>.

these preliminary findings from the NLSY79 data suggest that expanded health insurance coverage and less churning on and off insurance may help reduce bankruptcy risk.

With respect to bankruptcy risk (*i.e.*, the inability to afford one's debt obligations), some studies indirectly support our observations by finding that at least with respect to the accumulation of medical debt, the ACA has had an appreciable effect on peoples' finances. For instance, the Centers for Disease Control reported that "[t]he percentage of 'near-poor' families who experienced difficulty paying their medical bills declined significantly during the first six months of subsidized health coverage under the Affordable Care Act."<sup>86</sup> According to the report, during this time frame the rate of all families facing difficulty paying medical bills dropped from 33.2% to 31.2% among the uninsured, 24.8% to 24.2% among those with public health insurance, and 13.7% to 12.4% among those with private health insurance.<sup>87</sup> Subsequent studies support this finding, namely that lower-income families in Medicaid expansion states had significant increases in the ability to pay medical bills post-ACA.<sup>88</sup> Further, Blavin and colleagues found that adults with incomes between 100-138% of the FPL experienced lower out-of-pocket health spending in Medicaid expansion states from 2010-2016 while those adults in non-expansion states (while gaining increased health care coverage overall) experienced "significant increases" in out-of-pocket spending post-ACA, particularly from 2014-2015.<sup>89</sup>

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<sup>86</sup> Advisory Board Company, *Report: Medical Debt Concerns Down Significantly for 'Near-Poor' Families*, AM. HEALTH LINE (February 26, 2015), <https://du.idm.oclc.org/login?url=https://search.proquest.com/docview/1658592934?accountid=14608>.

<sup>87</sup> Advisory Board Company, *Report: Medical Debt Concerns Down Significantly for 'Near-Poor' Families*, AM. HEALTH LINE (February 26, 2015), <https://du.idm.oclc.org/login?url=https://search.proquest.com/docview/1658592934?accountid=14608>.

<sup>88</sup> *See, e.g.*, Stacey McMorrow, Jason A. Gates, Sharon K. Long & Genevieve M. Kenney, *Medicaid Expansion Increased Coverage, Improved Affordability, and Reduced Psychological Distress for Low-Income Parents*, 36 HEALTH AFFAIRS 808, 817 (2017) ("We found strong and consistent evidence that the ACA Medicaid expansion increased coverage, reduced problems paying medical bills, and reduced psychological distress among low-income parents."). *See also* Sara R. Collins, Herman K. Bhupal & Michelle M. Doty, *Health Insurance Coverage Eight Years After the ACA: Fewer Uninsured Americans and Shorter Coverage Gaps, But More Underinsured* (Commonwealth Fund, Feb. 2019), <http://doi.org/10.26099/penv-q32> ("There was modest but significant improvement following the ACA's coverage expansions in the proportion of all U.S. adults who reported having difficulty paying their medical bills or said they were paying off medical debt over time.").

<sup>89</sup> Fredric Blavin et al., *Medicaid Versus Marketplace Coverage for Near-Poor Adults: Effects on Out-of-Pocket Spending and Coverage*, 37 HEALTH AFFAIRS 299, 305-06 (2018). *See also* Stacey McMorrow, Jason A. Gates, Sharon K. Long & Genevieve M. Kenney, *Medicaid Expansion Increased Coverage, Improved Affordability, and Reduced Psychological Distress for Low-Income Parents*, 36 HEALTH AFFAIRS 808, 817 (2017) (finding that the ACA Medicaid expansion had a positive effect on a family's ability to afford medical bills).

Other studies support this general trend. The National Center for Health Statistics in 2017 found that among adults between the ages of 18-64, the percentage of those who were in families struggling to pay medical bills decreased from 20.6% in 2011 to 15.6% in the first six months of 2017.<sup>90</sup> This same study further found that the percentage of “near-poor” persons under the age of 65 (*i.e.*, defined as individuals with incomes between 100% to 200% of FPL) who were having difficulties paying medical bills decreased from 34.6% in 2011 to 24.8% in the first six months of 2017.<sup>91</sup> Finally, the National Center for Health Statistics found that those under the age of 65 with public coverage who were in families having problems affording medical bills decreased from 27.8% in 2011 to 20.5% in the first six months of 2017.<sup>92</sup>

Based upon the nature of the NLSY79 data, we are limited in our ability to conclusively say that the ACA caused a reduction in the bankruptcy filing rate. We can say, however, that there is a strong association between the post-ACA period of expanded coverage, and the disappearance of the association between intermittent coverage and bankruptcy risk. In conjunction with the previous literature on health insurance and bankruptcy, in addition to the studies finding a connection between the post-ACA period and the reduction in medical debt for the poor and near-poor, it is reasonable to at least suggest that the ACA may continue to significantly reduce consumer bankruptcy in this country.

Avenues for future research abound. For example, future researchers can revisit the NLSY79 in subsequent years to see if the patterns regarding intermittent coverage and future bankruptcy remain statistically significant. Future researchers might also explore the association between health insurance and consumer bankruptcy beyond the NLSY79 by assembling aggregate data from other available resources (*e.g.*, United States Courts’ records, state and federal health interview surveys). In addition, future researchers could develop a nationally representative data set through surveys

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<sup>90</sup> Robin A. Cohen & Emily P. Zammiti, *Problems Paying Medical Bills Among Persons Under Age 65: Early Release of Estimates from the National Health Interview Survey, 2011-June 2017*, U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES, NATIONAL CENTER FOR HEALTH STATISTICS 2, December 2017.

<sup>91</sup> Robin A. Cohen & Emily P. Zammiti, *Problems Paying Medical Bills Among Persons Under Age 65: Early Release of Estimates from the National Health Interview Survey, 2011-June 2017*, U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES, NATIONAL CENTER FOR HEALTH STATISTICS 5, December 2017.

<sup>92</sup> Robin A. Cohen & Emily P. Zammiti, *Problems Paying Medical Bills Among Persons Under Age 65: Early Release of Estimates from the National Health Interview Survey, 2011-June 2017*, U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES, NATIONAL CENTER FOR HEALTH STATISTICS 4, December 2017.

that specifically includes both bankruptcy filers and non-filers to see if patterns between health insurance coverage and personal bankruptcy persist. Finally, future researchers should undertake qualitative research studies in order to obtain rich, in-depth information on how individuals and families with varying socio-demographic characteristics deal with medical debt in light of health insurance coverage, why people lapse or “churn” with respect to their health insurance coverage, and whether uncovered medical expenses are indeed a causal pathway leading to financial indebtedness. Without this kind of qualitative evidence, we can only speculate about why intermittent coverage has historically been more predictive of bankruptcy than no coverage at all, and why intermittent coverage carries less bankruptcy risk after the implementation of the ACA. However, there is some evidence that changes occurring as a result of the ACA have resulted in changes to who ends up with coverage, and that these demographic changes in coverage may be associated with reductions in bankruptcy risk.

## V. CONCLUSION

Our study adds to the growing body of literature regarding the effects of the ACA upon the financial health for millions of Americans, particularly the poor and near-poor. Based upon our data, we found that the pre-ACA association between possessing intermittent health insurance coverage and its positive predictive effect on filing for bankruptcy evaporates in the post-ACA period. While we are limited in our ability to explain precisely why (like many other researchers), we theorize that the ACA expanded coverage to millions of poor and near-poor families between 2014 and 2016, and the obtaining of health insurance may have staved off financial ruin, perhaps through a lower accumulation of medical debt. Once additional data become available, we hope that subsequent researchers can continue to study the ACA’s effect on the financial health of millions of Americans. Findings that the ACA has a positive impact on peoples’ finances and reduces the risk of filing for bankruptcy is incredibly important to know, particularly since much of the political wind continues to try to dismantle the ACA.

**Table 1: Descriptive Statistics by Period, NLSY79 2004-2016**

<b>Descriptive Statistics</b>	<b>Pre-Recession</b>		<b>Recession</b>		<b>Post-ACA</b>	
<b>Full Sample</b>	Mean	(SD)	Mean	(SD)	Mean	(SD)
Health Insurance Coverage						
Full	0.719	(0.449)	0.729	(0.444)	0.793	(0.405)
None	0.111	(0.314)	0.126	(0.331)	0.074	(0.261)
Intermittent	0.170	(0.376)	0.145	(0.352)	0.133	(0.340)
Employment						
% of Weeks Worked	0.776	(0.385)	0.735	(0.413)	0.714	(0.429)
Income						
0-30K	0.381	(0.486)	0.401	(0.490)	0.410	(0.492)
30-60k	0.250	(0.433)	0.221	(0.415)	0.196	(0.397)
60-100k	0.208	(0.406)	0.190	(0.392)	0.181	(0.385)
100K +	0.162	(0.369)	0.188	(0.390)	0.213	(0.409)
Debt						
0-5k	0.608	(0.488)	0.678	(0.467)	0.728	(0.445)
5-10k	0.057	(0.231)	0.096	(0.295)	0.100	(0.300)
10-50k	0.094	(0.292)	0.147	(0.354)	0.147	(0.354)
50K +	0.242	(0.428)	0.079	(0.270)	0.025	(0.156)
Demographic Characteristics						
Female	0.521	(0.500)	0.523	(0.500)	0.526	(0.499)
Never Married	0.172	(0.377)	0.164	(0.370)	0.155	(0.362)
Separated	0.053	(0.224)	0.052	(0.223)	0.049	(0.215)
Divorced	0.186	(0.389)	0.214	(0.410)	0.225	(0.417)
Widowed	0.014	(0.119)	0.021	(0.145)	0.032	(0.176)
Age	44.885	(2.835)	49.891	(2.624)	54.417	(2.437)
Hispanic	0.188	(0.390)	0.189	(0.392)	0.186	(0.389)
Black	0.305	(0.461)	0.309	(0.462)	0.313	(0.464)
Has Child	0.852	(0.355)	0.863	(0.344)	0.864	(0.343)
Health Limitations	0.153	(0.360)	0.204	(0.403)	0.258	(0.437)
Bankruptcy Filing	0.009	(0.096)	0.016	(0.124)	0.013	(0.112)
Number of Person-Year Observations	14099		13480		12356	



**Table 2: Regression Results Predicting Bankruptcy by Health Insurance Coverage, Demographics, and Period**

NLSY 2004-2016	Model 1		Model 2		Model 3	
	Odds Ratio	Standard Error	Odds Ratio	Standard Error	Odds Ratio	Standard Error
Health Coverage (vs. Full)						
None	1.124	(0.184)	0.944	(0.160)	0.925	(0.222)
Intermittent	1.953	(0.222) ***	1.654	(0.195) ***	1.938	(0.337) ***
Period (vs. Recession 2010-2012)						
Pre-Recession (2004-2008)	0.568	(0.065) ***	0.601	(0.100) ***	0.570	(0.100) ***
Post-ACA (2014-2016)	0.806	(0.088) *	0.760	(0.138) *	0.878	(0.138)
Interactions						
No Cov * Pre-Recession					1.429	(0.514)
No Cov * Post-ACA					0.713	(0.303)
Int Cov * Pre-Recession					0.994	(0.264)
Int Cov * Post-ACA					0.583	(0.161) *
Demographic Characteristics						
Female			1.120	(0.114)	1.120	(0.114)
Never Married			0.501	(0.090) ***	0.498	(0.090) ***
Separated			0.513	(0.125) **	0.511	(0.124) **
Divorced			0.860	(0.107)	0.861	(0.107)
Widowed			1.145	(0.300)	1.158	(0.304)
Age			1.009	(0.019)	1.008	(0.019)
Hispanic			0.886	(0.125)	0.883	(0.124)
Black			1.158	(0.135)	1.157	(0.135)
Has Child			1.536	(0.286) *	1.533	(0.286) *
Employment/Income						
% of Weeks Worked			2.768	(0.422) ***	2.802	(0.428) ***
Household Income (\$1k)			0.990	(0.001) ***	0.990	(0.001) ***
Personal Debt (\$1k)			1.000	(0.000)	1.000	(0.000)
Health Limitations			1.615	(0.212) ***	1.622	(0.213) ***
Intercept	0.007	(0.001)	0.003	(0.002)	0.003	(0.003)
ICC	0.322		0.284		0.286	
Number of Individuals Included	7863		7863		7863	

+ p<0.10, \* p<0.05, \*\* p<.01, \*\*\* p<.001

**Table 3: Descriptive Statistics by Period, Intermittent Coverage Only**

<b>Descriptive Statistics</b>	<b>Pre-Recession</b>		<b>Recession</b>		<b>Post-ACA</b>	
<i>Intermittent Coverage Only</i>	Mean	(SD)	Mean	(SD)	Mean	(SD)
Employment/Income						
% of Weeks Worked	0.659	(0.422)	0.580	(0.445)	0.611	(0.447)
Income						
0-30K	0.643	(0.479)	0.680	(0.466)	0.694	(0.461)
30-60k	0.234	(0.423)	0.208	(0.406)	0.195	(0.396)
60-100k	0.089	(0.285)	0.084	(0.277)	0.079	(0.270)
100K +	0.033	(0.180)	0.028	(0.164)	0.032	(0.176)
Debt						
0-5k	0.648	(0.478)	0.748	(0.434)	0.789	(0.408)
5-10k	0.052	(0.221)	0.083	(0.276)	0.074	(0.262)
10-50k	0.084	(0.278)	0.117	(0.321)	0.120	(0.325)
50K +	0.216	(0.412)	0.052	(0.221)	0.017	(0.129)
Demographic Characteristics						
Female	0.511	(0.500)	0.539	(0.499)	0.534	(0.499)
Never Married	0.241	(0.428)	0.234	(0.423)	0.214	(0.410)
Separated	0.082	(0.274)	0.083	(0.276)	0.082	(0.274)
Divorced	0.259	(0.438)	0.281	(0.449)	0.316	(0.465)
Widowed	0.018	(0.131)	0.033	(0.179)	0.046	(0.210)
Age	44.665	(2.883)	49.899	(2.617)	54.131	(2.412)
Hispanic	0.225	(0.418)	0.226	(0.418)	0.225	(0.417)
Black	0.394	(0.489)	0.398	(0.490)	0.402	(0.491)
Has Child	0.844	(0.363)	0.860	(0.347)	0.856	(0.352)
Health Limitations	0.221	(0.415)	0.304	(0.460)	0.332	(0.471)
Bankruptcy Filing	0.016	(0.127)	0.030	(0.170)	0.018	(0.132)
Number of Person-Year Observations	2398		1956		1648	

**Figure 1: Predicted Probabilities of Bankruptcy Filing by Insurance Coverage and Period**

