

The Ticket to Easy Street? The Financial Consequences of Winning the Lottery*

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Abstract

Does receiving large cash prizes of up to \$150,000 reduce bankruptcy? While one might hope that additional resources help individuals avert bankruptcy, there are reasons why this may not be the case. For example, if recipients have high discount rates, engage in mental accounting, or become accustomed to a more expensive lifestyle, then receipt of large lump sums may have no effect on or even increase future bankruptcy filings. To address this question, we exploit a unique dataset of Florida lottery winners from 1993 – 2002 linked to bankruptcy records. Under the identifying assumption that the magnitude of the cash prize is random conditional on winning one time, we isolate the effect of large lump-sum payments from the effects of potential confounding factors by comparing the bankruptcy rates of large winners to those of small winners. Results show that although recipients of \$50,000 to \$150,000 are 50 percent less likely to file for bankruptcy in the two years after winning than are recipients of less than \$10,000, they experience a statistically significant increase in bankruptcy rates of similar magnitude three to five years after winning. This suggests that winning the lottery only postpones bankruptcy rather than reduce it despite the fact that the median large winner received enough money to pay off all of her unsecured debts. Furthermore, among those who filed for bankruptcy in the five years after winning we find that there is no difference in either net assets or unsecured debt between large and small winners. This suggests that policymakers

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ought to use considerable caution in giving additional resources to heavily indebted individuals with the hope of increasing their longer-term financial well-being.

1 Introduction

Despite the prevalence and popularity of state lotteries nationwide, little is known about the short- and long-term impact of the cash prizes on recipients' financial outcomes. While one would hope that giving people large unexpected cash transfers would help them avert bankruptcy in the future, there are reasons to be doubtful. For example, individuals may lack the knowledge to handle large lump-sum payments wisely; surveys have consistently shown that U.S. adults have relatively low levels of financial literacy (e.g., Higer, Hogarth, and Beverly, 2003). In addition, individuals may engage in mental accounting (Thaler, 1990). By treating the lottery prizes or other lump sums as "found" money, recipients may be less likely to use it to pay down debt or to make other decisions that will enhance future financial stability. Similarly, people may treat the winnings as "house money" and use it to take on risks in an effort get out of their current debt. Lottery winners may also develop a taste for luxury goods and may be unable to adjust that preference once the money runs out. Finally, even if individuals were financially literate and did not engage in mental accounting, hyperbolic discounting and the time-inconsistency of preferences may prevent them from behaving in such a way as to increase their future financial stability. Winners may want to invest wisely in the long-run but short-run impatience leads them to overspend relative to their long-run selves' preferences.(See, for example DellaVigna, forthcoming; Frederick et. al, 2002; O'Donoghue and Rabin, 1999).

The significance of these departures from rationality may well be even higher for lottery players than they are for the general public. Given that payout rates in state lotteries average only 55% (Cook et al, 1999), the act of buying lottery tickets itself is not a wise decision if judged solely on financial grounds. Furthermore, other researchers have challenged the rationality of lottery players based on patterns in lottery sales data. For example, Guryan and Kearney (2008) argue that the increase in sales of tickets sold at retailers that previously issued a large winning ticket is due to consumers erroneously predicting an increase in the probability that a ticket sold by the winning store will itself be a winner. If lottery players incorrectly assume non-randomness in the lottery, it raises serious questions with respect to the wisdom with which those individuals might make financial decisions after receiving a large income shock. Collectively, this suggests significant

ambiguity in how individuals might respond to receiving a financial windfall through the lottery.

The extent to which individuals use lump-sum payments to avert bankruptcy is relevant well outside of state lotteries. Indeed, this question is part of a much broader debate on what the long-term consequences of helping out financially distressed individuals are. In addition, legal scholars have long expressed concern that recipients of lump-sum cash settlements may either be unable or unwilling to smooth their consumption over time. This concern is reflected in the words of Judge Joseph Weiss of the United States Court of Appeals for the Third Circuit, who stated that “Lump-sum payments all too often are improvidently invested or squandered by unsophisticated recipients and so fail to provide for the lifetime of medical bills and unemployment faced by victims of serious injury” and calls the reliance on lump sum awards one of the “enduring weaknesses of the common law tort system” (*Jacquette v. Continental*, 1999). At least in part as a response to these concerns, there has been a shift from one-time lump-sum payments to structured settlements paid out over years, a trend that Pryor (2002) states is “perhaps the most striking development in the tort payment structure over the last 25 years.” While this trend is consistent with economic research showing that individuals may not smooth consumption over foreseeable income shocks (Shapiro, 2005; Stephens, 2003), the only evidence on this topic to our knowledge consists of informal surveys of lump-sum settlement recipients.

There are two primary reasons for the lack of careful empirical research on this issue. The first is the lack of data necessary for addressing this question; we know of no other dataset that links recipients of large lump-sum payments to measures of financial distress over the short- and long-term. More fundamentally, it is difficult to distinguish the effect of the income shock from other confounding factors. For example, individuals who receive large legal settlements typically do so because they suffered an injury that itself likely will affect future financial outcomes. Similarly, lottery players may well make different financial choices than non-lottery players even in the absence of the income shock. Consequently, estimates arising from comparisons of lump-sum recipients to non-recipients will likely suffer from omitted variable bias.

To overcome those problems, we apply a straightforward research design to a unique dataset. By linking winners of the Florida lottery during 1993 to 2002 to public bankruptcy records, we compare the bankruptcy rates of those who won \$10,000 to \$50,000 (“moderate winners”) and \$50,000 to \$150,000 (“large winners”) to those of individuals who won less than \$10,000 (“small winners”). The identifying assumption is that conditional on winning at least \$600 one time, the amount

won is uncorrelated with underlying propensity for bankruptcy. Tests support this identifying assumption: we find no difference in either the demographic characteristics or the bankruptcy rates of large winners versus small winners in the years prior to winning the lottery.

Our results show that while recipients of \$50,000 to \$150,000 are less likely to file for bankruptcy immediately following the receipt of the cash prize, this reduction represents a mere postponing of bankruptcy as it is followed by an increase in bankruptcy rates three to five years after winning. Consequently, we find no difference between the overall bankruptcy rates of small winners versus large winners in the 6 years after winning the lottery. This is true despite the fact that bankruptcy cases filed prior to winning show that most financially distressed lottery winners owed an average of \$60,000 in unsecured debt. Furthermore, bankruptcy cases filed in the 6 years after winning show no difference in the amount of unsecured debt owed by winners of \$50,000 to \$150,000 relative to that owed by recipients of less than \$10,000. This indicates that even though the median winner of a large cash prize could have paid off all of his unsecured debt with his winnings, he chose not to. Consequently, the behavior of past lottery winners suggests that winning the lottery does not yield longer-term benefits with respect to avoiding financial disaster. The results also suggest policymakers ought to use considerable caution when deciding whether to offer cash assistance to heavily indebted individuals with the hope of increasing their longer-term financial security.

2 Data

Data on lottery winners were obtained from the Florida Lottery. The data include every winner of the Fantasy 5 lottery game in Florida from April 29, 1993 through November 27, 2002. These winners represent all individuals who won more than \$600, the minimum amount federal law mandates that records be kept and reported to the Internal Revenue Service. For each lottery winner, we observe the individual's name and home zip code, the amount won (which we adjust for inflation), and the date of the drawing.

Because we ultimately link bankruptcy records to winners using their first and last names and county of residence, it is necessary to identify the set of unique names so as to minimize the number of individuals falsely linked to a bankruptcy case. Toward that end, we exclude all names that appeared more than once in 2008 phone records for that county. In addition, if lottery records indicated that an individual with a unique name from a given county won more than once, we then

use only the first time that individual won.¹ We also limit the sample to those individuals who won less than \$150,000 since only 153 Fantasy 5 winners won more than \$150,000 over this time period. As shown in Table 1, this limits the sample to 34,987 individuals.

Bankruptcy records were obtained from the electronic Public Access to Court Electronic Records database (PACER) maintained by the Administrative Office of the US Courts. In total, there were 1,433,243 personal bankruptcy records filed in Florida from 1985 to November 27, 2007. These records represent all of the Chapter 7 and Chapter 13 personal bankruptcy cases filed in the three district US bankruptcy courts in Florida. Included in these data are the first and last name of the filer along with his or her residential address, the date filed, and the chapter under which the bankruptcy case was filed. In addition, we also obtained more detailed data from the bankruptcy filings, although we were only able to do so for bankruptcies filed between January 1, 2004 and November 27, 2007 since the files were unavailable in electronic format prior to 2004. These data are discussed in more detail in Section 5.4.

Bankruptcy records represent an important outcome for several reasons. First, they are arguably the most extreme signal of financial distress. In addition, preventing bankruptcy may be socially desirable both because it is bad for creditors and because by affecting a filer's credit score, it can affect both the availability and price of future consumer loans and in some cases can also worsen one's chances of gaining employment.

The lottery winners were linked to bankruptcy filings on the basis of first and last name and county of residence, with results shown in Table 2. Each winner was linked to any bankruptcy case filed up to five years prior to winning the lottery and within five years after winning the lottery. In all, 1,934 Fantasy 5 winners were linked to a bankruptcy in the five years after winning.

While it is possible that type I or type II errors were made in linking lottery winners to bankruptcy records, neither type of error will invalidate the research design. Due to the randomness with which amount won is determined (which is discussed in the next section), we should be no more or less likely to match winners of large sums than winners of small sums except for the causal effect of winning amount on bankruptcy filing rates. However, while we are unable to determine with certainty the magnitude of the matching errors, we do note that we estimate one-year bankruptcy rates among lottery players at just less than 1% per year, which is somewhat higher than the 0.50% bankruptcy rate for all adults in Florida (including those who do not play the lottery) over the

¹Results are unchanged when these individuals are excluded from the analysis.

same time period. In light of evidence that people who play the lottery most frequently (and thus are most likely to win at least \$600) are disproportionately low-income (Cook et al, 1999), we find it unsurprising that the bankruptcy rate in our sample is higher than for the state as a whole.

3 Fantasy 5 and Identification Strategy

Fantasy 5 is a pari-mutuel lottery game in which amount won depends on the number of people who played and the number of winning tickets. The largest prizes are given for matching five of five numbers and range from less than \$10,000 to more than \$200,000, and depended largely on the structure of the game. From April 29, 1993 through July 15, 2001, individuals who matched five of five numbers won an average of about \$20,000, though depending on the number of winners the amount won varied from \$1,300 to \$132,000. Beginning on July 16, 2001 the game changed such that the average amount won for matching 5 numbers increased to \$120,000. On days in which no one matched five of five numbers, people who matched 4 numbers won an average of \$900. Consequently, because the number of winners changed over time, it is important for our main analysis to control for that as well as for year fixed effects. Finally, while it is possible for individuals to play up to ten times on each card, this only presents a problem for our analysis to the extent that people play identical numbers on each card.² Perhaps more importantly, we show that the results are robust to excluding individuals who played the same numbers more than once per card in Section 5.3. In addition, in Section 5.1 we show that recipients of large cash prizes were no more or less likely to file for bankruptcy before they won than were recipients of small cash prizes, which suggests that except for the difference in amount one, we would not expect bankruptcy rates to differ systematically after winning the lottery either.

Our identification strategy relies on the assumption that conditional on winning at least \$600 in Fantasy 5 for the first time, the amount won is uncorrelated with underlying propensity for bankruptcy. Consequently, we compare the bankruptcy rates of winners of large cash prizes to those of small cash prizes. This is similar to approaches employed in other papers to examine the effect of income on health and mortality (Lindahl, 2005) and the effect on labor earnings, savings, and consumption (Imbens et al, 2001).

²If individuals play different numbers (say) 10 times on a card, at most one number can win. Consequently, while this means some people are more likely to enter our data than others (i.e., those who play the lottery more frequently or play more numbers on a card), conditional on winning \$600 the amount won is still uncorrelated with underlying propensity for filing for bankruptcy.

An important advantage of this identification strategy is that it can be empirically tested in two ways. First, in results available upon request, we show that amount won is not explained by winners’ neighborhood characteristics. Second, and more importantly, we show that that amount won is uncorrelated with bankruptcy rates prior to winning. Collectively these tests suggest that any difference in the post-winning bankruptcy rates of large winners versus small winners is properly interpreted as the causal effect of the lottery winnings.

4 Methodology

Given the intuitive research design applied, the simplest way to determine the effect of receiving large cash transfers on bankruptcy is to compare the bankruptcy rates of recipients of large cash prizes to those small-cash prize recipients. In addition to comparing the bankruptcy rates of these groups graphically before and after winning the lottery, we also do so using ordinary least squares regression. Specifically, we estimate:

$$Bankruptcy_i = \alpha_i + \beta_0(\text{After Change in Game Structure on July 16, 2001})_i + \beta_1(\$10,000 \leq \text{Amount} < \$50,000)_i + \beta_2(\$50,000 \leq \text{Amount} < \$150,000)_i + \epsilon_i$$

where $Bankruptcy_i$ is a dummy variable equal to one if individual i filed for bankruptcy within a given number of years after winning, α_i is a set of fixed effects for the year in which the individual won, $(\text{After Change in Game Structure on July 16, 2001})_i$ is a dummy variable equal to one if the individual won after the structure of the game was changed, and the remaining variables are dummy variables for various ranges of amounts won where the excluded group are those individuals who won less than \$10,000. While one may object that winning \$10,000 may have its own effect on bankruptcy rates, we choose that as the cutoff for the control group because prior to July 16, 2001 there were relatively few winners of less than \$3,000. However, in Section 5.3 we show that the results are robust to using smaller cash prizes as the omitted group.

Finally, for ease of exposition, we will hereafter refer to recipients of less than \$10,000 as “small winners,” winners of \$10,000 to \$50,000 as “moderate winners,” and winners of \$50,000 to \$150,000 as “large winners.”

5 Results

5.1 Tests of the Identification Strategy

To demonstrate that the size of the income shock is random and thus uncorrelated with underlying financial well-being, we examine the extent to which filing for bankruptcy prior to winning the lottery is correlated with the amount later won. So long as the amount won is uncorrelated with underlying propensity to file for bankruptcy conditional on winning, there should be no difference between the bankruptcy rates of individuals who later win large amounts and those of individuals who later win small amounts.

This is shown graphically in Figure 1, which plots flows into bankruptcy before and after winning for both small winners and large winners. As shown there, the bankruptcy rates of individuals who later win the lottery are similar regardless of amount later won.

This is confirmed more formally in Table 3 in which the first column shows differences in unconditional means and the second column includes year fixed effects. Results there reveal that although unconditional means indicate that those who won between \$10,000 and \$150,000 were less likely to file for bankruptcy than were small winners in the period before winning, this difference is dramatically diminished and is no longer statistically significant once one controls for either the change in game structure (column (2)), year fixed effects (column (3)), or both (column 4). Consequently, once one accounts for the time effects due to the changes in the structure of the Fantasy 5 game over time (which is correlated with the economic conditions affecting bankruptcy), there is little correlation between the amount won and the underlying propensity to file for bankruptcy. This is also shown graphically in Figures A.1 – A.3 in the Appendix.

5.2 The Effect of Lottery Winnings on Bankruptcy Rates

We now turn to estimating the impact of receiving large cash prizes on future bankruptcy rates. Figure 1 shows the flows into bankruptcy for large and small winners after winning the lottery and shows that large winners are much less likely to file for bankruptcy in the two years after winning. This pattern reverses from years three through 5, however, during which time large winners are more likely to file for bankruptcy than are small winners.

To investigate this pattern more rigorously, we estimate the impact of winning large lump sums on bankruptcy rates within two years, from three to five years, and within five years after winning.

Results are shown in Table 4, where column (1) shows unconditional differences, column (2) controls for the change in the game structure, column (3) controls for year fixed effects, and column (4) controls for both the change in the game structure and year fixed effects. Consistent with Figure 1, we find statistically significant decreases in bankruptcy rates in the two years after winning, a result that is consistent across all of the specifications. Our preferred specification in column (4) shows that the bankruptcy rates of moderate and large winners fall 0.87 and 1.63 percentage points in the first two years, which represents relative declines of 27 to 50 percent. This decline is offset, however, by increases between 0.5 and 1.21 percentage points three to five years after winning, respectively, although the increase is only statistically significant for large winners. The net result is that within five years after winning, moderate and large winners are no more or less likely to file for bankruptcy than are small winners. This is true despite the fact that the median large winner won a cash prize (\$65,000) that was sufficient to pay off all of the unsecured debt owed by the most financially distressed lottery players (\$52,000) at the time of winning.³

In order to show that this pattern is not driven by the admittedly arbitrary definitions of large versus moderate versus small winners, we also show how bankruptcy rates over these time periods vary across the full distribution of earnings. Figures 2, 3, and 4 show the bankruptcy rates of all individuals within two years, from three to five years, and within five years of winning the lottery. The graphical evidence is consistent with that presented in Table 4: Figure 2 shows that the likelihood of filing for bankruptcy within the first two years after winning is smaller for winners of large cash prizes while Figure 3 shows that this trend reverses three to five years after winning. Finally, Figure 4 shows there is little evidence that winning larger cash prizes affects overall bankruptcy rates in the five years after winning.

5.3 Robustness of the Results

We investigate the robustness of these results in three ways. First, as discussed earlier the omitted group in the analysis has thus far been individuals who won less than \$10,000. While that was done in order to construct a dataset that was balanced in that each year had reasonable numbers of both small and large winners, one might be concerned that winning up to \$10,000 has its own effect on bankruptcy rates. Consequently, we examine whether the effect is different when we estimate

³The figure of \$52,000 comes from the bankruptcy filings of lottery players who filed for bankruptcy in the year prior to winning the lottery. These data are discussed in more depth in Section 5.4.

effects relative to winning less than \$2,500. Results are shown in Table 5, where the first column serves as a reference by showing the preferred result from column (4) of Table 4 in which we control for both the change in the structure of the game and year fixed effects. Results in which winners of less than \$2,500 are the control group are shown in column (2) and show similar declines in bankruptcy rates for moderate and large winners in the two years after winning while showing statistically significant increases in bankruptcy rates for moderate and large winners three to five years after winning.

Second, we further address the question of whether recipients of large cash prizes are otherwise similar to winners of relatively small prizes by excluding all those individuals who played the same numbers more than once on the same lottery card. To do so, we excluded the approximately 20% of lottery winners in our sample who won more than the minimum amount observed to be won on a given date. For example, an individual who matched five of five numbers one time on December 10, 2002 won \$71,662.70 and was kept in the dataset for this robustness check. However, an individual who played two times (\$2) on the same card and matched five of five numbers and four of four numbers (worth \$82.00) was excluded, as was an individual who played the same five numbers two or more times and won some multiple of \$71,662.70.

As shown in the third column of Table 5, this exclusion makes very little difference as we still see the pattern of moderate and large winners initially reducing bankruptcies after winning, but then filing at higher rates. This provides comfort that the results are unaffected by the fact that in a relatively small proportion of cases individuals win more because they played identical numbers multiple times on the same card.

Third, we examine whether bankruptcy reform is responsible for any of the results. The Bankruptcy Abuse Prevention and Consumer Protection Act (BAPCPA) reform was signed on April 20, 2005 and went into effect on October 17, 2005. However, increases in bankruptcies were seen beginning in March of 2005 in anticipation of the law and rates peaked in October of 2005 as filers rushed to file before the tougher laws went into effect. It is worth pointing out, however, that the initial drop in bankruptcy rates in the two years after winning cannot be a consequence of either the expectation or implementation of bankruptcy reform since the most recent winners in our sample won on November 26, 2002. Furthermore, while we would expect that year fixed effects would take care of much of this issue for the longer time horizons, we also construct two control variables capture exposure to these effects more precisely. The first measures the number

of months during the time period in question (either three to five years after winning or within five years of winning) in which the individual faced a greater incentive to file for bankruptcy given the expectation that BAPCPA would take effect. The second control variable measures the number of months during the time period in question in which the lottery winner faced a reduced probability of filing for bankruptcy due to the tougher bankruptcy laws. For example, an individual who won on June 1 of 2001 was exposed to all 7.5 months in which consumers expected (from March 1 of 2005 through October 16, 2005) a tougher bankruptcy law in the future and 7.5 months facing the new bankruptcy law (from October 17, 2005 when the new law went into effect through May 31, 2006, exactly five years after winning).

Results are shown in the fourth column of Table 5 and are consistent with the findings presented earlier and shown in column (1), i.e., the bankruptcy rates of moderate and large winners drop significantly in the first two years, though rates increase three to five years after winning.

Collectively, this suggests that the results are unaffected by the choice of control group, the exclusion of individuals who played identical numbers more than one time on a card (and thus won more money), or differential exposure to bankruptcy reform between small and large winners.

5.4 The Effect of Lottery Winnings on Debt and Expenditures at Bankruptcy

Given the similarity in the bankruptcy rates between large and small winners in the five years after winning, we also investigate whether outstanding debts of large winners who filed for bankruptcy was similar to outstanding debts of small winners. For example, even if winning \$10,000 to \$50,000 or \$50,000 to \$150,000 does not affect one's likelihood of filing for bankruptcy, it may be that those individuals who file for bankruptcy are less in debt than those who won less than \$10,000. Consequently, we obtained data on cases filed after 2004 for which the details of the bankruptcy were available electronically. Specifically, we pulled and coded information from a random sample of individuals who won less than \$5,000 and 1) filed in the year prior to winning, or 2) filed zero to two years after winning, or 3) filed between three and five years after winning. In addition, we looked up the case filings of all individuals who filed after 2004 and for whom the filing was either one year before winning, zero to two years after winning, or two to five years after winning. We wish to emphasize that many of these lottery winners were not in our original dataset since we could only look up the details for cases filed after 2004.

The descriptive statistics for this sample of individuals are shown in Table 6. Panel A shows

that there is no statistical difference between the assets, debts, incomes, and expenditure patterns of large winners and small winners who filed for bankruptcy before winning the lottery—consistent with the evidence presented in Table 3 that shows the two groups are otherwise similar in terms of their underlying propensity to file for bankruptcy.

Panel B shows the assets and debts of large and small winners who filed in the two years after winning. It shows that the net assets of large winners who filed had over \$20,000 less in net assets (assets minus debts) than did small winners. Furthermore, among those lottery winners who reported types of debt incurred, large winners who filed within two years after winning owed \$27,000 more in unsecured debt than did small winners. This suggests that the large winners who did not postpone bankruptcy for more than two years after winning were those who were most heavily indebted, which is unsurprising given the evidence presented earlier on bankruptcy rates.

Panel C shows the assets and debts of large and small winners who filed between three and five years after winning. Here it is clear that the large winners who file had incurred less debt than small winners who filed, which again is consistent with the interpretation that some of these individuals had postponed bankruptcy from the first two years after winning but not reduced it overall.

Finally, Panel D of Table 6 shows the characteristics of lottery winners who filed for bankruptcy within five years of winning the lottery. There, it is striking that the net assets of individuals who had won between \$25,000 and \$150,000 were only \$10,000 higher than those of people who won less than \$5,000. Furthermore, small winners who reported unsecured debt reported an average of \$63,447 while large winners reported a similar average unsecured debt of \$57,361. This suggests that whatever the recipients did with their cash prizes, it neither reduced the amount of debt that they ultimately set out to clear in bankruptcy court nor increased their level of assets. This finding is roughly consistent with that of Agarwal, Liu, and Souleles (2007) who find that although consumers initially used federal rebate checks to reduce debt, eventually debt levels returned to their pre-rebate levels. The fact that the same appears to be true even when consumers receive vastly larger cash transfers is, however, striking.

5.5 Attrition

As noted earlier, individuals were linked to bankruptcy based on first and last name as well as county of residence. Given this approach, attrition will cause a problem for identification under

two conditions: 1) the amount won is correlated with propensity to move out of the county, and 2) at least some of the individuals who selected out of the county on the basis of amount won filed for bankruptcy in the next five years. That is, if migration is orthogonal to amount won, then there will be no bias. Similarly, if none of the individuals who select out of the county file for bankruptcy, then there is no error in who is ultimately matched to a bankruptcy.

In thinking about the likelihood of leaving one's county in Florida for another, it is worth noting that counties in Florida represent relatively large geographic areas. For example, the average (by population) county in Florida is 1,866 square miles, or more than six times the size of New York City.⁴ In addition, Florida is a net in-migration state over the time period in question. Consequently, exiting the county after winning \$50,000 to \$150,000 is less likely in Florida than it would be in other states.

Although we are unaware of a method of tracking people who move out of a county, we can address the issue of attrition by examining whether amount won is correlated with the likelihood that the individual will be found in the 2008 phone book 1, 2, 3, 4, 5, and 6 years after winning. While this is clearly an imperfect test due to the fact that some households no longer have landlines, some individuals in a household with a landline are not listed in the phone book, and winning the lottery could potentially enable individuals to afford a landline, this exercise may be instructive nonetheless. One might especially be concerned if large winners were much less likely to show up in the phone book in the first two years after winning the lottery, but then were much more likely to show up in the phonebook from two to five years after winning. In that case, one might worry that the results were being driven by selective migration out of the county.

The results from this exercise (available upon request) show no evidence of such a pattern. Specifically, we find that large winners were a statistically insignificant 3.0 percentage points more likely to show up in the phone book within two years of winning the lottery than were small winners, of whom 30.4% were listed in the county phone book. The difference in years three through 6 is a similarly insignificant 3.1 percentage points. Collectively, this provides suggestive evidence that the pattern seen in bankruptcy rates is not driven by selective migration out of the county.

⁴Sources: www.fl-counties.com and www.census.gov/popest.

5.6 Are Individuals Gaming the Bankruptcy System in Florida?

Given the unlimited homestead exemption for Florida residents filing for bankruptcy, one may be concerned that moderate and large winners are gaming the bankruptcy system by purchasing a house (or paying down their mortgage) after winning and then filing for bankruptcy. While this possibility is deemed unlikely by all of the bankruptcy lawyers with whom we have spoken⁵ and appears inconsistent with other evidence more supportive of a notion of bounded rationality among lottery players (Guryan and Kearney, 2008), we can investigate this issue empirically. To do so, we examine the debt and asset levels of small and large winners who file in the five years after winning as shown in Table 6. If large winners were using their winnings to purchase equity in a primary residence, then one would expect that large winners would have a higher level of net assets (assets – debts). However, data in Table 6 suggest that this is not the case. Specifically, as described earlier we find that winners of \$25,000 to \$150,000 have net assets that are a statistically insignificant \$10,000 higher than those of winners of less than \$5,000. This suggests that the individuals used their lottery winnings for consumption rather than for purchasing an asset such as real estate. Consequently, while we cannot rule out the possibility that any one lottery winner is gaming the bankruptcy system, the evidence appears to lend little support to—if not contradict—the story that on average moderate and large lottery winners purchase equity in a house and then file for bankruptcy.

6 Conclusion

We investigate the extent to which receiving large lump sums of cash affect the likelihood of bankruptcy in the short- and long-term. To distinguish the effect of the unexpected income shock from other confounding factors, we compare the bankruptcy rates of lottery players who won between \$10,000 and \$50,000 or between \$50,000 and \$150,000 to those of individuals who won less than \$10,000. Consistent with the identifying assumption that the magnitude of the prize won is randomly assigned conditional on winning, we find no statistical difference between either the bankruptcy rates of the large and small winners in the years prior to winning the lottery nor in the assets, debts, incomes, or expenditures of those winners who did file prior to winning the lottery.

⁵One in particular commented that this type of behavior is so unlikely that “only economists would be concerned about that.”

The results indicate that while the lump-sum payments reduce the probability of bankruptcy in the first two years after winning in an economically and statistically significant way, this reduction is followed by statistically significant increases of similar magnitude three to five years after winning. This is true despite the fact that the median large winner in our sample received a large enough prize that she could have paid off all of the unsecured debt of the most indebted lottery players. Furthermore, a deeper examination of the bankruptcy filings shows that not only are the rates of bankruptcy not different overall, but recipients of \$50,000 to \$150,000 who later filed for bankruptcy did so with similar levels of net assets and unsecured debt. This provides compelling evidence that winning reasonably large cash prizes in the lottery only enables individuals to postpone rather than avert bankruptcy. Consequently, the results imply policy-makers should be cautious when trying to help indebted individuals avoid bankruptcy by offering them additional resources.

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Table 1: The Sample of Unique, First-Time Lottery Winners in Florida
May 1993 – December 2002

Amount	All Fantasy 5 Winners		Unique in Phone Book		First Time Winners	
	Freq.	Percent	Freq.	Percent	Freq.	Percent
<\$1,000	8,494	15.08	5,670	14.56	4,888	13.93
\$1,000 - \$2,500	15,239	27.06	10,190	26.17	8,657	24.68
\$2,500 - \$5,000	413	0.73	295	0.76	274	0.78
\$5,000 - \$7,500	577	1.02	404	1.04	373	1.06
\$7,500 - \$10,000	728	1.29	513	1.32	476	1.36
\$10,000 - \$15,000	3,028	5.38	2,144	5.51	1,964	5.60
\$15,000 - \$20,000	5,682	10.09	4,038	10.37	3,760	10.72
\$20,000 - \$25,000	6,298	11.18	4,460	11.45	4,177	11.91
\$25,000 - \$30,000	5,418	9.62	3,836	9.85	3,610	10.29
\$30,000 - \$35,000	3,911	6.95	2,764	7.10	2,583	7.36
\$35,000 - \$40,000	2,183	3.88	1,582	4.06	1,499	4.27
\$40,000 - \$45,000	1,446	2.57	1,042	2.68	975	2.78
\$45,000 - \$50,000	802	1.42	574	1.47	539	1.54
\$50,000 - \$60,000	837	1.49	553	1.42	512	1.46
\$60,000 - \$70,000	393	0.70	287	0.74	271	0.77
\$70,000 - \$80,000	209	0.37	150	0.39	134	0.38
\$80,000 - \$90,000	124	0.22	77	0.20	69	0.20
\$90,000 - \$100,000	130	0.23	90	0.23	79	0.23
\$100,000 - \$150,000	248	0.44	167	0.43	147	0.42
Total	56,160	100	38,836	100	34,987	100

Table 2: Lottery Players Linked to Bankruptcy Cases

Amount Won	Within 2 Years			Between 3 & 5 Years			Within 5 Years		
	No Bankruptcy	Bankruptcy	% Bankruptcy	No Bankruptcy	Bankruptcy	% Bankruptcy	No Bankruptcy	Bankruptcy	% Bankruptcy
<\$1,000	4,742	146	2.99	4,767	121	2.48	4,621	267	5.46
\$1,000 - \$2,500	8,367	290	3.35	8,399	258	2.98	8,109	548	6.33
\$2,500 - \$5,000	264	10	3.65	264	10	3.65	254	20	7.30
\$5,000 - \$7,500	367	6	1.61	357	16	4.29	351	22	5.90
\$7,500 - \$10,000	467	9	1.89	462	14	2.94	453	23	4.83
\$10,000 - \$15,000	1,937	27	1.37	1,886	78	3.97	1,859	105	5.35
\$15,000 - \$20,000	3,705	55	1.46	3,628	132	3.51	3,573	187	4.97
\$20,000 - \$25,000	4,112	65	1.56	4,026	151	3.62	3,961	216	5.17
\$25,000 - \$30,000	3,554	56	1.55	3,474	136	3.77	3,418	192	5.32
\$30,000 - \$35,000	2,548	35	1.36	2,494	89	3.45	2,459	124	4.80
\$35,000 - \$40,000	1,476	23	1.53	1,433	66	4.40	1,410	89	5.94
\$40,000 - \$45,000	959	16	1.64	946	29	2.97	930	45	4.62
\$45,000 - \$50,000	532	7	1.30	514	25	4.64	507	32	5.94
\$50,000 - \$60,000	507	5	0.98	493	19	3.71	488	24	4.69
\$60,000 - \$70,000	269	2	0.74	255	16	5.90	253	18	6.64
\$70,000 - \$80,000	132	2	1.49	129	5	3.73	127	7	5.22
\$80,000 - \$90,000	69	0	0.00	66	3	4.35	66	3	4.35
\$90,000 - \$100,000	77	2	2.53	75	4	5.06	73	6	7.59
\$100,000 - \$150,000	146	1	0.68	142	5	3.40	141	6	4.08
Total	34,230	757	2.16	33,810	1,177	3.36	33,053	1,934	5.53

Table 3: Falsification Test

The Effect of Later Winning the Lottery on Bankruptcy Rates

	(1)	(2)	(3)	(4)
Panel 1	Bankruptcy Rate in the 2 Years <i>prior</i> to Winning			
Won \$10,000 - \$50,000	-0.0061*** (0.0015)	-0.0011 (0.0035)	-0.0028 (0.0031)	-0.0006 (0.0036)
Won \$50,000 - \$150,000	0.0002 (0.0041)	0.0037 (0.0046)	0.0026 (0.0045)	0.0041 (0.0046)
Panel 2	Bankruptcy Rate 3 to 5 Years <i>prior</i> to Winning			
Won \$10,000 - \$50,000	-0.0134*** (0.0016)	0.0024 (0.0039)	0.0043 (0.0033)	0.0041 (0.0039)
Won \$50,000 - \$150,000	-0.0123*** (0.0044)	-0.0013 (0.0051)	-0.0001 (0.0049)	-0.0002 (0.0051)
Panel 3	Bankruptcy Rate in the 5 Years <i>prior</i> to Winning			
Won \$10,000 - \$50,000	-0.0195*** (0.0022)	0.0013 (0.0052)	0.0015 (0.0045)	0.0035 (0.0052)
Won \$50,000 - \$150,000	-0.0121** (0.0060)	0.0024 (0.0068)	0.0025 (0.0066)	0.0039 (0.0068)
Number of Observations	34,987	34,987	34,987	34,987
Controls for Change in Game Structure?	No	Yes	No	Yes
Includes year fixed effects?	No	No	Yes	Yes

Effects reported are relative to winning less than \$10,000. Asterisks *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 4: The Effect of Winning the Lottery on Bankruptcy Rates

	(1)	(2)	(3)	(4)
Panel 1	Bankruptcy Rate within 2 Years after Winning			
Won \$10,000 - \$50,000	-0.0166*** (0.0016)	-0.0086** (0.0038)	-0.0106*** (0.0033)	-0.0087** (0.0038)
Won \$50,000 - \$150,000	-0.0215*** (0.0043)	-0.0160*** (0.0050)	-0.0176*** (0.0048)	-0.0163*** (0.0050)
Panel 2	Bankruptcy Rate 3 to 5 Years after Winning			
Won \$10,000 - \$50,000	0.0084*** (0.0020)	0.0040 (0.0047)	0.0081** (0.0041)	0.0050 (0.0047)
Won \$50,000 - \$150,000	0.0143*** (0.0054)	0.0113* (0.0062)	0.0143** (0.0059)	0.0121** (0.0062)
Panel 3	Bankruptcy Rate within 5 Years after Winning			
Won \$10,000 - \$50,000	-0.0082*** (0.0025)	-0.0046 (0.0059)	-0.0025 (0.0051)	-0.0036 (0.0060)
Won \$50,000 - \$150,000	-0.0072 (0.0068)	-0.0047 (0.0078)	-0.0034 (0.0075)	-0.0042 (0.0078)
Number of Observations	34,987	34,987	34,987	34,987
Controls for Change in Game	No	Yes	No	Yes
Includes year fixed effects?	No	No	Yes	Yes

Effects reported are relative to winning less than \$10,000. Asterisks *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 5: Robustness Checks

	(1)	(2)	(3)	(4)
Panel 1	Bankruptcy Rate within 2 Years after Winning			
Won \$10,000 - \$50,000	-0.0087** (0.0038)	-0.0116* (0.0067)	-0.0087** (0.0038)	-0.0087** (0.0038)
Won \$50,000 - \$150,000	-0.0163*** (0.0050)	-0.0184*** (0.0064)	-0.0163*** (0.0050)	-0.0163*** (0.0050)
Panel 2	Bankruptcy Rate 3 to 5 Years after Winning			
Won \$10,000 - \$50,000	0.0050 (0.0047)	0.0117 (0.0084)	0.0040 (0.0051)	0.0053 (0.0047)
Won \$50,000 - \$150,000	0.0121** (0.0062)	0.0171** (0.0080)	0.0073 (0.0068)	0.0122** (0.0062)
Panel 3	Bankruptcy Rate within 5 Years after Winning			
Won \$10,000 - \$50,000	-0.0036 (0.0060)	0.0002 (0.0106)	-0.0045 (0.0065)	-0.0034 (0.0060)
Won \$50,000 - \$150,000	-0.0042 (0.0078)	-0.0014 (0.0101)	-0.0080 (0.0086)	-0.0041 (0.0078)
Number of Observations	34,987	34,987	29,271	34,987
Controls for change in game structure?	Yes	Yes	Yes	Yes
Includes year fixed effects?	Yes	Yes	Yes	Yes
Excluded Group	<\$10,000	<\$2,500	<\$10,000	<\$10,000
Sample	All	All	Only Those Who Played Identical Numbers Once Per Card	All
Controls for quadratic of the months of exposure to bankruptcy reform?	No	No	No	Yes

Effects for columns (1), (3), and (4) are relative to winning less than \$10,000; effects in column (2) are relative to less than \$2,500 (the effect of winning \$2,500 to \$10,000 is not reported in column (2)). Estimates reported in column (1) are the same as those reported in column (4) of Table 4. Column (4) includes a quadratic of the months exposed to the anticipation of bankruptcy reform during March 1, 2005 through October 16, 2005 as well as a quadratic of the months exposed to the new bankruptcy law which took effect on October 17, 2005. Asterisks *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

**Table 6: Debt, Assets, Expenditures, Income
of Lottery Winners who Filed for Bankruptcy**

Panel A: Filed prior to Winning

	Prize ≤ \$5000	Prize \$25,000-150,000	Difference
Total Debt (\$)	111,061	120,888	9,827
Total Assets (\$)	75,022	100,127	25,104
Net Assets (\$)	-36,039	-20,761	15,278
Current Monthly Income (\$)	2,171	2,230	59
Current Monthly Expenditures (\$)	2,378	2,403	26
N	36	17	

Panel B: Filed within 2 Years after Winning

	Prize ≤ \$5000	Prize \$25,000-150,000	Difference
Total Debt (\$)	129,963	160,895	30,932
Total Assets (\$)	108,884	119,238	10,354
Net Assets (\$)	-21,078	-41,656	-20,578
Current Monthly Income (\$)	2,484	2,629	144
Current Monthly Expenditures (\$)	2,517	3,244	726*
N	50	14	

Panel C: Filed between 3 and 5 Years after Winning

	Prize ≤ \$5000	Prize \$25,000-150,000	Difference
Total Debt (\$)	156,786	82,312	-74,474***
Total Assets (\$)	135,696	85,695	-50,001**
Net Assets (\$)	-21,091	3,383	24,474**
Current Monthly Income (\$)	2,275	1,771	-504*
Current Monthly Expenditures (\$)	2,708	2,187	-521*
N	53	33	

Panel D: Filed between 0 and 5 Years after Winning

	Prize ≤ \$5000	Prize \$25,000-150,000	Difference
Total Debt	143,890	105,720	-38,171**
Total Assets	122,680	95,687	-26,994
Net Assets	-21,210	-10,033	11,177
Monthly Income	2,381	2,016	-365*
Monthly Expenditures	2,612	2,489	-123
N	103	47	

Notes: Each Panel shows average dollar amounts of current monthly income, current monthly expenditures, total debt, total assets, and net assets at the time of bankruptcy filing for winners in Florida's Fantasy 5 lottery game. * , ** and *** represent significant difference in means of large and small winners at the 10%, 5% and 1% levels, respectively. Total assets may not equal unsecured debt plus secured debt because each of the bankruptcy districts in FL use different forms to consolidate debt and asset information. Source: PACFR.

Figure 1: Flows into Bankruptcy Before and After Winning the Lottery

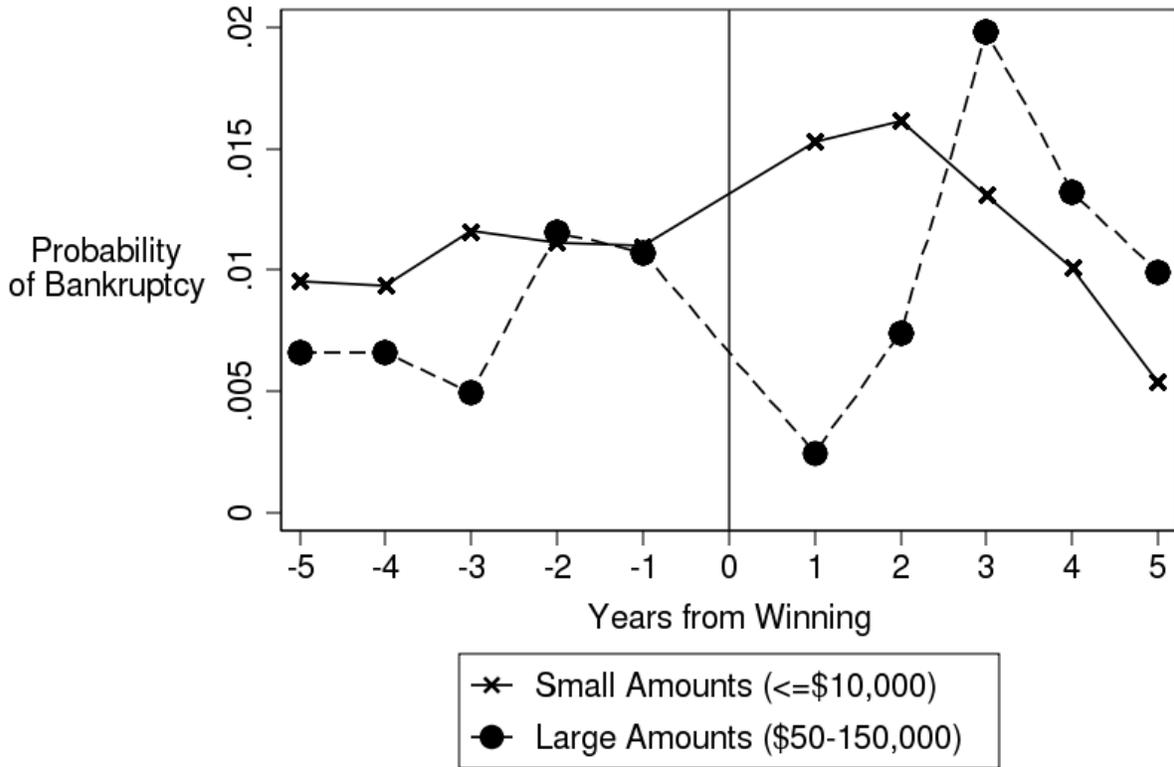


Figure 2: Bankruptcy Rates in the First Two Years after Winning the Lottery

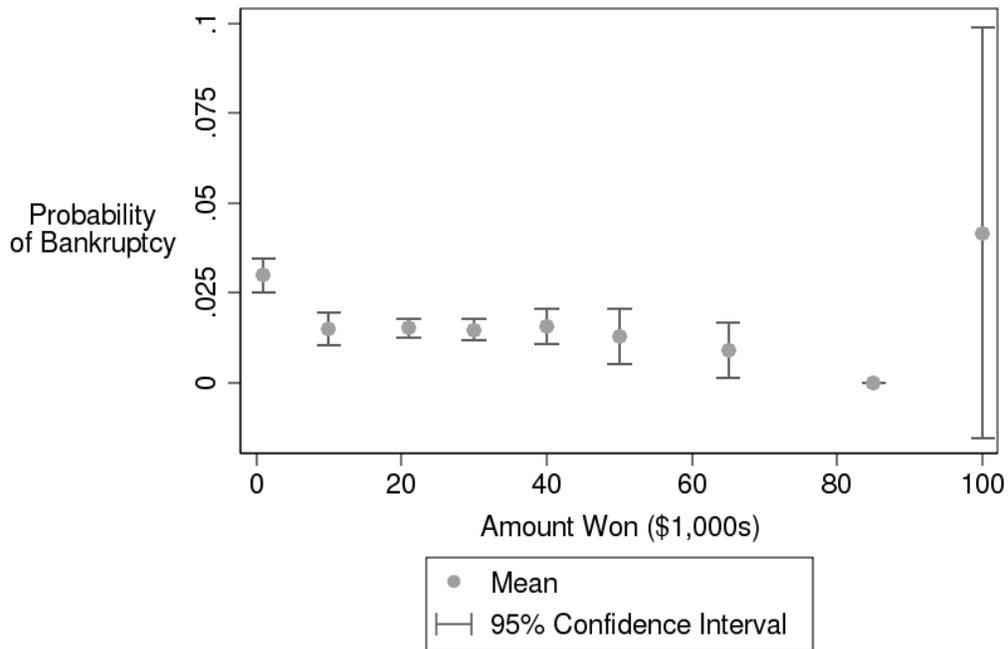


Figure 3: Bankruptcy Rates 3 to 5 Years After Winning the Lottery

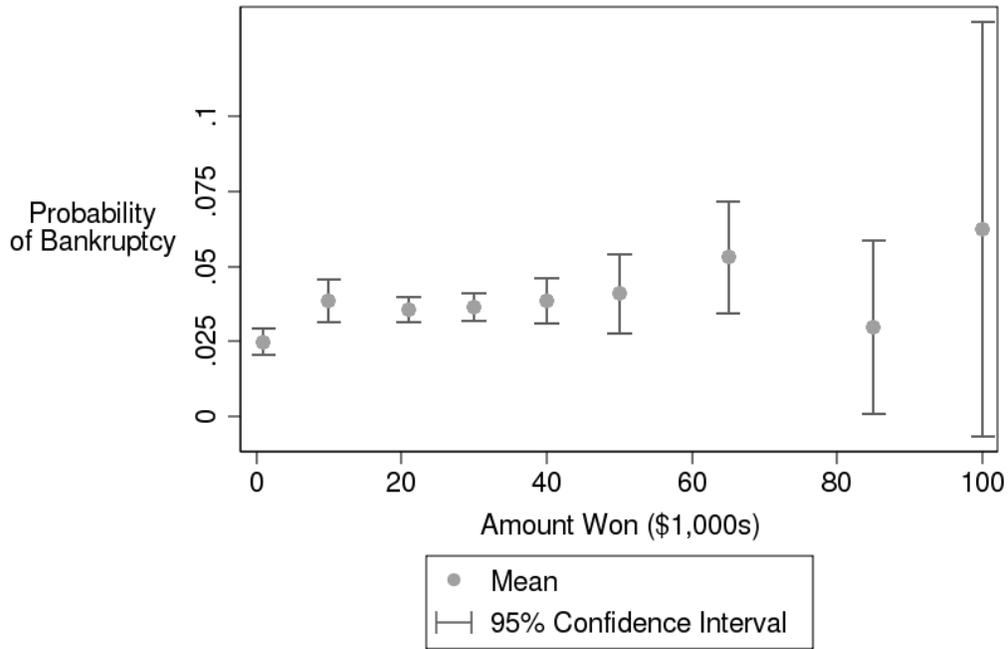
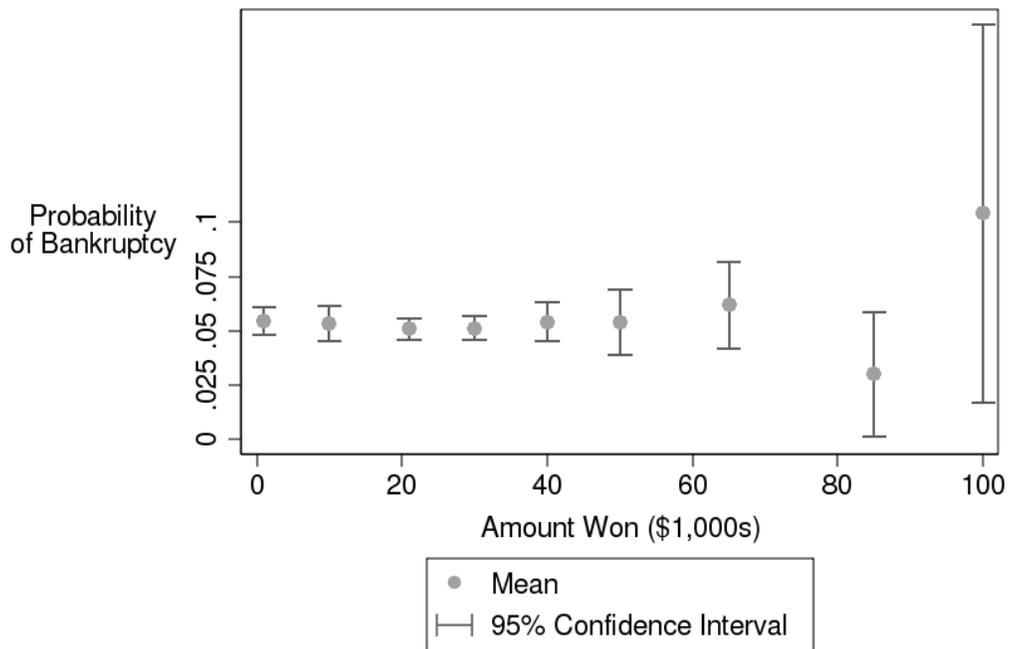


Figure 4: Bankruptcy Rates in the 5 Years After Winning the Lottery



Appendix

Figure A.1: Bankruptcy Rates in the 2 Years *Before* Winning the Lottery

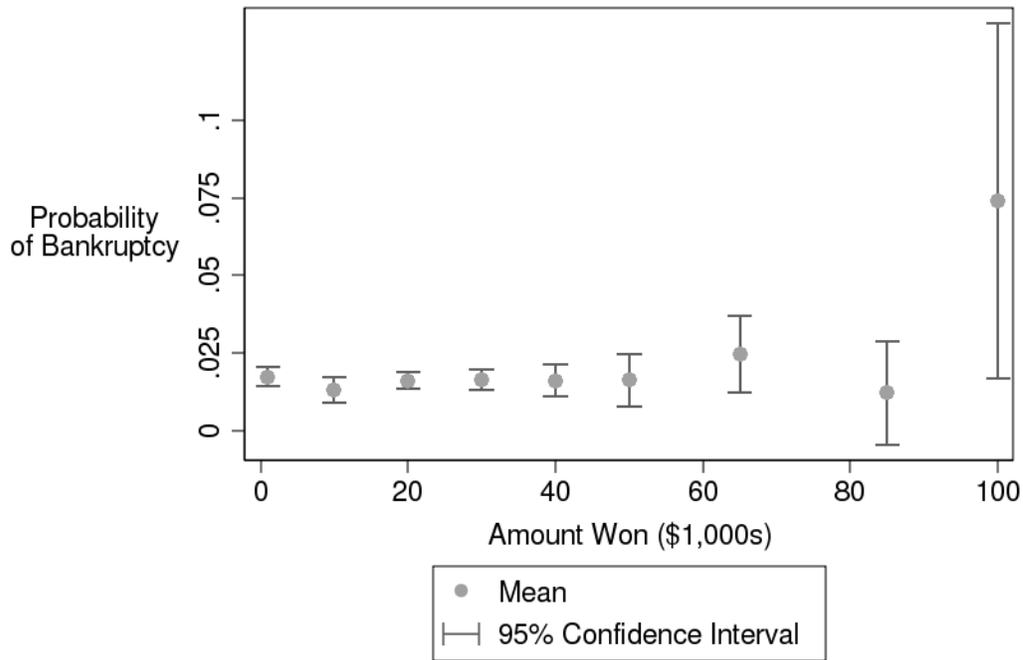


Figure A.2: Bankruptcy Rates 3 to 5 Years *Before* Winning the Lottery

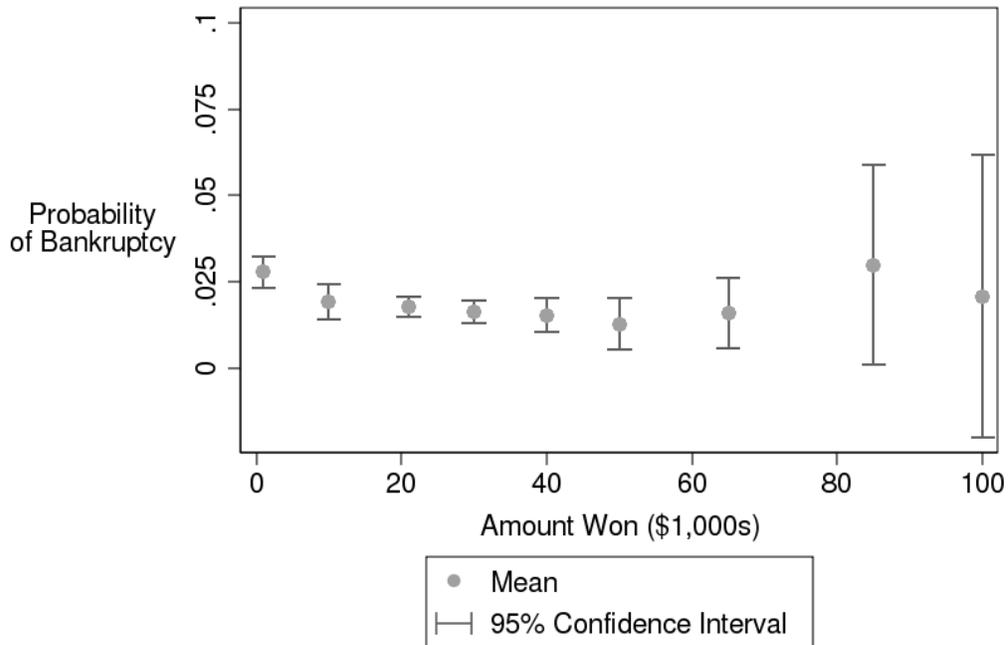


Figure A.3: Bankruptcy Rates in the 5 Years *Before* Winning the Lottery

