Financial Literacy: The case of Personal Bankruptcy and Consumer Credit Delinquency

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Abstract

Given the increasing complexities of the financial markets as well as a shift away from employer/government sponsored pensions to individuals managing their retirement fund, financial literacy is an important tool in order to navigate the evolving and complex financial environment. In this paper, I examine the impact of financial literacy on credit delinquency. Prior studies show that financial literacy affects financial decisions such as savings, retirement planning, wealth accumulation and stock market participation. Using data on personal bankruptcy and consumer credit delinquency rates, I show that financial literacy is important in reducing personal bankruptcy as well as consumer credit delinquency rates. Furthermore, for personal bankruptcy, financial literacy is important in both states with legalized gambling and those without. Also, for mortgage loan, auto loan, credit card debt and student loan delinquency rates, financial literacy is particularly important in states with legalized gambling.

JEL: G10, I22, I23

Key Words: Consumer Credit, Delinquency**,** Personal Finance Education, Economic Education, K-12, Personal Bankruptcy

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1.0 Introduction

Given a shift from an era of company pension to asset-based policies that require individuals to make more choices that can affect their financial well-being and manage their retirement wealth, basic financial literacy becomes a prerequisite. Furthermore, given that financial markets are becoming increasingly accessible and services such as payday loans, pawn shops, auto title loans, tax refund loans and rent-to-own shops have become widespread (Lusardi and Mitchell, 2014), the need for financial literacy has increased in importance in order to avoid costly financial mistakes.

In fact, Anthes (2004) argues that just as individuals must have basic reading and math literacy to navigate today's world, they also need basic money-management skills, that is financial literacy.[1] Furthermore, when individuals lack basic money-management skills and knowledge to evaluate financial options, they will continue to make poor financial choices that lower their standard of living and jeopardize their financial security (Anthes, 2004). Hence, this potentially can lead to personal bankruptcy and increased consumer credit delinquency rates. Furthermore, Fox et al. (2005) argue that burdensome consumer debt, low savings rates and record bankruptcies are commonly considered the results of lower financial literacy levels. In addition, financial literacy differs substantially depending on education, age, income, gender and those living in rural areas (for example, Lusardi and Mitchell (2014); Hsu (2011), Rooij et al. (2011); Lusardi and Mitchell (2007); Lusardi, Mitchell and Curto (2010); and Hilgert and Hogarth (2002))[2]. Lusardi and Mitchell (2014) argue that it is socially optimal to raise financial knowledge for everyone early in life. Similarly, Lusardi, Michaud and Mitchell (2011) show that providing pre-labor market financial knowledge to the least educated group improves their wellbeing by an amount equivalent

[1] Jump$tart defined financial literacy as the ability to use knowledge and skills to manage one's financial resources effectively for lifetime financial security (Jump$tart Survey of Financial Literacy Among High School Students, 1997).
[2] Lusardi and Mitchel (2014) presented a comprehensive review of the literature and the economic importance of financial literacy.

to 82 percent of their initial wealth. Therefore, it is important to examine the impact of mandating financial education in K-12 curriculum on consumer credit delinquency and personal bankruptcy.

Financial literacy can be organized into three broad categories: firstly, programs directed to improve financial literacy broadly by focusing on topics such as budgeting, saving and credit management. Secondly, programs focusing on retirement and savings provided by employers and thirdly, programs addressing home buying and ownership. In this paper, I focused on the first category by utilizing a unique environment in the U.S where some states require economics and financial education classes in high school while other states do not have such a requirement to investigate whether financial education is important in reducing the frequency of personal bankruptcy filing as well as the rate of credit delinquency for mortgages, credit cards as well as auto and student loans.

There is an ongoing debate whether financial education should be included in high school curriculum in the U.S as well as other developed and developing countries. Using state level personal bankruptcy and consumer credit delinquency data, the objective of this paper is to test whether states with financial education have less personal bankruptcies or credit delinquency compared to those that do not have a financial education requirement for high school students. In addition, Braunstein and Welch (2002) argue that immediate impact financial training program is often measured and not the long-term benefits. Therefore, evidence of the long-term benefits of financial education in improving financial decision making is still needed. This paper aims at filling that gap in the literature.

The results show that stateswith a mandate for financial education have less Chapter 13 and Chapter 7 bankruptcy. The result support the hypothesis that financial education is important in order to make prudent financial decisions. Furthermore, I show that financial literacy has a negative impact of the delinquency rates for mortgage debt, credit card debt and automobile loan. This is

additional evidence to support the argument that financial literacy is important. In addition, I conducted a subsample analysis for financial education in states with legalized gambling versus those without. In terms of personal bankruptcy, financial literacy is important in both states with and without legalized gambling. However, when consumer credit delinquency rates are used to measure the impact of financial education, it appears that it is more important in reducing delinquency rates in states with legalized gambling compared to those without legalized gambling.

The remainder of the paper is organized as follows: section 2 reviews the literature and develop testable hypotheses, section 3 describes the data and methodology, section 4 reports the results and section 5 concludes the paper.

2.0 Literature Review and Hypothesis Development

Fox, Bartholomae and Lee (2005) define financial literacy as one's understanding and knowledge of financial concepts. They argue that it is crucial to effective consumer financial decision making. The need for financial education is often demonstrated with alarming rates of bankruptcy, high consumer debt levels, lower savings rates and other negative outcomes that may result in poor family financial management and low financial literacy levels (Fox et al., 2005).

Proponents argue that basic financial education is important for individuals to make prudent decisions such as buying a home, using credit cards and utilizing credit in general. Lack of financial education may result in individuals acquiring unmanageable debt and hence, lead to financial distress and bankruptcy. For example, Bernheim, Garrett and Maki (2001) examine states which mandate financial education in high school versus those that do not and find evidence of positive effects on saving rates and net worth during peak earnings years for states with a high school financial education mandate. Also, Tennyson and Nguyen (2001) provide evidence that high school seniors received higher scores on the JumpStart personal financial literacy survey in states that

require specific financial literacy course work compared to those that did not or those with general curriculum financial literacy mandates. Similarly, studies of workplace financial education show that individuals have improved savings rates (Bernheim and Garrett (2003), Todd (2002) and Kim, Kratzer and Leech (2002)). For example, Bernheim and Garrett (2003) show the median savings rates to be 22% higher for individuals whose employers offered financial education training.

Prior research shows that there is a strong relationship between financial knowledge and engaging in a number of financial practices such as paying bills on time, tracking expenses, budgeting, setting financial goals, planning for retirement, savings and wealth accumulation (Hilgert et al. (2003), Ameriks et al. (2003), Lusardi (2004), Lusardi and Mitchell (2007), Lusardi and Mitchell (2011); and Hung et al. (2009)). Furthermore, several studies show that financial literacy is related to stock market participation, choosing a low fee investment portfolio, better diversification and more frequent stock trading (Van Rooij, et al. (2011), Kimball and Shumway (2006), Christelis et al. (2006), Choi et al. (2011), and Graham et al. 2009)). Finally, low financial literacy is associated with negative credit behaviors such as debt accumulation, high-cost borrowing, poor mortgage choice, mortgage delinquency and home foreclosure (Stango and Zinman 2008, Lusardi and Tufano (2011), Moore (2003) and Gerardi et al. (2010)).

In addition, financial mistakes are more prevalent among the young and the elderly (Agarwl et al., 2009). These groups display the lowest level of financial knowledge both in the U.S and other countries (Lusardi and Mitchell, 2007). Also, Lusardi and Mitchell (2007) show that financial illiteracy is particularly acute for Blacks and Hispanics, women and those with low educational attainment and income. Similarly, Lusardi and Mitchell (2014) argue that older decision makers are more susceptible to fraud due to lack of financial literacy. While, Moore (2003) shows that the least financially literate are more likely to have costly mortgages. Finally, the least financially savvy individuals incurred high transaction costs, pay higher fees, use high-cost borrowing, and report

that their debt loads are excessive, engage in costly credit card behavior and are more likely to borrow against their retirement accounts (Lusardi and Tufano (2015), Mottola (2013) and Utkus and Young (2011)). Hence, general knowledge (education) and specialized knowledge (financial education) both contribute to more informed financial decision making (Lusardi and Mitchell, 2014).

In terms of credit counselling, Hirad and Zorn (2001) show that borrowers who receive classroom and individual counseling, respectively, are 23 percent and 41 percent less likely ever to become 60-day delinquent than equivalent borrowers who do not undergo counseling. They find no statistical evidence that either home study or telephone counseling programs significantly mitigate risk. Also, Wiener, Baron-Donovan, Gross and Block-Lied (2005) studied trained debtors, untrained debtors and non-debtors and find that trained debtors showed more negative attitudes towards unnecessary spending compared to the other two groups and reported less intention to buy than non-debtors.

On the other hand, Gartner and Todd (2005) examine a credit education plan for first-year college students and find no statistically significant differences between the control and treatment groups in their credit balances or timeliness of payments. Similarly, Servon and Kaestner (2008) used random variation in a financial literacy training and technology assistance program and find virtually no differences between the control and treatment groups in a variety of financial behaviors such as investments, saving money, and timely bill payments. Although they suspect that the program was implemented imperfectly.

Financial education and training in the workplace can have a positive impact on retirement savings. For example, Bernheim and Garrett (2003) investigate the effects of employer-based financial education on personal savings and show that employer-based financial education stimulates savings, both in general and for retirement. Similarly, Bayer, Bernheim and Scholz

(2009) find that both participation in and contributions to voluntary savings plans are significantly higher when employers offer retirement seminars. The effect is typically much stronger for non-highly compensated employees than for highly compensated employees. In contrast, Choi et al. (2011) randomly assign some participants in a survey to an educational intervention designed to teach them about the value of the employer match in an employer-sponsored savings plan. They find statistically insignificant differences in future savings plan contributions between the treatment and the control group, even in the face of significant financial incentives for savings plan participation.

The closest related study is by Bernheim et al. (2001) and Cole and Shastry (2012). These studies utilized the high school financial education mandates across different states and time as a natural experiment to examine its effect on savings and wealth accumulation. Bernheim et al (2001) conclude that financial education mandates do have an impact on wealth accumulation. However, Cole and Shastry (2012), utilizing the variation in state reforms on high school graduation requirements, examine the impact on asset accumulation and find that state mandates requiring students to take a financial literacy course do not affect the propensity to save. They also find that state reforms increase the number of required math courses improve financial behavior for women, but not men. Therefore, evidence of state mandate financial education is somewhat mixed based on the findings of these studies.

This study differs from the above studies in that I am looking at state mandated high school financial education and the level of personal bankruptcy and consumer credit delinquency rates (mortgage loans, auto loans, credit card debt and student loans) compared to states that do not mandate financial education in the K-12 curriculum. This study contributes to the debate on financial literacy in that it is, to my knowledge, the first to examine state mandated financial

education and consumer credit delinquency rates as well as personal bankruptcy. It further adds to the existing debate on the impact of financial literacy. It also adds to the existing literature on high school financial education and financial decision making.

In summary, there remains substantial disagreement over the efficacy of financial education. Hastings, Madrian and Skimmyhorn, (2013) argue that there is, at best, mixed evidence that financial education improves financial outcomes. They argue that the current literature is inadequate to draw conclusions about it, and under what conditions, financial education works. Hence, this paper aims at providing evidence on the impact of financial education on financial decision making and outcomes. Therefore, the following hypotheses are tested in this study:

H1: U.S States that mandate financial education in high schools are expected to have a lower frequency of personal bankruptcy compared to those states that do not have such mandates.

H2: U.S States that mandate financial education in high schools are expected to have lower consumer credit delinquency compared to those states that do not have such mandate.

3.0 Data and Methodology

3.1 Data

The sample period is from 2003 to 2016. The data on economic and financial education is retrieved from the Council for Economic Education Survey of the State. The council produces a comprehensive survey on K-12 economic and financial education for all 50 U.S State and District of Columbia biennially. For the years without survey data, I assume that the previous survey year is the status quo. For example, if a particular state mandates financial education requirement in year 2003 I assume that the mandate remains in place until the next survey year.[3] In this study, I utilized two sets of dependent variables: personal bankruptcy (total, chapter 7 and 13) and consumer credit delinquency rates (mortgage loan, credit card debt, auto loan and student loan). Personal bankruptcy

[3] The results for the survey years only are consistent with the full sample.

data is retrieved from U.S Bankruptcy Courts.[4] State level delinquency data as well as state level household debt data is collected from the Federal Reserve Bank of New York Consumer Credit Panel.[5]

State level unemployment data is retrieved from the Bureau of Labor Statistics, population data is from the U.S Census Bureau, while GDP, consumption of durable goods and disposable income is collected from the Bureau of Economic Analysis and house price index is from the Federal Housing Finance Agency.

3.2 Methodology

I utilized a fixed effects panel regression framework to examine the impact of financial literacy. The following equation is estimated with State and Year fixed effects:

$$Personal\ Bankruptcy/Delinquency_t = \propto + \sum_{j=1}^{2} \beta_{i,j}\ Economics_{j,t} + \sum_{j=1}^{3} \gamma_{i,j} Personal\ Finance_{j,t} + \delta' \boldsymbol{X} + \varepsilon_t \quad (1),$$

where personal bankruptcy is in the form of Chapter 7 and 13 as well as total non-business bankruptcy.[6] In addition, state level consumer delinquency rates on several different types of credit such as auto loans, mortgages, credit card debt and student loans are utilized as dependent variables to measure poor financial decisions due to lack of financial education.

[4] Bankruptcy data is from Table F-2 from the Statistics and Report section of www.uscourts.gov
[5] FRBNY Consumer Credit Panel, a new longitudinal database with detailed information on consumer debt and credit from 2003 to 2016.
[6] Under Chapter 7, unsecured debts are discharged. Debtors are not obliged to use any of their future income to repay their debt, but they are obliged to turn over all of their assets above the fixed exemption level to the bankruptcy trustee. Under Chapter 13 bankruptcy, debtors do not give up any assets, but they must propose a plan to repay a portion of their debt from future income.

The main independent variables are divided into two groups. The first group identifies states with economic education in high school curriculum while the second group represents state with personal finance education mandated in schools. Both economic and personal finance education is represented by binary variables. Firstly, economic enrollment is a binary variable equal to one if students are required to take an economic education course in order to graduate and zero otherwise. Secondly, economic testing is an indicator variable equal to one if students' knowledge in economics education is being tested and zero otherwise. I do not include a dummy variable to measure whether an economic education standard is in place since, on average, 98% of U.S State and the District of Columbia have an economic education standard.

The three personal finance education measures are utilized in this study. Firstly, personal finance standard is a dummy variable equal 1 if a particular U.S State has education standards to promote personal finance education in their K-12 standards and zero otherwise. Secondly, personal finance enrollment is a binary variable equal to one if students are required to take a personal finance course in order to graduate and zero otherwise. Thirdly, personal finance testing is an indicator variable equal to one if students' knowledge in personal finance education is being tested and zero otherwise.

Based on the prior literature, the vector **X** contains several control variables that have been proven to influence personal bankruptcy. These include: income per capita, automobile loans, credit card debt, mortgage debt, student loans, unemployment rate, durable goods consumption, housing growth, economic growth (U.S GDP and state GDP growth rate), divorce rate and consumption of financial services. For example, Fisher (2005) shows that an increase in unemployment benefits decreases the probability of bankruptcy. While, Thalheimer and Mukhtar (2004) find that population, personal income, age, race, divorce rate, unemployment rate and ratio of debt to disposable income are a significant determination of personal bankruptcy. In addition, Zhu (2011)

finds that household expenditures on durable consumption goods contribute significantly to personal bankruptcy filings while divorce and unemployment have marginal effects. Fisher and Lyons (2006), after controlling for the endogeneity between divorce and bankruptcy, find that the effect of divorce on bankruptcy and the effect of bankruptcy on divorce are statistically insignificant.

4.0 Results

4.1 Descriptive Statistics

In table 1, I report the descriptive statistics. In panel A, bankruptcy and consumer credit delinquency measures are reported. The average (median) total non-business bankruptcy in the sample is 23,255 filings with California having the highest number of bankruptcy (251,396 in 2010) while Alaska has the lowest number (376 in 2016). Chapter 7 filings represents approximately 70% of the total filings with a mean of 16,251, while the average Chapter 13 filing is 6,982. Consumer credit delinquency is also reported in panel A. The average delinquency rate for credit card debt and student loans is approximately 9% while automobile loans and mortgage delinquency rates are approximately 3%.

Panel B reports the various financial literacy measures. They are divided into economics education and personal finance education measures. In terms of economics education, 98% of states in the U.S. have standards for making economics education a part of the core curriculum in high school. However, only 40 % of states offered an economics education course. Furthermore, in only 36% of states, enrollment in an economics education course is required for graduation. While, 35% of states require students to be tested on economics concepts.

Figure 1 shows the adoption of economics education of the sample period. In terms of economics education standards, all 50 states and the District of Columbia had economic education

standards in the core curriculum since 2009. Furthermore, 45 states implemented the economics education standard in 2016 compared to 35 states in 2000. However, in 2016 only 23 states offered an economics course compared to 16 in 2000. In addition, only 16 states in 2016 required an economics course to be taken for graduation.

The second financial literacy measure is personal finance education. On average, 79% of the states in the sample include a personal finance standard in their curriculum. However, only 24% offered a course in personal finance. While, 21% require enrollment in a personal finance course in order to graduate. Finally, 11% of states require testing of personal finance concepts. It is important to note that economics education is typically included in the social studies curriculum or as a standalone course. Similarly, in states that have personal finance education mandates, it is included in the economics course or as a standalone course.

Figure 2 shows the adoption of personal finance education for the sample period. In terms of a personal finance standard in the core high school curriculum, we see an increase from 31 states in 2002 to 45 states in 2016. A similar trend is observed for implement of the standard (16 states in 2000 vs. 37 states in 2016). Furthermore, 1 state offered a personal finance course in 2002 vs. 22 states in 2016. A similar trend is observed for personal finance course required to graduate. Only 1 state required a personal finance course to graduate in 2002 compared to 17 in 2016.

In panel C, table 1, I report the summary statistics for several control variables used in equation (1). The mean (median) income per capita is $40,598 ($39,220) with District of Columbia having the highest income per capita ($75,756 in 2016) and Mississippi having the lowest income per capita ($23,862 in 2003). In terms of debt, the mean (median) total debt per capita is $43,010 ($39,795) with mortgage debt accounting for a significant proportion of the total debt (approximately 76% of total debt). The next largest category of debt is automobile and student loans. The mean (median) automobile debt and student loan are $3,309($3,220) and $3,185

($3,140), respectively. The final debt category is credit card debt with a mean (median) of $2,983 ($2,960) per capita.

Other control variables included: unemployment rate with mean of 6.06%, durable goods consumption per capita (mean=$3,854), state GDP growth rate (mean=3.87%), U.S GDP growth rate (mean=3.85%), consumption of financial services-to-income (mean of 0.069), housing growth (mean =2.98%). Also, the mean (median) divorce rate is 3.64 (3.60) individual per 1000. Finally, 47% of the states have legalized gambling.

4.2 Regression Results

In table 2, I report the panel regression results with State and Year fixed effects for financial literacy on personal bankruptcy. Total bankruptcy results are reported in column I.[7] The results for states that required students to take an economics course or be tested on economics concepts do not have lower total bankruptcy, chapter 7 or chapter 13 personal bankruptcy. However, states that do require students to take a personal finance course to graduate appear to have a lower per capita total, chapter 7 and chapter 13 bankruptcy fillings. For example, personal finance enrollment requirement is statistically significant at the 1% level for total bankruptcy filings. This is evidence in support of hypothesis 1. Hence, financial literacy leads to more prudent financial decision making and therefore, lowers the likelihood of individuals filing for bankruptcy. The results in table 2 support the arguments by Fox et al. (2005) that financial literacy is crucial to effective consumer financial decision making. Furthermore, the findings are consistent with survey evidence by Thorne and Porter (2007). They find that the majority of respondents (57.4%) in their survey with lower levels of education (no college degree) acknowledge that a financial education course would have helped them avoid bankruptcy. In comparison, on average, 40.8% of respondents with college degrees felt

[7] Total bankruptcy includes chapter 7 and chapter 13 filings.

that financial education would have helped in avoiding bankruptcy. Further support of the impact of financial education in making good financial decisions is provided by Bernheim et al. (1997). They show that students who participated in high school financial curricula showed improved assets accumulation as adults. Similarly, Braucher (2001) shows that a short financial management course required for chapter 13 debtors appears to have a strong and positive impact. In fact, course participants had a higher rate of plan completion (41.9%) compared to individuals who did not (29.6%).

In addition, several of the control variables are statistically significant. For example, income is positively related to bankruptcy. The potential explanation is that individuals with higher income levels are more likely to take on more debt and hence, end up in financial difficulties that lead to increased bankruptcy filings. The prior evidence on impact of income on bankruptcy is mixed. For example, Barron et al. (2002) and Zhu (2011) find that increases in average household income decrease the county bankruptcy rate. While, Buckley and Brinig (1996) find that an increase in aid to families with dependent children (AFDC) payments increases state bankruptcy filings.

In examining personal bankruptcy, I control for the impact of several types to consumer debt on bankruptcy. Credit card and student loan debt tend to lead to a higher degree of bankruptcy filings. This is consistent with Domowitz and Saertain (1999) who show that households with more credit card debt are more likely to file for bankruptcy. However, automobile loans and mortgage debt appear to be negatively related to total bankruptcy. Auto loans are positively related to chapter 13 filings and negatively related to chapter 7.

Higher unemployment rate results in greater bankruptcy filings (total and chapter 7). As individuals lose their jobs they are likely to face financial strain that may result in individuals filing for bankruptcy. This is consistent with Zhu (2011) who shows that unemployment increases the likelihood of filing for bankruptcy. Consistent with the prior literature, consumption of financial

services results in higher levels of bankruptcy filing. However, consumption of durable goods per capita results in lower bankruptcy filings. This is primarily driven by chapter 7 filings. While, the U.S GDP growth rate leads to higher levels of bankruptcy filings. With economic growth, it is likely that individuals engage in riskier behavior and as a result, run into financial difficulties. On the other hand, housing growth, state GDP and divorce rate are not statistically related to total personal bankruptcy. In terms of divorce rate, the results are consistent with prior literature (e.g. Zhu, 2011). Housing growth is negative and statistically significant for chapter 13 filings (insignificant for total and chapter 7filings). An increase in house value potentially increases the home equity and hence potentially reduces the likelihood that a household experiences financial difficulty.

In table 3, I report the results for financial literacy on consumer credit delinquency. Using FRBNY delinquency data on mortgage, credit card, automobile and student loans, I test hypothesis 2. In column I, the dependent variables are delinquency rates for mortgage loans. Economics course enrollment requirements and testing is not statistically significantly related to mortgage delinquency though testing of economics concepts is negative as expected. States with a personal finance mandate in high school core curriculum have lower rates of mortgage delinquency. This is further evidence that financial literacy is important and it is consistent with the findings of Hirad and Zorn (2001) that homebuyer training lowers delinquency rates. They show that borrowers who received counselling prior to home purchase, on average, had a 90-day mortgage delinquency rate which was 19% lower than non-counselled homeowners.

In terms of the control variables, higher income per capita leads to lower levels of delinquency as expected. Automobile and mortgage debt per capita is not statistically significant. While, states with higher levels of credit card debt, student loans and unemployment tend to have higher mortgage delinquency rates. Furthermore, higher consumption per capita results in higher delinquency rates. While, as expected, housing growth and U.S GDP growth leads to lower

delinquency rates. Both variables are indications of the economic strength that is, in a strong economic environment, delinquency is expected to be lower. State GDP and divorce rates are both positive but not significant. Finally, consumption of financial services is positively related to mortgage delinquency rates. Consumption of financial services can be proxied for increased use of debt which can lead to financial difficulties and hence, the positive relationship.

In column II, the dependent variable is credit card delinquency rates. Similar to mortgage loan delinquency, personal finance standard results in lower levels credit card delinquency. Testing of both economics and personal finance concepts are negatively related to credit card delinquency but not statistically significant. Unemployment, credit card debt and student loan debt result in higher rates of credit card delinquency as expected. Furthermore, higher income leads to higher credit card delinquency rates. It is possible that in states with higher income, individuals have increased access to credit and as a result, are more likely to spend or consume using credit. This in turn can lead to increased delinquency rates. Other control variables such as automobile loans, mortgage debt, and housing growth lead to lower rates of credit card delinquency.

In column III, the dependent variable is automobile loan delinquency. Three measures of financial literacy are negative and statistically significant. States that require an economic course for graduation, testing economic concepts and have a personal finance standard in the core curriculum tend to have lower rates of auto loan delinquency. However, personal finance enrollment requirement and testing appears to be positive and significant. This is counter to the expectation in hypothesis 2. In terms of the control variables, higher income per capita, U.S GDP growth, state GDP growth and divorce rate leads to lower rates of auto loan delinquency. Mortgage debt, student debt and unemployment are positively related to auto loan delinquency rates.

Finally, in column IV, the dependent variable is student debt. None of the financial literacy measures are in the hypothesized direction. In fact, states with economics and personal finance

course enrollment requirements for graduation tend to have higher rates of student loan delinquency. This is the opposite effect predicted by hypothesis 2. The control variables are similar to those reported in columns I to III.

In summary, the results for the impact of financial education on delinquency rates are consistent with prior literature. For example, Guiso and Jappelli (2005) find economics education increases financial awareness. As a result, it can be argued that financial education increases financial awareness which positively influences financial decision making. This in turn, affects the level of consumer credit delinquency. Furthermore, our results are consistent with Bernheim and Garrett (2003). They show that financial education in the workplace significantly increases the likelihood of savings. Similarly, Bernheim et al. (2001) show that households exposed to financial education during high school have higher savings rates relative to those that did not have financial education in high school.

In addition, Klapper, Lusardi and Panos (2012) show that individuals with higher financial literacy are significantly more likely to report greater availability of unspent income and higher spending capacity. Given that individuals with higher financial literacy have higher unspent income, they are less likely to default on loans or file for bankruptcy. Our results are consistent with that argument and the findings of Klapper et al (2012). Furthermore, Stango and Zinman (2006) document a systematic tendency of people to underestimate the interest rates associated with a stream of loan payments. They argue that those who underestimate interest on loans are more likely to borrow and less likely to save. Our findings support this conjecture. In fact, our results show that financial education reduces delinquency rates on mortgage loans, auto loans and credit card debt.

4.3 States with Legalized Gambling

It is possible that legalized gambling plays a role in personal bankruptcy as well as consumer credit delinquency. In fact, Boardman and Perry (2007) show that pari-mutuel gambling increases bankruptcies for counties within 25 miles of a gambling facility by 9.25% while casino style gambling showed no significant impact on county bankruptcies, regardless of accessibility. However, Thalheimer and Mukhtar (2004) show that access to pari-mutuel or casino gaming facilities did not have a significant impact on personal bankruptcies. Hence, I conducted sub-sample analyses for states with legalized gambling and those that do not have legalized gambling.

In table 4, I report the results for personal bankruptcy and legalized gambling sub-sample. The results for states with legalized gambling are reported in panel A. Personal finance course enrollment requirement is negative and significantly related to total bankruptcy and chapter 7. It is negative but not statistically significant for chapter 13. However, economics course enrollment requirement is negative and significant related to chapter 13 filings. Also, economics course enrollment requirement is positive and significant for total bankruptcy (marginally significant) and chapter 7 filings. This is counter to our hypothesized expectation.

In panel B, I report the results for states without legalized gambling. Personal finance standard is negative and statistically significant at the 5% level. None of the financial literacy measures are statistically significant for chapter 7. While, personal finance standard, enrollment requirements and testing requirements are all negative and statistically significant at the 5% or 1% level. In summary, regardless of whether a state has legalized gambling or not, financial literacy is important in reducing the level of bankruptcy filings.

Table 5 reports results for consumer credit delinquency partitioned by legalized gambling. In panel A, the results are similar to those reported in table 3 above. For example, economic enrollment requirements, testing of economics concepts and personal finance standard are

negatively related to auto loan delinquency rates, while personal finance standard and personal finance testing are negatively related to credit card delinquency.

In panel B, the results for states without legalized gambling are presented. Even though personal finance standard is negative for all four types of delinquency measures, it is only significant for mortgage loan delinquency. It appears that financial education is more important for states with legalized gambling when consumer credit delinquency is use to proxy financial decision making.

5.0 Conclusions

In this study, I examine the impact of financial literacy using state level data on personal bankruptcy and consumer credit delinquency. I hypothesized that states with financial literacy mandates are expected to have lower frequency of personal bankruptcy as well as lower rates of consumer delinquency. Financial literacy is expected to aid individuals when making financial decisions and hence, they are less likely to face financial difficulties leading to delinquency or personal bankruptcy. Using a quasi-natural experiment where some states mandate financial education while others do not provide a unique setting to test the above expectation.

After controlling for several macroeconomic factors that are proven to influence bankruptcy, I show that financial literacy is negatively related to bankruptcy filings as well as consumer credit delinquency rates. The evidence supports the expectation that financial education enables prudent financial decision making and as a result, reduces delinquency and personal bankruptcy filings. In addition, financial literacy is important in reducing personal bankruptcy in both states with and without legalized gambling. However, in terms of consumer credit delinquency

rates, it appears that financial education is more important in reducing delinquency in states with legalized gambling compared to those without legalized gambling.

Reference

Ameriks, J., Caplin, A., and Leahy, J. (2003). Wealth accumulation and the propensity to plan. *The Quarterly Journal of Economics*, *118*(3), 1007-1047.

Barron, J. M., Staten, M. E., and Wilshusen, S. M. (2002). The impact of casino gambling on personal bankruptcy filing rates. *Contemporary Economic Policy*, *20*(4), 440-455.

Bayer, P. J., Bernheim, B. D., and Scholz, J. K. (2009). The effects of financial education in the workplace: Evidence from a survey of employers. *Economic Inquiry*, *47*(4), 605-624.

Bernheim, B. D., and Garrett, D. M. (2003). The effects of financial education in the workplace: evidence from a survey of households. *Journal of public Economics*, *87*(7-8), 1487-1519.

Bernheim, D.B., Garrett, D.M., and Maki, D.M. (2001). Education and Saving: The long-term effects of high school financial curriculum mandates, *Journal of Public Economics*, 80, 436-466

Boardman, B. and Perry, J.J. (2007). Access to gambling and declaring personal bankruptcy, *Journal of Socio-Economics*, 36, 789-801

Braucher, J., (2001), An empirical study of debtor education in bankruptcy: Impact on Chapter 13 completion not shown, *The American Bankruptcy Institute Law Review*, 9, 557-592

Braunstein, S., and Welch, C. (2002). Financial literacy: An overview of practice, research and policy, Federal Reserve Bulletin, 88, 445-458

Brinig, M. F., and Buckley, F. H. (1996). The market for deadbeats. *The Journal of Legal Studies*, *25*(1), 201-232.

Choi, J. J., Laibson, D., and Madrian, B. C. (2011). $100 bills on the sidewalk: Suboptimal investment in 401 (k) plans. *Review of Economics and Statistics*, *93*(3), 748-763.

Choi, J. J., Laibson, D., and Madrian, B. C. (2011). $100 bills on the sidewalk: Suboptimal investment in 401 (k) plans. *Review of Economics and Statistics*, *93*(3), 748-763.

Christelis, D., Jappelli, T., and Padula, M. (2010). Cognitive abilities and portfolio choice. *European Economic Review*, *54*(1), 18-38.

Cole, S. A., and Shastry, GK. (2011), Is High School the Right Time to Teach Self Control? The Effect of Education on Financial Behavior. Harvard Business School; working paper

Domowitz, I., and Sartain, R. L. (1999). Determinants of the consumer bankruptcy decision. *The Journal of Finance*, *54*(1), 403-420.

Fisher, J. D., (2005), The effect of unemployment benefits, welfare benefits and other income on personal bankruptcy, *Contemporary Economic Policy*, 23, 483-492

Fisher, J. D., and Lyons, A. C. (2006). Till debt do us part: A model of divorce and personal bankruptcy. *Review of Economics of the Household*, *4*(1), 35-52.

Fox, J., Bartholomae, S., and Lee, J. (2005). Building the case for financial education, Journal of Consumer Affairs, 39, 195-213

Gartner, K., and Todd, R. M. (2005). Effectiveness of online early intervention financial education programs for credit-card holders. In *Federal Reserve Bank of Chicago Proceedings* (No. 962).

Gerardi, K. (2010). *Financial literacy and subprime mortgage delinquency: Evidence from a survey matched to administrative data*. DIANE Publishing.

Graham, J. R., Harvey, C. R., and Huang, H. (2009). Investor competence, trading frequency, and home bias. *Management Science*, *55*(7), 1094-1106.

Guiso, L. and Jappelli, T., (2005). Awareness and stock market participation, *Review of Finance*, 9, 537-567

Hilgert, M. A., Hogarth, J. M., and Beverly, S. G. (2003). Household financial management: The connection between knowledge and behavior. *Fed. Res. Bull.*, *89*, 309.

Hirad, A., and Zorn, P. M. (2001). A Little Knowledge Is a Good Thing: Empirical Evidence of the Effectiveness of Pre-Purchase Homeownership Counseling, Joint Center for Housing Studies, *Harvard University working paper*

Hogarth, J. M., and Hilgert, M. A. (2002). Financial knowledge, experience and learning preferences: Preliminary results from a new survey on financial literacy. *Consumer Interest Annual*, *48*(1), 1-7.

Hsu, J. W. (2011). Aging and strategic learning: The impact of spousal incentives on financial literac, working paper

Hung, A., Parker, A. M., and Yoong, J. (2009). Defining and measuring financial literacy. Rand Corp, working paper, WR-708

Kim, J., Kratzer, C.Y., and Leech, I. E. (2002). Impacts of workplace financial education on retirement plans. In P. Hogarth (Ed) Proceedings of 2001 Annual Conference of the Association of Financial Consulting and Planning Education

Kimball, M., and Shumway, T. (2006). Investor sophistication, and the participation, home bias, diversification, and employer stock puzzles. *Unpublished Manuscript, University of Michigan*.

Klapper, L., Lusardi, A., and Panos, G.A. (2012). Financial literacy and financial crisis, NBER working paper #17939

Lusardi, A. (2004), Saving and the effectiveness of financial education. In: Michell, O.; Utkus, S., editors. Pension Design and Structure: New Lessons from Behavioral Finance. Oxford Univ.; New York: p. 157-184.

Lusardi, A., and Mitchell, O. (2007). Financial literacy and retirement planning: New evidence from the Rand American Life Panel. Univ. Michigan Retirement Research Center; 2007. Work. Pap. 2007-157

Lusardi, A., and Mitchell, O. S. (2007). Financial literacy and retirement preparedness: Evidence and implications for financial education. *Business economics*, *42*(1), 35-44.

Lusardi, A., and Mitchell, O. S. (2011). *Financial literacy and planning: Implications for retirement wellbeing* (No. w17078). National Bureau of Economic Research.

Lusardi, A., and Mitchell, O. S. (2014). The economic importance of financial literacy: Theory and evidence. *Journal of economic literature*, *52*(1), 5-44.

Lusardi, A., and Tufano, P. (2015). Debt literacy, financial experiences, and overindebtedness. *Journal of Pension Economics and Finance*, *14*(4), 332-368.

Lusardi, A., Michaud, P. C., and Mitchell, O. (2011). Optimal financial literacy and saving for retirement, Warton School Pension Research Council working paper 2001-20

Lusardi, A., Mitchell, O. S., and Curto, V. (2010). Financial literacy among the young. *Journal of consumer affairs*, *44*(2), 358-380.

Moore, D. L. (2003). *Survey of financial literacy in Washington State: Knowledge, behavior, attitudes, and experiences*. Washington State Department of Financial Institutions.

Mottola, G. R. (2013). In our best interest: Women, financial literacy, and credit card behavior. *Numeracy*, *6*(2), 4.

Servon, L. J., and Kaestner, R. (2008). Consumer financial literacy and the impact of online banking on the financial behavior of lower-income bank customers. *Journal of Consumer Affairs*, *42*(2), 271-305.

Sondar, B., and Sherraden, M. (1999). Institutional determinants of savings: Implications for low-income households, *Journal of Socio-Economics*, 28, 457-473

Stango, V., and Zinman, J. (2006). Fuzzy math and red ink: Payment/interest bias, intertemporal choice and wealth accumulation. *Working paper Dartmouth College*.

Stango, V., and Zinman, J. (2009). Exponential growth bias and household finance. *The Journal of Finance*, *64*(6), 2807-2849.

Tennyson, S., and Nguyen, C.C. (2001). State curriculum mandates and student knowledge of personal finance, *Journal of Consumer Affairs*, 35, 241-263

Thalheimer, R. and Mukhtar, A. M. (2004). The relationship of pari-mutuel wagering and casino gaming to personal bankruptcy, *Contemporary Economic Policy*, 22, 420-432

Thorne, D. and Porter K. (2007). Financial education of bankrupt families: Attitudes and Needs, *Journal of Consumer Education*, 24, 15-27

Todd, R. M., (2002), Financial Literacy education: A potential tool for reducing predatory lending? The Region (Federal Reserve Bank of Minneapolis, 16, 6-13

Utkus, S. P., and Young, J. (2011). Financial Literacy and 401 (k) Loans. *Financial Literacy: Implications for Retirement Security and the Financial Marketplace*, *59*

Van Rooij, M., Lusardi, A., and Alessie, R. (2011). Financial literacy and stock market participation. *Journal of Financial Economics*, *101*(2), 449-472.

Wiener, R. L., Baron-Donovan, C., Gross, K., and Block-Lieb, S. (2003). Multiple measure evaluation of "training the trainers": Implications for pending bankruptcy legislation. In R. L. Wiener (Chair), The psychology of financial literacy: Debtor education programs for bankruptcy filers. Symposium conducted at the Psychology and Law International Interdisciplinary Conference, Edinburgh, UK

Zhu, N. (2011), Household consumption and personal bankruptcy, *Journal of Legal Studies*, 40, 1-37

Figure 1: Economic Education 2000-2016

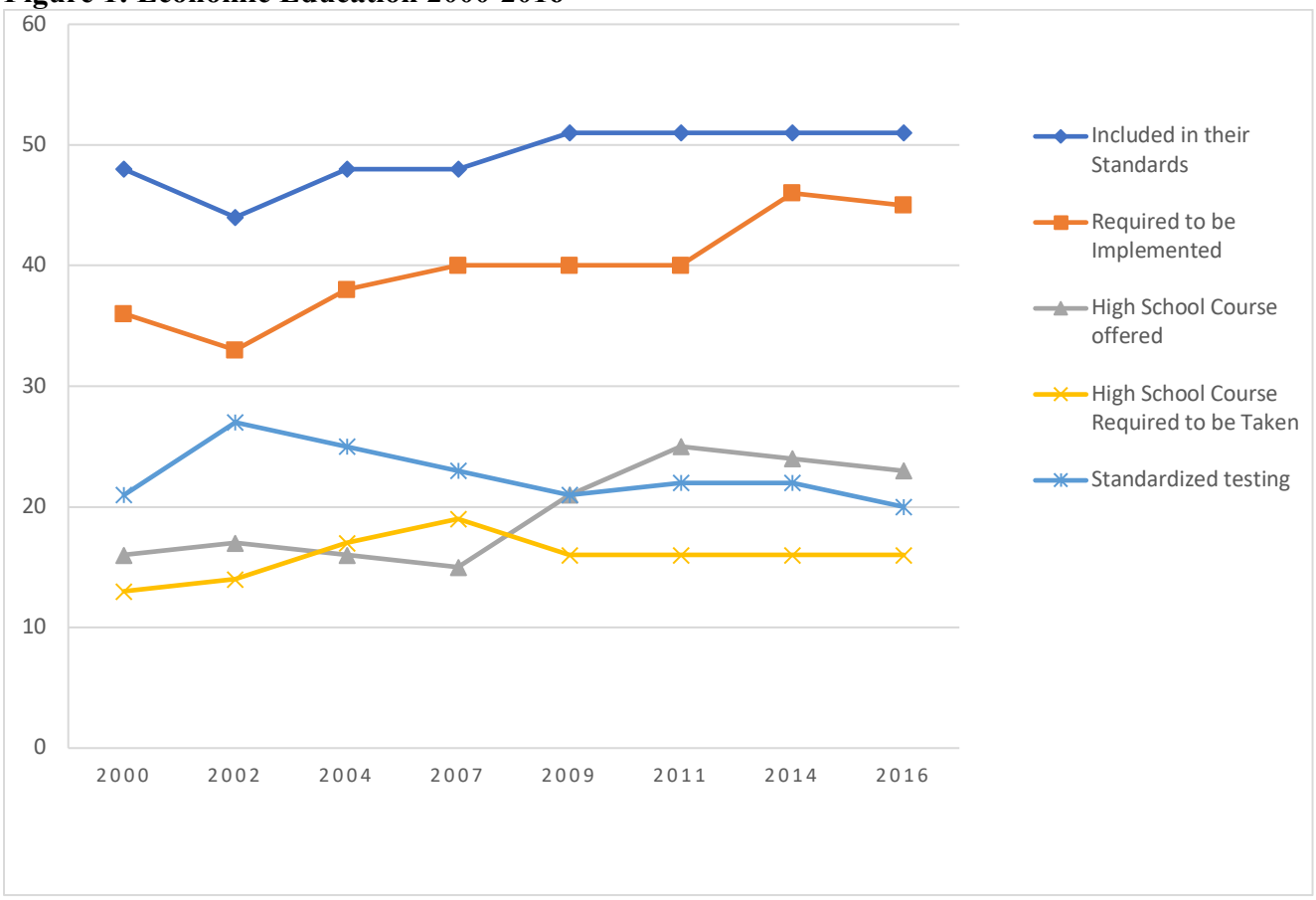

Figure 2: Personal Finance Education 2000-2016

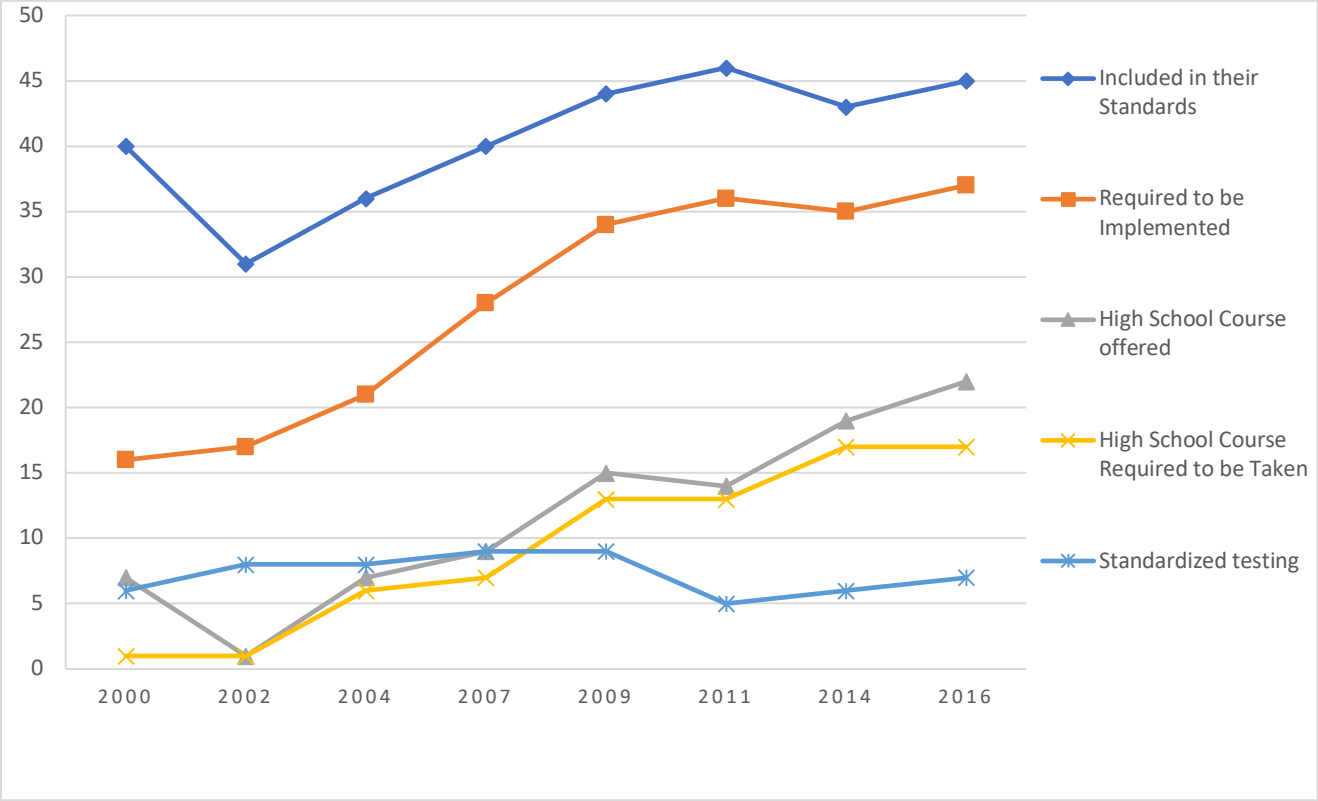

Table 1: Summary Statistics

Total personal bankruptcy, chapter 7 and chapter 13 are the number of state level bankruptcy filings, respectively. Auto loans, credit card debt, mortgage loans and student loans are the percentage of state level credit delinquency, respectively. Economic standard is equal to 1 if a state has an education standard to promote economics education in its core high school curriculum and zero otherwise. Economic course offered is equal to 1 if an economics course is offered high school curriculum and zero otherwise. Economic course enrollment requirements (dummy variable equal to 1 if a state requires an economics course for graduation and zero otherwise), Economics testing (dummy variable equal to 1 if students are tested on economics concepts and zero otherwise), personal finance standard (dummy variable equal 1 if a particular U.S State has education standards to promote personal finance education in their K-12 standards and zero otherwise), personal finance enrollment requirements (dummy variable equal to 1 if a state requires an economics course for graduation and zero otherwise),and personal finance testing (dummy variable equal to 1 if students are tested on economics concepts and zero otherwise). Unemployment is the state unemployment rate. legalized gambling is a binary variable equal to 1 if a state has legalized gambling and zero otherwise. Housing growth is the percentage change in House Price Index from the Federal Housing Finance Agency.

	Mean	Median	Stnd. Dev.	N
Panel A: Bankruptcy and Delinquency Measures				
Total personal bankruptcy	23,255	14,988	28,081	714
Chapter 7	16,251	9,768	21,124	714
Chapter 13	6,982	4,206	8,704	714
Total bankruptcy per capita	0.004	0.003	0.002	714
Chapter 7 per capita	0.003	0.002	0.002	714
Chapter 13 per capita	0.001	0.001	0.001	714
Auto loans delinquency -%	3.16	2.81	1.44	714
Credit card delinquency -%	8.80	8.47	2.45	714
Mortgage delinquency -%	2.91	2.17	2.58	714
Student loans delinquency -%	8.84	8.45	2.92	714
Panel B: Financial Literacy Measures				
Economics standard	97.80	1	14.81	714
Economics course offered	39.64	0	48.98	714
Economics enrollment	36.19	0	48.03	714
Economic testing	35.16	0	47.78	714
Personal finance standard	78.85	1	40.86	714
Personal finance course offered	23.84	0	42.64	714
Personal finance enrollment	20.90	0	39.41	714
Personal finance testing	10.64	0	30.86	714
Panel C: Control Variables				
Income per capita	40,598	39,220	8,491	714
Total debt per capita	43,010	39,795	12,928	714
Auto loan per capita	3,309	3,220	675	714
Credit card debt per capita	2,983	2,960	532	714
Mortgage debt per capita	30,343	27,545	11,378	714
Student loan per capita	3,185	3,140	1,532	714
Unemployment -%	6.06	5.70	1.99	714
Durable goods consumption per capita	3,854	3,801	585	714
Legalized gambling	47.06	0	49.95	714
State GDP growth- %	3.87	3.79	3.55	714
U.S GDP growth - %	3.85	3.95	2.12	714
Consumption of financial services-to-income	0.069	0.069	0.003	714
Divorce per 1000	3.64	3.60	0.84	714
Housing growth -%	2.98	3.21	6.81	714

Table 2: Panel Regression of Personal Bankruptcy on Financial Literacy

The dependent variables are: total bankruptcy (column I), Chapter 7 personal bankruptcy (column 2) and chapter 13 personal bankruptcy (column 3). Financial literacy is measured by: Economic course enrollment requirements (dummy variable equal to 1 if a state requires an economics course for graduation and zero otherwise), Economics testing (dummy variable equal to 1 if students are tested on economics concepts and zero otherwise), personal finance standard (dummy variable equal 1 if a particular U.S State has education standards to promote personal finance education in their K-12 standards and zero otherwise), personal finance enrollment requirements (dummy variable equal to 1 if a state requires an economics course for graduation and zero otherwise),and personal finance testing (dummy variable equal to 1 if students are tested on economics concepts and zero otherwise). All control variables are defined in the methodology section above.

	Total	**Chapter 7**	**Chapter 13**
Economics course enrollment	0.0001	0.0001	-0.00003
	(0.73)	(1.38)	(-0.69)
Economics testing	0.0001*	0.0001	0.0001***
	(1.91)	(0.64)	(2.70)
Personal finance standard	-0.00003	-0.00002	-0.00001
	(-0.47)	(-0.44)	(-0.23)
Personal finance enrollment	**-0.0002*** **	**-0.0001***	**-0.0001*** **
	(-2.90)	**(-1.69)**	**(-3.01)**
Personal finance testing	-0.00004	0.00001	-0.0001
	(-0.58)	(0.07)	(-1.21)
Log of income per capita	0.0035***	0.0017***	0.0019***
	(5.61)	(3.36)	(5.67)
Automobile debt per capita/income	-0.0080*	-0.0130***	0.0049*
	(-1.66)	(-3.38)	(1.95)
Credit card debt/income	0.0711***	0.0529***	0.0182***
	(11.27)	(10.61)	(5.54)
Mortgage debt/income	-0.0021***	-0.0001**	-0.0012***
	(-4.40)	(-2.53)	(-4.61)
Student loan/income	0.0046	0.00717***	-0.0026
	(1.49)	(2.94)	(-1.61)
Unemployment	0.0150***	0.0128***	0.0022
	(4.97)	(5.37)	(1.40)
Log of durable goods consumption per capita	-0.00171***	-0.0014***	-0.0003
	(-2.72)	(-2.74)	(-1.05)
Housing growth	-0.0008	0.0007	-0.0015***
	(-1.17)	(1.38)	(-4.35)
U.S GDP growth	0.105***	0.0769***	0.0283***
	(5.67)	(5.24)	(2.94)
State GDP growth	-0.0003	0.0002	-0.0005
	(-0.47)	(0.37)	(-1.48)
Divorce rate	0.0818	0.0338	0.0481
	(1.28)	(0.67)	(1.45)
Consumption of financial services/income	0.0316*	0.0128	0.0188*
	(1.66)	(0.82)	(1.84)
Intercept	-0.0301***	-0.0111	-0.0191***
	(-3.41)	(-1.58)	(-4.14)
State Fixed Effects	Yes	Yes	yes
Year Fixed Effects	Yes	Yes	yes
Obs.	714	714	714
Adj. R-Sq.	0.883	0.894	0.475

Table 3: Panel Regression of Consumer Credit Delinquency on Financial Literacy

The dependent variables are: mortgage loan delinquency rate (column I), credit card delinquency rate (column 2), auto loan delinquency rate (column 3) and student loan delinquency rate (column IV). Financial literacy is measured by: Economic course enrollment requirements (dummy variable equal to 1 if a state requires an economics course for graduation and zero otherwise), Economics testing (dummy variable equal to 1 if students are tested on economics concepts and zero otherwise), personal finance standard (dummy variable equal 1 if a particular U.S State has education standards to promote personal finance education in their K-12 standards and zero), personal finance enrollment requirements (dummy variable equal to 1 if a state requires an economics course for graduation and zero otherwise),and personal finance testing (dummy variable equal to 1 if students are tested on economics concepts and zero otherwise). All control variables are defined in the methodology section above.

	I	**II**	**III**	**IV**
	Mortgage	**Credit card**	**Auto loan**	**Student loan**
Economics Enrollment	0.0011	0.0021	**-0.0014****	0.0048**
	(1.07)	(1.63)	**(-2.04)**	(2.38)
Economics Testing	-0.0003	-0.0002	**-0.0013****	-0.0021
	(-0.42)	(-0.20)	**(-2.52)**	(-1.41)
Personal Finance Standard	**-0.0018****	**-0.0018****	**-0.0009***	0.001
	(-2.41)	**(-2.03)**	**(-1.80)**	(0.69)
Personal Finance Enrollment	-0.00003	0.0017	0.0019***	0.0029*
	(-0.04)	(1.60)	(3.57)	(1.84)
Personal Finance Testing	0.0001	-0.001	0.003***	-0.001
	(0.05)	(-1.16)	(4.78)	(-0.69)
Log of income per capita	-0.015*	0.028***	-0.024***	-0.034**
	(-1.95)	(3.02)	(-4.78)	(-2.40)
Automobile debt per capita/income	-0.0913	-0.274***	-0.059	0.250**
	(-1.56)	(-3.85)	(-1.55)	(2.27)
Credit card debt/income	0.520***	0.611***	0.016	-0.707***
	(6.83)	(6.60)	(0.31)	(-4.92)
Mortgage debt/income	0.004	-0.050***	0.015***	0.031***
	(0.59)	(-7.03)	(3.92)	(2.77)
Student loan/income	0.284***	0.149***	0.093***	0.179***
	(7.81)	(3.37)	(3.91)	(2.61)
Unemployment	0.119***	0.165***	0.0756***	0.196***
	(3.20)	(3.64)	(3.11)	(2.79)
Log of durable good consumption per capita	0.016**	-0.013	-0.008	-0.002
	(2.14)	(-1.39)	(-1.61)	(-0.14)
Housing growth	-0.047***	-0.018*	-0.007	-0.024
	(-5.76)	(-1.77)	(-1.35)	(-1.58)
U.S GDP growth	-1.577***	-0.024	-0.904***	-1.770***
	(-7.04)	(-0.09)	(-6.20)	(-4.19)
State GDP growth	0.010	-0.010	-0.013**	0.012
	(1.16)	(-0.95)	(-2.39)	-0.74
Divorce rate	0.353	0.443	-2.224***	-2.378
	(0.46)	(0.47)	(-4.42)	(-1.63)
Consumption of financial services/income	0.500**	0.388	-0.092	-0.848*
	(2.10)	(1.34)	(-0.60)	(-1.89)
Intercept	0.025	-0.121	0.379***	0.588***
	(0.23)	(-0.93)	(5.45)	(2.92)
State fixed effects	yes	yes	yes	Yes
Year fixed effects	yes	yes	yes	Yes
Obs.	714	714	714	714
Adj. R-Sq.	0.866	0.781	0.782	0.813

Table 4: Panel Regression of Personal Bankruptcy on Financial Literacy

The dependent variables are: total bankruptcy (column I), Chapter 7 personal bankruptcy (column 2) and chapter 13 personal bankruptcy (column 3). Financial literacy is measured by: Economic course enrollment requirements (dummy variable equal to 1 if a state requires an economics course for graduation and zero otherwise), Economics testing (dummy variable equal to 1 if students are tested on economics concepts and zero otherwise), personal finance standard (dummy variable equal 1 if a particular U.S State has education standards to promote personal finance education in their K-12 standards and zero), personal finance enrollment requirements (dummy variable equal to 1 if a state requires an economics course for graduation and zero otherwise),and personal finance testing (dummy variable equal to 1 if students are tested on economics concepts and zero otherwise). All control variables are defined in the methodology section above.

Panel A: State with Legalized Gambling

	Total	**Chapter 7**	**Chapter 13**
Economics Enrollment	0.0002*	0.0003***	**-0.0001****
	(1.87)	(3.48)	**(-1.97)**
Economics Testing	-0.000002	-0.00003	0.00002
	(-0.02)	(-0.40)	(0.58)
Personal Finance Standard	0.0001	0.0001	0.00003
	(1.58)	(1.38)	(0.78)
Personal Finance Enrollment	**-0.0003*****	**-0.0002*****	-0.00004
	(-2.98)	**(-2.97)**	(-0.89)
Personal Finance Testing	-0.0001	-0.0001	0.00002
	(-0.65)	(-1.09)	(0.49)
Intercept	-0.0155	-0.0163	0.0008
	(-1.28)	(-1.60)	(0.12)
Control variables	yes	yes	yes
State fixed effects	yes	yes	yes
Year fixed effects	yes	yes	yes
Obs.	336	336	336
Adj. R-Sq.	0.913	0.918	0.439

Panel B: State without Legalized Gambling

	Total	**Chapter 7**	**Chapter 13**
Economics Enrollment	-0.0002	-0.0001	-0.00004
	(-1.34)	(-1.37)	(-0.65)
Economics Testing	0.0003***	0.0001	0.0002***
	(2.70)	(1.14)	(3.91)
Personal Finance Standard	**-0.0003****	-0.0001	**-0.0003*****
	(-2.49)	(-1.27)	**(-3.25)**
Personal Finance Enrollment	-0.0001	0.00002	**-0.0002****
	(-1.00)	(0.19)	**(-2.44)**
Personal Finance Testing	-0.0001	0.0001	**-0.0002*****
	(-0.50)	-1.14	**(-2.92)**
Intercept	-0.045***	-0.008	-0.037***
	(-3.19)	(-0.76)	(-5.57)
Control variables	yes	yes	yes
State fixed effects	yes	yes	yes
Year fixed effects	yes	yes	yes
Obs.	378	378	378
Adj. R-Sq.	0.867	0.88	0.60

Table 5: Panel Regression of Consumer Credit on Financial Literacy

The dependent variables are: mortgage loan delinquency rate (column I), credit card delinquency rate (column 2), auto loan delinquency rate (column 3) and student loan delinquency rate (column IV). Financial literacy is measured by: Economic course enrollment requirements (dummy variable equal to 1 if a State requires an economics course for graduation and zero otherwise), Economics testing (dummy variable equal to 1 if students are tested on economics concepts and zero otherwise), personal finance standard (dummy variable equal 1 if a particular U.S State has education standards to promote personal finance education in their K-12 standards and zero), personal finance enrollment requirements (dummy variable equal to 1 if a state requires an economics course for graduation and zero otherwise),and personal finance testing (dummy variable equal to 1 if students are tested on economics concepts and zero otherwise). All control variables are defined in the methodology section above.

Panel A: State with Legalized Gambling

	Mortgage	**Credit Card**	**Auto loan**	**Student loan**
Economic Enrollment	0.0025	0.0002	**-0.0026*** **	0.0050*
	(1.55)	(0.11)	**(-2.62)**	(1.90)
Economic Testing	-0.0004	-0.0015	**-0.0016** **	-0.0016
	(-0.41)	(-1.26)	**(-2.48)**	(-0.90)
Personal Finance Standard	**-0.0031*** **	**-0.0020***	**-0.0012***	0.00002
	(-3.04)	**(-1.83)**	**(-1.93)**	(0.010)
Personal Finance Enrollment	0.0012	0.0027**	0.0012*	0.0062***
	(0.99)	(2.13)	(1.70)	(3.13)
Personal Finance Testing	0.0000	**-0.0025***	0.0009	0.0022
	0.00	**(-1.74)**	(1.06)	(0.98)
Intercept	0.0088	-0.0702	0.327***	0.826***
	-0.05	(-0.37)	(3.09)	(2.86)
Control variables	yes	yes	yes	yes
State fixed effects	yes	yes	yes	yes
Year fixed effects	yes	yes	yes	yes
Obs.	336	336	336	336
Adj. R-Sq.	0.865	0.813	0.804	0.868

Panel B: State without Legalized Gambling

	Mortgage	**Credit Card**	**Auto loan**	**Student loan**
Economic Enrollment	-0.0001	0.002	0.0004	0.0064**
	(-0.08)	(0.96)	(0.37)	(2.14)
Economic Testing	-0.001	0.000	-0.001	-0.002
	(-0.73)	(0.24)	(-1.57)	(-0.75)
Personal Finance Standard	**-0.0023***	-0.002	-0.001	-0.001
	(-1.89)	(-1.17)	(-1.13)	(-0.31)
Personal Finance Enrollment	-0.0006	0.0009	0.0027***	0.0005
	(-0.49)	(0.51)	(3.13)	(0.22)
Personal Finance Testing	-0.0013	-0.0002	0.0042***	-0.0032
	(-1.12)	(-0.09)	(4.80)	(-1.31)
Intercept	0.0408	-0.211	0.462***	0.712**
	(0.28)	(-1.03)	(4.41)	(2.40)
Control variables	yes	yes	yes	yes
State fixed effects	yes	yes	yes	yes
Year fixed effects	yes	yes	yes	yes
Obs.	378	378	378	378
Adj. R-Sq.	0.888	0.765	0.775	0.794