

SOLO SIGNATOR:
ANALYSIS OF THE MINOR ALONE STATUTES

by
Lev Ariel Parker

A thesis submitted in partial fulfillment
of the requirements for the degree

of
Master of Science
in
Applied Economics

MONTANA STATE UNIVERSITY
Bozeman, Montana

April 2019

©COPYRIGHT

by

Lev Ariel Parker

2019

All Rights Reserved

ACKNOWLEDGEMENTS

I would like to thank the following: My thesis committee chair, Dr. Carly Urban, for your consistent guidance and encouragement throughout the thesis process. The remaining members of my committee, Dr. Mark Anderson and Dr. Andrew Hill, for providing additional support and perspective. The FINRA Investor Education Foundation for granting me access to the restricted version of the NFCS data. My cohort, for discussing thesis content and distracting me with needed breaks. Dr. Christiana Stoddard, for your check-ins and encouragement. The Agricultural Economics and Economics Department at Montana State University, for funding my graduate education including this thesis.

TABLE OF CONTENTS

1. INTRODUCTION	1
2. BACKGROUND	4
Banking Access.....	4
Credit Unions	8
Heterogeneity of the Laws and Implications	9
Case Studies	11
3. THEORETICAL PREDICTIONS	13
4. LITERATURE REVIEW	15
5. DATA	18
University of Kentucky	18
Credit Union Financial Data	19
National Financial Capability Survey	19
Financial Institution Location Data	20
6. EMPIRICAL STRATEGY	22
First-Stage Model – State Characteristics That Determine the MAS	23
Firm Response Model	26
Individual Model.....	28
Affected.....	29
Years Since the MAS Was Enacted When the Respondent was	
14 – Cohort1 Only	31
Pre-treatment Trends.....	32
7. RESULTS	34
Firm Response Model	34
Individual Model.....	34
8. CONCLUSION.....	36
REFERENCES CITED.....	38

TABLE OF CONTENTS CONTINUED

APPENDICES	42
APPENDIX A: Tables	43
APPENDIX B: Robustness Checks	58

LIST OF TABLES

Table	Page
1. Table 1 MAS by State and Year	44
2. Table 2 Summary Statistics – First Stage Model Characteristics by MAS	45
3. Table 3 State Characteristics That Determine MAS	46
4. Table 4 Summary Statistics – Firm Model Variables by MAS	47
5. Table 5 Firm Response - MAS	47
6. Table 6 Firm Response – Yrs_MAS	48
7. Table 7 Individual Model Summary Statistics by Affected.....	49
8. Table 8 Account Ownership - Affected	50
9. Table 9 Summary Statistics – BINYrs_since_at14 (Cohort1).....	50
10. Table 10 Account Ownership – BINYrs_since_at14 (Cohort1).....	51
11. Table 11 Summary Statistics – Pre-treatment Trend – General Population.....	52
12. Table 12 Summary Statistics – Pre-treatment Trend – Cohort1	53
13. Table 13 Pretreatment Trend – General Population	54
14. Table 14 Pretreatment Trend – Cohort1	55
15. Table 15 Account Ownership – Affected With State Time Trend.....	56

LIST OF TABLES CONTINUED

Table	Page
16. Table 16 Summary Statistics – Account Ownership by Cohort	57
17. Table 17 Account Ownership – Affected with GovDem.....	59
18. Table 18 Firm Response – MAS, no topcode	59
19. Table 19 Firm Response – Yrs_MAS, no topcode	60
20. Table 20 Account Ownership – Affected (2012 mean age by cohort for 2009 age)	61
21. Table 21 Account Ownership – Affected (2015 median age by cohort for 2009 age)	61
22. Table 22 Account Ownership – Affected (2015 mean age by cohort for 2009 age)	62
23. Table 23 Account Ownership – Affected with weights within nation by age/gender, ethnicity	62

ABSTRACT

Lack of banking access affects approximately a quarter of the population. It is often the most vulnerable populations that are most likely to be unbanked. Without access to the formal banking system, people turn to alternative financial services (AFS) which are significantly more expensive than the formal alternatives. Granting minors independent access to the formal banking system may be a policy tool which can reduce the number of unbanked adults and adults who frequent AFS. I exploit variation in a set of laws known as the Minor Alone Statutes (MAS) which grant minors independent access to state-chartered banks and credit unions. Results on how the MAS affect account ownership are inconclusive, but the MAS do decrease the probability of young adults with bank accounts frequenting AFS by approximately 10%.

INTRODUCTION

Approximately a quarter of the country's population (84.8 million people) lack access to the formal banking system (Apaam et al. 2017). Without access to banking, people use alternative financial services (AFS) such as auto title and payday loan services, pawn shops, or check-cashing services all of which are more expensive than the formal banking system. Those without access to the formal banking system, are predominantly vulnerable populations. Findings echoed throughout existing literature show that the unbanked are more likely to have lower incomes, be younger, minority, female, unmarried, unemployed, and less financially literate (Gross et al. 2012, Apaam 2017).

Approximately 20% of households use AFS (Apaam 2017). Even though AFS provide credit services to people who cannot access lines of credit through the formal banking system, the high interest rates and fees can keep consumers trapped. For payday loans specifically, 80% of all loans are renewed or followed by another loan within 14 days, half of all loans are in a sequence of at least ten loans long, and in 80% of the loan sequences that last longer than one, the last loan in the sequence is the same size or larger than the first (Burke et al. 2014). Approximately half of all AFS patrons are young adults between the ages 18-34 (Harvey 2018).

Existing research shows that access to the banking sector as a minor makes one more likely to be banked as an adult (Friedline 2013). There are a variety of public programs to encourage minors to save, but few which grant minors independent access to

the formal banking sector. Expanding minor banking access may reduce the amount of unbanked adults as well as reduce the amount of adults who frequent AFS.

Since 1909, 37 states have enacted laws which address minor bank accounts. Collectively, these laws are referred to as the ‘Minor Alone Statutes (MAS).’ At their strongest, the MAS grant minors independent access to state-chartered banks and credit unions and consider them adults held liable to the responsibilities for the accounts and membership. At their weakest, the MAS simply state that state chartered banks and credit unions may conduct business with minors. There are separate statutes for banks and credit unions, and one does not override the other.^{1,2}

There is no published research that evaluates the effects of the MAS on banking and AFS outcomes. To do so, I use a difference-and-difference approach with linear probability models to identify causal effects of the MAS on firm and individual level outcomes. I utilize variation between and within states, as well as variation between individuals, who are affected by the laws.

I reference state statutes for details of the MAS including year enacted. I use University of Kentucky Center for Poverty Research National Welfare Data, from 1980-2017, to show characteristics do not determine the MAS being enacted within a state. I use banking and credit union location data from the Federal Deposit Insurance Corporation (FDIC) and National Credit Union Association (NCUA) respectively. I also

¹ Connecticut has one statute for both banks and credit unions and Vermont refers to the statutes for banks to apply to credit unions.

² Idaho, Indiana, Nebraska, Pennsylvania, and Wisconsin only have statutes pertaining to credit unions. Delaware, Florida, Kansas, Maine, Maryland, Michigan, New Jersey, New York, Rhode Island, South Dakota, Utah, Washington, and Wyoming only have statutes pertaining to banks.

use NCUA data for aggregated state level credit-union outcomes. I use the restricted version of the 2009, 2012, and 2015 waves of the National Financial Capability Survey (NFCS) for individual level banking and AFS outcomes.

I identify causal effects of the MAS on individual level outcomes. When applied to all age groups, I identify zero effects of the MAS but when applied to young adults ages 18-24, I find the MAS reduce the probability of being banked by 4.6% and reduce AFS use among banked young adults by at least 10%. Results which show economically significant reductions in AFS use among young adults are strong and in sync with predictions, existing literature, and perceived intent of the laws.

BACKGROUND

Banking Access

Since 2009, the FDIC has conducted a biennial survey of the country to assess banking access. As of the 2017 FDIC National Survey of Unbanked and Underbanked Households, 6.5% of households (14.1 million adults and 6.4 million children) are ‘unbanked,’ meaning they have no access to the formal banking system (a checking or savings account), and 18.7% of households (48.9 million adults and 15.4 million children) are ‘underbanked,’ meaning they have access to the formal banking system but also use alternative financial services (AFS) such as pawn shops, payday loan or check-cashing services (Apaam 2017).

In the FDIC Surveys, the most commonly reported reason for being unbanked is that respondents don’t have enough money to keep an account. Even with sufficient income to warrant and keep a bank account, perception of banking climate can be a significant determinant of banking access. For example, the FDIC 2015 Survey findings show “that even among unbanked households with income of at least \$50,000, 47% perceive that banks are ‘not at all interested’ in serving households like theirs.” The implications of these findings suggest the unbanked are not price-sensitive to banking services.

The second most common reason for not having a bank account in the FDIC Surveys is not trusting banks.³ Moreover, in both the Federal Reserve Board's 2010 Survey of Consumer Finances as well as their 2012 Mobile Financial Services Survey the most frequently reported reason for being unbanked was also not liking banks. Kuhnén and Miu (2017) find in lower levels of socioeconomic status, there are stronger levels of pessimism regarding financial markets working in ones favor. Kuhnén and Miu (2017) suggest the socioeconomic-related differences in pessimism help explain why families just on either side of socioeconomic income brackets may have significantly different wealth outcomes. The same pessimism appears to be present in regards to the formal banking sector.

The intersection of multiple social and economic conditions which are related to banking access makes simple solutions to banking access often hard to identify or implement. Government programs like Child Development Accounts (CDA), which provide a variety bonuses and incentives to save have been shown to increase savings (Sherraden et al., 2013), but do so by the provision of funds in the first place (Cramer 2010)⁴. The cost and benefits of using tax dollars for initial deposits in CDAs have not been discussed.

Laws regulating AFS or providing life-line accounts have had mixed results. Washington (2006) finds that state legislation that caps check-cashing fees increases the

³ Other commonly reported reasons are account fees being too high, and not having the right identification.

⁴ Of the five CDA programs proposed to congress between 2007 and 2008, three provided \$500-\$1000 either in an account or as a bond to every child. The other two proposals involved creating tax-deferred savings accounts.

number of low-income Hispanic and Black banked households by 4.5% but also finds that life-line account laws decrease the amount of low-income White households by 2.6%. Moreover, Doyle et al. (1998) evaluates life-line banking laws and conditions of New York and concludes they are often ineffective because banks already provide cheaper account services than required by the laws and affirms that the unbanked are nonresponsive to the price changes.

Without access to the formal banking system, AFS are often used for check-cashing, paying bills, and credit services. The 2017 FDIC Survey reports 22.1% of households used AFS within the last year. Avoiding expensive check-cashing fees and finding convenient ways to pay bills are both relatively easy. Supermarkets, including Walmart, often provide both check-cashing and bill-pay services at lower prices than check cashing businesses (Gross 2012, Doyle 1998).^{5,6} However, AFS credit services are not as forgiving. Average fees and annual percentage rates (APR) in AFS credit markets are much higher than the formal banking sector (Harvey 2018). Pawn shop loan APR ranges from 12-300%, mean payday loan APR is 391%, and rent-to-own financing APR ranges from 57-230% (Harvey 2018).

Having access to banking means individuals can safely store money in an account as savings as well as have a command over a tool to pay bills and receive payments using checking accounts. Aportela (1999) finds that simply having access to banking leads to

⁵ Walmart charges up to \$4 for checks up to \$1,000 and up to \$8 for checks greater than \$1,000 (<https://www.walmart.com/cp/check-cashing/632047>).

⁶ Walmart Money Services includes check-cashing, prepaid debit cards, and billpay services. Billpay services can be used to pay bills with cash. Cash can also be loaded onto prepaid debit cards that can be used to pay bills and make purchases (<https://www.walmart.com/cp/walmart-money-center/5433>).

increased savings rates. Other benefits of banking include avoiding unnecessary costs of AFS services and gaining access to a suite of investment opportunities or lines of credit. Moreover, the benefits may be even greater the earlier in life one obtains access to banking. Brown (2016) finds that the earlier in life one gets access to banking, the younger they are when they initiate a credit inquiry, and even if the first inquiry is denied, their credit history is initiated and they are better off in the long run because time is a positive determinant of a credit history.

Access to banking as a minor may be one of the single greatest determinants of financial well-being in adulthood not currently being discussed. Friedline & Elliott (2013) found a correlation between those who had savings accounts in childhood being twice as likely to have savings accounts and credit cards, and four-times as likely to own stocks, in adulthood. Moreover, Brown (2016) found that residents growing up in areas with low levels of financial development, defined as number of banks in an area, experience a ten-year lag in their credit scores to catch-up to their peers from areas of higher financial development. However, and most importantly, Brown (2016) also found that those who grew up in areas of low financial development but did obtain access to banking had comparable credit-scores to their peers from areas of higher financial development suggesting access to banking, in particular early access to banking, is key to overcoming financial development deficiencies.

Credit Unions

Credit unions are akin to banks in that they accept deposits, grant loans, and provide financial services such as investment accounts and insurance products. They differ in structure from banks by being non-profit cooperative institutions that issue membership-shares while banks are profit-seeking private institutions which have customers (NCUA 2019). Credit unions are often regionally-based, tend to face less regulation, and due to the cooperative business model, often charge lower fees and interest rates than banks (NCUA 2019)⁷. However, it is important to note that credit union services are often less robust than what banks provide either in quality and/or convenience. As such, consumers and businesses often face a trade-off of quality and price when choosing between credit unions and banks.

The reason behind specific credit unions being established often reflects the community oriented nature of their business model. The oldest credit union in the country is ‘St. Mary’s Bank’ in Manchester, NH and was established in 1908 on a volunteer basis by a pastor to empower local residents to save and lend money (St.Marys 2019). St. Mary’s still remains today and withstood the great depression, remaining operational even during the ‘Bank Holiday’ of 1933 when President Roosevelt closed banks nationwide, as well as during the tumultuous banking climate of the 1990’s when many

⁷ Some credit unions provide payday loans but at rates substantially lower than payday loan servicers (Harvey, 2018).

banks within the same city closed. If local membership is strong, credit unions are capable of sustaining local banking needs.

The conditions of credit unions provide an interesting context to evaluate the MAS. Due to greater reliance on local communities for membership, credit unions may have a stronger response to the MAS than banks because they may see the MAS as expanding existing local markets in a different way than banks would. Most importantly, MAS for credit unions have been enacted in greater frequency most recently compared to MAS for banks. MAS for credit unions have been enacted by North Carolina in 2013, Illinois in 2012, Iowa in 2007, Vermont in 2005, and Michigan in 2004. The most recent enactment of MAS for banks, was by Colorado in 2001.

The MAS for credit unions do address the membership structure and cooperative business model of credit unions. Arkansas, Iowa, Nevada, New Hampshire, and Oklahoma limit a minor's ability as a voting member, to sit on the board, and become president/director. Colorado permits credit unions to set an age limit for membership and voting ability by discretion.

For this analysis, I will only be evaluating MAS for credit unions. When referring to MAS it is implicit that I am referring to MAS for credit unions.

Heterogeneity of the Laws and Implications

The rights and privileges explicitly granted to minors by the MAS varies between states. In some states, the statutes explicitly grant minors independent access to banks and

credit unions. In other states, minors are granted protected membership and banking privileges, but the laws do not specifically address access let alone independent access. It's unclear, but presumably the case, that some states with MAS do not actually grant minors independent banking access but simply allow credit unions to have accounts in the names of both the minor and the co-signer.

All states with MAS are assigned to the treatment group. Because some states do not grant the same extent of independent banking access to minors as others, and presumably some not at all, the treatment is being over-assigned. Over-assigning the treatment to include some of the control group, whom the treatment is compared against, weakens that comparison thus weakening the observable effects of the treatment. Accordingly, the effects of the laws will be understated in the analysis which strengthens any findings of causal relationships because we know that the effects of the treatment are actually greater than what is observed.

There is also heterogeneity of the MAS which bind credit unions to the provisions of them. Some states allow credit unions to grant independent access but do not require it.⁸ The exceptions are Minnesota, Missouri, and Oklahoma which use language which define that if membership is issued to a minor, it is in the sole control of the minor.⁹

⁸ Text of the MAS being 'credit unions may...'

⁹ The MAS of Minnesota state, '...shares issued in a minors name, shall be held for exclusive right and benefit of the minor.' The MAS of Missouri state, 'When shares are issued in the name of any minor, the same shall be held for the exclusive right and benefit of the minor..' and also states 'To the shares issued in joint tenancy in the name of any minor, all provisions of section 370.287 shall apply' indicating the MAS of Missouri grant independent access because if a parent was needed to obtain access, their name would also be on the account. The MAS of Oklahoma state, 'When any shares shall be purchased by or deposits made in the name of any minor, the same shall be held for the exclusive right and benefit of such minor.'

There are also provisions of the MAS which specify that minors shall be considered/deemed adults for such accounts.¹⁰ A provision stating such is important because it requires the minor to fulfill the responsibilities of the bank account contract. Without such provisions, minors are capable of shirking account responsibilities, including payments, fees, or penalties, until they become legal adults, the consequences of which banks and credit unions try to avoid. As such, we expect some credit unions who have MAS in their state to not respond to them despite potential advantages because the expected benefits outweigh the expected costs.

The lack of provisions of the MAS making minors accountable to the responsibilities of the accounts like adults is only one example why credit unions may not respond to the MAS. There are potentially other marginal costs which are greater than the benefit of independent minor accounts. If returns of average account balance for an independent minor account, or expected value of having such customers, is lower than the cost to maintain or administer, credit unions may not respond to MAS.

Case Studies

Two credit unions will be discussed as case studies to demonstrate the variation in response we may expect to see from credit unions to MAS. Information for the credit union case studies was obtained by phone interview with customer service centers by the author.

¹⁰ (Arizona, Colorado, Connecticut, Georgia, Hawaii, Illinois, Indiana, Kentucky, Montana, Nebraska, Nevada, New Mexico, North Carolina, Ohio, Pennsylvania, South Carolina, Vermont and West Virginia)

The North Carolina State Employees' Credit Union (NCSECU) is a state-chartered credit union for the employees of the state of North Carolina (NCUA). NCSECU was chartered in 1937 and has 265 locations (<https://locations.ncsecu.org/index.html>), 2,374,770 members, and \$38.81 billion dollars in assets making it a part of the largest classification size of credit unions by the National Credit Union Association (NCUA 2019). MAS were enacted in North Carolina in 2013 and contain provisions which hold minors accountable to the responsibilities of accounts. However, an adult co-signer is required for all minor accounts at NCSECU (phone interview with customer service center on 10/30/18).

The Pennsylvania State Employees Credit Union (PSECU) is a state-chartered credit union for the employees of the state of Pennsylvania (NCUA). PSECU was chartered in 1933 and has three locations (<https://www.psecu.com/about-psecu/contact/atms-locations>), 453,181 members, and \$5.36 billion dollars in assets and in the same size-classification of NCSECU (NCUA 2019). MAS were enacted in Pennsylvania in 1933 and contain provisions which exclusively grant independent access to minors age 12 and older as well as hold minors accountable to the responsibilities of accounts. At PSECU, minors age 12 and older can get a savings and checking account with a debit card without a parent cosigner. For minors under the age of 12, PSECU provides custodial accounts where minors are primary and parents only have rights to custodial actions and do not have transactional rights to funds. PSECU is an example of a credit union offering minor accounts in direct accordance with MAS both in level of access and intent of laws.

THEORETICAL PREDICTIONS

The theoretical predictions of enacting MAS are ambiguous. The strongest presumption to make when evaluating MAS is that credit unions know the marginal costs and benefits of minor accounts, especially independent minor accounts. Presumably, part of that calculus is the expected value of the independent minor accounts which is in part determined by the costs to maintain the account as well as the probability and costs of minors accumulating and neglecting to pay overdraft charges or account. However, credit unions may not be accurately assessing the benefits of independent minor accounts because they just presume it not worth it to them, underestimate the youth market, or are ignorant to the MAS.

Existing literature has already found a correlation between being banked as a minor and being banked in adulthood (Friedline & Elliott 2013). A potential payoff for credit unions granting access to minors, aside from returns on deposits, is capturing consumers early in life who are then most likely to remain credit unions members if not with the same branch.¹¹ Moreover, Lewis and Bingham (1991) and Fosch et al. (2010) find that the youth demographic, although with considerably less income than adults, have an increasingly high purchasing power. As such, presuming minor accounts, including independent minor accounts, are too risky or unprofitable without significant analysis may be a mistake.

¹¹ Srivista and Srinivasan (2009) find that among Indian college students convenience was the most important criteria for banking decisions. Although I avoid applying findings from other countries in this analysis, I believe this general finding is broadly applicable and verifies basic theoretical assumptions regarding individual behavior especially with banking.

So, if credit unions are rational actors and know what is worth it to them, how will MAS affect their behavior? Will credit unions grant more independent minor accounts? Yes, if the marginal benefits are greater than the marginal costs, in which case we expect the number of accounts to increase. There could be a decrease in average assets per member if minor deposits are smaller than existing membership and if minors are a large enough group to make a difference. Therefore, decrease in average assets per member may be considered a negative outcome by credit union managers if not considered carefully.

In the long term, we might expect more states to continue to adopt MAS if they produce positive results for credit unions. Presuming lobbying powers are stronger for credit unions than consumers, MAS being enacted is presumably driven by favorable credit union outcomes. Despite so few states having enacted MAS in their strongest form, we still see a steady progression of MAS being enacting with credit unions leading the trend over banks, especially within the last 20 years¹².

¹² Figure 1 shows MAS by state and year.

LITERATURE REVIEW

This analysis touches on only a few existing fields of published research. Banking access, youth banking behavior, and AFS use are all related but few papers are directly applicable. I will focus on two papers which specifically address youth banking access. I avoid delving into papers analyzing child development accounts (CDA) because they have barely been implemented in the US, existing papers do not identify causal effects, and the MAS grant independent access to banks and credit unions, not a special type of account.

‘Growing Up Without Finance,’ by Brown et al (2016), is the most relevant published research to this analysis. In their paper, Brown et al. (2016) utilize an exogenous shock from Public Law 280 (PL280) which resulted in significant differences in financial development (number of banks) between treatment and control reservations that still remains today. Public Law 280 was enacted in 1953 and required civil law cases on certain reservations to be processed in state courts. Debt collection was included. Although the reservations which were affected by PL280 were not randomly chosen, Brown et al. (2016) show that the economic conditions, including number of bank branches, were identical across the treatment and control group before PL280 was enacted.

To build their case, Brown et al. (2016) demonstrate that reduced financial development lead to fewer individuals being banked within the formal banking sector. From this disparity, Brown et al. (2016) demonstrate how people from the reservations

under PL280 had credit score that were on average 18 points lower than their peers from non PL280 treated reservations and that it took them a decade to catch up to their peers. Brown et al. (2016) conclude by emphasizing that financial wellbeing as an adult is significantly influenced by the financial conditions, including access to the formal banking system, faced while growing up.

Friedline and Elliot have written extensively, both collaboratively and independently, about youth banking habits, minor account programs (including CDA accounts), and banking among the poor. However, their analyses have not identified causal relationships. In their 2013 paper, Friedline and Elliot utilize propensity score weighting to find an association between those who had a savings accounts in childhood being twice as likely to have savings accounts and credit cards, and four-times as likely to own stocks, in adulthood. Addressing their findings, Friedline and Elliot (2013) mention the the lack of youth banking research, poor availability of data to do so, and poor theoretical work done to best understand and identify relevant covariates to include in models. In addition, Friedline and Elliot (2013) note ‘few studies have tested whether having savings accounts in childhood relates to connectedness to mainstream banking in young adulthood.’

There are few policies or laws pertaining to banking access which exist to be analyzed. Washington (1999) analyzes check-cashing and lifeline banking policy effects on banking access. Although both are not related to MAS, Washington’s (2013) paper is one of few focusing on bank access outcomes. However, by her own admission, Washington is unable to make significant findings. Harvey (2018) analyzes financial

education impacts on AFS use with significant and positive results. There is an expanding body of research on impacts of financial education which I do not delve into because the MAS are not education-oriented.

I contribute to existing research in a novel way. No one has evaluated the MAS and there is a sparse amount of research focusing on youth-oriented market mechanisms. Moreover, I focus on outcomes, banking access and access to the formal banking sector, which have been identified as needed greater attention by prominent scholars in the field.

DATA

University of Kentucky

I use the University of Kentucky Center for Poverty Research National Welfare Data, from 1980-2017, to construct a first-stage model of state characteristics that may determine the MAS being enacted. The UK Poverty Data is a state-level panel data set that is updated annually. The dataset includes aggregated state-level social, economic, and political characteristics primarily sourced from government data sources including the Current Population Survey (CPS) and the American Community Survey (ACS), both conducted by the U.S. Census Bureau, and various other surveys and analyses conducted by the Bureau of Labor Statistics, Bureau of Economic Analysis, U.S. Department of Commerce, and U.S. Department of Labor. Political characteristics, such as political party affiliation of state government house and senate members and governor, are sourced from The Council of State Governments.

I choose controls from the UK Poverty Data which have theoretical basis for being associated with banking access. I address political climate in state government by separately controlling for the political party affiliation of the governor and party dominance in the state house and senate. I control for economic characteristics using unemployment rate, minimum wage, poverty rate, gross state-product, and level of workman's compensation within a state. Using financial institution data from the FDIC and NCUA, I address financial development by controlling for the proportion of credit

unions out of all banks and credit unions as well as the proportion of credit unions which are state-chartered out of all credit unions.

Credit Union Financial Data

To evaluate firm-level effects of the MAS, I use financial data from the National Credit Union Association (NCUA) which includes the aggregate number of credit unions, members, and financial information by state from 1991-2017. For the scope of a master's thesis, I was unable to assemble firm-level data but I can evaluate effects on credit union outcomes aggregated at statewide-levels by year. I use total credit unions assets which I divide by number of members to get average assets per member.

National Financial Capability Survey

The dataset for my individual-level models is the restricted version of National Financial Capability Survey (NFCS). The NFCS is a state-by-state online survey of over 25,000 adults, with approximately 500 respondents per state in each survey year (2009, 2012, 2015) conducted between the months of June and October (NFCS)^{13,14}. The NFCS is conducted by the FINRA Investor Education Foundation.

¹³ Sampling by year: 2009 – 28,000 respondents, 2012 – 25,509 respondents, 2015 – 27,564 respondents. In 2015, New York, Illinois, and California were oversampled at 1000 respondents. In 2012, survey timeframe was June through October.

¹⁴ Individual level model is run with weights within nation by age, gender, and ethnicity with similar results as shown in Table 23.

The NFCS contains demographic and financial information of each respondents. Demographic information included in the NFCS which I utilize are state, zip code, age, cohort, race, and gender¹⁵. Financial information included in the NFCS which I use are having a checking or savings account and how many times a respondent has used an auto title loan, payday loan, or rent to own services or a pawn shop within the last year. A respondent is considered to use AFS if they answer at least once to any of the AFS services listed. The NFCS also includes information regarding homeownership, investment behavior, ability to pay bills, and financial literacy assessments.

Age is not reported in the 2009 survey year data but cohort is. Cohorts are ages 18-24 and every nine years thereafter until the age of 65.¹⁶ To assign age for the 2009 survey year respondents, I determine the median age of each cohort by state in 2012, and reassign it as the age for 2009 survey respondents for their respective cohort and state. Compared to the mean, the median will best represent the average cohort age if the distribution of ages is skewed. Models are repeated with all combinations of mean and median age of each cohort by state for 2012 and 2015 as base years as part of robustness checks with similar results as shown in Tables 20 - 22.

Financial Institution Location Data

I use bank location data from the FDIC and credit union location data from the NCUA which are the insuring bodies for the respective types of financial institutions.

¹⁵ FINRA granted me access to the restricted version of the NFCS which includes age.

¹⁶ Cohort age ranges: 25-34, 35-44, 45-54, 55-64, and 65+.

From the FDIC, I use two types of datasets, one that has the total number of FDIC insured institutions by state from 1934-2017, and one that lists every FDIC insured institution, including residing state and zip code, by quarter. From NCUA, I utilize one type of dataset which lists every single NCUA insured institution, with location details and type of chartering, by quarter. The NCUA data only goes as far back as 1994. From these datasets, I am able to tally the number of banks and credit unions (by total and charter type), within a zip code and state by both year and quarter.

I use bank and credit union location data differently between the firm and individual level models. In the firm model, I use number of banks and credit unions by year and state to measure the financial development (number of banks and credit unions) as well as the proportion of credit unions which are state-chartered. For the individual model, I use credit union location data which I compile as averages between quarters two (Q2) and three (Q3). Because NFCS survey is conducted between June and October, I average the credit union location data by both state and zip code between Q2 (June) and Q3 (September) to find an average number of credit unions during the survey period.

EMPIRICAL STRATEGY

I use a difference-and-difference approach with linear probability models to identify causal effects of the MAS. I measure differences in outcomes caused by the MAS in firm and individual models separately. In the firm model, I compare the differences of state level aggregated credit union outcomes between states with and without MAS over the same time period as well as compare the differences within states before and after the MAS were enacted in states that did so. In the individual model, I compare the differences of banking outcomes between people of all ages, and only young adults, who were and were not directly-affected by the MAS as minors, over the same time period.

I identify the treatment in the firm model by knowing if, and in which year, MAS were enacted in each state. I assign which years each state is affected by the MAS. For the individual model, I know each respondent's age and state of residence for each survey year. From age and year, I can determine year of birth and the year respondents were 14 and 17 years old. Combined with my knowledge of the MAS for each state, I can determine if respondents were affected by the MAS while a minor and if so, for how many years since the MAS have been enacted at the age of 14. Table 1 shows the year each state has enacted MAS for those that have done so.

A potential weakness in my identification strategy is I cannot control if or when respondents have moved between states during their lifetime. By not knowing if or when respondents have moved, I cannot know for certain if they were affected by MAS.

However, Brown et al. (2018) compile data from the Federal Reserve Board of New York Consumer Credit Panel and show that those between the ages of 19 to 24 have a 98.87% to 89% likelihood of residing within the same state they graduated high school.¹⁷ Moreover, there is no reason to believe those who do move as minors are doing so because of the MAS or banking outcomes so any error in identifying such would be classical measurement error and of no concern.

In all models, I cluster standard errors by state to address heteroskedasticity and because the MAS vary by state. I use state-level fixed effects to pick-up any unobservable time invariant characteristics of each state. I use year-fixed effects to pick-up any unobservable time-varying conditions. In the individual level models, I use a cohort fixed effect when analyzing all ages of the sample population and I use an age fixed effect when analyzing young adults ages 18-24. When controlling for pre-treatment trends, I include state-specific linear time trends.

First-Stage Model – State Characteristics That Determine the MAS

First, I run a first-stage model to determine if any state-level characteristics have a causal effect on the MAS being enacted. The reason being for a first-stage model, is to control for omitted variable bias in the individual and firm level-models. If there are any time-variant state-level characteristics that have a causal effect on the MAS being enacted

¹⁷ From Brown et al. (2018), age and likelihood of residing within the same state one graduated high school: 20 – 97.33%, 21 – 95.75%, 22 – 93.72%, 23 – 91.27%, 24 – 89%.

and are also correlated with any of the outcome variables in the individual or firm models, but are not included as controls, there will be an omitted variable bias.

To identify significant state-level characteristics, I construct a linear probability model which evaluates each variable's contribution to the probability of MAS being enacted within a state over the sample period. The model is estimated by equation (1):

$$\begin{aligned} MAS_{s,y} = & B_0 + \beta_1 GovDem_{s,y} + \beta_2 MinWage_{s,y} + \beta_3 UnempRate_{s,y} + \beta_4 Fd_pc_{s,y} + \\ & B_5 Prop_CU_{s,y} + \beta_6 GSP_{s,y} + \beta_7 Wrks_Comp_{s,y} + \beta_8 PovertyRate_{s,y} + \\ & \beta_9 FracHousDem_{s,y} + \beta_9 FracSenDem_{s,y} + \delta_s + \gamma_y + \varepsilon_{s,y} \end{aligned} \quad (1)$$

Outcome variable of interest $MAS_{s,y}$ is a binary variable (one for yes, zero for no) if minor alone statutes have been passed within state s by year y . $GovDem_{s,y}$ is a binary variable if the governor is a Democrat for state s in year y . $MinWage_{s,y}$ is whichever is highest between state and federally mandated minimum wages for state s in year y . $UnempRate_{s,y}$ is the unemployment rate for state s in year y . $Fd_pc_{s,y}$ is a measure for 'financial development per capita' and is the total number of banks and credit unions per 10,000 people for state s in year y . $Prop_CU_{s,y}$ is the proportion of credit unions out total banks and credit unions for state s in year y . $Prop_SCCU_{s,y}$ is the proportion of credit unions which are state chartered for state s in year y . $GSP_{s,y}$ is the gross state product in billions of dollars for state s in year y . $Wrks_Comp_{s,y}$ measures Workman's Compensation in billions of dollars for state s in year y . $PovertyRate_{s,y}$ is the percent of the population in poverty for state s in year y . $FracHousDem_{s,y}$ and $FracSenDem_{s,y}$ are the proportion of the state government house and senate that are Democrat for state s in year y .

δ_s are state fixed-effects that measure the mean of the outcome variable by state, and control for unobservable time-invariant characteristics of each state. γ_y are year fixed-effects that measure the mean of the outcome variables by year, and control for unobservable time-variant characteristics. $\varepsilon_{s,y}$ is the idiosyncratic error term varying by state and year and clustered by state. Table 2 shows summary statistics for all variables included in first stage model.

Table 3 displays results of first stage model with three levels of specifications. All three model specifications have the same outcome variable $MAS_{s,y}$ but vary by sampling of states and time-periods. Column (1) shows results without Nebraska and is limited by banking data to 1994-2017. Nebraska has a ‘unicameral’ state legislature, meaning it has only one legislative body, and drops when controlling for the proportion of state house and senate being democrat. The only statistically significant variable from this model specification is *GovDem* which has a magnitude of -0.0489 and is statistically significant to the 5% confidence level.

Column (2) shows results when insignificant variables of the first specification are removed but maintains the same sample time period 1994-2017. Nebraska is included in the second specification because *FracHouseDem_{s,y}* and *FracSenDem_{s,y}* are dropped. *GovDem_{s,y}* remains statistically significant but decreases to the 10% confidence level and decreases in magnitude to -0.0398.

Column (3) shows results of model specification without insignificant variables and expands the sample time-period to include the entire range of the dataset because it is

not limited by banking data. $GovDem_{s,y}$ is statistically significant to the 5% confidence level with a magnitude of -0.0579. The results from column (3) indicate that if a Governor of a state is a Democrat, on average, that state is 5.79% less likely to have MAS compared to states where the Governor is not a Democrat, which presumably means being a Republican. Because I identify a causal effect of the political party affiliation of a state governor, $GovDem_{s,y}$ is included in firm models. Table 17, as a robustness check, shows no significant findings when $GovDem_{s,y}$ is included in the individual model. As such, $GovDem_{s,y}$ is excluded in all subsequent individual level models.

Firm Response Model

To evaluate the effects the MAS have on credit unions, I construct another linear probability model. There are three firm-response model specifications varying by treatment controls. Table 4 shows summary statistics for all variables included in firm response model. The first firm model specification is estimated by equation (2):

$$Y_{s,y} = \beta_0 + \beta_1 MAS_{s,y} + \beta_2 GovDem_{s,y} + \delta_s + \gamma_y + \varepsilon_{s,y} \quad (2)$$

$Y_{s,y}$ are outcomes variables $Member_prop_{s,y}$, $Prop_SCCU_{s,y}$ and $assets_member_{s,y}$ and are repeated in all three model specifications. $Member_prop_{s,y}$ is the proportion of credit union members out of state population for state s in year y . In Alaska from 2014-2017, and Virginia from 2013-2017, the proportion is greater than one. This variable is top-coded so any value greater than one is rounded to one. This model is run again

without top-coding as a robustness check with similar results shown in Table 18 and Table 19.

$Prop_SCCU_{s,y}$ is the proportion of credit unions which are state-chartered for state s in year y . $assets_member_{s,y}$ is the average assets per credit union member for state s in year y . The treatment control variable $MAS_{s,y}$ is a binary variable if state s in year y has minor alone statutes and measures the average effect of the MAS across all states over the entire sample time period. Included in all three models are: $GovDem_{s,y}$, δ_s and γ_y , which are state and year fixed-effects, and $\epsilon_{s,y}$ the idiosyncratic error term varying by state and year and clustered by state.

The second firm model specification measures the treatment by years since the MAS have been enacted. $Yrs_MAS_{s,y}$ are the years since MAS have been enacted in state s in year y and measure the average effect across all states for every additional year MAS have been enacted. Identifying the treatment by number of years the MAS have been enacted enables me to measure the difference in the treatment over time which the first model specification does not. This model is estimated by equation (3):

$$Y_{s,y} = \beta_0 + \beta_1 Yrs_MAS_{s,y} + \beta_2 GovDem_{s,y} + \delta_s + \gamma_y + \epsilon_{s,y} \quad (3)$$

The third model specification measures the treatment by binning years since MAS have been enacted. $1,15,27,43,71.BINyrs_MAS$ are dummy variables for five evenly binned ranges of Yrs_MAS (1-14 years, 15-26 years, 27-42 years, 44-70 years, and 71-108 years) for state s in year y . The coefficient on each dummy measures the average

effect of the MAS being enacted for the range of years the dummy represents compared to zero. This model specification is estimated by equation (4):

$$Y_{s,y} = \beta_0 + \beta_1 1,15,27,43,71.BINYrs_MAS_{s,y} + \beta_2 GovDem_{s,y} + \delta_s + \gamma_y + \varepsilon_{s,y} \quad (4)$$

Table 5 shows results for firm model with $MAS_{s,y}$ as the treatment control variable. Table 6 shows results for firm model with $Yrs_MAS_{s,y}$ and $BINYrs_MAS_{s,y}$ as the treatment control variables . All three model specifications are repeated with the three outcome variables of interest, *Member_prop*, *Prop_SCCU*, and *Assets_Member*. There are zero causal effects of the MAS identified by the firm-response model. $GovDem_{s,y}$ is statistically significant at the 1% confidence level in both models and has a positive effect on average assets per credit union member within a state by \$227.6, \$204.9, and \$253.2 respectively. The treatment control variables are not statistically significant in any of the firm-response models.

Individual Model

To identify individual level effects of the MAS, I construct multiple linear probability models. The individual-level models vary by treatment control variables, subset of sample population analyzed, and age or cohort fixed effects. Demographic controls, year fixed effects, and state fixed effects remain constant throughout all individual level models and specifications.

All treatment control variables included in all the individual level models do not vary by year. Because the NFCS surveys individuals 18 and older, if an individual was

affected by the MAS while a minor, however that is measured, will not change by subsequent survey years as they get older. By the time respondents are taking the survey, they will already be affected or not for the entirety of their life.

Affected

The first individual level model uses a treatment control variable which identifies if a respondent was affected by MAS while a minor. The model is estimated by equation (5):

$$Y_{i,s,y} = \beta_0 + \beta_1 affected_{i,s} + \beta X_i + \delta_s + \gamma_y + \zeta_c + \varepsilon_{i,s,y} \quad (5)$$

$Y_{i,s,y}$ are outcome variables *Checking/Savings* _{i,s,y} and *Fully_Banked* _{i,s,y} .

Checking/Savings _{i,s,y} is a binary variable if individual i has a bank account, checking or savings, in state s and year y . *Fully_Banked* _{i,s,y} is a binary variable if individual i has a bank account and hasn't used AFS within the last year in state s and year y so it is only used to compare AFS use within the subset of those with a bank account. *Affected* _{i,s} is the treatment control variable, it is a binary variable for individual i in state s if MAS were enacted before the year they turned 18 and measures the average effect of the MAS across all levels of exposure.

X_i is a vector of demographic controls which are time-invariant characteristics of the respondents. X_i includes a dummy variable for gender (1 for male, 0 for female) which measures the effects of being male compared to being female for individual i . X_i also includes dummy variables for racial-categories (Black, Latino, Asian/Pacific

Islander, Native American, and ‘Other’) all of which compare the effect of the respective race to being White for individual i , δ_s and γ_y are state and year fixed effects, and $\varepsilon_{i,s,t}$ is the idiosyncratic error term clustered by state. ζ_c is a cohort fixed effect when running the model for the entire sample population and an age fixed effect (ζ_a) when running the model for young adults 18-24 years old (cohort1). A cohort fixed effect measures mean of outcome variables by cohort and allows me to control for unobservable generational effects. An age fixed effect measures mean of outcome variables by age and allows me to control for unobservable effects from aging within a cohort. Table 7 shows summary statistics of all variables included in the individual level model.

Table 8 identifies causal effects of MAS on individual banking outcomes using *Affected_{i,s}* as the treatment control variable. Columns (1) and (2) show results on entire sample population while columns (3) and (4) show results for young adults (cohort1). There are zero causal effects of MAS identified for the entire sample. However, I do find causal effects of MAS on banked and fully banked outcomes for cohort1. Results from columns (3) show MAS reduces likelihood of young adults, ages 18-24, of having a checking or savings account by 4.64% at the 1% confidence level. Results from column (4) show MAS increases likelihood of young adults being fully banked by 9.89% at the 1% confidence level.

Years Since the MAS Was Enacted When the Respondent Was 14 – Cohort1 Only

I also assign a treatment effect by measuring the years since the MAS have been enacted when a respondent is 14 and can legally work (U.S. Department of Labor). I assign the treatment in this manner for the entire sample by the following process: First, I subtract 14 from the current age of the respondent to find how many years older than 14 the respondent is. Second, I subtract the age-difference from 14 from the survey-year to find the year the respondent was 14. Third, I subtract the year the MAS was enacted in the respondent's state from the year they were 14 to find how many years the MAS had been enacted by the year the respondent was 14. Respondents are given a value of zero if the MAS were enacted after the year they were 14 or if the MAS were never enacted within their state. Finally, I bin the treatment variable into five evenly sized groups. Binning the treatment in this manner allows me to identify how the effects from enacting the MAS differ by how long the MAS have been enacted. Summary statistics including range and relative frequency of the binned groups are shown in Table 9. This model is only applied to cohort1 and is estimated by equation (6):

$$Y_{i,s,y} = \beta_0 + \beta_1 BINYrs_since_at14_{i,s} + \beta X_i + \delta_s + \gamma_y + \zeta_a + \varepsilon_{i,s,t} \quad (6)$$

$BINYrs_since_at14_{i,s}$ is a dummy variable for each binned group of the treatment (1-13 years, 14-24 years, 25-42 years, 43-70 years, and 71-102 years) for individual i in state s . The coefficient on each dummy measures the average effect of the MAS being

enacted for the range of years the dummy represents compared to zero. Results for the binned model are shown in Table 10.

The results in column (1) of Table 10 do not show a statistically significant effect of the MAS on being banked. Results from column (2) identify causal effects of MAS on being fully banked within every bin. Results are significant at the 1% confidence level for all bins except 71 years and over which is significant at the 5% confidence level.

Coefficient magnitudes increase as bin values increase and range from 0.129 to 0.208.

Results from column (2) are not statistically different from each other and indicate that positive causal effects of MAS on being fully banked among young adults ranges from 12-20%, are noticeable within the first decade after the laws are enacted, and remain just as strong decades later into future generations.

Pre-treatment Trends

I construct a model to evaluate pre-treatment trends. I reassign the year the MAS were enacted (t-1, t-2, t-3, t-4, t-5, t-10, and t-20) and compare the year respondents were 17 to the reassigned years. I conduct this comparison different for the general population and cohort1. For both groups, t-1 is the omitted category. The pre-trend model for the general population is estimated by equation (7):

$$Y_{i,s,y} = \beta_0 + affected_{i,s} + affected_tminus(2,3,4,5,10,\geq 20)_{i,s} + \beta X_i + \delta_s + \gamma_y + \zeta_c + \mathcal{E}_{i,s,t} \quad (7)$$

$affected_{i,s}$ remains in the model. $affected_tminus(2,3,4,5,10,\geq 20)_{i,s}$ are dummy variables if the year a respondent was 17 is equal to the reassigned year the MAS were enacted.

$affected_tminus \geq 20_{i,s}$ identifies everyone who was 17 years or younger 20 years before the MAS were enacted within their state. The same model is applied to cohort1 but with five years being the low bound for expansive category. $affected_tminus \geq 5_{i,s}$ is a dummy for everyone who was 17 or younger five years before the MAS were enacted within their state. A pre-trend model is repeated for cohort1 and estimated by equation (8):

$$Y_{i,s,y} = \beta_0 + affected_{i,s} + affected_tminus(1,2,3,4,\geq 5)_{i,s} + \beta X_i + \delta_s + \gamma_y + \zeta_a + \varepsilon_{i,s,t} \quad (8)$$

Tables 11 and 12 shows pre-treatment trend summary statistics for the general population and cohort1 respectively. Tables 13 and 14 show respective results. Despite respondents which fill each variable cell being very low, both models identify significant effects of reassigned treatment years. These results indicate that there were non-systematic pre-treatment trends that are biasing my results. Thankfully, in both models, the causal effects of $affected_{i,s}$ are not statistically different from results from model equation (5) with identical implications. A model with state time trends is included as a robustness check, results are shown in Table 15.

When controlling for state time trends, results of effects of the MAS for the general population remain unchanged, but results for cohort1 do change. Results in column (3) of Table 15 identify the MAS have a causal effect equal to zero on being banked. Finding no effect of MAS on being banked is more in-line with theory and predictions than negative findings in previous models. Results from column (4) identify positive causal effects of MAS on being fully banked, statistically significant to the 1% confidence, with a magnitude of 0.176. The results of MAS on being fully banked are statistically different from results of equation (5) without state time trends.

RESULTS

Firm-Response Model

Finding from the firm-response models do not support the theoretical predictions that the MAS are being enacted because they benefit credit unions. The identification strategy in this model is straight forward and without holes. The results may suggest why some states still have not enacted MAS by now. Friedline, Elliot, and Nam (2011) identify minors and young adults between the ages of 17-22 have a median savings of \$500. Low deposit amounts of the minor accounts may not provide sufficient benefits compared to the marginal cost of issuing membership share at credit unions. As such, independent minor accounts may not be worth it for credit unions.

Individual Model

Average effects of the MAS for the entire sample population are as expected. The amount of adults with checking or savings accounts is 95% so the effects of MAS would drown out over time (See Table 16 for summary stats of being banked by cohort). The results for young adults are a different story. The MAS increasing likelihood of being fully banked by 9.89% is in-line with the intent of the laws and is affirming to the theoretical predictions. However, the MAS reducing the likelihood of being banked by 4.64% is a perplexing finding. A potential story to explain this result may be that minors

gain access to banking too early, engage in unsavory banking behavior, and by the time they are young adults have gone so far as to lose their accounts.

The state time trend model seems to demonstrate a clearer picture of the individual effects of the MAS. Because so few observations are being picked up in the pre-treatment trend model, it makes it hard to validate the state time trends model. However, including a state time trend may still be ‘correct’ despite so few observations filling the cells. The results from the state time trend model reinforce positive effects of MAS on being fully banked and nullify the negative findings on being banked, both of which support theory and expectations.

CONCLUSION

Banking access has been increasing since 2009 when the FDIC began the Unbanked and Underbanked Households Survey (Apaam et al. 2018). The likelihood of being banked is already relatively high, and gets higher as people age (Table 16). The MAS have positive impacts on financial outcomes for young adults. However, the MAS do not increase access to banking, despite the intention of the laws. Given the trend in improved banking access, and the narrow margins to affect, null or negative findings on banking access isn't much of a surprise. It's possible the models I construct do not span enough years to pick-up on the trends of banking access nationwide. It's also possible that the heterogeneity of the provisions of the MAS, which understate the effects, are also muddling banking access outcomes.

Zero effects of the MAS on credit union outcomes is also of little surprise. Likely, credit unions do not respond to the MAS because they conclude, correctly or not, that minor accounts are not worth it. There may be legislative hurdles and increased oversight and analysis which make minor accounts unprofitable, especially if they have low average deposits (Friedline, Elliot, and Nam 2011). Incurring additional costs on the lowest value memberships doesn't seem like a profitable decision from the credit union manager perspective, aside from potential for membership retention. The calculus of such decision is demonstrably not in favor of minor accounts.

If all of the MAS had provisions which considered minors to be adults, we may expect a reduction in expected costs and see different outcomes. Even though the

unbanked might not be price-sensitive (Doyle et al. 1998), we presume that credit unions are. Reducing the uncertainty of the minor accounts by reducing minors' abilities to shirk account responsibilities including payments and fees, credit unions may be more likely to respond to the MAS and grant more membership shares to minors.

I identify a positive effect of the MAS on young adults being fully banked with the effects being noticed within the first decade after enacting the MAS as well as decades later into future generations. This finding suggests that those who grew up in states with MAS, regardless if they had gained independent access, tend to fare better than those who did not. There may be other unobservable banking attributes, responses, or programs associated with the MAS that are affecting the results of the models in a myriad of directions. There may also be institutional and/or cultural responses associated with the MAS that are favorable for young adults which result in less frequent use of AFS.

REFERENCES CITED

- Apaam, G., Burhouse, S., Chu, K., Ernst, K., Fritzdixon, K., Goodstein, R., . . . Weinstein, J. (October 20th 2018). 2017 FDIC National Survey of Unbanked and Underbanked Households. *Federal Deposit Insurance Corporation*.
<https://www.fdic.gov/householdsurvey/2017/2017report.pdf>
- Aportela, F. (1999). Effects of Financial Access on Savings by Low-Income People. *Banco de Mexico Research Department*.
<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.194.5270&rep=rep1&type=pdf>
- Brown, J. R., Cookson, J. A., & Heimer, R. (2016). Growing Up Without Finance. *Journal of Financial Economics*. <https://papers.ssrn.com/abstract=2809164>
- Brown, M., Grigsby, J., Klaauw, W., Wen, J., Zafar, B. (2018). Financial Education and the Debt Behavior of the Young. *Federal Reserve Bank of New York Staff Reports*.
https://www.newyorkfed.org/medialibrary/media/research/staff_reports/sr634.pdf
- Burhouse, S., Chu, K., Ernst, K., Goodstein, R., Lloro, A., Lyons, G., . . . Weinstein, J. (October 20th 2016). 2015 FDIC National Survey of Unbanked and Underbanked Households. *Federal Deposit Insurance Corporation*.
<https://www.fdic.gov/householdsurvey/2015/2015report.pdf>
- Cramer, R. (2010). The big lift: Federal policy efforts to create Child Development Accounts. *Children and Youth Services Review*, 32(11), 1538–1543.
<https://doi.org/10.1016/j.childyouth.2010.03.012>
- Doyle, J. J., Lopez, J. A., & Saidenberg, M. R. (1998). How Effective is Lifeline Banking in Assisting the “Unbanked”? *Federal Reserve Bank of New York: Current Issues in Economics and Finance*. <https://doi.org/10.2139/ssrn.997402>
- Foscht, T., Maloles, C., Schloffer, J., Swee-Lim, C., & Sinha, I. “Jay.” (2010). Banking on the youth: the case for finer segmentation of the youth market. *Young Consumers; Bradford*, 11(4), 264–276.
<http://dx.doi.org.proxybz.lib.montana.edu/10.1108/17473611011093907>
- Friedline, T. (2014). Extending Savings Accounts to Young People: Lessons from Two Decades of Asset Building. In R. Cramer & T. R. W. Shanks (Eds.), *The Assets Perspective: The Rise of Asset Building and Its Impact on Social Policy* (pp. 203–225). https://doi.org/10.1057/9781137384881_10
- Friedline, T., & Elliott, W. (2013). Connections with banking institutions and diverse asset portfolios in young adulthood: Children as potential future investors.

Children and Youth Services Review, 35(6), 994–1006.
<https://doi.org/10.1016/j.childyouth.2013.03.008>

Gross, M. B., Hogarth, J. M., & Schmeiser, M. D. (2012). Use of Financial Services by the Unbanked and Underbanked and the Potential For Mobil Services Adoption. *Federal Reserve Bulletin*, 98(4), 1-20.
https://www.federalreserve.gov/pubs/bulletin/2012/pdf/mobile_financial_services_201209.pdf

Harvey, M. (2018). Financial Education among Financially Vulnerable Populations in the United States. *RAND Pardee Graduate School*.
https://www.rand.org/pubs/rgs_dissertations/RGSD410.html

Kuhnen, C. M., & Miu, A. C. (2017). Socioeconomic status and learning from financial information. *Journal of Financial Economics*, 124(2), 349–372.
<https://doi.org/10.1016/j.jfineco.2017.03.002>

Lewis, B. R., & Bingham, G. H. (1991). The Youth Market for Financial Services. *International Journal of Bank Marketing*, 9(2), 3–11.
<https://doi.org/10.1108/02652329110001143>

Sherraden, M., Peters, C., Wagner, K., Guo, B., & Clancy, M. (2013). Contributions of qualitative research to understanding savings for children and youth. *Economics of Education Review*, 32, 66–77.
<https://doi.org/10.1016/j.econedurev.2012.09.006>

Srivatsa, H. S., & Srinivasan, R. (2008). New Age Youth Banking Behavior an Explorative Study in the Indian Banking Sector. *Journal of Services Research; Gurgaon*, 8(2), 53–71.
<https://search.proquest.com/docview/195549462/abstract/40E1E40291F64D06PQ/1>

Burke, K., Lanning, J., Leary, J., Wang, J. (2014.). CFFB Data Point: Payday Lending. *Consumer Financial Protection Bureau's Office of Research*.
https://files.consumerfinance.gov/f/201403_cfpb_report_payday-lending.pdf

Washington, E. (2006). The Impact of Banking and Fringe Banking Regulation on the Number of Unbanked Americans. *The Journal of Human Resources*, 41(1), 106–137. <http://www.jstor.org/proxybz.lib.montana.edu/stable/40057259>

Benefits of Credit Union Membership. NCUA. (2019). Retrieved from
<https://www.cuna.org/About-Credit-Unions/Benefits-of-Credit-Union-Membership/>

Our Story. St. Mary's Bank. (2019). Retrieved from:
<https://www.stmarysbank.com/nav/about-us/history/our-story>

Research a Credit Union. NCUA. (2019). Retrieved from:
<https://mapping.ncua.gov/SingleResult.aspx?ID=6631%200&IsCorpCU=0>

APPENDICES

APPENDIX A

TABLES

Table 1 - MAS by State and Year

State	Year MAS Enacted
MA	1909
TN	1923
GA	1925
MN	1925
AL	1927
KS	1929
MS	1930
PA	1933
ND	1935
OK	1941
AR	1947
LA	1950
VA	1950
MO	1959
CO	1963
CT	1967
WI	1971
MT	1975
NV	1975
ID	1977
IN	1977
AK	1980
CA	1983
NH	1983
KY	1984
NJ	1984
NM	1987
OH	1987
AZ	1990
HI	1993
NE	1996
SC	1996
WV	1996
TX	1997
OR	1999
MI	2004
VT	2005
IA	2007
IL	2012
NC	2013

40 States have enacted MAS
 18 within firm model study period
 2 within individual model study period

Table 2: Summary Statistics - First Stage Model Characteristics by MAS

<u>State Characteristics</u>	MAS ==0			MAS ==1			Total		
	<u>Mean</u>	<u>St. Err.</u>	<u>N</u>	<u>Mean</u>	<u>St. Err.</u>	<u>N</u>	<u>Mean</u>	<u>St. Err.</u>	<u>N</u>
GovDem	0.5152*	0.0182	759	0.4706	0.0148	1141	0.4884	0.0115	1900
MinWage	4.9149	0.0601	759	5.5170***	0.0499	1141	5.2765	0.0390	1900
UnempRate	5.9876	0.0813	759	5.9500	0.0587	1141	5.9650	0.0479	1900
Fd_pc	0.7993**	0.0308	396	0.7277	0.0175	804	0.7514	0.0155	1200
Prop_CU	0.6030***	0.0092	396	0.5593	0.0067	804	0.5737	0.0054	1200
Prop_SCCU	0.3716	0.0156	396	0.3918	0.0086	804	0.3852	0.0077	1200
GSP	182.6917	8.7046	759	204.9172*	9.1779	1141	196.0387	6.5201	1900
Wrks_Comp	0.2292	0.0163	759	0.2110	0.0127	1141	0.2182	0.0100	1900
PovertyRate	12.3166	0.1118	759	13.4674***	0.1222	1141	13.0077	0.0869	1900
FracHousDem	0.5348	0.0066	742	0.5449	0.0052	1120	0.5409	0.0041	1862
FracSenDem	0.5398	0.0069	742	0.5477	0.0056	1120	0.5445	0.0043	1862

Notes: Variables Fd_pc, Prop_CU, Prop_SCCU have data points from 1994-2017. FracHousDem and FracSenDem have data points for all state except Nebraska from 1980-2017. All other variables are from 1980-2017. * p<0.10 ** p<0.05 *** p<0.01. Stars are placed on larger mean values.

Table 3: State Characteristics That Determine MAS

	Nebraska Omitted, 1994-2017 (1) MAS	All States, 1994-2017 (2) MAS	All States, 1980-2017 (3) MAS
GovDem	-0.0489** (0.0224)	-0.0398* (0.0201)	-0.0579** (0.0251)
MinWage	0.0130 (0.0207)		
UnempRate	-0.0023 (0.0038)		
Fd_pc	-0.184 (0.143)		
Prop_CU	0.0460 (0.474)		
Prop_SCCU	-0.557 (0.535)		
GSP	0.0001 (0.0002)		
Wrks_Comp	0.0171 (0.0367)		
PovertyRate	-0.0052 (0.0038)		
FracHouseDem	0.0754 (0.119)		
FracSenDem	0.179 (0.249)		
Y-var mean	0.6658	0.67	0.6005
N	1176	1200	1900
R-sq	0.138	0.010	0.012

Notes: Sources: University of Kentucky Center for Poverty Research National Welfare Data (1980-2017), FDIC (1994-2017), and NCUA (1994-2017). Robust standard errors are clustered at the state level in parenthesis. * p<0.10 ** p<0.05 *** p<0.01. Each regression contains state and year fixed effects. Bold indicates a coefficient magnitude is statistically significant from zero.

Table 4: Summary Statistics - Firm Model Variables by MAS

<u>Variables</u>	MAS ==0			MAS ==1			Total		
	<u>Mean</u>	<u>St. Err.</u>	<u>N</u>	<u>Mean</u>	<u>St. Err.</u>	<u>N</u>	<u>Mean</u>	<u>St. Err.</u>	<u>N</u>
Member_Prop	0.3143	0.0060	396	0.3162	0.0053	804	0.3155	0.0041	1200
Prop_SCCU	0.3716	0.0156	396	0.3918	0.0086	804	0.3852	0.0077	1200
Assets_member	7522.4100	144.5129	396	7855.8760*	97.5208	804	7745.8320	80.9836	1200
GovDem	0.4773**	0.0251	396	0.4042	0.0173	804	0.4283	0.0143	1200

Notes: Sources: University of Kentucky Center for Poverty Research National Welfare Data (1980-2017) and NCUA (1994-2017). * p<0.10 ** p<0.05 *** p<0.01. Stars are placed on larger mean values.

Table 5: Firm Response - MAS

	(1)	(2)	(3)
	Proportion CU Membership	Proportion of State Chartered CU	Assets per Member
MAS	0.0133 (0.0204)	-0.0288 (0.0220)	424.1 (389.4)
$\bar{x}$	0.67	0.67	0.67
GovDem	-0.00522 (0.00781)	0.00237 (0.00481)	227.6*** (80.16)
$\bar{x}$	0.4884	0.4884	0.4884
Y-var mean	0.316	0.385	7745.8
N	1200	1200	1200
R-sq	0.338	0.0364	0.941

Notes: Sources: University of Kentucky Center for Poverty Research National Welfare Data (1908-2017) and NCUA (1994-2017). Robust standard errors are clustered at the state level in parenthesis. * p<0.10 ** p<0.05 *** p<0.01. Each regression contains state and year fixed effects. Bold indicates a coefficient magnitude is statistically significant from zero.

Table 6: Firm Response - Yrs_MAS

	(1)	(2)	(3)	(4)	(5)	(6)
	Proportion CU Membership	Proportion of State Chartered CU	Assets per Member	Proportion CU Membership	Proportion of State Chartered CU	Assets per Member
GovDem	-0.00578 (0.00765)	0.00374 (0.00512)	204.9** (81.39)	-0.00333 (0.00698)	0.00254 (0.00465)	253.2*** (81.97)
$\bar{x}$	0.4884	0.4884	0.4884	0.4884	0.4884	0.4884
yrs_MAS	-0.0000928 (0.00141)	0.00132 (0.00121)	-35.66 (21.91)			
$\bar{x}$	27.1867	27.1867	27.1867			
1.BINyrs_MAS				0.0126 (0.0196)	-0.0271 (0.0214)	483.0 (369.0)
<i>mean yrs_MAS</i>				7.8782	7.8782	7.8782
15.BINyrs_MAS				-0.00443 (0.0252)	-0.0161 (0.0290)	46.32 (442.0)
<i>mean yrs_MAS</i>				20.3273	20.3273	20.3273
27.BINyrs_MAS				0.0115 (0.0400)	0.00187 (0.0326)	141.2 (523.3)
<i>mean yrs_MAS</i>				33.5291	33.5291	33.5291
43.BINyrs_MAS				-0.0219 (0.0502)	0.00609 (0.0353)	45.17 (639.9)
<i>mean yrs_MAS</i>				57.2755	57.2755	57.2755
71.BINyrs_MAS				-0.0411 (0.0572)	-0.00898 (0.0392)	626.1 (849.4)
<i>mean yrs_MAS</i>				82.4782	82.4782	82.4782
Y-var mean	0.316	0.385	7745.8	0.316	0.385	7745.8
N	1200	1200	1200	1200	1200	1200
R-sq	0.336	0.0323	0.942	0.357	0.0578	0.944

Notes: Sources: University of Kentucky Center for Poverty Research National Welfare Data (1994-2017) and NCUA (1994-2017). Robust standard errors are clustered at the state level in parenthesis. * p<0.10 ** p<0.05 *** p<0.01. Each regression contains state and year fixed effects. Bold indicates a coefficient magnitude is statistically significant from zero.

Table 7: Individual Model Summary Statistics by Affected

	Entire Sample									
	affected=0					affected=1				
	Mean	St. Err.	n	Freq. %		Mean	St. Err.	n	Freq. %	Total
Checking/Savings	0.9609***	0.0009	41316	52.87%		0.9356	0.0013	32884	42.08%	0.9495
Gender	0.4624***	0.0024	19881	25.44%		0.4494	0.0027	15795	20.21%	0.4565
White	0.8163***	0.0019	35099	44.92%		0.7676	0.0023	26979	34.52%	0.7944
Black	0.0839***	0.0013	3607	4.62%		0.1227	0.0018	4314	5.52%	0.1014
Latino	0.0829	0.0013	3563	4.56%		0.1010***	0.0016	3549	4.54%	0.0910
Asian Pacific	0.0366	0.0009	1572	2.01%		0.0363	0.0010	1276	1.63%	0.0364
Native American	0.0186	0.0007	801	1.03%		0.0279***	0.0009	982	1.26%	0.0228
Other	0.0109	0.0005	470	0.60%		0.0102	0.0005	359	0.46%	0.0106
Checking/Savings==1										
	affected=0		N = 41316			affected=1		N = 32884		Total
Fully Banked	Mean	St. Err.	n	Freq. %		Mean	St. Err.	n	Freq. %	Mean
	0.8062***	0.0019	33307	80.62%		0.7325	0.0024	24086	73.25%	0.7735
Cohort I										
	affected=0		N = 2532			affected=1		N = 5896		Total
Checking/Savings	Mean	St. Err.	n	Freq. %		Mean	St. Err.	n	Freq. %	Mean
	0.8938*	0.0061	2263	26.85%		0.8831	0.0042	5207	61.78%	0.8863
Gender	0.4186	0.0098	1060	12.58%		0.4113	0.0064	2425	28.77%	0.4135
White	0.6801	0.0093	1722	20.43%		0.6689	0.0061	3944	46.80%	0.6723
Black	0.1627	0.0073	412	4.89%		0.1535	0.0047	905	10.74%	0.1563
Latino	0.1734	0.0075	439	5.21%		0.1810	0.0050	1067	12.66%	0.1787
Asian Pacific	0.0533	0.0045	135	1.60%		0.0534	0.0029	315	3.74%	0.0534
Native American	0.0245	0.0031	62	0.74%		0.0416***	0.0026	245	2.91%	0.0364
Other	0.0186	0.0027	47	0.56%		0.0176	0.0017	104	1.23%	0.0179
Cohort I & Checking/Savings==1										
	affected=0		N = 2263			affected=1		N = 5207		Total
Fully Banked	Mean	St. Err.	n	Freq. %		Mean	St. Err.	n	Freq. %	Mean
	0.6681	0.0099	1512	20.24%		0.6630	0.0066	3452	46.21%	0.6645

Notes: Sources: National Financial Capability Survey (2009, 2012, and 2015). * p<0.10 ** p<0.05 *** p<0.01. Stars are placed on larger mean values.

Table 8: Account Ownership - Affected

	(Checking/Savings==1)		Cohort 1: 18-24yrs old (Checking/Savings==1)	
	(1) <u>Checking/Savings</u>	(2) <u>Fully Banked</u>	(3) <u>C1:Checking/Savings</u>	(4) <u>C1:Fully Banked</u>
affected	-0.00410 (0.00472)	-0.00179 (0.00989)	-0.0464*** (0.00992)	0.0989*** (0.0118)
$\bar{x}$	0.4498	0.4498	0.6996	0.6996
Y-var mean	0.950	0.773	0.886	0.665
Cohort FE	Yes	Yes	No	No
Age FE	No	No	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes
N	78145	74200	8428	7470
R-sq	0.023	0.061	0.008	0.011

Notes: Sources: National Financial Capability Study Data (2009, 2012, 2015). Robust standard errors are clustered at the state level in parenthesis. * p<0.10 ** p<0.05 *** p<0.01. Bold indicates a coefficient magnitude is statistically significant from zero.

Table 9: Summary Statistics - BINYrs_since_at14 (Cohort 1)

<u>BINYrs_Since_at14</u>	N = 8428		Yrs_since_at14	
	<u>Obs</u>	<u>Freq Percent</u>	<u>Range</u>	<u>Mean</u>
0	2,720	32.27%	0	0
1 - 13	1104	13.10%	12	8
14 - 24	1049	12.45%	10	19
25 - 42	1188	14.10%	17	31
43 - 70	1139	13.51%	27	56
71 - 102	1228	14.57%	31	80

Source: National Financial Capability Survey (2009, 2012, 2015)

Table 10: Account Ownership - BINyrs_since_at14 (Cohort1)

	(Checking/Savings==1)	
	(1)	(2)
	<u>C1:Checking/Savings</u>	<u>C1:Fully Banked</u>
1.BINyrs_since_at14	0.0620	0.129***
	(0.0679)	(0.0240)
<i>mean yrs_since_at14</i>	7.8614	7.8614
14.BINyrs_since_at14	0.0142	0.171***
	(0.0725)	(0.0366)
<i>mean yrs_since_at14</i>	18.7445	18.7445
25.BINyrs_since_at14	-0.0505	0.188***
	(0.0762)	(0.0537)
<i>mean yrs_since_at14</i>	30.963	30.963
43.BINyrs_since_at14	-0.00464	0.186***
	(0.0815)	(0.0604)
<i>mean yrs_since_at14</i>	56.4583	56.4583
71.BINyrs_since_at14	-0.0502	0.208**
	(0.0881)	(0.0856)
<i>mean yrs_since_at14</i>	80.2134	80.2134
Y-var mean	0.886	0.665
N	8428	7470
R-sq	0.0317	0.0326

Notes: Sources: National Financial Capability Study Data (2009, 2012, 2015) and NCUA (1994-2017). Robust standard errors are clustered at the state level in parenthesis. * p<0.10 ** p<0.05 *** p<0.01. Both model specifications include age, year, and state fixed effects. Results from demographic controls have been removed. Bold indicates a coefficient magnitude is statistically significant from zero.

Table 11: Summary Statistics - Pre-treatment Trend - General Population

<u>Variable</u>	Checking/Savings					Total				
	Checking/Savings==0		N = 3945			Checking/Savings==1		N = 74200		
	<u>Mean</u>	<u>St. Error</u>	<u>n</u>	<u>Freq %</u>		<u>Mean</u>	<u>St. Error</u>	<u>n</u>	<u>Freq %</u>	
affected	0.5734***	0.0079	2262	57.34%		0.4432	0.0018	32884	44.32%	
affected_tminus1	0.0172**	0.0021	68	1.72%		0.0135	0.0004	1002	1.35%	
affected_tminus2	0.0084	0.0015	33	0.84%		0.0070	0.0003	517	0.70%	
affected_tminus3	0.0053	0.0012	21	0.53%		0.0074	0.0003	546	0.74%	
affected_tminus4	0.0079	0.0014	31	0.79%		0.0097	0.0004	723	0.97%	
affected_tminus5	0.0051	0.0011	20	0.51%		0.0073*	0.0003	540	0.73%	
affected_tminus10	0.0104	0.0016	41	1.04%		0.0106	0.0004	785	1.06%	
affected_tminus>20	0.2971	0.0073	1172	29.71%		0.4005***	0.0018	29714	40.05%	

Fully Banked (Checking/Savings==1)

<u>Variable</u>	Fully Banked==0					Fully Banked==1					Total				
			N = 16807					N = 57393					N = 74200		
	<u>Mean</u>	<u>St. Error</u>	<u>n</u>	<u>Freq %</u>		<u>Mean</u>	<u>St. Error</u>	<u>n</u>	<u>Freq %</u>		<u>Mean</u>	<u>St. Error</u>	<u>n</u>	<u>Freq %</u>	
affected	0.5235***	0.0039	8798	52.35%		0.4197***	0.0021	24086	41.97%		0.4432	0.0018	32884		
affected_tminus1	0.0158***	0.0010	266	1.58%		0.0128	0.0005	736	1.28%		0.0135	0.0004	1002		
affected_tminus2	0.0077	0.0007	129	0.77%		0.0068	0.0003	388	0.68%		0.0070	0.0003	517		
affected_tminus3	0.0087**	0.0007	146	0.87%		0.0070	0.0003	400	0.70%		0.0074	0.0003	546		
affected_tminus4	0.0110**	0.0008	185	1.10%		0.0094	0.0004	538	0.94%		0.0097	0.0004	723		
affected_tminus5	0.0072	0.0007	121	0.72%		0.0073	0.0004	419	0.73%		0.0073	0.0003	540		
affected_tminus10	0.0091	0.0007	153	0.91%		0.0110**	0.0004	632	1.10%		0.0106	0.0004	785		
affected_tminus>20	0.3278	0.0036	5510	32.78%		0.4217***	0.0021	24204	42.17%		0.4005	0.0018	29714		

Notes: Sources: National Financial Capability Study Data (2009, 2012, 2015). * p<0.10 ** p<0.05 *** p<0.01. Stars are placed on larger mean values.

Table 12: Summary Statistics - Pre-treatment Trend - Cohort1

Checking/Savings									
Variable	Checking/Savings=0			Checking/Savings=1			Total		
	Mean	St. Error	n	Mean	St. Error	n	Mean	St. Error	n
affected	0.7192*	0.0145	689	0.6971	0.0053	5207	0.6996	0.0050	5896
affected_tminus1	0.0052	0.0023	5	0.0047	0.0008	35	0.0047	0.0007	40
affected_tminus2	0.0094	0.0031	9	0.0129	0.0013	96	0.0125	0.0012	105
affected_tminus3	0.0021	0.0015	2	0.0040	0.0007	30	0.0038	0.0007	32
affected_tminus4	0.0042	0.0021	4	0.0050	0.0008	37	0.0049	0.0008	41
affected_tminus>5	0.2599	0.0142	249	0.2764	0.0052	2065	0.2746	0.0049	2314

53

Fully Banked (Checking/Savings=1)

Variable	Fully Banked=0			Fully Banked=1			Total		
	Mean	St. Error	n	Mean	St. Error	n	Mean	St. Error	n
affected	0.7003	0.0092	1755	0.6954	0.0065	3452	0.6971	0.0053	5207
affected_tminus1	0.0052	0.0014	13	0.0044	0.0009	22	0.0047	0.0008	35
affected_tminus2	0.0108	0.0021	27	0.0139	0.0017	69	0.0129	0.0013	96
affected_tminus3	0.0060**	0.0015	15	0.0030	0.0008	15	0.0040	0.0007	30
affected_tminus4	0.0084***	0.0018	21	0.0032	0.0008	16	0.0050	0.0008	37
affected_tminus>5	0.2694	0.0089	675	0.2800	0.0064	1390	0.2764	0.0052	2065

Notes: Sources: National Financial Capability Study Data (2009, 2012, 2015). * p<0.10 ** p<0.05 *** p<0.01. Stars are placed on larger mean values.

Table 13: Pre-treatment Trend - General Population

	(Checking/Savings==1)	
	(1)	(2)
	<u>Checking/Savings</u>	<u>Fully Banked</u>
affected	-0.00364 (0.00498)	-0.00643 (0.0101)
affected_tminus2	-0.00260 (0.0154)	0.00296 (0.0207)
affected_tminus3	0.0139** (0.00614)	-0.0276 (0.0188)
affected_tminus4	0.00149 (0.00655)	-0.0366** (0.0181)
affected_tminus5	0.00308 (0.00832)	-0.0222 (0.0178)
affected_tminus10	-0.0121 (0.00888)	0.00619 (0.0175)
affected_tminus≥20	0.00259 (0.00725)	-0.00246 (0.00935)
Y-var mean	0.950	0.773
N	78145	74200
R-sq	0.023	0.061

Notes: Sources: National Financial Capability Study Data (2009, 2012, 2015). Robust standard errors are clustered at the state level in parenthesis. * p<0.10 ** p<0.05 *** p<0.01. Both model specification have cohort, year, and state fixed effects. Bold indicates a coefficient magnitude is statistically significant from zero.

Table 14: Pre-treatment Trend (Cohort1)

	(Checking/Savings==1)	
	(1)	(2)
	<u>C1:Checking/Savings</u>	<u>C1:Fully Banked</u>
affected	-0.0432*	0.101**
	(0.0222)	(0.0445)
affected_tminus2	-0.0210	0.0604
	(0.0480)	(0.0811)
affected_tminus3	0.0803*	-0.0992***
	(0.0410)	(0.0296)
affected_tminus4	0.0213	-0.158
	(0.0141)	(0.142)
affected_tminus≥5	0.0196	-0.0158
	(0.0278)	(0.0319)
Y-var mean	0.8860	0.6650
N	8428	7470
R-sq	0.0308	0.0300

Notes: Sources: National Financial Capability Study Data (2009, 2012, 2015), FDIC (1994-2017). Robust standard errors are clustered at the state level in parenthesis. * p<0.10 ** p<0.05 *** p<0.01. Both model specification have age, year, and state fixed effects. Bold indicates a coefficient magnitude is statistically significant from zero.

Table 15: Account Ownership - Affected With State Time Trend

	(Checking/Savings=1)		Cohort 1: 18-24yrs old	
	(1) Checking/Savings	(2) Fully Banked	(3) C1:Checking/Savings	(4) C1:Fully Banked
affected	-0.00417 (0.00475)	-0.00256 (0.00982)	-0.0383 (0.0295)	0.176*** (0.0486)
$\bar{x}$	0.4498	0.4498	0.6996	0.6996
Y-var mean	0.950	0.773	0.886	0.665
Cohort FE	Yes	Yes	No	No
Age FE	No	No	Yes	Yes
State FE	Yes	Yes	Yes	Yes
State Time Trend	Yes	Yes	Yes	Yes
N	78145	74200	8428	7470
R-sq	0.0285	0.0749	0.0323	0.0389

Notes : Sources : National Financial Capability Study Data (2009, 2012, 2015), and NCUA (1994-2017). Robust standard errors are clustered at the state level in parenthesis. * p<0.10 ** p<0.05 *** p<0.01. Bold indicates a coefficient magnitude is statistically significant from zero. Output for demographic controls (dummies for gender and race categories) are omitted.

Table 16: Summary Statistics - Account Ownership by Cohort

<u>Cohort</u>	<u>Age</u>	<u>N</u>	<u>Checking_Savings==1</u>			
			<u>Mean</u>	<u>Std. Err.</u>	<u>[95% Conf. Interval]</u>	
1	18 - 24	8428	0.8810	0.0045	0.8723	0.8898
2	25 - 34	13554	0.9228***	0.0028	0.9172	0.9283
3	35 - 44	13723	0.9375***	0.0026	0.9323	0.9426
4	45-54	15641	0.9489***	0.0022	0.9446	0.9532
5	55-64	13732	0.9662***	0.0019	0.9625	0.9699
6	65+	13067	0.9915***	0.0010	0.9896	0.9934

Notes: Sources: National Financial Capability Study Data (2009, 2012, 2015). * p<0.10 ** p<0.05 *** p<0.01. Comparison between means is made from preceeding cohort. Stars a re place on larger mean values. All cohort means are statistically different from each other.

APPENDIX B

ROBUSTNESS CHECKS

Table 17: Account Ownership - Affected with GovDem

	(1) Checking/Savings	(2) Fully Banked	Cohort 1: 18-24yrs old	
			(3) C1:Checking/Savings	(4) C1:Fully Banked
affected	-0.0044 (0.0048)	-0.0021 (0.0099)	-0.0325** (0.0154)	0.100*** (0.0116)
$\bar{x}$	0.4498	0.4498	0.6996	0.6996
GovDem	0.000797 (0.0023)	-0.00367 (0.0083)	0.0029 (0.001)	-0.0148 (0.0186)
$\bar{x}$	0.4433	0.4433	0.43	0.43
Y-var mean	0.9495	0.7730	0.8863	0.6650
Cohort FE	Yes	Yes	No	No
Age FE	No	No	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes
N	78145	74200	8428	7470
R-sq	0.023	0.061	0.008	0.011

Notes: Sources: National Financial Capability Study Data (2009, 2012, 2015) and NCUA (1994-2017). Robust standard errors are clustered at the state level in parenthesis. * p<0.10 ** p<0.05 *** p<0.01. Bold indicates a coefficient magnitude is statistically significant from zero. Output for demographic controls has been removed.

Table 18: Firm Response - MAS, no topcode

	(1) Proportion CU Membership	(2) Proportion of State Chartered CU	(3) Assets per Member
MAS	0.0104 (0.0213)	-0.0288 (0.0220)	424.1 (389.4)
$\bar{x}$	0.67	0.67	0.67
GovDem	-0.00290 (0.00985)	0.00237 (0.00481)	227.6*** (80.16)
$\bar{x}$	0.4884	0.4884	0.4884
Y-var mean	0.317	0.385	7745.8
N	1200	1200	1200
R-sq	0.279	0.0364	0.941

Notes: Sources: University of Kentucky Center for Poverty Research National Welfare Data (1908-2017), FDIC (1994-2017), and NCUA (1994-2017). Robust standard errors are clustered at the state level in parenthesis. * p<0.10 ** p<0.05 *** p<0.01. Each regression contains state and year fixed effects. Bold indicates a coefficient magnitude is statistically significant from zero.

Table 19: Firm Response - Yrs_MAS, no topcode

	(1)	(2)	(3)	(4)	(5)	(6)
	Proportion CU Membership	Proportion of State Chartered CU	Assets per Member	Proportion CU Membership	Proportion of State Chartered CU	Assets per Member
GovDem	-0.00327 (0.00980)	0.00374 (0.00512)	204.9** (81.39)	-0.000709 (0.00902)	0.00254 (0.00465)	253.2*** (81.97)
$\bar{x}$	0.4884	0.4884	0.4884	0.4884	0.4884	0.4884
Yrs_MAS	0.000344 (0.00164)	0.00132 (0.00121)	-35.66 (21.91)			
$\bar{x}$	27.1867	27.1867	27.1867			
1.BINyrs_MAS				0.00925 (0.0208)	-0.0271 (0.0214)	483.0 (369.0)
<i>mean yrs_MAS</i>				7.8782	7.8782	7.8782
15.BINyrs_MAS				-0.0122 (0.0295)	-0.0161 (0.0290)	46.32 (442.0)
<i>mean yrs_MAS</i>				20.3273	20.3273	20.3273
27.BINyrs_MAS				0.00485 (0.0469)	0.00187 (0.0326)	141.2 (523.3)
<i>mean yrs_MAS</i>				33.5291	33.5291	33.5291
43.BINyrs_MAS				-0.0344 (0.0606)	0.00609 (0.0353)	45.17 (639.9)
<i>mean yrs_MAS</i>				57.2755	57.2755	57.2755
71.BINyrs_MAS				-0.0574 (0.0706)	-0.00898 (0.0392)	626.1 (849.4)
<i>mean yrs_MAS</i>				82.4782	82.4782	82.4782
Y-var mean	0.317	0.385	7745.8	0.317	0.385	7745.8
N	1200	1200	1200	1200	1200	1200
R-sq	0.279	0.0323	0.942	0.298	0.0578	0.944

Notes: Sources: University of Kentucky Center for Poverty Research National Welfare Data (1994-2017), FDIC (1994-2017), and NCUA (1994-2017). Robust standard errors are clustered at the state level in parenthesis. * p<0.10 ** p<0.05 *** p<0.01. Each regression contains state and year fixed effects. Bold indicates a coefficient magnitude is statistically significant from zero.

Table 20: Account Ownership - Affected (2012 mean age by cohort for 2009 age)

	(Checking/Savings==1)		Cohort 1: 18-24yrs old	
	(1)	(2)	(3)	(4)
	<u>Checking/Savings</u>	<u>Fully Banked</u>	<u>C1:Checking/Savings</u>	<u>C1:Fully Banked</u>
affected	-0.00441 (0.00481)	-0.00208 (0.00991)	-0.0333** (0.0153)	0.104*** (0.00962)
$\bar{x}$	0.4498	0.4498	0.6996	0.6996
Y-var mean	0.950	0.773	0.886	0.665
Cohort FE	Yes	Yes	No	No
Age FE	No	No	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes
N	78145	74200	8428	7470
R-sq	0.023	0.061	0.008	0.011

Notes: Sources: National Financial Capability Study Data (2009, 2012, 2015). Robust standard errors are clustered at the state level in parenthesis. * p<0.10 ** p<0.05 *** p<0.01. Bold indicates a coefficient magnitude is statistically significant from zero.

Table 21: Account Ownership - Affected (2015 median age by cohort for 2009 age)

	(Checking/Savings==1)		Cohort 1: 18-24yrs old	
	(1)	(2)	(3)	(4)
	<u>Checking/Savings</u>	<u>Fully Banked</u>	<u>C1:Checking/Savings</u>	<u>C1:Fully Banked</u>
affected	-0.00419 (0.00469)	-0.00400 (0.0100)	-0.0538*** (0.0105)	0.122*** (0.0118)
$\bar{x}$	0.4498	0.4498	0.6996	0.6996
Y-var mean	0.950	0.773	0.886	0.665
Cohort FE	Yes	Yes	No	No
Age FE	No	No	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes
N	78145	74200	8428	7470
R-sq	0.023	0.074	0.030	0.033

Notes: Sources: National Financial Capability Study Data (2009, 2012, 2015). Robust standard errors are clustered at the state level in parenthesis. * p<0.10 ** p<0.05 *** p<0.01. Bold indicates a coefficient magnitude is statistically significant from zero.

Table 22: Account Ownership - Affected (2015 mean age by cohort for 2009 age)

	(Checking/Savings==1)		Cohort 1: 18-24yrs old (Checking/Savings==1)	
	(1)	(2)	(3)	(4)
	<u>Checking/Savings</u>	<u>Fully Banked</u>	<u>C1:Checking/Savings</u>	<u>C1:Fully Banked</u>
affected	-0.00433 (0.00476)	-0.00290 (0.0100)	-0.0517*** (0.0101)	0.113*** (0.0104)
$\bar{x}$	0.4498	0.4498	0.6996	0.6996
Y-var mean	0.950	0.773	0.886	0.665
Cohort FE	Yes	Yes	No	No
Age FE	No	No	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes
N	78145	74200	8428	7470
R-sq	0.023	0.074	0.031	0.033

Notes: Sources: National Financial Capability Study Data (2009, 2012, 2015). Robust standard errors are clustered at the state level in parenthesis. * p<0.10 ** p<0.05 *** p<0.01. Bold indicates a coefficient magnitude is statistically significant from zero.

Table 23: Account Ownership - Affected with weights within nation by age/gender, ethnicity,)

	(Checking/Savings==1)		Cohort 1: 18-24yrs old (Checking/Savings==1)	
	(1)	(2)	(3)	(4)
	<u>Checking/Savings</u>	<u>Fully Banked</u>	<u>C1:Checking/Savings</u>	<u>C1:Fully Banked</u>
affected	-0.00104 (0.00535)	0.000894 (0.0103)	-0.0381** (0.0155)	0.0819*** (0.0206)
$\bar{x}$	0.4498	0.4498	0.6996	0.6996
Y-var mean	0.941	0.762	0.874	0.649
Cohort FE	Yes	Yes	No	No
Age FE	No	No	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes
N	78145	74200	8428	7470
R-sq	0.0317	0.0810	0.0249	0.0365

Notes: Sources: National Financial Capability Study Data (2009, 2012, 2015). Robust standard errors are clustered at the state level in parenthesis. * p<0.10 ** p<0.05 *** p<0.01. Bold indicates a coefficient magnitude is statistically significant from zero.