
The Impact of Banking and Fringe Banking Regulation on the Number of Unbanked Americans

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ABSTRACT

Thirty-five to 45 percent of low-income American households do not possess a bank account. This statistic coupled with claims of price gouging by check cashers has prompted government intervention. I find that state legislation requiring banks to offer low-cost accounts slightly decreases the number of low-income minority unbanked households, but only with a substantial lag. Caps on check-cashing fees also lead to a small, but more immediate, reduction in the number of unbanked among this population. Because price caps may lead to a reduction in supply, welfare effects are indeterminate.

To be unbanked is to be under an economic disadvantage. It means that many people have to rely on fringe banking services, such as check-cashing outlets with high fees. But what is worse is the savings deficit that it creates for many working-class, and minority, and young citizens, who have a much harder time acquiring and building assets.

Senator Joseph Lieberman (Stegman 1999)

I. Introduction

Ten to 20 percent of Americans are among the unbanked. That is, they possess neither a savings nor a checking account (Hogarth and O'Donnell 1999; Kennickell, Starr-McCluer, and Surette 2000). Among the low-income population¹

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1. Low-income is defined here as under 200 percent of poverty line.

the figure has ranged in the 1980s and 1990s from 35 to nearly 45 percent of households unattached to a traditional bank. As Lieberman's quote illustrates, many in government view the existence of the unbanked as a problem in need of a solution. This is for two reasons. First, the unbanked are believed to live at the mercy of fringe banks (pawnshops and check cashers) that charge as much as 10 percent of face value to cash a paycheck (Stegman 1999). Secondly, correlations between ownership of a bank-account and asset holdings induce speculation that transaction accounts play a role in asset accumulation. For example, Carney and Gale (2001) show that 70 percent of banked households own their home. Thirty-three percent of unbanked households do.

Both the federal and state governments have implemented policies aimed at encouraging bank-account takeup among low-income households. The "problem of the unbanked" was part of the motivation behind the federal Debt Improvement and Collection Act of 1996, which mandated direct deposit for benefits such as Social Security and Disability (Stegman 1999). (Unlimited hardship exemptions have since been granted.) While the number one goal of the act was to save federal dollars,² a secondary, and much touted, goal was to connect the unbanked to traditional-financial services. According to Donald Hammond, the Treasury Department's Fiscal Assistant Secretary in 1999, the department is "very committed to using this transition to try to bring people into the banking mainstream" (Oppel 1999).

State governments have been more direct in their attack. Six states currently have in place what is known as lifeline-banking legislation—legislation mandating that banks offer low-cost accounts to low-income persons. However, both researchers and activists view this legislation as ineffective in achieving its goal of banking the unbanked. The New York Public Interest Research Group (cited in Hogarth and O'Donnell 1999) blames poor advertising on the part of New York banks. Studies by the office of the Public Advocate for New York City (cited in Doyle, Lopez, and Saidenberg 1998) suggest that the price regulations are not binding. And a Federal Reserve Bank of New York article (Doyle, Lopez, and Saidenberg 1998) cites low-price sensitivity on the part of fringe bank users for the legislation's failure. While all of these studies offer explanations for the legislation's shortcomings, none points to data demonstrating that lifeline legislation in fact failed to significantly decrease the number of unbanked households in a given state. In this paper, I take the question of the effectiveness of lifeline legislation to the data.

Lifeline legislation is not the only instrument in the state legislator's toolkit. States also have passed legislation limiting the fees that fringe banks can charge for check conversion. While the primary purpose of these laws is clearly to prevent the price gouging commonly perceived to be practiced by check cashers, these regulations may have indirect effects (whether intended or not) on the demand for traditional bank accounts. The direction of the impact of check-cashing regulations on the number of unbanked in a state is theoretically ambiguous. On the one hand, the lower prices may increase demand for check cashers and decrease demand for bank services. On the

2. Mail delivery of paper checks costs the federal government 43 cents per payment. Electronic delivery costs two cents per payment (Stegman 1999).

other hand, the lower prices may decrease the supply of neighborhood check cashers and therefore increase demand for bank services. This paper responds to the question empirically.

The methodological approach of the paper is the standard difference-in-difference estimation. I regress a dummy for whether a household possesses a transaction account on state banking and fringe-banking regulations, state and year dummies, and individual and state covariates. I find limited support for the hypothesis of the New York interest groups. Lifeline legislation does not have a statistically significant impact on the number of low-income households who hold accounts. Nonetheless, the implementation of lifeline legislation is followed by a small (three to four percentage points) significant increase in the number of banked low-income *minority* households. However, the bank-account takeup response happens with a lag of two to three years. Minority households also see small (less than 5 percentage points) significant increases in their propensity to hold an account in the year following the implementation of price caps on check casher fees.

As the approach is difference-in-difference, the standard limitations apply. While state and year dummies control for unobserved fixed differences between states and between years, the major threat to the identification strategy is differential trends in variables across states. In particular, the approach would be invalid if the proportion of unbanked households is trending differently in treatment and control states before the introduction of banking and fringe-banking regulation. I handle this concern in two ways: First, I present graphical evidence refuting the notion of differential pretreatment trends. Secondly, in specification checks, I add state specific linear and quadratic time trends to the model. The results are not qualitatively changed by the addition. Black and Hispanic low-income households are less likely to be unbanked in the presence of either lifeline banking or check-cashing regulation in their state.

One caveat of this analysis is that it is purely positive in nature. I provide evidence of the impact of traditional and fringe-banking legislation on bank-account take up. However, this paper is silent on the implications of increased bank-account takeup for the welfare of low-income Americans. Do accounts really increase households' savings and asset holdings? Do low-income Americans fully understand the pricing schemes of both traditional and fringe banks? Given the youth of this research area, there are yet too many unanswered questions to begin to tackle the welfare question. This analysis is one piece in the puzzle.

The remainder of the paper proceeds as follows. In Section II I provide an overview of how low-income Americans meet their financial needs. Section III summarizes the history of traditional and fringe-banking legislation. The data and methodology are detailed in Section IV. In Section V I present the results. The paper concludes in Section VI.

II. The Calculus of a Transaction Account

For the vast majority of Americans, the calculus of a transaction account is simple: The benefits far outweigh the costs. For the low-income household,

the calculation is not as straightforward. In this section, I describe the trade offs the poorest Americans face in deciding how to satisfy financial needs.

A bank account provides a person with entrée to two services: (1) a secure home for savings, and (2) a means of transferring income into payments.³ The costs also are of two types: monetary, which can be easily quantified, and the more nebulous psychic costs.

A. Benefit: Storage for Savings

A low-income person who would likely hold only a small account balance would benefit little from interest payments. Nonetheless, an account would offer a safe place to store savings for such a consumer. Money held in a bank may be less likely to be stolen, spent on impulse, or given to friends and family. Fringe banks do not compete with traditional banks in providing a haven for savings. However, low-income Americans have uncovered alternative systems. Dunham (2001) shows that 30 percent of unbanked individuals do, in fact, save. The money is stored in the bank account of another person, or in cash, jewelry, or gold.

B. Benefit: Income Conversion

While only a fraction of low-income individuals save, the need for income conversion and bill payment is near universal. Income from an employer or a government must be converted into payments for rent, food, and utilities. The benefit of the bank in this domain is clear: Account holders are able to deposit their income checks and then write personal checks against the account to pay the bills. However, the first of these services, income conversion, is available even to those who do not hold an account at a particular bank. Surveys have repeatedly found that the number one institution used for income conversion among the unbanked is a bank or credit union. (See, for example, Caskey 1997 and Prescott and Tatar 1999.) And of course there are also alternative providers of income-conversion services. These same authors find that grocery stores rank second and check cashers third in terms of businesses most frequented for income conversion. Clearly the image of low-income households being held hostage by outrageous check-casher fees is not universally true. In fact, between 59 and 61 percent of the unbanked report that they do not usually pay a fee to cash a check (Prescott and Tatar 1999).⁴

Banks do not offer check writing services to those who do not hold accounts. The alternatives to a checking account are money orders and cash, used by 42 and 41 percent of unbanked individuals respectively (Dunham 2001). Money orders are available at banks, check cashers, post offices, and grocery stores.

3. Those who hold transaction accounts may also have an advantage in securing bank loans. This, however, seems to be a second-order consideration for low-income Americans. A telephone survey of 900 low-income households across three states revealed that 8.6 percent had received a loan from a bank or savings and loan in the past year (Caskey 1997).

4. Banks often do not charge a fee to cash a check for which the bank is the bank of origin. Grocery stores may provide free cash checking as a service to their customers (Dunham 2001).

Table 1
Reasons for Not Holding a Transaction Account

Reason	Survey 1	Survey 2	Survey 3
Not enough money	53	47	67
Bank fees too high	23	6	24
Not comfortable dealing with banks	18		
Banks have inconvenient hours/location	9		8
Banks won't let us	10		10
Problem managing an account		3	13
Want to keep money private/don't want frozen in event of divorce	22		8
No need		21	27
Use another person's account			10
N	199	178	190

Notes: All figures are in percentages. The sample for Survey 1 (Caskey 1997) is composed of low-income individuals. Government beneficiaries were the subjects of Survey 2, which was conducted by phone by Booz, Allen & Hamilton and Shugoll Research (1997). Survey 3 was a mail survey of government beneficiaries for whom phone numbers were unavailable.

C. Cost: Monetary

The United States Public Interest Research Group (PIRG) estimates that the total annual monetary cost for a typical account holder is \$32 dollars for savings and \$147 for low-cost checking accounts.⁵ Of course fees run much higher for those who bounce more checks or visit the ATM more often than average (Mierzwinski 2001). In comparison, the average fee charged by a check casher to convert a check is 2.34 percent of face value for a payroll check and 2.21 percent for a government issued check (Consumer Federation of America 1997). Therefore, to cash two paychecks and purchase three money orders per month at a fringe-banking institution, a family with a combined income of \$18,850⁶ would be charged \$395 per year using the conservative fees of 2 percent for checks and \$.50 for money orders.⁷ In pure monetary terms, the bank account seems the better option.

D. Cost: Nonmonetary

Monetary costs may be only a fraction of the bank-account cost considerations. Table 1 details reasons for not owning a transaction account as provided by respondents to

5. PIRG assumes the representative agent fails to meet minimum balance requirements, makes 25 regional and five national ATM withdrawals per year, bounces one check, and receives one deposit item return. PIRG uses industry data to determine the average number of checks written by account type. Savings and interest-bearing checking account costs are lowered by the monthly interest earned.

6. \$18,850 is the 2004 federal poverty line for a family of four (United States Department of Health and Human Services website <http://aspe.os.dhhs.gov/poverty/04poverty.shtml>).

7. A Consumer Federation of America Survey (cited in Caskey 1994) found the average charge for a \$50 money order was 50 cents. Many check cashers charge a flat fee, independent of the money order value.

three different surveys. While money considerations are the top reasons given for not holding an account, discomfort with banks and a desire for privacy also are cited. Further, banks hours and location are inconvenient, report respondents. Federal Deposit Insurance Corporation (FDIC) data on bank branch locations support this claim. In a cross section of bank branches by zip code in the year 2000, a ten percentage point increase in the number of residents living below 200 percent of the poverty line is correlated with a significant decrease in bank branches of $-.01$.⁸

Evidence that nonmonetary costs are substantial comes from examining the behavior of bank-account holders who should have zero marginal monetary cost of cashing a check at the bank. These bank-account holders do not rely exclusively upon banks to process their checks; 67 percent of check-cashing customers surveyed reported holding a transaction account (The Roper Organization 1989). And 37 percent of heavy users of check cashers⁹ possess such an account (Caskey 1997).

The fact that a single individual patronizes both a bank and a check casher demonstrates the potential for both banking and fringe-banking legislation to have an impact on bank-account takeup.¹⁰ Before measuring those impacts, I provide an overview of the legislation.

III. Regulation of the Banking and Fringe-Banking Sectors

A. Lifeline Legislation

The lifeline-banking movement began in the 1980s. Until that time, Regulation Q capped the amount of interest that banks and thrifts could offer on deposit accounts. Checking accounts were required to be interest free. The maximum interest rate on savings accounts was capped at 5 percent.¹¹ In order to attract deposits away from higher interest earning money markets and Treasury bonds, banks and thrifts charged below market rates on accounts. Services such as check printing, bounced check processing, and teller access often came at no charge. Banks offered gifts, such as toasters, to individuals who opened accounts. (See, for example, United States General Accounting Office 1987 and Rubin 1992.)

Interest rates surged in the late 1970s. Banks and thrifts lost even more ground in the race to attract investments. These depository institutions plead for the relaxation of Regulation Q. Academics and public interest groups echoed the plea. Academics were in favor on efficiency grounds. Interest groups argued that the regulation exacerbated income inequality as the poorest Americans lacked the resources to purchase

8. Author's calculation using FDIC and census data. The specification is a regression of bank branches per capita on percent in poverty. The mean number of branches per thousand residents is 0.32; the mean percent below 200 percent of the poverty line is 32. Regressions and means are population weighted. Standard errors are clustered by state.

9. He defines heavy users as processing ten or more checks at a check casher in the past year.

10. This fact also underlines the impossibility of drawing inferences about welfare without additional information.

11. Thrifts could offer 5.25 percent interest.

Table 2
Percent of Unbanked by Data Source and Year

Survey Date	Consumer Credit Survey/Survey of Consumer Finances	Panel Study of Income Dynamics	Survey of Income and Program Participation	Survey of Income and Program Participation (Households under 200 Percent of Poverty Line)
1977	9			
1983	13			
1984		19		
1985			15	46
1986				
1987			15	42
1988			15	39
1989	15	19	20	47
1990				
1991			16	37
1992	13		19	39
1993			16	34
1994		22	17	34
1995	12		17	34
1996				
1997			18	38
1998	10		19	38
1999			19	37
2000			19	37

Sources: Consumer Credit Survey/Survey of Consumer Finances and Panel Study of Income Dynamics percentages from Hogarth and O'Donnell (1999) and Kennickell, Starr-McCluer and Surette (2000). Survey of Income and Program Participation percentages are author's calculations.

T-bills or stocks. Lawrence and Elliehausen (1981) showed that the implicit burden of the interest ceilings was regressive.

The federal government answered the call in 1980, when legislation eliminating Regulation Q was signed into law. Interest rate ceilings were phased out gradually and completely by 1986. Able to compete in terms of interest, banks and thrifts could now charge explicitly for their services. Bank fees rose. The percentage of banks offering free checking accounts fell from 35 percent to 5 percent between 1977 and 1991 (National Consumer Law Center 1998).

Table 2 presents the percentage of unbanked by year and by data source. The five percentage point jump in the number of unbanked households between 1977 and 1983 (Column 1) is widely attributed to the phase out of Regulation Q.¹² (See, for example, Canner and Maland 1987 or Mierzwinski 2001.)

12. However Caskey and Peterson (1994) offer evidence to the contrary.

In light of the decline in bank-account ownership, interest groups took up a new cause: lifeline banking. Regulation Q had priced the poor out of the bank-account market, advocates argued. They asked the government to intervene, to require banks to offer low-cost accounts to America's poorest citizens. State legislatures took up the lifeline-banking debate. At least 15 states had debated legislation by the end of 1986 (Canner and Maland 1987). Bills have since passed in eight states. Lifeline banking is currently the law in six. In half of these states the laws only apply to accounts held by the elderly and/or children. Minnesota, New Jersey, and New York have more expansive laws. Minnesota forbids fees on savings accounts with balances of \$50 or more. New Jersey and New York require financial institutions to offer checking accounts with minimum balance requirements of no greater than one dollar at a cost of no more than three dollars per month.

Theoretically, the impact of lifeline legislation on the equilibrium number of unbanked in a state is ambiguous. Provided that there is a negative elasticity of bank-account demand with respect to price, legislation capping prices should increase demand for accounts. Supply, on the other hand, may decrease in the face of price caps. For example, banks may close branches in neighborhoods in which demand for low-cost accounts is greatest. Before turning to data to resolve the theoretical ambiguity, I describe the history of a second type of legislation that may impact the number of unbanked: regulation of check cashers.

B. Check-Cashing Legislation

As banks expanded interest rates, check cashers expanded their numbers. Caskey (1994) writes that the "1980s saw explosive growth in commercial check-cashing outlets." The number of outlets nationwide climbed from 2,151 in 1986 to 5,400 in less than a decade (Consumer Federation of America 1997). While check cashers have been and still are disproportionately located in poor urban areas, in the 1990s the number of these fringe banks increased more rapidly outside of urban centers than within their boundaries. These businesses have expanded to states without major urban centers and into the less densely populated parts of states that do encompass a major metropolitan area. Further, they are increasingly found in lower-middle class areas (Caskey 1994). Growth is not surprising in a competitive industry with low barriers to entry¹³ and an estimated one billion dollars in profits per year (Stegman 1999).

As their presence increased, so too did their attention received from media, activists, and regulators. Pointing to fees as high as 10 percent of the face value of the check (Stegman 1999), some activists have accused the industry of exploiting low-income persons. States have stepped in to regulate. In 1980 only three states—Delaware, Illinois, and New York—limited check-cashing fees. By the end of 1999, 21 of the 49 states that allow check cashers¹⁴ had capped charges. Average fee limits across states are 3 percent for government checks and 4 percent for payroll checks.¹⁵ Fee limits range from 1 to 10 percent. In unregulated states, check cashers charge between 1.5 and 3 percent for government and payroll checks, with a modal fee of 2 percent

13. In the few states that require licenses to operate a check-cashing business, the fee and the time required to obtain the license are small (Caskey 1994).

14. New Hampshire has outlawed stand-alone check cashers throughout the sample period.

15. Author's calculations based on average monthly pay and average monthly transfer income receipt in the data.

(Caskey 1994).¹⁶ Using fees charged in unregulated states as a guide, we can think of fees at or below 2 percent as binding. Under this definition, government check regulations in five states and payroll check regulations in three states were binding at the end of 1999.^{17,18}

As with lifeline legislation, the theoretical impact of check-cashing price caps on the number of unbanked in a state is ambiguous. Banks and check cashers are competitors in the provision of income-conversion services. A bank account is likely a substitute for check-cashing services; demand for bank accounts should decrease along with check-cashing fees. On the other hand, the supply of check cashers will likely decrease as well. Evidence of the supply response can be found in West Virginia, a state that limits fees to a maximum of 1 percent or one dollar. A search on the website ReferenceUSA in May 2002 revealed that there are only four check cashers in West Virginia compared with 192 in the unregulated neighboring state of Maryland. Once again the competing effects of supply and demand render theory of little guidance. Therefore, I turn to the data in the next section.

IV. Data and Methodology

A. Household Data

Data on a household's banking status and demographics are drawn from the Survey of Income and Program Participation (SIPP). The SIPP's oversampling of low-income Americans coupled with its detailed questioning regarding respondents' finances make the data set well suited to the present analysis.

To create a relevant sample, I collapse the data to the household/month level. The focus is on households, rather than individuals, because household members are likely to pool resources. A bank account in one member's name would afford easy access to free check-cashing for a second member. The subjects of this study are low-income Americans; I restrict attention to households whose annual earnings place them at or under 200 percent of the poverty line. The final sample consists of 105,163 households residing in 45 states¹⁹ and the District of Columbia²⁰ in the time period August 1985 through February 2000.²¹

16. A small number of outlets cash personal checks. The average ceiling on these checks across the 19 states that regulated their exchange at the end of 1999 was 8 percent, with a minimum of 1 percent and a maximum of 12 percent. In unregulated states personal check-cashing fees range from 4 to 15 percent of check face value.

17. These are Connecticut, Illinois, New Jersey, New York, and West Virginia for government checks, and Illinois, New York, and West Virginia for paychecks. Delaware's regulation increased to a nonbinding level in 1993.

18. An Appendix detailing the check-cashing law changes, 1981-2000, is available from the author upon request.

19. The SIPP does not sample individuals in North Dakota, South Dakota, Vermont, and Wyoming. I eliminate New Hampshire because the state outlaws stand alone check cashers throughout the sample period.

20. The SIPP consists of mini-panels. Households are interviewed every four months for 2 1/2 to four years. A single household may be administered the asset and liabilities supplement and therefore appear in the sample, two to four times. Despite the panel nature, I treat the sample as a repeated cross section, adjusting standard errors appropriately. Because of the infrequency with which states alter traditional- and fringe-banking laws, exploiting the panel nature in a household fixed effect model proves uninformative due to growth in the size of standard errors.

21. There are two gaps in the data: No data were collected during the winter that included January 1990, or during the winter that included January 1996.

In 2000, 37 percent of these households held no transaction account. As shown in the final column of Table 2, the percentage of low-income households who are unbanked fell from more than 40 percent in the late 1980s to about 35 percent in the mid 1990s. The first three columns of Table 2 provide estimates of the percentage of unbanked households from three data sources: the Survey of Consumer Finances (SCF), the Panel Study of Income Dynamics (PSID), and the SIPP. While the three define households²² in a similar manner, SCF data suggest a decline in the phenomenon in the 1990s while SIPP data present a less steady trend during that decade. The estimates from the infrequent PSID are generally larger than the other two data sources.

Table 2 should not be interpreted as a reflection of merely demographic changes. Being unbanked is not a permanent state. Caskey (1997) estimates that 70 percent of those without transaction accounts have held such accounts in the past.

Nonetheless, even when the comparison is restricted to low-income households the unbanked appear less well-off than their counterparts who hold transaction accounts. Table 3 indicates that the unbanked are less likely to own a car or a house. They are more likely to receive transfer income; heads of unbanked households are less likely to be employed. The unbanked are less likely to be living in married-couple-headed households. They are less likely to have attended any college. Finally, the low-income unbanked are slightly younger and more often Black or Hispanic than low-income individuals with transaction accounts.²³

B. Regulatory Data

I combine banking and demographic data from the SIPP with data on state regulations of traditional and fringe banks.

1. Lifeline Legislation

I code lifeline legislation (Appendix Table A1) as a binary indicator equal to one if the state has active lifeline legislation in the year. Six sample states introduced lifeline legislation during the sample period.²⁴ One of these states, Pennsylvania, also eliminated legislation within the time frame considered.

2. Check-cashing Legislation

While check-cashing regulations in theory may vary across types of checks processed, in reality there is little such variation within a state. All of the states with binding payroll check regulations at the end of 1999 also held binding government check-cashing regulations. Two states had binding government check-cashing regulations but not binding regulations on paychecks.²⁵ Because of this lack of variation, I create

22. Households are defined as coresidents who share economic resources. However, the number of unbanked may vary across studies due to differences in the sampling scheme.

23. Regressions make use of SIPP data from 1985 to 2000. However, to avoid bias from attrition while presenting time relevant data, Table 3 draws from responses to the first asset and liability supplement for the most recent SIPP used in the study. Interviews were conducted from November 1996 to February 1997.

24. Seven when a behavioral response time of two or more years is allowed.

25. All states/months with government check regulation also have payroll check regulation.

Table 3*Characteristics of Banked and Unbanked Households, November 1996 through February 1997*

Characteristic	Banked Households	Unbanked Households
Mean age of head (in years)	52	47
White, non-Hispanic	76	47
Black, non-Hispanic	12	32
Hispanic	9	20
Asian	3	2
Some elementary	5	12
Elementary	9	9
Some high school	12	22
High school	36	34
Some college or more	38	20
Married couple	33	21
Single female-headed	34	39
Single male-headed	11	14
Monthly income (in 1999 dollars)	\$1,286	\$1,025
Receiving transfer income	12	36
Receiving social security	42	32
Head is employed	54	48
Own car	80	55
Own house	58	33
Debt (in 1999 dollars)	\$19,329	\$6,603
Observations	7,402	4,592

Note: All figures are in percentages, unless otherwise indicated.

regulatory variables in reference to government check regulation only.²⁶ While it would be interesting to examine differences in unbanked status by type of check regulated, this is simply not possible given the collinearity of these two regulations.

State regulations differ in that some are expressed as limits on fees (independent of check value) whereas others are expressed in terms of a percentage of the check's value. Some states rely on a combination of the two. Additionally states may allow or disallow fees for first time customers, for identification cards, and for "handling." I combine these varying types of legislation into one measure of the strength of state regulation. This measure is expressed in terms of the maximum fee that can be charged. (Higher fees indicate less stringent regulation.)

26. Because of the paucity of outlets that process personal checks (Bachelder and Ditzion 1999), I exclude personal check regulation from this analysis.

To calculate the maximum fee allowable on government checks²⁷ in a particular state in a particular month, I proceed as follows. I consider a six-month window beginning with the focal month. Within that period, I consider the average household receiving government transfers. In December 1999 terms, this household receives \$478 from the government each month.²⁸ Over a six-month period, the head of this household cashes six government issued checks for \$478 each. I assume that in month one the head is a new customer to a check-cashing outlet; therefore any new customer fees apply. During months two through six I assume that the household head returns to the same check-cashing outlet; new customer fees no longer apply. I calculate the maximum total fees that a single check casher could charge this head of household for cashing the six government checks. I then divide those fees by \$2,868 ($\478×6) to express the total fees as a percentage of check value.

An example may help clarify. As of October 1997 the state of Tennessee has limited fees on government checks to 3 percent of face value or two dollars, whichever is higher. The state further allows a one time membership fee of ten dollars. Therefore in Tennessee in December 1999, the representative household pays: $\$478 \times .03 + \10 or \$24.34 to cash its check in month one. The household pays $\$478 \times .03$ or \$14.34 in each of months two through six. The household pays a total of \$96.04 or 3.35 percent of face value to cash its checks for six months. I assign Tennessee a government check regulation score of 0.0335 for December 1999.

The government check regulation score is then used to create two independent variables. The first is the government check maximum rate defined as the government check regulation score for a given state/month. I impute a value of 0.10 for state/months in which there is no regulation because 10 percent is the maximum fee reported in unregulated states.²⁹ This measure exploits the full range of maximum fees permitted within a state. The limitation of this measure is that small changes in maximum fee level may not in reality affect the price that suppliers and demanders of check-cashing services face. This is especially likely when nonbinding regulation is raised or lowered to a still nonbinding level. I address this possibility by including as an alternative independent variable, an indicator of the presence of binding regulation. The value is one if the regulation score is below 0.02. (Recall that 2 percent is the modal fee charged in unregulated states.)³⁰ Four states introduce or remove binding regulation during the sample period.³¹

27. Since 1994 New Jersey has allowed fees of 1.5 percent on Social Security checks, but only 1 percent on public assistance checks. I rely on the public-assistance check fee to create my measure of severity of government check regulations.

28. This is the real average transfer received across the sample period expressed in December 1999 dollars. By expressing the check value in focal month/year terms in calculating fees, I allow the value of ceilings that are not pegged to check value to fall over time.

29. Ten percent is the maximum allowable in a regulated state. Further 10 percent is the maximum reported in unregulated states (Stegman 1999).

30. Results are robust to defining the level at which legislation binds at levels between 0.015 and 0.025.

31. They are Connecticut, Delaware, New Jersey, and Wyoming.

C. Methodology

The basic specification takes the following form:

$$(1) \text{ UNBANKED}_{ijk} = \alpha + \beta_1(\text{BANK REGULATION})_{jk-12} + \beta_2(\text{CHECK CASHER REGULATION})_{jk-12} + \beta_3(\text{STATE UNEMPLOYMENT})_{jk} + \delta_j + \gamma_k + X + \varepsilon$$

where *UNBANKED* is a dummy indicating that household *i* in state *j* holds no account at time *k*. *BANK REGULATION* (lifeline legislation) and *CHECK CASHER REGULATION* are variables on the regulation of traditional and fringe banks in state *j* at month *k-12*. Lagging state regulations allows time for households to become aware of the new regulations and adjust their banking behavior accordingly. *STATE UNEMPLOYMENT* controls for the current month economic conditions in the state. δ and γ are vectors of state and month indicators respectively. *X* is a vector of demographic controls on household type (married couple, single mother, single father, or other), income, number of children, welfare receipt status, Social Security receipt status and on household head age, race, education, and employment status. Standard errors are clustered by state to account for both auto-correlation and the possible dependence of observations within a state.³²

The estimation strategy of Equation 1 is a simple difference-in-difference estimator. The standard limitations apply. Factors that affect account demand and that are fixed within states, such as perhaps taste differences, are fully controlled for by state dummies. Factors that are fixed within time periods, such as the interest rate, are controlled for by the time dummies. The threat to the identification strategy is differential trends in variables across states. In particular, the approach would be invalid if the proportion of unbanked households is trending differently in treatment and control states before the introduction of banking and fringe-banking regulation. Figure 1 addresses this concern.

The top half of the figure examines the relationship between the trend in the proportion of unbanked households and a state's introduction of lifeline legislation. Data are drawn from the winter of the year indicated.³³ The figure compares the trend in the share of unbanked in New Jersey (which introduced lifeline legislation in 1992), New York (which introduced lifeline legislation in 1995), and control states that failed to introduce lifeline legislation before the year 2000. The graph shows a clear downward trend in the unbanked rate in all three locales up until 1995 when New York and the control states begin a slight upward trend, while New Jersey's proportion unbanked continues to decline. Through the introduction of lifeline legislation in both New Jersey (1992) and New York (1995) both treatment and control states follow a similar pattern in the rate of bank-account holding. Preexisting trend differences do not appear to explain the decision of a state to pass lifeline legislation (United States Department of Commerce 1988, 1994, and 2000).

While neighboring New York and New Jersey were chosen for the graphical exercise because of the late dates at which they introduced legislation, it is important to

32. As a household resides within a single state, this also corrects for dependence between observations from the same household.

33. 1985, 1986, 1990, and 1996 are not included as no winter data are provided for these years.

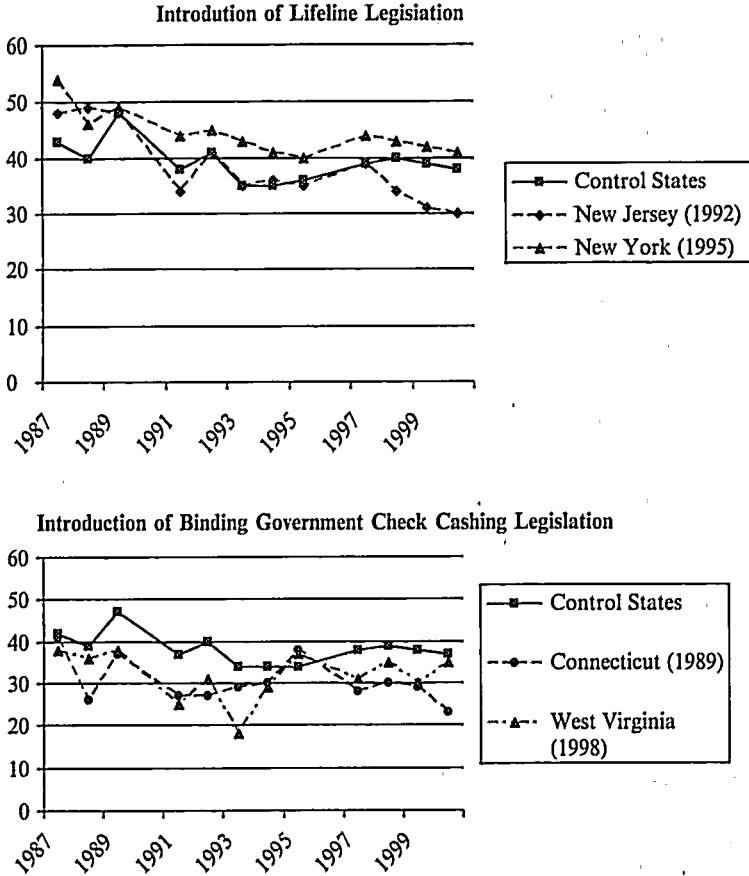


Figure 1

Percent of Households that are Unbanked, by Introduction of Banking and Fringe Banking Legislation

recognize that lifeline states are varied demographically. Among those that have introduced lifeline legislation over the sample period are states with low poverty rates, such as Massachusetts and New Jersey which ranked in the bottom ten for poverty levels in both the 1990 and 2000 censuses, as well as states like Illinois and New York, which ranked in the top half of states for poverty in both time periods. States also are varied with regard to minority population. Ranking states based on percentage White, Minnesota ranks 12 or under in both censuses. New York is consistently in the bottom decile, while Illinois and New Jersey rank in the penultimate decile in both censuses (United States Department of Commerce 1988, 1994, and 2000).

There also appears to be no difference in the patterns of the number of unbanked in a state in relation to the introduction of check-cashing legislation. The bottom of Figure 1 plots the trend in the unbanked for Connecticut (which introduced binding

check-cashing regulation in 1989), West Virginia (which introduced binding check-cashing regulation in 1998), and control states that failed to introduce binding check-cashing regulation in the time frame. Connecticut, like control states, sees a dip in the proportion unbanked in 1988 and then an increase in 1989 when its legislation is introduced. West Virginia, while much noisier than control states due to sample size, follows the general ups and downs in the rate of unbanked households in control states through implementation of legislation in 1998.

States with binding fringe-banking regulation also are varied. Connecticut, New Jersey, and Delaware are in the bottom ten in terms of poverty rates in the 1990 and 2000 censuses. West Virginia consistently ranks among the top five for poverty and the bottom five for percent minority. New Jersey and Delaware rank between 14 and 16 in terms of percent minority across the years (United States Department of Commerce 1988, 1994, and 2000). Because of the variation in state demographics, I rely on all untreated states in the United States as my control.

Differential trends in unobserved control variables also are a threat to the identification strategy. The omission of independent variables that are trending differently from state to state could potentially bias results. One such potential omission from Equation 1 is the number of bank branches in low-income neighborhoods. In a specification check, I show that the inclusion of banks per capita does not change the basic findings. To allow for other potentially omitted variables, I show that results are robust to the inclusion of linear and quadratic state time trends. Nonetheless, the analysis may suffer from bias caused by the omission of variables that do not vary within states according to these functional forms.

A final limitation of this analysis is the single outcome measure: whether the household owns a transaction account. This is clearly the critical outcome in the evaluation of lifeline legislation. But, given that bank-account holding and check-casher usage are not mutually exclusive, it also would be interesting to know how legislation impacts actual bank-account and check-casher usage. Surveys tell us that among low-income Americans, those with accounts use check cashers less frequently than those without. (See, for example, Caskey 1997.) This is likely true even for the population that is induced to hold accounts by the introduction of legislation. However, there is no way to discern the magnitude of the impact of legislation on actual banking and fringe-banking usage using the present data. In the next section, I present evidence on the extent to which banking and fringe-banking legislation induce bank-account takeup.

V. Results

Before providing evidence on the impact of legislation, I show the conditional correlations of demographics with unbanked status in Table 4. The model is of the form of Equation 1; however state regulatory variables are excluded. Results indicate that in comparison to married-couple-headed houses, single female- and male-headed households are more likely to hold no account. Low-income Blacks and Hispanics are more likely than their White counterparts to fail to have a transaction account, by 21 and 16 percentage points respectively. Education lowers the risk of unbankedness, as do age and income. Those who receive transfer income are 19 percentage points more likely to be unbanked. Those who receive Social Security are less likely by six percentage points.

Table 4
Impact of Demographics on Being Unbanked

Demographic Characteristic	Coefficient
Single female-headed household	0.010 (0.006)
Single male-headed household	0.06 (0.007)
Other household ^a	0.036 (0.004)
Asian	-0.028 (0.013)
Black	0.205 (0.01)
Hispanic ^b	0.162 (0.016)
Elementary	-0.061 (0.011)
Some high school	-0.038 (0.008)
High school	-0.127 (0.01)
Some college or more ^c	-0.234 (0.013)
Age 25-34	0.001 (0.005)
Age 35-44	-0.029 (0.005)
Age 45-54	0.048 (0.007)
Age 55-64	-0.101 (0.008)
Age 65 plus	-0.159 (0.012)
Monthly income \$250 to \$500	-0.158 (0.01)
Monthly income \$500 to \$1,000	-0.215 (0.007)
Monthly income \$1,000 to \$1,500	-0.295 (0.01)
Monthly income greater than \$1,500 ^d	-0.401 (0.011)
Receive transfer income	0.19 (0.008)
Receive Social Security	-0.06 (0.007)

Table 4
(continued)

Demographic Characteristic	Coefficient
Head employed	-0.023 (0.006)
Number of children	0.018 (0.002)
State poverty rate	-0.005 (0.002)

Notes: Regression includes month and state effects. Standard errors adjusted for clustering at state level. N = 112,780.

a. Omitted household category is married-couple-headed households.

b. Omitted race/ethnicity category is White.

c. Omitted education category is some elementary school.

d. Monthly income in 1999 dollars.

Employment is correlated with a two percentage point lower risk of being unbanked. Each child increases a family's likelihood of failing to hold an account.

Table 5 provides the results from models of the form of Equation 1, regulatory variables included. In Column 1, the regulatory variables of interest are the maximum rate for converting government checks and a dummy for the presence of lifeline legislation. Both variables, as is the case with all regulatory variables in this table, are lagged by one year to allow time for households to become aware of and to adjust to the new regime. Results in Column 1 indicate that as the maximum rate for converting government checks increases so does the number of unbanked households. The result is economically small and statistically insignificant: each percentage point increase in the rate correlates with a 7/100 of a percentage point increase in the number of unbanked households.

In the remaining columns of the table, I allow for nonlinear effects of check-cashing regulation. In Column 2 maximum check rates are entered both linearly and quadratically. The number of unbanked is decreasingly increasing in the maximum check conversion rate. Linear and squared terms enter insignificantly.

The first two models assume that small changes in the check-cashing rate have an effect on the number of unbanked in a state. However, it may be the case that small changes in regulation do not in reality affect the market price of check conversion. Or perhaps small changes in regulation only produce undetectably small effects in market price and bank-account take-up. Both scenarios are likely when regulations are not binding. To explore these possibilities, regulation is next modeled in a binary fashion. The indicator is equal to one if the legislation is binding, defined as holding the maximum rate below 2 percent of check value. Column 3 shows that binding government check legislation is associated with a significant three percentage point decrease in the number of unbanked households. The binary model appears to be the better fit.

The limitation of moving from the linear to the binary measure of government check regulation is the loss of variation. The identification using the binary indicator now comes from only four events: the introduction of binding legislation in

Table 5
Impact of Banking and Fringe Banking Regulation on Proportion of Unbanked Households

	(1)	(2)	(3)	(4)
Government check regulation (binding)			-0.03*	-0.029
			(0.017)	(0.019)
Government check maximum rate	0.074	1.4		
	(0.111)	(1.4)		
0.02-government check maximum rate				-0.021
				(0.113)
Government check maximum rate squared		-10.44		
		(11.0)		
Lifeline-banking regulation	0.012	0.013	0.015	0.015
	(0.011)	(0.011)	(0.010)	(0.011)

Notes: Controls for family type, race, education, age, employment status of head, receipt of transfer income, receipt of Social Security income, real monthly income, number of children, and state and month dummies included. All regulatory variables are lagged one year. Standard errors clustered at state level. $N = 112,780$. ***denotes significance at the 1 percent level, ** at the 5 percent level and * at the 10 percent level.

Connecticut in 1989, in New Jersey in 1994, and in Wyoming in 1998 and the removal of binding legislation in Delaware in July 1993.³⁴ Column 4 combines the better fit of the binary indicator with the variation of a linear measure. The linear measure now is identified solely off of the variation within binding levels of check-cashing regulation.³⁵ It is measured as the maximum rate subtracted from 0.02. The measure is set to zero for state/months in which regulation is not binding. Column 4 indicates that binding government check-cashing regulation continues to be associated with approximately a three percentage point fall in the number of unbanked. Setting the regulation at 1 percent (one percentage point below binding) would be associated with an additional decrease of only 2/100 of a percentage point in unbanked households. The regulatory variables are jointly insignificant in Column 4. The simple binary model (Column 3) seems the best fit for the check-cashing regulations. Theoretically price regulations have both supply (decrease) and demand (increase) effects. In the case of check cashers, it seems the supply effect dominates as households are more likely to hold a bank account (a substitute for check cashers) in the face of such regulations.

Lifeline-banking regulations are described by a binary indicator throughout the table. Across models, we see that the adoption of lifeline legislation last year is associated with an increase in the fraction of unbanked households today. However, the

34. New York and Illinois have binding legislation throughout the sample period.

35. For example, Delaware increased the maximum rate on both types of checks from 1/2 to 1 percent in 1989. Connecticut, Illinois, and New York have all altered maximum check-cashing rates from one binding level to another within the time period.

Table 6

Impact of Banking and Fringe Banking Regulation on Proportion of Unbanked Households, by Type of Household

	Below Poverty Line	Whites	Blacks and Hispanics
Government check regulation (binding)	-0.039 (0.022)	-0.023 (0.017)	-0.045*** (0.009)
Lifeline-banking regulation	0.017 (0.01)	0.026** (0.011)	-0.012 (0.019)
Mean percent unbanked	57	29	60
N	45,446	76,886	33,397

Notes: Controls for family type, race, education, age, employment status of head, receipt of transfer income, receipt of Social Security income, real monthly income, number of children, and state and month dummies included. All regulatory variables are lagged one year. Standard errors clustered at state level. *** denotes significance at the 1 percent level, ** at the 5 percent level and * at the 10 percent level.

effect is statistically insignificant. The evidence is indeterminate on whether supply or demand changes dominate in the impact of lifeline-banking regulation on low-income households.^{36,37}

Of course low-income households are not a monolithic group. It is possible that the results of Table 5 may be masking considerable variation in subgroup responses to banking regulation. Table 6 estimates separate models of the form of Equation 1 for White households, Black and Hispanic households, and households whose income places them below the poverty line. Of the three groups White households at 29 percent are the least likely to be unbanked, followed by those under the poverty line at 57 percent unbanked, and finally minority households at 60 percent unbanked. Results in the first column of the table suggest that the probability of being unbanked for the lowest-income households, as for the average low-income households, is decreasing in government-check regulation and increasing in lifeline-banking regulation. However, neither result is statistically significant. White households show a similar pattern. Note that in this case the perverse result of lifeline-banking regulation

36. Using the zip code-level bank-branching data for the years 1994-2000 to examine the correlation of bank branches per capita with lifeline legislation conditional on zip code and year effects did not help to resolve the indeterminacy. While lifeline legislation was associated with a significant decrease in bank branches per capita, the significance of the correlation was eliminated when state trends were added to the model. Restricting focus to this time period reduces the variation in lifeline legislation by half.

37. As the unit of observation is the household, the results speak to the effects of legislation on the average household. Results are qualitatively unchanged when data are collapsed to the state/month level so that results are attributable to behavior in the average state. In the state level data, the coefficients in Table 5 Column 3 are -.022 (0.011) on binding check-cashing regulation and 0.009 (0.011) on lifeline-banking regulation.

increasing the number of unbanked households is statistically significant. Together Black and Hispanic households comprise the smallest of the three subsamples. Nonetheless, the effect of check-cashing legislation on account takeup is estimated most precisely for this group: Binding check-cashing regulation increases the percentage of banked households by a significant 4.5 percentage points. The impact of lifeline legislation, while statistically insignificant, is in the direction intended by the regulation.³⁸

Thus far the analysis has allowed a year for households to respond to a change in banking regulation. However, it is possible that the time of adjustment is much longer, particularly in the case of lifeline legislation. A person who cashes a check every month at the check casher will know within a month of implementation that the check-cashing fees have changed. However, if that same individual cashes his checks at a bank, he is unlikely to learn in a bank visit that the fees on transaction accounts have been lowered. This is for two reasons: First, when you go to the bank to cash a check you may not notice a sign pertaining to transaction accounts. Second, there is evidence that that signage may not be there for you to notice. A study of New York banks found that none displayed information on lifeline accounts and only 40 percent of branches employed tellers who mentioned the lifeline accounts to surveyors (cited in Hogarth and O'Donnell 1999).

On the supply side, check cashers also can respond faster than banks. Closing a federally insured bank branch requires 90 day advanced notice to regulators and advanced notice of an unspecified length to customers (Federal Register 1999). Further, banks may hesitate to close branches for fear that doing so will be detrimental to community relations.³⁹

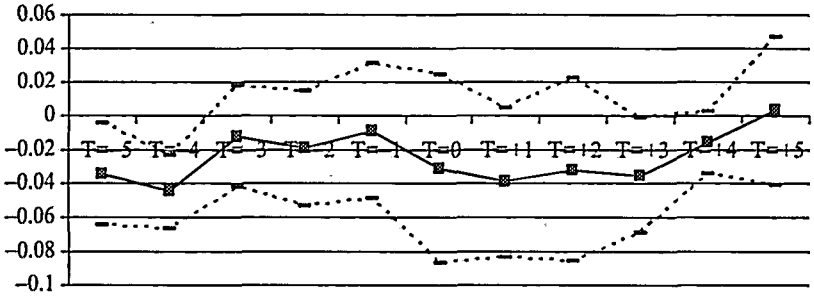
In Figures 2 and 3, I allow for longer lapses for behavioral response. The figures display the results from models similar to the form of Equation 1. However, instead of only modeling regulatory variables as indicators for whether the state has had the regulation in place for a year or longer, models are estimated for regulation of one, two, three, four, and five years or longer. In the same figures, specifications checks are performed by looking to leads: indicators for whether the regulation will be in place in the next year to five years. Identification continues to come from within-state changes in regulation status.

The top graph of Figure 2 focuses on households in poverty. For this group check-cashing legislation impending in the next year to three years has no significant impact on unbanked status. The leads of four and five years, however, do show a significant negative correlation with the fraction of households that are unbanked. Regulation that has passed in the previous year to five years shows no significant relationship with unbanked status. Hence, there is no evidence that check-cashing regulations impact the propensity of the lowest income households to hold transaction accounts.

38. The SIPP is composed of several overlapping mini-panels raising the possibility that results are impacted by attrition bias. I address this concern by reestimating Table 6 using only those observations from respondents receiving the asset and liability supplement for the first time. Results are qualitatively unchanged.

39. See, for example, Trigaux (1994), Parker (1994), and Van Gelder (1995). A 2005 Lexis Nexis search retrieved no articles on communities' protesting the closure of a check casher.

Households in Poverty



White Households



Black and Hispanic Households

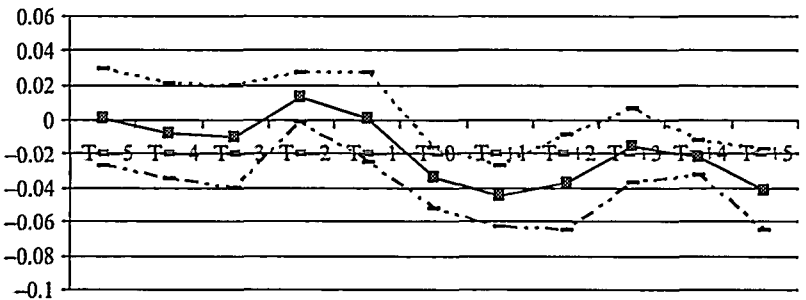
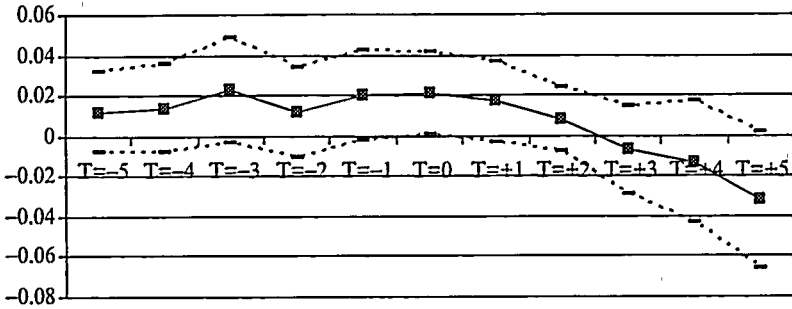


Figure 2

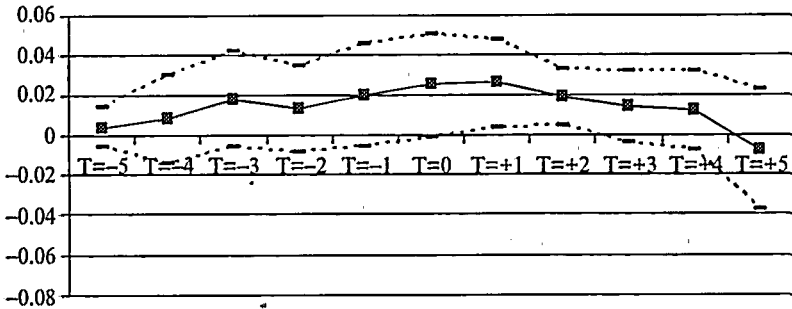
Impact of Check-cashing Legislation on Percent of Unbanked Households, by Household Type and Time from Implementation

Note: Each point on in each graph represents the coefficient on binding check-cashing legislation (lagged or led as indicated) from a separate regression. Dashed lines indicate 5 percent confidence intervals.

Households in Poverty



White Households



Black and Hispanic Households

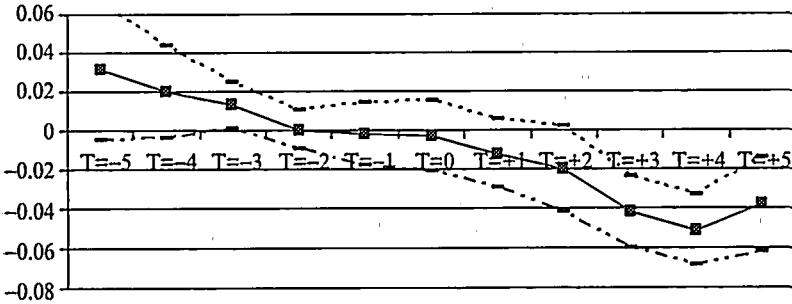


Figure 3

Impact of Lifeline-Banking Legislation on Percent of Unbanked Households, by Household Type and Time from Implementation

Note: Each point on in each graph represents the coefficient on lifeline-banking legislation (lagged or led as indicated) from a separate regression. Dashed lines indicate 5 percent confidence intervals.

For White households there is also no significant relationship between impending regulation and bank-account status, which provides evidence of the validity of the quasi-experiment. However, neither is there any significant relationship between current regulation (regardless of lag) and bank-account status.

For Black and Hispanic households estimates are more precise. Coefficients in the preperiod dance around zero. Whether regulation is modeled to impact behavior immediately, or with a lag of one year or more, regulation is correlated with a decrease in the number of unbanked minority households. This relationship is significant for lags of one, two, four, and five years.

Figure 3 graphically displays the lifeline-banking coefficients. For households in poverty, there is no significant relationship between impending lifeline regulation and unbanked status. And despite the fact that coefficients for lagged legislation are negative, the graph shows that the relationship between lifeline legislation and unbanked status is imprecise.

The middle figure places in perspective the finding of a positive impact of lifeline legislation on the number of unbanked White households. As preregulation measures produce coefficients similar in magnitude, one must conclude that the results are not evidence of a significant relationship between lifeline legislation and the number of unbanked low-income White households.

Once again the story for low-income minority households is distinct. Falsification exercises show a positive correlation between lifeline legislation and the proportion unbanked in the preperiod. This relationship declines as lead time decreases. However, none of the preperiod correlations are significant. As we move through estimation strategies that model the effects of lifeline legislation with increasing lags, we see, with the exception of $T = +5$, increasingly larger negative impacts of the legislation on the proportion of unbanked Black and Hispanic low-income households. Coefficients are significant for behavioral lags of three to five years. The graph provides evidence that lifeline legislation does alter the behavior of low-income Black and Hispanic households, albeit with a substantial lag. Again, given the evidence of slower dissemination of information on lifeline legislation (over check-cashing regulations) it is not surprising that lifeline effects are slower to materialize.

In summary, Figures 2 and 3 provide evidence that to the extent banking regulation has any impact on the banking behavior of low-income households, that effect is small and concentrated within low-income minority populations.⁴⁰ The results of banking and fringe-banking regulation suggested by these results are quite distinct. In the case of lifeline legislation, price caps lead low-income minority households to increase their propensity to hold accounts. In other words, the increased demand seems to

40. One possible explanation for the fact that the legislation only affects the behavior of low-income minority households may be that low-income minorities are more likely to live in urban areas where there is greater access to check cashers allowing for a greater elasticity of substitution between check-cashing prices and bank-account takeup. I can provide only very limited evidence to speak to this point. The SIPP identifies 70 percent of the sample as living in metropolitan areas. The remaining 30 percent is composed of households who live outside of metropolitan areas as well as those who live within metropolitan areas but whose urban status is not revealed. Running models of Equation 1 by urban status: I find no significant impact of either of the laws for either group.

Table 7
Impact of Banking and Fringe Banking Regulation on Proportion of Unbanked Black and Hispanic Households

	Government Check-Cashing Regulation (Binding)	Lifeline Check- cashing Regulation
Regulation implemented one year prior	0.005 (0.036)	0.005 (0.013)
Regulation implemented two years prior	-0.023** (0.007)	0.013 (0.017)
Regulation implemented three or more years prior	-0.020** (0.01)	-0.038*** (0.01)

Notes: All results from a single regression. Controls for family type, race, education, age, employment status of head, receipt of transfer income, receipt of Social Security income, real monthly income, number of children, and state and month dummies included. Standard errors clustered at state level. N = 33,397. *** denotes significance at the 1 percent level, ** at the 5 percent level and * at the 10 percent level.

outweigh any decrease in supply. For fringe banking the opposite is true: Price caps seem to lead low-income minority households to rely less on check-cashing services. This is likely because the supply of check cashers decreases following the implementation of the regulation. The result of both types of legislation is a decrease in the number of unbanked minority households over time.⁴¹

Because this analysis is only able to detect a shift in transaction account holdings among the minority subsample, this group will be the focus of the remainder of the paper. That low-income minority households are slower to respond to lifeline legislation as compared with check-cashing regulation is further supported in specifications modeling both types of regulation using three variables: a dummy for whether the regulation was implemented the year prior, a dummy for whether the regulation was implemented two years ago and a third dummy indicating that the regulation was implemented three or more years ago. When these differential lag periods are run head to head in Table 7, we see that government check-cashing regulation does not begin to have a negative impact on banking behavior until two years after implementation. Lifeline-banking legislation lowers the proportion of unbanked beginning three or more years after implementation.

Regardless of the time allowed for behavioral response, all specifications in this paper rely on the identifying assumption that any changes to state banking regulation are independent of any other factors that might determine the supply or demand for bank accounts. All static state characteristics are fully controlled for by the state dummies. However, one potentially omitted variable that may not be static within states is the number of bank branches per capita. Perhaps it is easier to introduce lifeline

41. As stated earlier, the basic pattern of check-cashing results is robust to defining legislation as binding at fees from 1.5 to 2.5 percent of check value. Defined at 1.5 percent, there is a significant relationship between unbanked status and regulation for Whites.

legislation in states in which banks are moving out of poor neighborhoods. If this were the case, then the lifeline-banking coefficients would confound the effects of the legislation with the effects of decreased access to banks.

Table 8 examines whether the exclusion of bank branches per capita from Equation 1 leads to bias in the basic results. Each panel of the table allows for a different lag from regulation implementation to behavioral response: one, two, or three years. Data on the location of federally insured bank branches are available on the FDIC website (www.fdic.gov) for the years 1994 to the present. In the first column of the table I

Table 8

Impact of Banking and Fringe Banking Regulation on Proportion of Unbanked Black and Hispanic Households, by Years since Implementation

	(1)	(2)	(3)
One-year lag			
Government check regulation (binding)	-0.099*** (0.012)	-0.105*** (0.015)	-0.106*** (0.015)
Lifeline-banking regulation	0.002 (0.021)	0.004 (0.026)	(0.025) 0.001
Bank branches per 1,000 residents		-0.414 (0.48)	
Bank branches per 1,000 residents (high-poverty areas)			-0.515 (0.491)
Two-year lag			
Government check regulation (binding)	-0.096*** (0.03)	-0.098*** (0.031)	-0.103*** (0.03)
Lifeline-banking regulation	0.007 (0.022)	0.002 (0.026)	0.005 (0.025)
Bank branches per 1,000 residents		-0.389 (0.482)	
Bank branches per 1,000 residents (high-poverty areas)			-0.534 (0.494)
Three-year lag			
Government check regulation (binding)	-0.037* (0.019)	-0.038* (0.02)	-0.044** (0.018)
Lifeline-banking regulation	-0.033 (0.021)	-0.039 (0.025)	-0.035 (0.023)
Bank branches per 1,000 residents		-0.49 (0.454)	
Bank branches per 1,000 residents (high-poverty areas)			-0.558 (0.49)

Notes: Controls for family type, race, education, age, employment status of head, receipt of transfer income, receipt of Social Security income, real monthly income, number of children, and state and month/year dummies included. Only regulatory variables are lagged. Standard errors clustered at state level. Data for 1994 to 2000. N = 17,735. *** denotes significance at the 1 percent level, ** at the 5 percent level and * at the 10 percent level.

reestimate the basic model for the period 1994 to 2000.⁴² In this restricted time frame, the government check regulation coefficient more than doubles. Such regulation is now associated with a ten percentage point decrease in the proportion of unbanked low-income minority households. Lifeline legislation still only seems to decrease the percentage unbanked after at least three years' time. The coefficient in this restricted sample is similar in magnitude to that in the expanded sample, however, it is no longer significant due to the loss in variation in the measure in the restricted time period.

The final two columns of the table address the issue of omitted variables bias. In Column 2 a variable on the number of bank branches per 1,000 residents is added to the model.⁴³ This variable enters negatively—as the number of bank branches increases the proportion of unbanked minority households decreases. However, the association is insignificant. Further, the addition of the variable to the model, does not substantially alter the Column 1 findings. But perhaps the relevant statistic is not bank branches across the state, but rather the abundance of branches in low-income areas. For Column 3, the bank branch variable is recalculated using only those zip codes in which the poverty rate is greater than 32 percent.⁴⁴ The inclusion of this, arguably more relevant, measure of access to bank branches does not substantively alter the findings.

But of course the possibility of other omitted variables remains. Further, it could be the case that the characteristics of the low-income population in one state vary across time differently from the characteristics of the low-income population in another state. To the extent that these differences are not captured by demographic controls on age, race, and education, the identification strategy is compromised. Perhaps, for example, different groups of immigrants have differential demand for bank accounts.

These concerns are addressed in Table 9. The first column of the table replicates the basic results (from Figures 2 and 3) for behavioral response lags of one to three years. The second column adds linear state trends to the model. The addition slightly increases the magnitude of the fringe-banking coefficients (for lags of one and two years). However, the coefficients are now estimated less precisely. In the case of the two-year lag, results are no longer significant. Lifeline coefficients are increased in magnitude by the inclusion of state trends. Results are now significant for all behavioral lags. In the final column, I add the square of the time trend to the model. Results continue to show a significant reduction of about five percentage points in the proportion of unbanked low-income minority households following the introduction of binding check-cashing regulation. *Legislation on the banking side reduces the proportion of unbanked with a three-year lag according to this model.* Thus even when allowing for varying state trends, the basic story remains the same: Both fringe and traditional-banking legislation serve to decrease the fraction of unbanked low-income minority households. However, changes in unbanked status lag traditional-banking legislation by two or three years.

42. By restricting the sample time frame I lose the variation from one fringe banking quasi-experiment (the introduction of binding legislation to Connecticut in 1989) and two to four lifeline-banking quasi-experiments (the introduction of regulation in Illinois and Minnesota in 1986, the introduction of regulation in Massachusetts in 1984 and the introduction of legislation in New Jersey in 1992).

43. This is calculated per zip code and then averaged over all zip codes in the state.

44. Thirty-two percent is the mean poverty rate in the data.

Table 9

Impact of Banking and Fringe Banking Regulation on Proportion of Unbanked Black and Hispanic Households, by Years since Implementation

	(1)	(2)	(3)
One-year lag			
Government check regulation (binding)	-0.045*** (0.008)	-0.055* (0.031)	-0.046*** (0.009)
Lifeline-banking regulation	-0.012 (0.009)	-0.024* (0.015)	0.007 (0.021)
Two-year lag			
Government check regulation (binding)	-0.037*** (0.013)	-0.04 (0.052)	-0.022 (0.059)
Lifeline-banking regulation	-0.02** (0.01)	-0.025** (0.011)	0.006 (0.014)
Three-year lag			
Government check regulation (binding)	-0.015 (0.011)	-0.004 (0.047)	0.061 (0.058)
Lifeline-banking regulation	-0.042*** (0.009)	-0.046*** (0.013)	-0.032* (0.017)
Linear state trends	No	Yes	Yes
Quadratic state trends	No	No	Yes

Note: Controls for family type, race, education, age, employment status of head, receipt of transfer income, receipt of Social Security income, real monthly income, number of children, and state and month/year dummies included. Only regulatory variables are lagged. Standard errors clustered at state level. $N = 33,397$. *** denotes significance at the 1 percent level, ** at the 5 percent level and * at the 10 percent level.

VI Conclusion

Although lifeline legislation is aimed at connecting the poor to bank accounts, the relationship between price caps on transaction accounts and quantity of accounts held is theoretically ambiguous. On the one hand, lower prices increase demand for accounts. On the other hand, lower prices may decrease the supply of bank branches in low-income areas. Activists have argued that lifeline legislation was never given a fair chance to succeed. The failure of banks to advertise these new accounts has thwarted efforts to bank the unbanked. I test the theories and the accusations in the data. While lifeline legislation seems ineffective at connecting the average low-income person to an account, there is evidence that the legislation leads to a small decrease, about three to four percentage points, in the fraction of low-income minority households without an account. The banking response happens with a lag of at least two years, which seems reasonable given reports of the lack of advertisement of such accounts. However, such a lag also hints at the possibility that the cause of the increase in bank-account takeup may be due to other factors.

Low-income minority households' propensity to hold an account also is slightly affected by the presence of binding check-cashing legislation. Binding price caps on the maximum fees that can be charged for check conversion lead to a four to five percentage point increase in the likelihood that a low-income minority household will acquire a bank account. This response suggests that check cashers may be less available to low-income minority households following the implementation of binding check-cashing regulation.

While these results are robust to the inclusion of state linear and quadratic time trends, there is the possibility of bias from the exclusion of potentially omitted variables that vary within state according to other functional forms. Further these results were obtained based on little state variation—seven state-level changes in the case of lifeline legislation and four state-level changes in the case of fringe-banking legislation. Therefore, while the analysis speaks to the relationship between banking laws and unbanked status for the period 1985–2000, extrapolating to future changes in state banking regulation must be done with extreme caution.

Finally, I restate that this paper must remain silent on welfare implications. Because of information asymmetries and the possibility of myopia with regard to savings, we cannot assume that price caps that decrease the supply of check cashers actually lower welfare. Nor of course can we assume that regulations are welfare improving. Whether welfare is raised by lower reliance on check cashers (or increased reliance on banks) is an empirical question that remains unanswered.⁴⁵ Evidence from Mexico suggests that savings accounts may perform a behavioral role and thus perhaps increase welfare.⁴⁶ To determine whether fringe and traditional-banking regulations should be implemented more widely in this country, we need more evidence on their impact on welfare. This, I hope, will be the focus of future data collection and research efforts.

45. These laws prove to be too weak as instruments for bank-account holding in a two-stage least squares model of the impact of account holding on the accumulation of various assets.

46. Aportela (1999) studies a Mexican government intervention that increased the number of bank branches and savings instruments offered in some cities. Low-income households in treated towns increased savings by as much as seven percentage points.

Appendix Table A1
Lifeline-Banking Legislation by State

State Effect	Description of Legislation	Population Affected	Years in
Illinois	Basic checking accounts require a minimum initial deposit of no more than (1) \$100 or (2) written agreement of direct deposit of a monthly payment. Ten free checks per month. No minimum balance.	Aged 65 and over	July 1, 1986 to present
Massachusetts	No fees may be charged on checking or savings.	Under 18, 65 and older	July 13, 1984 to present
Minnesota	Basic service transaction accounts have no initial or periodic fees. Six free checks per month. financial transactions per month.	Low-income	March 19, 1986-March 22, 1995
Minnesota	No fees may be charged on a savings account if the average monthly balance is more than \$50.	all	May 16, 1987 to present
New Jersey	New Jersey Consumer Checking Accounts must be offered wherever regular checking accounts are offered. Consumer Checking Accounts have a minimum initial deposit of no more than \$50. Minimum balance no more than \$1. Three dollars per month fee maximum. Eight free checks per month. Fifty cents for each additional check. Unlimited in-bank withdrawals and deposits.	all	December 1, 1992 to present
New York	Basic bank accounts require an initial deposit of no more than \$25. Minimum balance of no more than \$0.01. Three dollars per month fee maximum. Eight free withdrawals per month. Unlimited deposits.	all	June 28, 1995 to present
Pennsylvania	Banks that wish to engage in interstate banking must offer "basic account transaction account services." Law leaves definition to banking department, which never issued regulations.	all	June 25, 1986-July 6, 1995
Rhode Island	No fees on savings accounts with balances under \$500.	Under 18	June 20, 1995 to present

Appendix Table A1

State Effect	Description of Legislation	Population Affected	Years in
Vermont	The commissioner of banking and insurance shall survey all institutions quarterly on availability of basic checking and savings accounts. If the community's needs are not being met the commissioner has the right to mandate basic checking and/or savings accounts.	all	December 31, 1987–January 1, 2001

Sources: Annotated Laws of Massachusetts 167D Section 2; Caskey (1994); Canner and Maland (1987); Hogarth and O'Donnell (1999); Illinois Compiled Statutes Chapter 205 Act 605/4; Illinois Public Act 84-1036 (1984); Massachusetts Bankers Association web site <https://www.massbankers.org/>; Massachusetts General Laws Chapter 230 (1984); Minnesota Session Law chapter 339 (1986); Minnesota Session Law chapter 202 article 4 section 25 (1995); Minnesota Session Law chapter 161 (1987); Minnesota Statutes 48.512; Minnesota Statutes 47.76; New Jersey Permanent Statutes 17:16; New Jersey Administrative Code 3.1-19.2; New Jersey Register August 3, 1992; New York Statutes Section 14-f; New York Codes Section 9.3; Pennsylvania Acts 1986-69 (1986); Pennsylvania Acts 1995-39 (1995); Pennsylvania Register (multiple issues); Rhode Island Public Laws Chapter 82 Section 47 (1995); Rhode Island Statutes 19-19-17; State of New York Banking Department website <http://www.banking.state.ny.us/>; Vermont Public Acts 1987 Chapter 75 (1987); Vermont Statutes Title 8 Chapter 75

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