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***PROHIBITIONS, PRICE CAPS,  
AND DISCLOSURES:  
A LOOK AT STATE POLICIES  
AND ALTERNATIVE FINANCIAL  
PRODUCT USE***

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**Prohibitions, Price Caps, and Disclosures:  
A Look at State Policies and Alternative Financial Product Use**

**Abstract**

This study uses nationally representative data from the 2009 National Financial Capability State-by-State Survey to examine the relationship between state-level alternative financial service (AFS) policies (prohibitions, price caps, disclosures) and consumer use of five AFS products: payday loans, auto title loans, pawn broker loans, refund anticipation loans, and rent-to-own transactions. Looking across products rather than at one product in isolation allows a focus on patterns and relationships across products. The results suggest that more stringent price caps and prohibitions are associated with lower product use and do not support the hypothesis that prohibitions and price caps on one AFS product lead consumers to use other AFS products.

**Keywords:** alternative financial services, unbanked, financial services regulation

**JEL Codes:** G28, G29

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## **Prohibitions, Price Caps, and Disclosures: A Look at State Policies and Alternative Financial Product Use**

### **1 Introduction**

Annual revenues from alternative financial services (AFS) exceed \$25 billion (Rivlin, 2010).<sup>1</sup> Millions of American households, especially households in the bottom half of the income distribution, use AFS loans to meet short-term needs. Short-term loans secured by automobiles, paychecks, and tax refunds have attracted attention because of their high price. Although often small in initial denominations, this type of credit can add up to significant debt burdens. Numerous states have put restrictions on the fees AFS providers can charge, which the industry says could eliminate such services. It is unclear whether consumers are better off without access to these short-term products.

This study examines the relationship between AFS policies and consumer use of five AFS products: payday loans, auto title loans, pawnshop loans, refund anticipation loans, and rent-to-own transactions. We examine the policies for each product alone as well as in conjunction with one another, because policies that restrict the availability of one product can affect consumer use of another product. For example, state policies that limit the availability of payday loans could lead consumers to turn to auto title loans when credit needs arise.

We use individual-level survey data and state-level policy data to answer the following research questions:

1. What is the relationship between state-level AFS policies and AFS use?
2. Are restrictions on one AFS product associated with increased use of other AFS products?

In doing so we contribute to the literature by looking across five products rather than at one product in isolation. This allows us to examine patterns across products as well as whether there is any relationship between a state law on one AFS product and consumer use of another AFS product.

We find evidence that prohibitions and price caps are associated with reduced supply of AFS products.<sup>2</sup> Specifically, we find prohibiting payday loans is associated with a 32 percent decline in the use of payday loans. State prohibitions do not necessarily prohibit all state residents from getting a payday loan, since people can get payday loans via the Internet or go across state lines to obtain the loan. We also find that price caps are associated with reduced use of auto title loans and pawnshop loans. Moving from no price cap on auto title loans to an annual percentage rate (APR) cap of 36 percent is associated with a 28 percent decline in auto title borrowing. Similarly, moving from no price cap on pawnshop loans to a monthly interest rate cap of 3 percent (roughly a 40 percent APR) is associated with a 23 percent decline in pawnshop borrowing. We also examine disclosure requirements for refund anticipation loans and renting to own and find little evidence that these requirements are related to AFS

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<sup>1</sup> In 2008, Pawnbrokers earned \$4 billion in revenue, while payday lenders and rent-to-own businesses each earned \$7 billion in revenue (Rivlin, 2010).

<sup>2</sup> We use the term “associated” to indicate a relationship, not a causal effect.

product use. Our findings may be a result of data limitations, as other studies suggest that clear and timely disclosures reduce AFS product use.

Finally, our results do not support the hypothesis that prohibitions and price caps on one AFS product lead consumers to use other AFS products. This last result does not necessarily convert to a universal rule, since demand for alternatives would depend upon the specific restrictions imposed and how readily the substitute is available. For instance, Theodos et al. (2010) find that restrictions on the use of refund anticipation loans by the military did lead to large substitution of the cheaper but related refund anticipation checks. Refund anticipation loans and checks are often sold by the same vendor or tax preparation firm, although refund anticipation checks are payment rather than a credit product.

The paper is organized as follows. Section 2 provides an overview of the five products and summarizes key findings from the literature. Section 3 provides a conceptual framework for thinking about how state policies might affect AFS product use. The data and empirical model are described in Sections 4 and 5, respectively. Section 6 presents the empirical results, answering each research question in turn. Finally, Section 7 discusses policy implications and Section 8 provides a summary and conclusion.

## **2 Background and Literature**

### ***2.1 Overview of the Five AFS Products***

One third of low-income families without savings accounts report that they would use a payday lender or pawn something to pay a large bill in an emergency (McKernan and Ratcliffe 2008). Payday, pawnshop, and auto title lenders all tender small loans intended to carry borrowers through temporary cash shortages. Payday lenders, for example, provide short-term loans to working people with bank accounts. The typical payday loan is for roughly \$250–\$300 for two weeks, with fees of \$15–\$20 per \$100 borrowed (Flannery and Samolyk 2005). Pawnshop and auto title lenders also provide short-term loans but use collateral (such as jewelry or a car title) to secure them. Pawnbroker loans are typically a one-month loan under \$100 (National Pawnbrokers Association 2008), and the typical auto title loan is a one-month loan between \$600 and \$2,500 (South Carolina Appleseed Legal Justice Center 2004).

Refund anticipation loans and rent-to-own stores provide quick access to tax rebates and merchandise, respectively. Refund anticipation loans are short-term loans secured by a taxpayer's anticipated income tax refund. Taxpayers receive their tax refunds more quickly through refund anticipation loans—within a few days rather than the six weeks it can take to receive a paper check refund. Refund anticipation loans are often used to pay for pressing financial needs and tax preparation fees (Theodos et al. 2010). Rent-to-own transactions are self-renewing weekly or monthly leases for merchandise (e.g., furniture) with the option to purchase. At the end of each lease period, consumers have the option to return the merchandise or to continue to rent by paying for an additional lease period. Consumers can purchase the merchandise by renting to term (usually 18 to 24 months) or by early payment of a proportion (usually 50 percent to 60 percent) of the remaining lease payments.

## **2.2 What We Know from the Literature**

The literature on alternative financial services is substantial,<sup>3</sup> but only a small subset of this literature examines the relationship between AFS policies and AFS product use. The majority of the AFS literature focuses on payday loans, leaving a gap in the literature for other AFS products. The literature has several important findings that are relevant to this paper. First, some AFS suppliers circumvent state laws (Feltner, 2007; Fox and Guy, 2005; Stegman, 2007). Second, binding price caps and prohibitions have been found to reduce supply (Prager, 2009; Zinman, 2010), likely because there are no excessive profits in AFS products (Flannery and Samolyk, 2005; Skiba and Tobacman, 2007). Third, AFS consumers have relatively few alternatives to AFS products (Elliehausen and Lawrence, 2001; Stegman 2007) and so, fourth, are not necessarily better off without AFS products (Caskey, 2010; Elliehausen and Lawrence, 2001; Fellowes and Mabanta, 2008; Lacko et al., 2002; Morgan and Strain, 2008; Morse, 2009; Zinman, 2010).<sup>4</sup> Fifth, well-designed and -timed disclosures can affect consumer behavior (McKernan et al., 2003; Bertrand and Morse, 2011). Sixth, fee disclosures may be better than APR disclosures on AFS products (Anderson and Jackson, 2004; Bertrand and Morse, 2011; Elliehausen, 2005; Elliehausen and Lawrence, 2001; Lacko et al., 2002).

This paper contributes to the literature by (1) providing a nationally representative picture of the relationship between state AFS policies and consumer product use; (2) measuring this relationship for less studied products, such as auto title and pawnshop loans; (3) looking across five AFS products, rather than at one product in isolation; and (4) examining substitution between AFS products.

## **3 How might state policies affect AFS product use?**

State policies can affect both the supply of and the demand for AFS products and thus consumer use of the products. The state policies we examine fall into three categories: prohibitions, price caps, and disclosures. Overall, we expect prohibitions decrease consumer use, price caps either increase or decrease use, and disclosures decrease use. The conceptual framework below suggests these relationships are more complicated than might be expected at first glance. For example, policies will affect many consumers and suppliers beyond those who are directly targeted by policies, partly because there are many possible substitutions between consumers, products, and suppliers.

Prohibitions are expected to reduce consumer use of the product by restricting its availability (i.e., restricting supply). In states where an AFS product is prohibited, consumer use of the product may not go to zero if consumers go to nearby states to obtain the product or obtain it online.

Price caps can either increase or decrease consumer use of AFS products, depending on the competitiveness of the market and the price cap amount. If the market is perfectly competitive, the price cap reduces the quantity supplied by firms, and some borrowers are rationed. If some suppliers have market power and earn excess profits, then the price cap will lead to a lower price while increasing

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<sup>3</sup> See Caskey (1994) and Barr (2004) for seminal overviews of alternative financial services and Theodos and Compton (2010) for a recent summary of the literature.

<sup>4</sup> Melzer (2011) and Skiba and Tobacman (2008) are exceptions, finding that access to payday loans may worsen economic outcomes.

quantity supplied by firms, provided the price cap is not set too low.<sup>5</sup> Thus, a price cap can lead consumer product use to rise or fall.

A price cap can also change the make-up of firms supplying AFS. For example, anecdotal evidence suggests that when California implemented its rent-to-own price cap, small “mom and pop” firms, who were no longer profitable with the price cut, went out of business and national chains saw decreased profits but increased revenue from the additional business. A price cap is also likely to change the customers a lender is willing to serve. For example, a price restriction may induce suppliers to shift their clientele to serve less risky, and thus less costly, customers. A lower price may also attract lower credit risk customers. This scenario is less likely in the short run, however, because of the stigma associated with the AFS lenders and products.

Overall we expect clear and timely disclosures to reduce AFS product use, though there are scenarios where use could increase. Disclosure laws may decrease demand for the product by disclosing to consumers the full cost of the transaction. Disclosures may also decrease the supply of the product by increasing dealer costs. Both of these effects would reduce consumer use of the product. Disclosures could also make a market more competitive by allowing consumers to better shop on price. The increased competition could induce suppliers to reduce price or provide better products and service and thus increase demand for the product.

AFS products can be substitutes for one another. Enforced restriction for one product can increase demand for another product by shifting demand from one product to the other. Evidence of this substitution can be seen in the shift from refund anticipation loans to refund anticipation checks with the 2006 price cap restriction on loans to military personnel (Theodos et al., 2010). This shift, however, is to a very similar product offered as a byproduct of a primary product (tax preparation) by the same vendor (the tax preparer). At the same time, it is possible that a restriction on one AFS product could decrease use of other AFS products by lowering complementary foot traffic in stores or by lowering profits for dealers that rely on the sale of multiple products to stay in business. Because AFS products often serve the same cash and credit restrained customers, many AFS suppliers offer multiple products within their stores. For example, many pawnbrokers offer payday loans (Caskey 2005) and many rent-to-own stores offer payday loans. And according to Rivlin (2010), “almost every enterprise that’s part of the fringe economy takes a stab at the tax return business” (p. 265).

#### **4 Data**

Our study relies on both individual-level survey data and state-level policy and economic data. We discuss each of these in turn below.

##### ***4.1 National Financial Capability State-by-State Survey***

The individual-level data for this study come from the 2009 National Financial Capability State-by-State Survey, sponsored by the FINRA Investor Educational Foundation.<sup>6</sup> This Internet-based survey includes

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<sup>5</sup> Any price cap set at or above the equilibrium price would lead to an increase in the quantity supplied by firms.

roughly 500 respondents per state (plus DC), for a total sample of about 28,000 respondents. When weighted, the data are nationally representative.

The survey was administered in mid-2009 and asks a variety of point-in-time questions about respondents' demographic and financial characteristics, including age, educational attainment, financial literacy,<sup>7</sup> race and ethnicity, living arrangements, number of financially dependent children, income, banked status, and whether the person has automobile insurance (as a proxy for car ownership).<sup>8</sup> Key for this analysis is retrospective questions that ask respondents if they used each of five AFS products—auto title, payday, pawnshop, refund anticipation loan (RAL), and rent-to-own—over the last five years. Because AFS use is measured over the past five years and state of residence is measured at the time of the survey, people who moved across state lines over the past five years may not have used the AFS product in their current state of residence. However, migration across states is not a large concern; according to the Current Population Survey, only two percent of people 15 years and over (in total and in any low-income group) moved across states lines in any of the five years covered by our data (U.S. Census Bureau, 2011).

In general, item nonresponse was low for most survey questions; roughly 2.5 percent of respondents did not answer the AFS product use questions and so are excluded from the analysis. Overall, our sample includes 27,069 people. Use of AFS products cuts across income group and educational attainment (as described below), so all analyses examines the full population.

Between 6 percent and 13 percent of the sample reported using each of the five AFS products over the five-year period from mid-2004 through mid-2009. Auto title loans and refund anticipation loans are used least often (6 percent), and pawnshop loans are used most often (13 percent; table 1 last row). The usage rates for payday and pawnshop borrowing are higher than the usage rates found in a companion telephone survey of nearly 1,500 adults—10 versus 5 percent for payday borrowing and 13 versus 8 percent for pawnshop borrowing. An Internet-based survey, such as this one, could produce higher AFS usage rates if respondents are more comfortable reporting AFS usage via an internet survey than to an interviewer on the telephone. The usage rates for payday and pawnshop borrowing are also higher than in other surveys, though comparisons are not exact because of differences in the population (individual, household) and in the use reference period (past year, past five years). For example, our 10 percent payday use in the past five years is more than twice the 3.5 percent use in the past year calculated from the Federal Deposit Insurance Corporation's (FDIC) 2009 National Survey of Unbanked and Underbanked Households (FDIC 2009 tables A-10 and A-17) and the 2.4 percent use in the past year calculated from

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<sup>6</sup> FINRA is a registered trademark of the Financial Industry Regulatory Authority.

<sup>7</sup> We measure financial literacy on a scale from 0 to 5 based on five survey questions about interest rates, inflation, mortgage payments, bond prices, and risk. A person with a financial literacy score of zero did not answer any of the questions correctly, while a person with a score of five answered all questions correctly.

<sup>8</sup> All questions used for this analysis ask about the individual except for number of financially dependent children (self and spouse/partner), income (household), and banked status (household).

the 2007 Survey of Consumer Finances (authors' calculations).<sup>9</sup> Potentially consistent with Zinman's (2009) finding that debt is underreported in household surveys relative to administrative data, our internet survey data find that 6 percent of adults used a RAL in the past 5 years, while administrative data show that 7.6 percent of *tax filers* used a RAL in 2008 (Theodos et al., 2010).

AFS use varies substantially across states (table 1). For example, payday loans are used by less than 5 percent of the population in six states, but used by more than 15 percent of the population in five states. Similarly, refund anticipation loan use varies substantially across states, from a low of 2 percent in New Hampshire and Idaho to a high of 15 percent in Mississippi. There is also variation within state across products. For example, no state has the same level of use for each product. Also, while some states have AFS usage rates that are consistently above or below the national average (e.g., Arizona and New Jersey, respectively), other states have usage rates that are above the national average for some products but below the national average for other products (e.g., Ohio and Washington).

[Insert Table 1 about here]

There is some overlap in AFS customers across products, although the majority of AFS customers used only one of the five products during the past five years (60 percent, not shown). Beyond this, 24 percent of AFS customers used two products, 11 percent used three products, and the remaining 6 percent used four or five products. Thus, our analyses of the five products capture, in large part, different groups of customers.

AFS customers are varied and AFS use cuts across multiple dimensions including income, banked status, age, educational attainment, race, and gender. As compared with non-AFS users, AFS customers do, however, tend to be lower income, unbanked, younger, less educated, less financially literate, minority, financially responsible for more children, and to live in the South (table 2).<sup>10</sup> As noted above, the survey asks about AFS product use over the course of the last five years, while the demographic and household characteristics are measured at the time of the survey. Keeping in mind that some individual and household characteristics may have changed over time, we note some differences in customers of different AFS products.

[Insert Table 2 about here]

The five AFS products are used by persons in each of the eight income groups, which range from less than \$15,000 to \$150,000 or more (table 2).<sup>11</sup> Among AFS consumers, pawnshop and rent-to-own customers tend to have the lowest incomes, while auto title customers have higher incomes. Auto title customers, along with payday customers, are also more likely to have a bank account. About 90 percent of auto title and payday customers report having a bank account, while roughly 80 percent of

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<sup>9</sup> The Federal Trade Commission 1999 Survey of Rent-to-Own Customers finding that 2.3 percent of households used rent-to-own in the past year and 4.9 percent in the past five years suggests that doubling the past year estimate is a reasonable approximation of use in the past five years (Lacko et al., 2002).

<sup>10</sup> For the purposes of this analysis, we use the Census designation of the South, which includes Alabama, Arkansas, Delaware, the District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia.

<sup>11</sup> The survey data provides household income in eight discrete ranges.



pawnshop, RAL, and rent-to-own customers are banked. Similarly, auto title and payday customers have higher levels of education and financial literacy than do users of the other three products. In all cases, however, persons who did not use an AFS product are on average more advantaged. Minorities are disproportionately more likely to use each of the five AFS products, as are people who live in the South.

#### **4.2 State-Level AFS Policy Data**

The National Financial Capability State-by-State data are augmented with state-level AFS policies, with information ranging from prohibitions and price caps to disclosure requirements. These policy data were assembled from documents published by a number of organizations including the Consumer Federation of America, the National Conference of State Legislatures, the National Consumer Law Center, and the Association of Progressive Rental Organizations. In addition, experts in the field reviewed and commented on a preliminary version of these data.<sup>12</sup> Source documentation is available from 2004 through 2009 for only some of the AFS policy variables. In cases where source data are not available for each year and state policies are the same at two points in time (e.g., 2005 and 2008), we assume no change in the interim years. When the policies did change, we obtained follow-up documentation to identify the year in which the policy changed.<sup>13</sup>

Few of the policies changed between mid-2004 and mid-2009. Since the individual-level National Financial Capability State-by-State data capture AFS use at any point over a five year period, we measure each policy with a single variable. Specifically, we take the policy that was in place for the majority of time over the 2004–2009 period.<sup>14</sup>

Table 3 presents a summary of the state policies included in our analysis, by product. Two of the five products, auto title loans and payday loans, have prohibitions in place in some states during the study period. The auto title industry has restrictions in the majority of states, with 26 states prohibiting auto title loans<sup>15</sup> and another 12 states with APR caps.<sup>16</sup> These auto title APR caps range from a low of 21 percent in Iowa to a high of 304 percent in four states—Alabama, Georgia, Mississippi, and Montana. The majority of states also have payday loan restrictions, although only half as many states, 13, prohibit

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<sup>12</sup> These experts included staff from the Office of the Comptroller of the Currency, the Association of Progressive Rental Organizations, the Center for Responsible Lending, the Conference of State Bank Supervisors, and a national pawnbroker association.

<sup>13</sup> Source data for the pawnshop policy variables were only available for 2005. In 2010, a reviewer from a national pawnbroker association advised that our pawnshop policy data are generally current.

<sup>14</sup> When the policy changed in the middle of the study period, we took the policy that was in place in the latter half of the period.

<sup>15</sup> Texas has statutory prohibitions on auto title loans, but auto title lenders can be active as brokers for unregulated “credit servicing organizations.” As a result, we do not treat Texas as prohibiting auto title lending for the purposes of the empirical analysis. This reduces the number of states with auto title prohibitions from 27 to 26.

<sup>16</sup> South Carolina imposes an APR cap of 15 percent but only on loans below \$600. Since most auto title loans are larger than \$600, we consider the South Carolina cap nonbinding, reducing the number of states recorded in our analysis as having a cap to 12.

payday loans. Thirty-three states restrict the APR on payday loans, although the average APR cap among these states is high at 487 percent.<sup>17</sup>

[Insert Table 3 about here]

Forty states also have a monthly interest rate cap on pawnshop loans. These monthly interest rates range from 1 percent to 25 percent, which translate to APRs of roughly 13 percent to over 1,300 percent. Many fewer states, 11, have rent-to-own APR or other price restrictions.<sup>18</sup>

In addition to these price restrictions, 10 states require pawnshops to return excess proceeds to the customer upon sale of the collateral. Several states require the disclosure of certain information about refund anticipation loans and/or rent-to-own transactions. Fourteen states also required disclosures of a standard set of contract terms for refund anticipation loans during the study period. Common refund anticipation loan requirements include disclosures for the loan's APR, loan fee schedule, and filing fees.<sup>19</sup> Forty seven states require rent-to-own providers to disclose contract information, while 16 states take the additional step of requiring total cost label disclosures.<sup>20</sup>

We examine whether individual, household, and state characteristics differ for people who live in states with strict versus more lenient policies for each of the five AFS products. The comparisons are: (1) auto title loans, prohibit or have an APR rate cap at or below 36 percent (yes vs. no), (2) payday loans, prohibit or have an APR rate cap at or below 36 percent (yes vs. no), (3) pawnshop, monthly interest rate at or below 3 percent (roughly 36 percent APR, yes vs. no),<sup>21</sup> (4) refund anticipation loans, disclosure requirements (yes vs. no), (5) rent-to-own, APR or other price cap (yes vs. no). By and large, the individual and household characteristics are similar for those who live in states with more restrictive versus lenient policies.<sup>22</sup> There are larger differences by region and state economic conditions. People who live in the Northeast are substantially more likely to face strict AFS policies, as are people who live in higher income states (as measured by per capita income and real gross domestic product, GDP).

It is possible that AFS policies were implemented in anticipation of demographic or other changes that are related to demand for AFS policies, introducing the possibility that the policies are endogenous. AFS product use may also be confounded with the tightening of policies around subprime mortgages in the 1990s and 2000s. A comparison of our AFS state policy data during the 2004-2009 time

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<sup>17</sup> These caps ranged from Ohio's 28 percent APR cap to Missouri's 1,980 percent APR cap. Since Missouri's cap is a significant outlier in the data, the empirical analysis sets this to the next highest value, which is 780 percent. Two of the 33 states (Oregon and New Mexico) implemented their payday loan caps in the middle of the study period.

<sup>18</sup> We were unable to identify a continuous measure of state rent-to-own price or APR caps.

<sup>19</sup> Three states impose APR caps on RALs; these caps are not included in our analyses because of the limited variation across states.

<sup>20</sup> The correlation in state policies across the AFS products is never higher than 0.55 and is generally below 0.40. The highest degree of correlation is between states that restrict auto title and payday loans at 0.55.

<sup>21</sup> No state prohibits the use of pawnshops.

<sup>22</sup> Characteristics are nearly identical in strict versus lenient states for age, educational attainment, financial literacy, gender, household income, banked status, and number of financially dependent children. There are some differences by race, but there is no consistent pattern across the products. The statistics show that married people and people with automobile insurance are a bit more likely to live in states with more lenient policies. Results are available from the authors.

period with state anti-predatory mortgage lending law changes during the same time period (White et al. 2011) suggests that states were not changing their AFS policies as part of the their anti-predatory mortgage lending policy changes. But even if the policy changes are not linked, the anti-predatory mortgage law changes raise endogeneity bias concerns to the extent that they affect demand for AFS products.

#### 4.3 State-Level Economic Data

State-level economic conditions may contribute to AFS product use. People may be more likely to use an AFS product if employment levels are low and the unemployment rate is high, for example. To control for economic conditions, the individual-level data are supplemented with state-level data on (1) real personal income per capita, (2) the unemployment rate, (3) the employment-to-population ratio, and (4) real GDP per capita by state. These data were collected from the U.S. Department of Labor (2010) and the U.S. Department of Commerce (2010a, 2010b, and 2010c). Values for these variables are averaged over the study period and included in the empirical model.<sup>23</sup>

### 5 Empirical Model

The empirical model measures the relationship between AFS policies and AFS product use, with a focus on five products: auto title loans, payday loans, pawnshop loans, refund anticipation loans, and rent-to-own. We estimate a separate model for each product. Individual-level National Financial Capability State-by-State data are used to capture consumers' use of AFS products in the last five years, as well as their demographic and household characteristics, while the AFS policies are measured at the state level. We estimate models for AFS use ( $Y_{is}$ ) for person  $i$  in state  $s$ :

$$Y_{is} = \alpha + \delta' AFS_s + \beta_1' X_{is} + \beta_2' S_s + v_{is}.$$

Using auto title as an example,  $Y_{is}$  indicates whether person  $i$  who lives in state  $s$  at the time of the survey took out an auto title loan in the past five years (yes=1, no=0). In this case,  $AFS_s$  represents the state-level auto title policies for each person in the sample.  $X_{is}$  represents individual and household characteristics including age, educational attainment, financial literacy, income, banked status, have automobile insurance, race and ethnicity, gender, living arrangement, and number of financially dependent children.  $S_s$  represents state-level economic variables (per capita income, unemployment rate, employment-to-population ratio, and per capita GDP by state) and region indicator variables.  $v_{is}$  is the error term. We estimate weighted probit models and cluster the standard errors by state to account for within-state correlation in the error term.

To test the robustness of the results, we estimate additional model specifications, both expanding and limiting the set of covariates. By and large, the estimated relationships between AFS policies and AFS product use in these alternate specifications mirror the primary specification results. These specifications and findings are discussed in Section 6.

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<sup>23</sup> The employment-to-population ratio and real GDP per capita by state are only used through 2008.

Our model is identified by variation across states. It does not include a time element because the National Financial Capability State-by-State data only capture whether respondents used the specific AFS products at any point over the five-year period from mid-2004 to mid-2009, not whether respondents used the products in *each* of the five years. The cross-sectional nature of these data is a limitation for our analysis.<sup>24</sup> Our model measures the causal effect of state AFS policies on consumer product use under the assumption that state laws are not determined by individual-level product use (i.e., no reverse causation) and that no unobserved factors are correlated with both consumer AFS product use and state regulation of the industry. Reverse causation is unlikely in our analysis because most of the state AFS policies examined were in place well before 2005.<sup>25</sup> The assumption that no unobserved factors are correlated could be violated in our analysis due to the potential endogeneity of state laws discussed earlier. If this assumption is violated, the results nonetheless provide information on how AFS policies relate to AFS product use, controlling for relevant individual- and household-level characteristics as well as state-level economic conditions. This is an important contribution to a literature where nationally representative information on the relationship between AFS policies and consumer outcomes is unknown.

There can be important differences between the intent of a policy and how it is implemented and used in practice. As discussed above, suppliers may find ways to circumvent policies by altering their products. This would lessen the impact of the policy on product use. Also, with national chains, laws in some states can affect policies in all states. For example, Rent-A-Center provides total cost label disclosures in all states, irrespective of the state law, because some states require it. While we expect this type of response to increase the potential impact of the policy on product use, it decreases the measured relationship between the policy change and product use. Thus, our analysis captures the relationship between AFS use and AFS policies as they are implemented and used in practice; we do not necessarily measure the relationship that captures the intent of the law.

## 6 Results

### 6.1 *What Is the Relationship between State-Level AFS Policies and AFS Use?*

#### 6.1.1 *Price Caps and Prohibitions*

The results suggest that more stringent price caps and prohibitions are associated with lower AFS product use. We find this relationship for all four products examined—auto title loans, payday loans,

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<sup>24</sup> If panel data were available, the models would include, at a minimum, state fixed effects and year fixed effects.

<sup>25</sup> The RAL disclosure policy is an exception; nine states changed their policy between 2005 and 2009. To investigate the issue of reverse causation, we estimate additional models that drop from the analysis states that implemented a relevant policy change between 2005 and 2009 (two states are dropped from the payday loan model, nine states from the RAL model, and one state from the rent-to-own model). The AFS policies that are statistically significantly related to AFS use in the primary specification remain so in these alternate models. Two additional policy variables become statistically significantly different from zero in the alternate models: payday loan cap amount in the payday loan model and RAL disclosure requirement in the RAL model. The magnitudes of the coefficients are also similar across the models. For example, the coefficient on the RAL disclosure requirement policy variable that became statistically significant in the alternate specification changes by 0.002 and the p-value falls from just over 0.1 to just under 0.1.

pawnshop loans, and rent-to-own. Our analysis does not consider the relationship between refund anticipation loan price caps and refund anticipation loan use, since there is not enough variation across states to estimate the relationship—only three states impose price caps on refund anticipation loans.

As discussed above, restricting the loan price can increase or decrease the availability and use of the product, depending on the competitiveness of the market. A lower-priced loan is expected to increase the (quantity) demand for the loan, but can increase or decrease the (quantity) supply of the loan. Suppliers would only meet the increased consumer demand if there were some excess profit, non-competitive pricing by some suppliers, or other limitations in the prior market. Our finding that more stringent price caps are associated with lower AFS product use is consistent with firms reducing the quantity of the product (e.g., auto title loans) they supply. Restrictions on the price lenders are allowed to charge for a loan can decrease the supply of the loan product if, for example, small firms are no longer profitable and leave the industry.

[Insert Table 4 about here]

*Auto title loans.* We measure auto title loan policies with three variables: APR cap amount and two indicator variables that capture whether the state has no price cap and whether the state prohibits auto title loans. The coefficients on the price cap amount and the indicator of no price cap are statistically significantly different from zero, while the coefficient on the prohibited variable is not statistically significantly different from zero (table 4, column 1).

Moving from an APR cap of 200 percent to 100 percent, for example, is associated with a 1.3 percentage point reduction in the use of auto title borrowing (table 4, column 1). Six percent of people report using an auto title loan (table 1), so this 1.3 percentage point reduction represents a 21 percent decline in use. The FDIC's model for small-dollar loans suggests an APR of 36 percent or less. Using this as a guide, we examine a change from no APR cap to an APR cap of 36 percent and find that such a change is associated with a 1.7 percentage point (28 percent) reduction in auto title borrowing (not shown). A 28 percent decline is substantial, yet one might expect this APR restriction to be associated with even larger declines in auto title borrowing. Analyses of the auto title industry have found that auto title lenders use loan structures and other mechanisms to circumvent state laws (Fox and Guy 2005; Feltner 2007), which could explain a smaller than expected relationship between state laws prohibiting auto title lending and capping auto title prices.

We do find a negative and statistically significant coefficient ( $p=0.05$ ) on the no price cap indicator variable. This finding suggests a lower use of auto title loans for persons in states with no price cap than for persons in states with the highest APR cap of 304 percent. We estimate an alternate specification that includes the state-level vehicle ownership rate (percent of households that own an automobile) to better control for differences across states, but the result holds. Stiglitz and Weiss's (1981) credit rationing model provides a possible explanation for this result, which otherwise seems counter-intuitive. They find that when no restrictions are placed on credit markets and asymmetric information is present, marketing a small amount of credit at a high interest rate to a small number of risky borrowers can be more profitable than making credit more widely available to a mixed population of borrowers. Credit

rationing under imperfect information would therefore predict low AFS use by relatively safe borrowers under highly restrictive price caps, wider use of AFS products under more modest price caps, and low use by relatively risky borrowers in the absence of price caps.

*Payday loans.* We measure payday loan policies with the same three variables: an indicator of whether the state prohibits payday loans, the APR cap amount, and an indicator of no APR price cap. The results suggest that prohibiting payday lending is the key policy associated with the use of payday loans. The coefficients on the APR cap amount and the indicator of no APR price cap are not statistically significantly different from zero. Focusing in on the prohibition variable, we find that prohibiting payday loans is associated with a 3.2 percentage point reduction in payday borrowing, which represents a 32 percent decline (table 4, column 2). Living in a state that prohibits payday lending does not necessarily prohibit residents of that state from getting a payday loan. People that live near the border with another state can go across state lines to obtain a payday loan. Also, Internet payday loans are generally available to people who live in states that prohibit payday lending businesses.

Unlike the auto title loan results, we do not find that a reduction in the payday loan APR cap (beyond prohibiting the product) is associated with reduced use. Over the 2004–2009 period covered by this analysis, 33 states had an APR cap on payday loans, although the majority of these caps were set upwards of 300 percent. Payday loans often cost about \$15 per \$100 borrowed, which translates into a 390 percent APR. Among the 33 states with a payday cap, only four states had an APR cap below 390 percent. The relatively limited variation in the APR caps in the range where these caps are more likely to be binding may account for our statistically insignificant finding.

Our finding that prohibiting payday loans is associated with lower consumer use is broadly consistent with other studies that suggest tighter restrictions on the payday industry lower payday borrowing by lowering supply (Prager, 2009; Zinman, 2010). For example, Zinman’s (2010) study of payday lending in Washington and Oregon finds that the likelihood of payday borrowing fell by roughly one-third in Oregon, relative to Washington, when Oregon imposed a 150 percent payday cap (Washington had an APR cap of 390 percent).

*Pawnshop.* No state prohibits pawnshops, so we focus on whether the state has a price cap and the cap amount. Pawnshop price caps are measured as a monthly interest rate cap, and range from 1 percent to 25 percent in the 40 states that impose a cap. Monthly interest rates in this range translate into APRs of roughly 13 percent to over 1,300 percent. With these high interest rate ceilings, it is not surprising that we find no statistically significant difference in pawnshop borrowing when there is no interest rate cap versus when the interest rate cap is set at the maximum of 25 percent.

The cap amount is related to use, however, when it is lowered further. Consistent with the auto title results, we find that more restrictive price caps are associated with less borrowing. A one percentage point decline in the price cap is associated with a 0.11 percentage point reduction in pawnshop borrowing (table 4, column 3). Larger changes are, of course, associated with larger declines in use. Moving from no interest rate cap to a cap of 3 percent (roughly a 40 percent APR) is associated with a 3.0 percentage point (or 23 percent) reduction in pawnshop borrowing (not shown).

*Rent-to-own.* We capture rent-to-own price restrictions with a single indicator variable that identifies whether the state had an APR or total cost price cap in place during the 2004–2009 study period. Over this five-year period, 10 states impose total cost price caps, while one state (MN) had an APR price cap.<sup>26</sup> Consistent with our analysis of the three loan products, we find that price caps are associated with less use of rent-to-own. Specifically, price caps are associated with a 1.2 percentage point (15 percent) reduction in rent-to-own use (table 4, column 5).

#### *6.1.2 Return Requirements and Disclosures*

We examine pawnshop return requirements and disclosure requirements for refund anticipation loans and rent-to-own. Our analysis provides little evidence that these requirements are related to AFS product use. APR disclosures may have little relationship to AFS use if the APR disclosure is not meaningful to consumers on short-term AFS products. If customers do not understand what an APR represents, for example, then disclosing this information is not likely to influence behavior. Earlier studies do, in fact, find that many AFS customers lack of awareness about their loan APR (Elliehausen, 2005; Elliehausen and Lawrence, 2001). However, disclosing more specific information about how the cost of a payday loan can add up over time (Bertrand and Morse, 2011) and the total cost of using rent-to-own to purchase an item (McKernan et al., 2003) has been found to reduce product use. With our broad sweep of five AFS products and use of national-level data, we are not able to drill down to the level of detail of some of these earlier studies.

*Pawnshops.* Our analysis of pawnshop borrowing includes an indicator variable that identifies whether states require pawnshops to return to the borrower excess proceeds from the sale of the item used for collateral. Ten states have such a requirement. All else equal, this policy reduces the expected payoff to the loan provider, so loan amounts are expected to fall. A fall in the loan amount relative to the value of the collateralized item may reduce pawnshop borrowing. However, the policy could have little effect on pawnshop use if borrowers expect to repay the loan. We find no evidence that return requirements are associated with the level of pawnshop borrowing (table 4, column 3).

*Refund anticipation loans.* We find no evidence that RAL disclosure requirements are associated with lower RAL use. While the estimated coefficient is negative, it is not statistically significantly different from zero (table 4, column 4). RAL disclosure requirements vary across the 17 states that have such requirements, although common requirements include disclosure of the loan’s APR, tax preparation fees, loan fee schedules, filing fees, and information on alternative e-filing options. Federal pressures, even if resulting from monitoring rather than legal requirements, can limit the extent to which additional state requirements make any difference. This would hold especially if effects play out evenly among the states through the major national suppliers of tax preparation, for example, when H&R Block removed financial incentives to tax preparers who prepared a return with a RAL.

*Rent-to-own.* Our results suggest that requiring rent-to-own businesses to disclose standard information on the product contract is associated with greater use of rent-to-own. Specifically, requiring

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<sup>26</sup> With the exception of California, the price cap policies were in place across the five-year period. California instituted total cost price cap rules in 2007<sup>27</sup> Results are available from the authors.

contract disclosures is associated with a 1.7 percentage point increase in the likelihood of using rent-to-own. While we generally expect disclosures to reduce use, they could increase use in the longer run by making the market more competitive—allowing consumers to better shop on price and removing high-priced suppliers. We find no evidence that total cost label disclosures are significantly related to rent-to-own use. Prior research suggests that these disclosures are associated with lower use among customers who use rent-to-own with the intent to purchase (McKernan et al., 2003). These authors do not find evidence that total cost price disclosures are significantly related to rent-to-own use among customers who use rent-to-own with the intent to rent only. The individual-level data used for this analysis do not provide information on the intent of rent-to-own customers (to purchase or rent), so we are not able to disentangle the different relationships.

### *6.1.3 Alternate model specifications*

Our model is identified by variation in AFS policies across states, so it is important that we control for state-level variables (beyond AFS policies) that could influence AFS use. However, we do not want to over-specify the model and weaken the estimated relationship between AFS policies and AFS product use. As a specification test, we estimate a pared-down version of the model that excludes the region dummies and limits the state-level economic control variables to per capita income. (State per capita income is statistically significantly different from zero in some models, unlike the other state-level economic control variables.) The estimated relationships between AFS policies and AFS product use in this alternate specification closely mirror the main results and our overall conclusions hold (see Appendix Table A-1).

We also estimate models that allow for a more flexible relationship between the price cap and AFS use by introducing a quadratic term. In all models, the squared term is not statistically significantly different from zero.<sup>27</sup>

Finally, we estimate two additional model specifications that alter the household-level characteristics included in the model—one expands the set of household-level characteristics and one limits them. In one specification, we exclude household banked status (i.e., have a checking or savings account) and income (but include their reduced form determinants) and in the other specification we include additional household finance variables (household experienced a large unexpected drop in income in the past year, person has a credit card, and person consistently paid his/her credit card bill in full over the past year). The estimated relationship between AFS policies and AFS product use in the alternate specifications are virtually identical to the main results, including the level of statistical significance.<sup>28</sup>

## **6.2 Are restrictions on one AFS product associated with increased use of other AFS products?**

### *6.2.1 Primary model specification*

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<sup>27</sup> Results are available from the authors.

<sup>28</sup> Results are available from the authors.



Here we examine whether prohibiting or strictly enforcing price caps on one AFS product is associated with increased use of another product. For example, are tight restrictions on payday lending associated with greater use of auto title loans? These analyses consider cross-product substitution on the extensive margin—movement from no use to use and vice versa. Substitution could, however, occur at the intensive margin where people use a product (e.g., payday loans) more often or take out larger loan amounts when the availability of another product (e.g., auto title loans) is restricted or more costly. Because the FINRA survey only asks respondents about any use of the specific products, we are not able to examine substitution on the intensive margin. This distinction is important for interpreting the findings below.

In the first set of models, we estimate the same models as presented in table 4, but also include policy variables of other products. The auto title loan model, for example, includes measures of payday, pawnshop, and rent-to-own policies. With a focus on prohibitions and price caps, the cross-product policy variables included in the models are (1) auto title loans prohibited or have an APR cap of less than or equal to 36 percent (0/1 indicator variable), (2) payday loans prohibited or have an APR cap of less than or equal to 36 percent (0/1), (3) pawnshop loans have a monthly interest rate cap of less than or equal to 3 percent (0/1),<sup>29</sup> and (4) rent-to-own industry has price caps.

When we add these additional policy variables to the models, the estimated relationships for the existing variables are similar to those shown in table 4.<sup>30</sup> For this reason, the discussion below focuses on the cross-product variables.

Overall, our results do not support the hypothesis that prohibitions and price caps on one AFS product lead consumers to use other AFS products. Among the cross-product policy variables in the five models, we find only one statistically significant relationship (table 5, bottom panel).<sup>31</sup> Stricter auto title loan policies are associated with greater use of rent-to-own transactions. Based on the number of cross-product policy variables (16 in the five models) and the level of statistical significance we examine (10 percent), we would expect one or two (1.6, to be precise) policy variables to be statistically significant just by chance. For this reason, we do not put much weight on the one statistically significant relationship.

[Insert Table 5 about here]

### *6.2.2 Alternate model specifications*

These findings are robust to two alternate model specifications. First, we test whether restrictive policies for one product (e.g., auto title loans) are associated with increased use of any of the other four products combined (i.e., payday, pawnshop, RAL, or rent-to-own). These analyses follow similarly to

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<sup>29</sup> Recall that no state prohibits pawnshop loans and that a monthly interest rate cap of 3 percent translates to an APR near 36 percent.

<sup>30</sup> One difference is that the magnitude of the pawnshop interest rate cap variable falls and is no longer statistically significantly different from zero.

<sup>31</sup> The lack of statistical significance does not appear to be driven by multicollinearity; the highest correlation between these policies is 0.37.

those presented in table 5, but the dependent variables are use a non-auto title product, use a non-payday product, use a non-pawnshop product, etc. Consistent with the analyses above, only one of the cross-product policy variables is statistically significantly related to product use across the five models. Higher pawnshop interest rates are associated with greater use of non-pawnshop products (table 6, top panel).<sup>32</sup> None of the other cross-product policy variables are statistically significant. For example, none of three auto title loan policies is statistically significantly related to one's use of non-auto title loan products. As a second approach, we test whether people with a higher propensity to use a particular AFS product (based on their measured characteristics) are more influenced by the prohibitions. That is, does cross-product substitution exist for a subset of the population? Using an approach that predicts each individual's likelihood of AFS use, we find no evidence of this.<sup>33</sup> While these analyses are not consistent with the hypothesis that cross-product substitution occurs at the extensive margin, they do not address whether substitution may occur at the intensive margin.

Our finding that prohibitions and price caps on one AFS product are not associated with higher consumer use of other AFS products is consistent with Zinman (2010), who finds no evidence that payday restrictions in Oregon led to increased use of auto title loans (he does not examine substitutions between other AFS products).<sup>34</sup> Zinman does, however, find evidence of a substitution between payday loans and both checking account overdrafts and late bill payment, both of which can have substantial costs. Additional research on how consumers meet their credit needs when government policies restrict the supply of AFS products, and the implications for consumer welfare, will help policymakers assess the costs and benefits of restrictions on AFS products.

### **6.3 How are demographic and economic characteristics related to the use of AFS products?**

AFS users tend to be young, less educated, less financially literate, lower income, male, minority, financially responsible for more children, and living in the South (table 4, second panel).

As compared with persons ages 45 to 54, those under age 45 are generally more likely to use AFS products, while those over age 55 are less likely to use the AFS products. One exception is that persons ages 18 to 24 are 2.9 percentage point less likely to use payday loans than those ages 45 to 54. This is likely due to the fact that payday customers must have a regular job, since the person's next paycheck secures the loan. Educational attainment is also a factor, particularly for pawnshop borrowing and the use of rent-to-own. Persons with a high school diploma are 1.6 percentage points less likely to use pawnshops and 2.5 percentage points less likely to use rent-to-own, as compared with persons with no

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<sup>32</sup> Because the dependent variable is non-pawnshop use, the relevant cross-product policy variables are the pawnshop policy variables.

<sup>33</sup> We carry out these analyses for the two products that are prohibited in some states—auto title and payday loans. Using auto title loans as an example, we calculate each person's likelihood of taking out an auto title loan if they live in a state where auto title loans are permitted. (We use auto title allowing states to estimate this likelihood, given individual and household characteristics.) Next, we interact this likelihood with the auto title prohibited variable, and include it as an explanatory variable in the other AFS product use models (i.e., payday, pawnshop, RAL, and rent-to-own). This interaction is not statistically significantly different from zero in any of the models.

<sup>34</sup> Consumer's product use is measured as any use in the last three months.

high school diploma. The likelihood of using these products falls with higher levels of educational attainment. Notably, there is no statistically significant difference in auto title borrowing by educational attainment. Financial literacy also plays a role, with higher levels of financial literacy associated with lower AFS product use.

African-Americans are more likely than whites to use each of the five AFS products. At the low end of the range, they are 1.7 percentage points more likely to take an auto title loan, and at the high end, they are 7.0 percentage points more likely to take out a payday loan. Living arrangements and the number of financially dependent children also play a role. As compared with married couple families, single people who live with a parent are 2.0 to 3.2 percentage points less likely to use each of the AFS products, with the exception of pawnshops. On the other hand, persons in cohabiting relationships are more likely to use two of the five AFS products (payday loans and pawnshop loans). Being financially responsible for an additional child is associated with an increased likelihood of using the AFS products of between 0.9 and 1.7 percentage points.

Not surprisingly, household income plays a large role. People with incomes above \$50,000 tend to use AFS products less than people with incomes between \$15,000 and \$50,000. AFS use is also lower for those with incomes below \$15,000, which likely signals limited access to credit for this group even from AFS providers (e.g., an automobile and employment are prerequisites for auto title loans and payday loans, respectively). The model controls for presence of automobile insurance at the time of the survey (proxy for car ownership), and we find that those who have automobile insurance are more likely to take out an auto title loan and are less likely to take out a payday loan, pawnshop loan, or use rent-to-own.

Our analysis also examines region and state economic conditions. As compared with persons living in the South, those in the Northeast are less likely to take out payday loans, pawnshop loans, and refund anticipation loans, while those in the Midwest are less likely to take out pawnshop loans.<sup>35</sup> In general, we find a limited relationship between state economic characteristics and use of AFS products.

## **7 Policy Implications**

Price caps and prohibitions on AFS products are associated with reduced use, which is consistent with reduced supply. Restricting supply can increase well-being when it restricts or exposes high-priced suppliers who might be offering products at well-above-market prices. At the same time, restricting supply without introducing alternative products can reduce consumer well-being, if consumers turn to inferior products or options to deal with credit needs. Encouraging alternative products—products that are less costly and more attractive than those currently available—could enhance consumer well-being, especially if it helps create a more competitive market for services. However, if innovation that expands

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<sup>35</sup> We use the Census designation of the Northeast, which includes Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont. We also use the Census designation of the Midwest, which includes Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.

product availability and access to credit moves consumers toward present-biased consumption, then these expansions could be welfare-reducing (Laibson, 1997).

The FDIC small-dollar loan pilot program might be thought of as an approach that tries to negotiate various concerns. In pilot efforts, financial institutions were encouraged to set the APR no higher than 36 percent. In the end, however, while some banks in the pilot were able to provide profitable small-dollar loans, others were not (Federal Deposit Insurance Corporation, 2010). Encouraging mainstream financial institutions to provide small-dollar loans but easing the 36 percent APR cap may prompt more banks to provide small-dollar loans to higher-risk consumers that rely on AFS products. In addition, small-dollar loans could be more profitable if financial institutions provide customers with a line of credit, rather than having to originate a new loan each time the person needs credit.

Findings from the literature suggest that standard, clear, and timely disclosures of the total cost of short-term, small-dollar products will help consumers know their full obligations, so that they can more easily compare what various providers charge for their loans and services. Disclosures may not always reduce demand, but they may help consumers avoid higher-priced suppliers (e.g., those with misleading advertising). Improved disclosures could increase competition within the alternative financial sector, reducing prices for consumers. And full disclosures, along with licensing, reporting, and examination requirements, could enhance the industry's image and make the small loan business more appealing to both mainstream and alternative entrants.

## **8 Summary and Conclusion**

This study uses nationally representative data from the 2009 National Financial Capability State-by-State Survey to examine the relationship between state-level AFS policies (prohibitions, price caps, disclosures) and consumer use of five AFS products: payday loans, auto title loans, pawnshop loans, refund anticipation loans, and rent-to-own transactions. Looking across products rather than at one product in isolation allows a focus on patterns and relationships across products.

The results suggest that more stringent price caps and prohibitions are associated with lower consumer product use. Specifically, we find prohibiting payday loans is associated with a 32 percent decline in the use of these loans. Further, we find that price caps are associated with reduced use of auto title loans, pawnshop loans, and rent-to-own. Moving from no APR cap on auto title loans to an APR cap of 36 percent is associated with a 28 percent decline in auto title borrowing. Similarly, moving from no interest rate cap on pawnshop loans to a monthly interest rate cap of 3 percent (which is roughly a 40 percent APR) is associated with a 23 percent decline in pawnshop borrowing. Finally, imposing rent-to-own price caps are associated with a 15 percent reduction in rent-to-own use.

If lower levels of use result from reduced supply, consumer well-being can worsen. Glaeser and Scheinkman (1998) predict that usury laws are less desirable when the supply of loans is elastic because “then much of the gains to the poor from lowering the interest rate will be offset by the losses they face from a lessened ability to borrow” (p. 4). Lower levels of use could also harm consumers if consumers turn to potentially inferior alternatives. To address this substitution question, we examine whether

consumers, when faced with restrictions on one AFS product are more likely to use other AFS products. We find no evidence that prohibitions and price caps on one AFS product are associated with higher use of other AFS products. While other studies have also found no substitution between AFS products, a recent study finds evidence of a substitution between payday loans and both checking account overdrafts and late bill payment, both of which can have substantial costs (Zinman, 2010).

Finally, our analysis examines disclosure requirements for refund anticipation loans and rent-to-own and finds little evidence that these requirements are related to AFS product use. Our findings may be a result of data limitations, as other studies suggest that clear and timely disclosures reduce AFS product use.

This paper provides a first look at a nationally representative picture of the relationship between state AFS policies and consumer product use across five AFS products. This research provides a course for future research, which could examine the less-studied AFS products and across multiple products to (1) measure the causal impact of AFS policies on consumer outcomes (e.g., by using quasi-experimental methods and longitudinal data or experimental methods); (2) uncover how the effect of state AFS policies on AFS product use differ among consumers along important dimensions such as education, income, and financial stress; (3) design and test effective disclosures for AFS products and customers; and (4) research how AFS policies affect consumer well-being. Research has yet to answer whether consumers, on net, benefit from or are harmed by AFS products, even for the most studied product payday loans (Caskey, 2010). With respect to this last question, important distinctions need to be made as to whether the products themselves are harmful per se, particular suppliers of the product are charging excessive prices or misleading consumers, or particular consumers are harmed by participating in this market. Also, we need to better understand any impact on higher-risk consumers who might be further excluded, and lower-risk consumers, who could end up with better prices.

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**Table 1: Percent of Population that Used AFS Products in the Last Five Years**

	Auto Title	Payday	Pawnshop	Refund Anticipation Loan	Rent-to-Own
Alabama	11%	12%	19%	10%	12%
Alaska	6%	11%	15%	5%	7%
Arizona	10%	18%	24%	12%	13%
Arkansas	4%	9%	19%	9%	15%
California	5%	8%	9%	3%	3%
Colorado	7%	12%	17%	4%	6%
Connecticut	4%	5%	11%	5%	9%
Delaware	6%	7%	7%	4%	8%
D.C.	4%	14%	11%	9%	3%
Florida	4%	11%	17%	7%	6%
Georgia	9%	6%	16%	7%	7%
Hawaii	5%	13%	7%	7%	8%
Idaho	8%	12%	13%	2%	6%
Illinois	3%	9%	11%	5%	5%
Indiana	7%	12%	15%	7%	10%
Iowa	9%	8%	10%	5%	7%
Kansas	7%	10%	13%	5%	10%
Kentucky	7%	11%	17%	11%	14%
Louisiana	8%	13%	13%	8%	10%
Maine	6%	4%	11%	5%	10%
Maryland	4%	8%	13%	6%	7%
Massachusetts	3%	3%	9%	3%	6%
Michigan	4%	7%	9%	6%	4%
Minnesota	5%	5%	17%	4%	1%
Mississippi	15%	14%	17%	15%	16%
Missouri	6%	10%	13%	7%	9%
Montana	12%	19%	23%	6%	7%
Nebraska	6%	10%	11%	4%	9%
Nevada	6%	21%	17%	8%	6%
New Hampshire	4%	5%	7%	2%	6%
New Jersey	4%	3%	7%	5%	4%
New Mexico	10%	15%	13%	7%	7%
New York	5%	4%	11%	5%	6%
North Carolina	7%	4%	17%	9%	9%
North Dakota	9%	10%	13%	4%	6%
Ohio	5%	11%	9%	8%	9%
Oklahoma	10%	14%	19%	7%	11%
Oregon	4%	10%	13%	5%	7%
Pennsylvania	5%	5%	6%	4%	6%
Rhode Island	8%	6%	10%	6%	9%
South Carolina	12%	17%	24%	10%	10%
South Dakota	7%	12%	12%	6%	4%
Tennessee	10%	14%	16%	13%	12%
Texas	8%	13%	26%	9%	11%
Utah	9%	13%	15%	3%	6%
Vermont	7%	4%	3%	3%	9%
Virginia	6%	9%	12%	6%	5%
Washington	5%	13%	17%	5%	7%
West Virginia	6%	7%	16%	8%	9%
Wisconsin	6%	9%	8%	3%	4%
Wyoming	13%	17%	24%	11%	9%
<b>Total</b>	<b>6%</b>	<b>10%</b>	<b>13%</b>	<b>6%</b>	<b>8%</b>

Source: 2009 National Financial Capability State-by-State Survey.

**Table 2: Individual and Household Characteristics by AFS Use**

	Auto Title	Payday	Pawnshop	RAL	Rent-to-Own	No AFS Use	Total
<b>Age</b>							
18–24	11%	10%	24%	13%	18%	11%	13%
25–34	27%	27%	25%	37%	27%	15%	17%
35–44	22%	26%	24%	29%	26%	17%	19%
45–54	19%	22%	17%	14%	18%	20%	19%
55–64	11%	10%	7%	4%	7%	17%	15%
65+	9%	5%	3%	3%	4%	21%	17%
<b>Education</b>							
Less than high school	15%	21%	29%	27%	34%	11%	15%
High school graduate	34%	31%	33%	35%	32%	27%	29%
Some college	31%	33%	28%	28%	25%	31%	31%
College degree	20%	15%	10%	11%	9%	30%	26%
Financial literacy	2.7	2.5	2.3	2.3	2.3	3.1	2.9
<b>Race/Ethnicity</b>							
Non-Hispanic white	65%	56%	56%	56%	59%	72%	69%
Non-Hispanic black	15%	22%	19%	22%	20%	9%	11%
Hispanic	14%	16%	19%	17%	14%	12%	13%
Other	7%	7%	5%	5%	6%	7%	6%
Female	50%	53%	50%	54%	55%	51%	51%
<b>Household Income</b>							
\$0–\$15,000	13%	16%	31%	20%	24%	15%	17%
\$15,000–\$24,999	18%	23%	21%	23%	23%	12%	14%
\$25,000–\$35,999	15%	17%	16%	18%	18%	12%	13%
\$35,000–\$49,999	19%	20%	14%	18%	17%	15%	16%
\$50,000–\$75,999	17%	15%	11%	13%	11%	19%	17%
\$75,000–\$99,999	9%	6%	4%	5%	3%	12%	10%
\$100,000–\$149,999	6%	3%	2%	3%	2%	10%	8%
\$150,000 or more	2%	1%	1%	1%	1%	6%	5%
Household is banked	92%	89%	79%	80%	83%	95%	93%
Has automobile insurance	88%	75%	67%	75%	71%	87%	84%
<b>Living Arrangement</b>							
Married	56%	47%	38%	50%	49%	55%	53%
Cohabiting	13%	15%	15%	16%	16%	7%	8%
Single, live alone	18%	22%	20%	19%	17%	22%	22%
Single, live with parent	5%	5%	14%	5%	6%	8%	8%
Single, live with other	9%	10%	12%	10%	12%	8%	9%
Number of financially dependent kids (0-4)	1.1	1.3	1.1	1.6	1.4	0.6	0.8
<b>Region</b>							
South	43%	41%	46%	47%	46%	34%	37%
Northeast	14%	8%	12%	13%	15%	20%	18%
Midwest	20%	22%	18%	20%	19%	23%	22%
West	23%	30%	24%	20%	20%	23%	23%
Observations	1,733	2,488	3,094	1,443	1,687	20,720	27,069

*Source:* 2009 National Financial Capability State-by-State Survey.

*Notes:* Average state economic conditions over the study period are included in the regressions but not shown in this table. The mean values for these variables for the full sample are: state real personal income per capita \$31,506, state unemployment rate 5.7%, state employment-to-population ratio 71.8%, real GDP per capita by state \$37,848.

**Table 3: State Alternative Financial Service Policies by Product**

	Number of States	Mean	Min	Max
<b>Auto Title Loan</b>				
Product Prohibited	26	51%	0	1
APR price cap	12	24%	0	1
APR price cap amount	12	174%	21%	304%
<b>Payday Loan</b>				
Product Prohibited	13	26%	0	1
APR price cap	33	64%	0	1
APR price cap amount	33	487%	28%	780% <sup>5</sup>
<b>Pawnshop Loan</b>				
Monthly interest rate price cap	40	78%	0	1
Monthly interest rate price cap amount	40	14%	1%	25%
Return requirement <sup>1</sup>	10	20%	0	1
<b>Refund Anticipation Loan</b>				
Disclosure requirement <sup>2</sup>	14	22%	0	1
<b>Rent-to-Own</b>				
Price or APR cap	11	21%	0	1
Contract disclosures <sup>3</sup>	47	92%	0	1
Total cost label disclosures <sup>4</sup>	16	31%	0	1

*Source:* Policy data assembled from documents published by the Consumer Federation of America, the National Conference of State Legislatures, the National Consumer Law Center, and the Association of Progressive Rental Organizations. In addition, experts reviewed and commented on a preliminary version of these data.

<sup>1</sup> States with return requirements require the pawnshop to return excess proceeds to the customer upon sale of collateral.

<sup>2</sup> Refund anticipation loan disclosure requirements vary across states. A standard core of disclosure requirements including the loan's APR, tax preparation fees, and fee schedules was required in almost all states. More detailed disclosure requirements were also enacted, including font size requirements and posting requirements.

<sup>3</sup> Rent-to-own contract disclosures require rent-to-own businesses to provide standard information on the product contract.

<sup>4</sup> Rent-to-own total cost label disclosures require rent-to-own businesses to disclose the total cost of purchase on the product label.

<sup>5</sup> Missouri reports an APR cap of 1,980 percent. Since this is a significant outlier in the data, the empirical analysis sets this to the next highest value, which is 780 percent.

**Table 4: Probit Model Estimates of the Relationship between AFS Policies and AFS Product Use**

	<b>Auto Title</b>	<b>Payday</b>	<b>Pawnshop</b>	<b>RAL</b>	<b>Rent-to-Own</b>
<b>Policy Variables</b>					
Price caps and prohibitions					
Product prohibited (0/1)	0.014 [0.011]	-0.032*** [0.012]			
No price cap (0/1)	-0.017** [0.008]	-0.002 [0.019]	0.005 [0.013]		0.012* [0.006]
Price cap amount (%/100)	0.013*** [0.004]	-0.001 [0.002]	0.112* [0.065]		
Disclosures and other requirements					
Return requirement (0/1)			0.003 [0.013]		
Contract disclosures (0/1)				-0.007 [0.004]	0.017*** [0.005]
Total cost label disclosures (0/1)					0.001 [0.006]
<b>Demographic and Family Characteristics</b>					
Age (0/1: Omitted, 45–54)					
18–24	0.007 [0.010]	-0.029*** [0.007]	0.051*** [0.013]	0.013* [0.008]	0.024** [0.012]
25–34	0.025*** [0.007]	0.012 [0.007]	0.037*** [0.011]	0.049*** [0.008]	0.021*** [0.007]
35–44	0.007 [0.006]	0.006 [0.007]	0.035*** [0.011]	0.027*** [0.007]	0.017*** [0.006]
55–64	-0.008* [0.005]	-0.027*** [0.006]	-0.031*** [0.007]	-0.021*** [0.003]	-0.018*** [0.005]
65+	-0.022*** [0.006]	-0.061*** [0.005]	-0.086*** [0.007]	-0.031*** [0.004]	-0.042*** [0.005]
Education (0/1: Omitted, less than high school)					
High school graduate	0.011 [0.010]	-0.005 [0.008]	-0.016* [0.009]	-0.000 [0.007]	-0.025*** [0.006]
Some college	0.004 [0.010]	-0.006 [0.009]	-0.024** [0.010]	-0.006 [0.007]	-0.034*** [0.006]
College or more	-0.006 [0.010]	-0.029*** [0.008]	-0.051*** [0.010]	-0.023*** [0.006]	-0.046*** [0.005]
Financial Literacy (5 high, 0 low)	-0.005*** [0.001]	-0.003 [0.002]	-0.009*** [0.002]	-0.005*** [0.001]	-0.005*** [0.002]
Race/Ethnicity (0/1: Omitted, non-Hispanic white)					
Non-Hispanic black	0.017** [0.008]	0.070*** [0.011]	0.033*** [0.012]	0.028*** [0.006]	0.026*** [0.009]
Hispanic	-0.006 [0.005]	0.003 [0.008]	0.008 [0.012]	-0.002 [0.006]	-0.011* [0.006]
Other	0.006 [0.011]	0.013 [0.012]	-0.007 [0.012]	0.002 [0.012]	0.015 [0.011]
Female	-0.011*** [0.003]	-0.004 [0.005]	-0.015*** [0.005]	-0.007* [0.004]	-0.003 [0.004]

continued

**Table 4, continued: Probit Model Estimates of the Relationship between AFS Policies and AFS Product Use**

	<b>Auto Title</b>	<b>Payday</b>	<b>Pawnshop</b>	<b>RAL</b>	<b>Rent-to-Own</b>
Household income (0/1: Omitted, \$0-\$15,000)					
\$15,000-\$25,000	0.033*** [0.011]	0.072*** [0.013]	0.023*** [0.008]	0.039*** [0.009]	0.032*** [0.010]
\$25,000-\$35,000	0.025*** [0.010]	0.046*** [0.010]	0.005 [0.012]	0.032*** [0.010]	0.021** [0.009]
\$35,000-\$50,000	0.026*** [0.008]	0.047*** [0.011]	-0.012 [0.009]	0.022*** [0.008]	0.009 [0.010]
\$50,000-\$75,000	0.015 [0.009]	0.013 [0.009]	-0.036*** [0.008]	0.004 [0.007]	-0.010 [0.007]
\$75,000-\$100,000	0.010 [0.009]	-0.013 [0.009]	-0.062*** [0.007]	-0.005 [0.007]	-0.030*** [0.005]
\$100,000-\$150,000	0.010 [0.014]	-0.030*** [0.009]	-0.069*** [0.008]	-0.009 [0.007]	-0.030*** [0.006]
\$150,000 or more	-0.009 [0.010]	-0.052*** [0.007]	-0.075*** [0.008]	-0.014** [0.007]	-0.037*** [0.004]
Household is banked	-0.006 [0.009]	0.002 [0.011]	-0.064*** [0.014]	-0.038*** [0.008]	-0.010 [0.010]
Has auto insurance	0.024*** [0.006]	-0.034*** [0.010]	-0.039*** [0.010]	-0.001 [0.005]	-0.016* [0.009]
Living arrangement (0/1: Omitted, married)					
Cohabiting	0.012 [0.008]	0.031*** [0.011]	0.046*** [0.014]	0.007 [0.005]	0.008 [0.006]
Single, live alone	-0.006 [0.006]	0.004 [0.006]	0.001 [0.008]	-0.003 [0.005]	-0.015*** [0.004]
Single, live with parent	-0.024*** [0.006]	-0.025*** [0.007]	0.007 [0.012]	-0.020*** [0.004]	-0.032*** [0.005]
Single, live with other	0.005 [0.007]	0.013 [0.008]	0.021** [0.010]	0.002 [0.005]	0.002 [0.008]
Number of financially dependent kids (0-4)	0.009*** [0.002]	0.017*** [0.002]	0.015*** [0.002]	0.014*** [0.002]	0.014*** [0.002]
Region (0/1: Omitted, South)					
Northeast	-0.002 [0.007]	-0.030*** [0.008]	-0.055*** [0.012]	-0.013*** [0.004]	0.009 [0.009]
Midwest	-0.010 [0.010]	-0.003 [0.009]	-0.040*** [0.012]	-0.004 [0.005]	-0.004 [0.008]
West	-0.002 [0.006]	0.014* [0.008]	-0.014 [0.013]	-0.008 [0.005]	-0.008 [0.006]
<b>State Economic Characteristics</b>					
Real personal income per capita (\$1,000)	-0.002** [0.001]	-0.001 [0.001]	0.001 [0.002]	-0.000 [0.001]	-0.002*** [0.001]
Unemployment rate (%)	-0.002 [0.003]	-0.005 [0.004]	0.004 [0.006]	0.002 [0.002]	-0.003 [0.003]
Employment-to-population ratio (%)	0.074 [0.103]	0.052 [0.103]	0.188 [0.172]	-0.075 [0.059]	-0.054 [0.087]
Real GDP per capita (\$1,000)	0.000 [0.000]	0.000 [0.001]	-0.001 [0.001]	0.000 [0.000]	0.000 [0.000]
Observations	27,069	27,069	27,069	27,069	27,069

Source: National Financial Capability State-by-State Survey and state-level policy and economic data.

Notes: This table presents probit marginal effects (dprobit in Stata) with robust standard errors clustered at the state level in brackets. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

**Table 5: Probit Model Estimates of the Relationship between AFS Policies and AFS Product Use, with Cross-Product Relationships**

	Auto Title	Payday	Pawnshop	RAL	Rent-to-Own
<b>Policy Variables</b>					
Price caps and prohibitions					
Product prohibited (0/1)	0.017 [0.011]	-0.031** [0.013]			
No price cap (0/1)	-0.017** [0.007]	-0.001 [0.018]	0.013 [0.013]		0.017** [0.007]
Price cap amount (%/100)	0.014*** [0.004]	-0.001 [0.002]	0.088 [0.060]		
Disclosures and other requirements					
Return requirement (0/1)			0.001 [0.012]		
Contract disclosures (0/1)				-0.005 [0.004]	0.018** [0.008]
Total cost label disclosures (0/1)					0.003 [0.007]
<b>Cross-Product Policy Variables</b>					
Prohibited or strict price cap					
Auto title: prohibited or APR cap < 36%		-0.002 [0.006]	-0.000 [0.009]	0.001 [0.004]	0.009** [0.004]
Payday: prohibited or APR cap < 36%	-0.005 [0.005]		-0.013 [0.008]	-0.000 [0.004]	-0.000 [0.010]
Pawnshop: prohibited or interest rate < 3%	-0.011 [0.010]	-0.008 [0.010]		-0.005 [0.004]	0.008 [0.005]
Price cap indicator					
RTO: price cap indicator (0/1)	-0.002 [0.005]	-0.011 [0.007]	-0.016 [0.014]	0.001 [0.005]	
Observations	27,069	27,069	27,069	27,069	27,069

*Source:* National Financial Capability State-by-State Survey and state-level policy and economic data.

*Notes:* This table presents probit marginal effects (dprobit in Stata) with robust standard errors clustered at the state level in brackets. The models control for age, education level, financial literacy, race/ethnicity, gender, household income, household is banked, has automobile insurance, living arrangement, number of financially dependent children, region, state real personal income per capita, state unemployment rate, state employment-to-population ratio, and state real GDP per capita.

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 6: Probit Model Estimates of the Relationship between AFS Policies and Use of Other AFS Products, with Cross-Product Relationships**

	Any Non- Auto Title Product	Any Non- Payday Product	Any Non- Pawnshop Product	Any Non- RAL Product	Any Non- Rent-to-Own Product
<b>Cross-Product Policy Variables<sup>1</sup></b>					
Price caps and prohibitions					
Product prohibited (0/1)	0.020 [0.015]	-0.013 [0.022]			
No price cap (0/1)	-0.011 [0.019]	-0.039 [0.024]	-0.023 [0.015]		0.014 [0.015]
Price cap amount (%/100)	0.008 [0.007]	0.001 [0.004]	0.128** [0.055]		
Disclosures and other requirements					
Return requirement (0/1)			0.012 [0.014]		
Contract disclosures (0/1)				-0.008 [0.014]	0.018 [0.024]
Total cost label disclosures (0/1)					-0.014 [0.020]
<b>Policy Variables</b>					
Prohibited or strict price cap					
Auto title: prohibited or APR cap < 36%		0.003 [0.012]	0.010 [0.008]	0.006 [0.011]	0.004 [0.011]
Payday: prohibited or APR cap < 36%	-0.026* [0.013]		-0.018 [0.014]	-0.022* [0.013]	-0.003 [0.024]
Pawnshop: prohibited or interest rate < 3%	-0.004 [0.015]	-0.009 [0.014]		-0.002 [0.014]	-0.019* [0.010]
Price cap indicator					
RTO: price cap indicator (0/1)	-0.011 [0.017]	-0.012 [0.015]	-0.013 [0.010]	-0.015 [0.016]	
Observations	27,069	27,069	27,069	27,069	27,069

*Source:* National Financial Capability State-by-State Survey and state-level policy and economic data.

<sup>1</sup> For the non-auto title product use model, the cross-product policy variables are the auto title policies. This follows similarly for the other four models.

*Notes:* This table presents probit marginal effects (dprobit in Stata) with robust standard errors clustered at the state level in brackets. The models control for age, education level, financial literacy, race/ethnicity, gender, household income, household is banked, has automobile insurance, living arrangement, number of financially dependent children, region, state real personal income per capita, state unemployment rate, state employment-to-population ratio, and state real GDP per capita.

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Appendix Table A-1: Probit Model Estimates of the Relationship between AFS Policies and AFS Product Use  
(Table 4 model excluding region, unemployment rate, employment-two-population ratio, and GDP)**

	<b>Auto Title</b>	<b>Payday</b>	<b>Pawnshop</b>	<b>RAL</b>	<b>Rent-to-Own</b>
<b>Policy Variables</b>					
Price caps and prohibitions					
Product prohibited (0/1)	0.012 [0.010]	-0.043*** [0.009]			
No price cap (0/1)	-0.018*** [0.006]	0.008 [0.019]	-0.011 [0.010]		0.012* [0.007]
Price cap amount (%/100)	0.013*** [0.004]	0.000 [0.002]	0.169* [0.090]		
Disclosures and other requirements					
Return requirement (0/1)			-0.024 [0.015]		
Contract disclosures (0/1)				-0.007 [0.005]	0.016*** [0.006]
Total cost label disclosures (0/1)					0.004 [0.006]
Observations	27,069	27,069	27,069	27,069	27,069

*Source* : National Financial Capability State-by-State Survey and state-level policy and economic data.

*Notes*: This table presents probit marginal effects (dprobit in Stata) with robust standard errors clustered at the state level in brackets. The models control for age, education level, financial literacy, race/ethnicity, gender, household income, household is banked, has automobile insurance, living arrangement, number of financially dependent children, and state real personal income per capita.

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1



**Appendix B Tables**

**Appendix B-1: Individual, Household, and State Characteristics by State AFS Policy Restrictions**

	Auto Title Cap or Prohibition		Payday Cap or Prohibition		Pawnshop Cap		RAL Disclosure Requirement		Rent-to-Own Cap	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
<i>Age</i>										
18–24	13%	13%	13%	13%	13%	13%	14%	12%	13%	13%
25–34	17%	18%	15%	18%	17%	17%	18%	17%	16%	18%
35–44	19%	18%	19%	18%	18%	19%	19%	18%	18%	19%
45–54	20%	19%	20%	19%	19%	20%	18%	20%	19%	20%
55–64	15%	14%	15%	15%	16%	15%	14%	15%	15%	15%
65+	17%	17%	17%	17%	17%	17%	17%	17%	18%	17%
<i>Education</i>										
Less than high school	15%	15%	14%	16%	15%	15%	14%	16%	14%	16%
High school graduate	29%	28%	31%	28%	28%	29%	27%	29%	31%	28%
Some college	30%	32%	28%	32%	29%	31%	32%	30%	30%	31%
College degree	26%	24%	27%	25%	27%	25%	26%	25%	26%	25%
<i>Financial literacy</i>										
(5 high, 0 low)	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
<i>Race/Ethnicity</i>										
Non-Hispanic white	69%	69%	70%	68%	66%	69%	61%	73%	66%	70%
Non-Hispanic black	11%	12%	14%	10%	16%	11%	9%	13%	7%	13%
Hispanic	13%	15%	11%	15%	13%	13%	23%	8%	15%	13%
Other	8%	4%	5%	7%	5%	7%	7%	6%	11%	5%
<i>Female</i>										
	52%	51%	52%	51%	52%	51%	51%	52%	51%	52%
<i>Household Income</i>										
\$0–\$15,000	18%	17%	18%	17%	18%	17%	16%	18%	18%	17%
\$15,000–\$24,999	14%	15%	13%	15%	13%	14%	14%	15%	14%	14%
\$25,000–\$35,999	13%	13%	12%	13%	12%	13%	12%	13%	12%	13%
\$35,000–\$49,999	15%	17%	15%	16%	15%	16%	15%	16%	14%	16%
\$50,000–\$75,999	17%	17%	17%	17%	17%	17%	17%	17%	17%	17%
\$75,000–\$99,999	10%	10%	11%	10%	11%	10%	11%	10%	10%	10%
\$100,000–\$149,999	8%	7%	9%	7%	9%	8%	9%	7%	9%	8%
\$150,000 or more	5%	4%	6%	4%	5%	5%	6%	4%	5%	5%
Household is banked	92%	93%	92%	93%	92%	92%	92%	92%	93%	92%
Has automobile insurance	83%	86%	80%	86%	76%	85%	82%	85%	82%	85%

continued

## Appendix B-1, continued: Individual, Household, and State Characteristics by State AFS Policy Restrictions

	Auto Title Cap or Prohibition		Payday Cap or Prohibition		Pawnshop Cap		RAL Disclosure Requirement		Rent-to-Own Cap	
<i>Living Arrangement</i>										
Married	52%	54%	50%	54%	48%	54%	51%	54%	52%	53%
Cohabiting	8%	9%	9%	8%	11%	8%	9%	8%	9%	8%
Single, live alone	22%	21%	23%	21%	25%	21%	22%	22%	22%	22%
Single, live with parent	9%	8%	9%	8%	9%	8%	10%	8%	9%	8%
Single, live with other	9%	8%	9%	9%	9%	9%	9%	9%	9%	9%
Number of financially dependent kids (0-4)	0.7	0.8	0.7	0.8	0.7	0.8	0.7	0.8	0.7	0.8
<i>Region</i>										
South	32%	46%	31%	40%	42%	36%	19%	47%	9%	47%
Northeast	28%	0%	52%	1%	40%	14%	27%	13%	39%	11%
Midwest	19%	28%	18%	24%	18%	23%	19%	24%	29%	19%
West	22%	26%	0%	35%	0%	27%	35%	16%	23%	23%
<i>State Economic Conditions</i>										
Real personal income per capita (\$1,000)	32.6	29.6	34.1	30.2	35.1	30.8	34.0	30.1	32.3	31.2
Unemployment rate	5.7	5.7	5.7	5.8	5.6	5.8	5.9	5.6	5.9	5.7
Employment to population ratio	0.72	0.72	0.72	0.71	0.72	0.72	0.72	0.72	0.71	0.72
Real GDP per capita (\$1,000)	38.8	36.2	41.6	35.9	49.7	35.7	40.7	36.2	37.6	37.9
Observations	15,904	11,552	8,100	19,356	3,742	23,714	7,772	19,684	5,903	21,553

Source: National Financial Capability State-by-State Survey and state economic data.

**Appendix B-2: Probit Model Estimates of the Relationship between AFS Policies and AFS Product Use  
(Models include family finance information)**

	<b>Auto Title</b>	<b>Payday</b>	<b>Pawnshop</b>	<b>RAL</b>	<b>Rent-to-Own</b>
<b>Policy Variables</b>					
Price caps and prohibitions					
Product prohibited (0/1)	0.014 [0.011]	-0.029** [0.011]			
No price cap (0/1)	-0.016** [0.008]	-0.004 [0.017]	0.006 [0.012]		0.013** [0.006]
Price cap amount (%/100)	0.012*** [0.004]	-0.001 [0.002]	0.106* [0.063]		
Disclosures and other requirements					
Return requirement (0/1)			0.006 [0.012]		
Contract disclosures (0/1)				-0.006 [0.004]	0.015*** [0.006]
Total cost label disclosures (0/1)					0.001 [0.005]
<b>Demographic Characteristics</b>					
Age (0/1: Omitted, 45–54)					
18–24	0.007 [0.010]	-0.022*** [0.007]	0.059*** [0.014]	0.015* [0.008]	0.023* [0.012]
25–34	0.025*** [0.006]	0.013* [0.008]	0.039*** [0.012]	0.049*** [0.008]	0.018*** [0.007]
35–44	0.006 [0.005]	0.006 [0.007]	0.035*** [0.012]	0.026*** [0.007]	0.016** [0.006]
55–64	-0.007 [0.005]	-0.021*** [0.006]	-0.026*** [0.007]	-0.019*** [0.003]	-0.015*** [0.005]
65+	-0.017** [0.007]	-0.046*** [0.006]	-0.071*** [0.008]	-0.025*** [0.004]	-0.036*** [0.006]
Education (0/1: Omitted, less than high school)					
High school graduate	0.013 [0.009]	-0.001 [0.008]	-0.011 [0.009]	0.002 [0.007]	-0.020*** [0.005]
Some college	0.006 [0.008]	0.000 [0.009]	-0.016 [0.010]	-0.003 [0.007]	-0.029*** [0.006]
College or more	-0.002 [0.009]	-0.015* [0.008]	-0.036*** [0.010]	-0.018*** [0.006]	-0.038*** [0.005]
Financial Literacy (5 high, 0 low)	-0.005*** [0.002]	-0.003 [0.002]	-0.009*** [0.002]	-0.005*** [0.001]	-0.005*** [0.002]
Race/Ethnicity (0/1: Omitted, non-Hispanic white)					
Non-Hispanic black	0.015* [0.008]	0.061*** [0.011]	0.029** [0.012]	0.023*** [0.006]	0.023** [0.009]
Hispanic	-0.007 [0.005]	-0.000 [0.008]	0.006 [0.012]	-0.002 [0.006]	-0.012** [0.006]
Other	0.007 [0.010]	0.019 [0.012]	-0.006 [0.011]	0.001 [0.010]	0.013 [0.011]

continued

**Appendix B-2, continued: Probit Model Estimates of the Relationship between AFS Policies and AFS Product Use (Models include family finance information)**

	<b>Auto Title</b>	<b>Payday</b>	<b>Pawnshop</b>	<b>RAL</b>	<b>Rent-to-Own</b>
Female	-0.012*** [0.003]	-0.006 [0.005]	-0.019*** [0.005]	-0.008** [0.004]	-0.005 [0.004]
Household income (0/1: Omitted, \$0-\$15,000)					
\$15,000-\$25,000	0.029** [0.011]	0.062*** [0.013]	0.021*** [0.008]	0.039*** [0.009]	0.032*** [0.010]
\$25,000-\$35,000	0.029*** [0.010]	0.052*** [0.011]	0.016 [0.012]	0.037*** [0.010]	0.028*** [0.009]
\$35,000-\$50,000	0.030*** [0.009]	0.051*** [0.012]	-0.001 [0.010]	0.029*** [0.009]	0.015 [0.010]
\$50,000-\$75,000	0.020** [0.010]	0.026** [0.010]	-0.018** [0.009]	0.017** [0.008]	-0.001 [0.008]
\$75,000-\$100,000	0.019** [0.009]	0.003 [0.011]	-0.044*** [0.009]	0.009 [0.009]	-0.021*** [0.006]
\$100,000-\$150,000	0.019 [0.015]	-0.014 [0.011]	-0.053*** [0.009]	0.004 [0.009]	-0.022*** [0.007]
\$150,000 or more	0.005 [0.012]	-0.035*** [0.009]	-0.057*** [0.011]	0.001 [0.010]	-0.029*** [0.006]
Household is banked	0.002 [0.009]	0.011 [0.010]	-0.043*** [0.013]	-0.028*** [0.007]	-0.000 [0.009]
Has auto insurance	0.026*** [0.006]	-0.022** [0.009]	-0.031*** [0.008]	0.003 [0.005]	-0.009 [0.008]
Living arrangement (0/1: Omitted, married)					
Cohabiting	0.010 [0.009]	0.026*** [0.010]	0.040*** [0.013]	0.005 [0.005]	0.008 [0.007]
Single, live alone	-0.004 [0.006]	0.005 [0.006]	0.003 [0.008]	-0.000 [0.004]	-0.015*** [0.005]
Single, live with parent	-0.020*** [0.007]	-0.025*** [0.007]	0.008 [0.012]	-0.019*** [0.005]	-0.030*** [0.005]
Single, live with other	0.005 [0.007]	0.007 [0.008]	0.020** [0.010]	0.001 [0.005]	-0.002 [0.007]
Number of financially dependent kids (0-4)	0.008*** [0.002]	0.014*** [0.002]	0.012*** [0.002]	0.013*** [0.001]	0.012*** [0.002]
Region (0/1: Omitted, South)					
Northeast	-0.001 [0.007]	-0.025*** [0.008]	-0.052*** [0.012]	-0.011*** [0.004]	0.009 [0.009]
Midwest	-0.010 [0.010]	-0.000 [0.009]	-0.035*** [0.012]	-0.004 [0.004]	-0.004 [0.007]
West	-0.002 [0.006]	0.016* [0.008]	-0.016 [0.014]	-0.009* [0.005]	-0.009 [0.006]
<b>State Economic Characteristics</b>					
Real personal income per capita (\$1,000)	-0.002** [0.001]	-0.001 [0.001]	0.002 [0.002]	0.000 [0.001]	-0.002*** [0.001]
Unemployment rate (%)	-0.003 [0.003]	-0.005 [0.004]	0.001 [0.007]	0.001 [0.002]	-0.003 [0.003]
Employment-to-population ratio (%)	0.084 [0.099]	0.023 [0.095]	0.116 [0.179]	-0.085 [0.060]	-0.041 [0.082]

continued

**Appendix B-2, continued: Probit Model Estimates of the Relationship between AFS Policies and AFS Product Use (Models include family finance information)**

	<b>Auto Title</b>	<b>Payday</b>	<b>Pawnshop</b>	<b>RAL</b>	<b>Rent-to-Own</b>
Real GDP per capita (\$1,000)	0.000 [0.000]	0.000 [0.000]	-0.001* [0.001]	-0.000 [0.000]	0.000 [0.000]
<b>Family Finances</b>					
Large unexpected drop in income	0.020*** [0.005]	0.023*** [0.006]	0.046*** [0.005]	0.024*** [0.004]	0.025*** [0.005]
Has a credit card	-0.011* [0.006]	-0.035*** [0.008]	-0.056*** [0.009]	-0.026*** [0.005]	-0.029*** [0.006]
Credit card pays in full	-0.012** [0.006]	-0.048*** [0.006]	-0.018*** [0.007]	-0.002 [0.006]	-0.003 [0.006]
Observations	25,916	25,916	25,916	25,916	25,916

*Source:* National Financial Capability State-by-State Survey and state-level policy and economic data.

*Notes:* This table presents probit marginal effects (dprobit in Stata) with robust standard errors clustered at the state level in brackets.

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Appendix B-3: Probit Model Estimates of the Relationship between AFS Policies and AFS Product Use  
(Models exclude income and banked status)**

	<b>Auto Title</b>	<b>Payday</b>	<b>Pawnshop</b>	<b>RAL</b>	<b>Rent-to-Own</b>
<b>Policy Variables</b>					
Price caps and prohibitions					
Product prohibited (0/1)	0.014 [0.011]	-0.033*** [0.013]			
No price cap (0/1)	-0.017** [0.008]	-0.006 [0.021]	0.006 [0.013]		0.012* [0.006]
Price cap amount (%/100)	0.013*** [0.004]	-0.001 [0.002]	0.113* [0.067]		
Disclosures and other requirements					
Return requirement (0/1)			-0.000 [0.014]		
Contract disclosures (0/1)				-0.007 [0.004]	0.019*** [0.007]
Total cost label disclosures (0/1)					-0.000 [0.006]
<b>Demographic Characteristics</b>					
Age (0/1: Omitted, 45–54)					
18–24	0.006 [0.009]	-0.030*** [0.007]	0.060*** [0.013]	0.016* [0.008]	0.027** [0.012]
25–34	0.027*** [0.007]	0.015** [0.008]	0.044*** [0.012]	0.054*** [0.008]	0.025*** [0.008]
35–44	0.007 [0.006]	0.005 [0.008]	0.035*** [0.011]	0.029*** [0.007]	0.017** [0.007]
55–64	-0.007 [0.005]	-0.025*** [0.006]	-0.032*** [0.007]	-0.021*** [0.004]	-0.019*** [0.005]
65+	-0.021*** [0.006]	-0.061*** [0.006]	-0.090*** [0.008]	-0.031*** [0.004]	-0.044*** [0.005]
Education (0/1: Omitted, less than high school)					
High school graduate	0.015 [0.010]	-0.001 [0.008]	-0.031*** [0.008]	-0.003 [0.007]	-0.029*** [0.006]
Some college	0.006 [0.010]	-0.006 [0.009]	-0.047*** [0.010]	-0.012 [0.007]	-0.042*** [0.006]
College or more	-0.008 [0.010]	-0.044*** [0.008]	-0.087*** [0.009]	-0.034*** [0.005]	-0.061*** [0.005]
Financial Literacy (5 high, 0 low)	-0.006*** [0.001]	-0.005** [0.002]	-0.012*** [0.002]	-0.007*** [0.001]	-0.007*** [0.002]
Race/Ethnicity (0/1: Omitted, non-Hispanic white)					
Non-Hispanic black	0.017** [0.008]	0.073*** [0.011]	0.036*** [0.012]	0.027*** [0.006]	0.029*** [0.010]
Hispanic	-0.005 [0.005]	0.007 [0.008]	0.014 [0.013]	0.001 [0.006]	-0.009 [0.007]
Other	0.008 [0.012]	0.011 [0.012]	-0.006 [0.014]	0.001 [0.013]	0.017 [0.012]

continued

**Appendix B-3, continued: Probit Model Estimates of the Relationship between AFS Policies and AFS Product Use (Models exclude income and banked status)**

	<b>Auto Title</b>	<b>Payday</b>	<b>Pawnshop</b>	<b>RAL</b>	<b>Rent-to-Own</b>
Female	-0.011*** [0.003]	-0.002 [0.006]	-0.013*** [0.005]	-0.005 [0.004]	-0.002 [0.004]
Has auto insurance	0.026*** [0.006]	-0.034*** [0.010]	-0.068*** [0.011]	-0.006 [0.005]	-0.023** [0.009]
Living arrangement (0/1: Omitted, married)					
Cohabiting	0.013 [0.008]	0.044*** [0.013]	0.059*** [0.015]	0.011** [0.006]	0.014* [0.008]
Single, live alone	-0.006 [0.005]	0.015** [0.006]	0.025*** [0.010]	0.002 [0.005]	-0.008 [0.006]
Single, live with parent	-0.025*** [0.006]	-0.028*** [0.008]	0.022 [0.014]	-0.020*** [0.005]	-0.034*** [0.005]
Single, live with other	0.005 [0.007]	0.021** [0.009]	0.048*** [0.012]	0.007 [0.006]	0.011 [0.010]
Number of financially dependent kids (0-4)	0.009*** [0.002]	0.017*** [0.002]	0.016*** [0.002]	0.015*** [0.002]	0.014*** [0.002]
Region (0/1: Omitted, South)					
Northeast	-0.001 [0.008]	-0.030*** [0.009]	-0.056*** [0.013]	-0.014*** [0.004]	0.011 [0.009]
Midwest	-0.009 [0.010]	-0.003 [0.010]	-0.044*** [0.012]	-0.004 [0.005]	-0.005 [0.008]
West	-0.001 [0.007]	0.016* [0.009]	-0.017 [0.014]	-0.009* [0.005]	-0.008 [0.006]
<b>State Economic Characteristics</b>					
Real personal income per capita (\$1,000)	-0.002** [0.001]	-0.002* [0.001]	0.000 [0.002]	-0.000 [0.001]	-0.003*** [0.001]
Unemployment rate (%)	-0.003 [0.003]	-0.005 [0.004]	0.004 [0.007]	0.001 [0.002]	-0.003 [0.003]
Employment-to-population ratio (%)	0.069 [0.104]	0.081 [0.111]	0.203 [0.172]	-0.088 [0.060]	-0.042 [0.084]
Real GDP per capita (\$1,000)	0.000 [0.000]	0.001 [0.001]	-0.001 [0.001]	0.000 [0.000]	0.000 [0.000]
Observations	27,320	27,320	27,320	27,320	27,320

*Source:* National Financial Capability State-by-State Survey and state-level policy and economic data.

*Notes:* This table presents probit marginal effects (dprobit in Stata) with robust standard errors clustered at the state level in brackets.

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Appendix B-4: Probit Model Estimates of the Relationship between AFS Policies and AFS Product Use**  
(Models include price cap quadratic)

	<b>Auto Title</b>	<b>Payday</b>	<b>Pawnshop</b>
<b>Policy Variables</b>			
Price caps and prohibitions			
Product prohibited (0/1)	-0.001 [0.015]	-0.032*** [0.012]	
No price cap (0/1)	-0.021** [0.008]	-0.001 [0.021]	-0.000 [0.016]
Price cap amount (%/100)	-0.020 [0.022]	-0.000 [0.005]	-0.092 [0.351]
Price cap amount squared (%/100)	0.010 [0.006]	-0.000 [0.001]	0.746 [1.254]
Disclosures and other requirements			
Return requirement (0/1)			0.001 [0.013]
<b>Demographic Characteristics</b>			
Age (0/1: Omitted, 45–54)			
18–24	0.007 [0.010]	-0.029*** [0.007]	0.052*** [0.014]
25–34	0.025*** [0.007]	0.012 [0.007]	0.037*** [0.011]
35–44	0.007 [0.005]	0.006 [0.007]	0.035*** [0.011]
55–64	-0.008* [0.005]	-0.027*** [0.006]	-0.031*** [0.007]
65+	-0.022*** [0.006]	-0.061*** [0.005]	-0.086*** [0.007]
Education (0/1: Omitted, less than high school)			
High school graduate	0.011 [0.010]	-0.005 [0.008]	-0.016* [0.009]
Some college	0.004 [0.010]	-0.006 [0.009]	-0.024** [0.010]
College or more	-0.006 [0.010]	-0.029*** [0.008]	-0.051*** [0.010]
Financial Literacy (5 high, 0 low)	-0.005*** [0.001]	-0.003 [0.002]	-0.009*** [0.002]
Race/Ethnicity (0/1: Omitted, non-Hispanic white)			
Non-Hispanic black	0.017** [0.008]	0.070*** [0.011]	0.033*** [0.012]
Hispanic	-0.006 [0.005]	0.003 [0.008]	0.008 [0.012]
Other	0.006 [0.011]	0.013 [0.012]	-0.008 [0.012]
Female	-0.011*** [0.003]	-0.004 [0.005]	-0.015*** [0.005]
Household income (0/1: Omitted, less than \$15,000)			
\$15,000–\$24,999	0.033*** [0.011]	0.072*** [0.013]	0.023*** [0.008]

continued



**Appendix B-4, continued: Probit Model Estimates of the Relationship between AFS Policies and AFS Product Use (Models include price cap quadratic)**

	<b>Auto Title</b>	<b>Payday</b>	<b>Pawnshop</b>
\$25,000–\$34,999	0.026*** [0.010]	0.046*** [0.010]	0.005 [0.012]
\$35,000–\$49,999	0.026*** [0.008]	0.047*** [0.011]	-0.012 [0.009]
\$50,000–\$74,999	0.015* [0.009]	0.013 [0.009]	-0.036*** [0.008]
\$75,000–\$99,999	0.010 [0.009]	-0.013 [0.009]	-0.062*** [0.007]
\$100,000–\$149,999	0.010 [0.014]	-0.030*** [0.009]	-0.069*** [0.008]
\$150,000 and greater	-0.008 [0.010]	-0.052*** [0.007]	-0.075*** [0.008]
Household is banked	-0.007 [0.009]	0.002 [0.011]	-0.064*** [0.014]
Has auto insurance	0.024*** [0.006]	-0.034*** [0.010]	-0.039*** [0.010]
Living arrangement (0/1: Omitted, married)			
Cohabiting	0.012 [0.008]	0.031*** [0.011]	0.046*** [0.014]
Single, live alone	-0.006 [0.006]	0.004 [0.006]	0.001 [0.008]
Single, live with parent	-0.024*** [0.006]	-0.025*** [0.007]	0.007 [0.012]
Single, live with other	0.005 [0.007]	0.013 [0.008]	0.020** [0.010]
Number of financially dependent kids (0-4)	0.009*** [0.002]	0.017*** [0.002]	0.015*** [0.002]
Region (0/1: Omitted, South)			
Northeast	0.000 [0.007]	-0.030*** [0.008]	-0.056*** [0.012]
Midwest	-0.009 [0.010]	-0.003 [0.009]	-0.038*** [0.013]
West	0.002 [0.006]	0.014* [0.008]	-0.010 [0.016]
<b>State Economic Characteristics</b>			
Real personal income per capita (\$1,000)	-0.002** [0.001]	-0.001 [0.001]	0.001 [0.002]
Unemployment rate (%)	-0.002 [0.003]	-0.005 [0.004]	0.003 [0.007]
Employment-to-population ratio (%)	0.076 [0.101]	0.053 [0.102]	0.157 [0.174]
Real GDP per capita (\$1,000)	0.000 [0.000]	0.000 [0.001]	-0.001 [0.001]
Observations	27,069	27,069	27,069

*Source:* National Financial Capability State-by-State Survey and state-level policy and economic data.

*Notes:* This table presents probit marginal effects (dprobit in Stata) with robust standard errors clustered at the state level in brackets.

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Appendix Table B-5: Probit Model Estimates of the Relationship between AFS Policies and AFS Product Use  
(Models exclude states with relevant AFS policy change between 2005-2009)**

	<b>Auto Title</b>	<b>Payday</b>	<b>Pawnshop</b>	<b>RAL</b>	<b>Rent-to-Own</b>
<b>Policy Variables</b>					
Price caps and prohibitions					
Product prohibited (0/1)	0.014 [0.011]	-0.042*** [0.012]			
No price cap (0/1)	-0.017** [0.008]	-0.000 [0.019]	0.005 [0.013]		0.011* [0.006]
Price cap amount (%/100)	0.013*** [0.004]	-0.003* [0.002]	0.112* [0.065]		
Disclosures and other requirements					
Return requirement (0/1)			0.003 [0.013]		
Contract disclosures (0/1)				-0.009* [0.005]	0.017*** [0.006]
Total cost label disclosures (0/1)					0.005 [0.005]
Observations	27,069	25,939	27,069	22,241	26,530

*Source* : National Financial Capability State-by-State Survey and state-level policy and economic data.

*Notes*: This table presents probit marginal effects (dprobit in Stata) with robust standard errors clustered at the state level in brackets. States that implemented a relevant policy change between 2005 and 2009 are dropped from these models: two states dropped from the payday loan model (NH, OR) , nine states from the RAL model (AK, CA, ME, MN, NV, NJ, NM, TX, and VA), and one state from the rent-to-own model (CA). The models control for age, education level, financial literacy, race/ethnicity, gender, household income, household is banked, has automobile insurance, living arrangement, number of financially dependent children, region, state real personal income per capita, state unemployment rate, state employment-to-population ratio, and state real GDP per capita.

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

## Data Appendix

### *State auto title loan restrictions*

#### **1. Auto title loans prohibited**

*Sources:* Fox and Guy, “Driven into Debt: CFA Car Title Loan Store and Online Survey” (2005); Consumers Union, National Consumer Law Center, and Consumer Federation of America, “Small-Dollar Loan Products Scorecard” (2008).

*Variable Type:* Binary.

*Values:* 0/1 (no/yes): If the state prohibits lenders from making auto title loans, the variable receives a 1; if not, it receives a 0.

*Years Available:* 2005, 2008, 2010. The Consumer Federation of America provides data on auto title loan restriction as of 2005. Information on state law as of 2008 is provided by the Consumer Federation of America and the National Consumer Law Center. In 2010, reviewers from the Conference of State Bank Supervisors and the Center for Responsible Lending reviewed the data and advised us on the identification of states where auto title restrictions were nonbinding or circumvented by suppliers.

*Notes:* We make the assumption that if auto title loan restrictions in 2008 are identical to the restrictions for 2005 and the reviewers provided no additional information that a change occurred, then these restrictions were also in effect for all intervening years. We also assume that the 2005 restrictions were in place in 2004. Texas has statutory prohibitions on auto title loans, but auto title lenders can be active as brokers for unregulated “credit servicing organizations.” As a result, we do not treat Texas as prohibiting auto title lending.

#### **2. APR cap on auto title loans**

*Sources:* Fox and Guy, “Driven into Debt: CFA Car Title Loan Store and Online Survey” (2005); Consumers Union, National Consumer Law Center, and Consumer Federation of America, “Small-Dollar Loan Products Scorecard” (2008).

*Variable Type:* Continuous.

*Values:* A continuous APR cap for states that have a rate cap.

*Years Available:* 2005, 2008, 2010. The Consumer Federation of America provides data on auto title loan restriction as of 2005. Information on state law as of 2008 is provided by the Consumer Federation of America and the National Consumer Law Center. In 2010, reviewers from the Conference of State Bank Supervisors and the Center for Responsible Lending reviewed the data and advised us on the identification of states where auto title restrictions were nonbinding or circumvented by suppliers.

*Assumptions:* Calculations assume a one-month, \$300 auto title loan.

*Notes:* We make the assumption that if auto title loan restrictions in 2008 are identical to the restrictions for 2005 and the reviewers provided no additional information that a change occurred, then these restrictions were also in effect for all intervening years. We also assume that the 2005 restrictions were in place in 2004. South Carolina imposes an APR cap of 15 percent but only on loans below \$600. Since most auto title loans are larger than \$600, we treat South Carolina as having no APR cap.

### **3. Auto title loan—no APR cap**

*Sources:* Fox and Guy, “Driven into Debt: CFA Car Title Loan Store and Online Survey” (2005); Consumers Union, National Consumer Law Center, and Consumer Federation of America, “Small-Dollar Loan Products Scorecard” (2008).

*Variable Type:* Binary.

*Values:* 0/1 (no/yes): If the state prohibits auto title loans or has an APR cap, the variable receives a 0; if not, it receives a 1.

*Years Available:* 2005, 2008, 2010. The Consumer Federation of America provides data on auto title loan restriction as of 2005. Information on state law as of 2008 is provided by the Consumer Federation of America and the National Consumer Law Center. In 2010, reviewers from the Conference of State Bank Supervisors and the Center for Responsible Lending reviewed the data and advised us on the identification of states where auto title restrictions were nonbinding or circumvented by suppliers.

*Notes:* See notes for variables “auto title loans prohibited” and “APR cap on auto title loans” above.

## **State payday loan restrictions**

### **1. Payday loans prohibited**

*Sources:* National Consumer Law Center, “Survey of State Payday Loan Laws” (2005); National Conference of State Legislatures, “Payday Lending State Statutes” (2009).

*Variable Type:* Binary.

*Values:* 0/1 (no/yes): If the state prohibits lenders from making payday loans, the variable receives a 1; if not, it receives a 0.

*Years Available:* 2005, 2009, 2010. The National Consumer Law Center provides data on payday loan restriction as of 2005. Information on state law as of 2009 is provided by the National Conference of State Legislatures. In 2010, reviewers from the Conference of State Bank Supervisors and the Treasury Department reviewed the data and advised us on the identification of states where payday restrictions had changed during the study period.

*Notes:* We make the assumption that if payday loan restrictions in 2009 are identical to the restrictions for 2005 and the reviewers provided no additional information that a change occurred, then these restrictions were also in effect for all intervening years. We also assume that the 2005 restrictions were in place in 2004.

### **2. APR cap amount on payday loans**

*Sources:* National Consumer Law Center, “Survey of State Payday Loan Laws” (2005); National Conference of State Legislatures, “Payday Lending State Statutes” (2009); Consumer Federation of America, “Payday Loan Consumer Information: State Information” (2010).

*Variable Type:* Continuous.

*Values:* A continuous APR cap for states that have a cap.

*Years Available:* 2005, 2009, 2010. The National Consumer Law Center provides data on payday loan restriction as of 2005. Information on state law as of 2009 is provided by the National Conference of State Legislatures. In 2010, reviewers from the Conference of State Bank

Supervisors and the Treasury Department reviewed the data and advised us on the identification of states where payday restrictions had changed during the study period.

*Assumption:* Calculations assume a 14 day, \$100 payday loan.

*Notes:* We make the assumption that if payday loan restrictions in 2009 are identical to the restrictions for 2005 and the reviewers provided no additional information that a change occurred, then these restrictions were also in effect for all intervening years. We also assume that the 2005 policies were in place in 2004. Some states did change their payday loan restrictions during the study period. In these cases, we conferred with reviewers and with the state code to determine the timing and nature of the change. The Consumer Federation of America (2010) translates the mix of finance charge caps, interest rate caps, and APR caps provided by the National Consumer Law Center into consistently defined APR caps.

### **3. Payday loan – no APR cap**

*Sources:* National Consumer Law Center, “Survey of State Payday Loan Laws” (2005); National Conference of State Legislatures, “Payday Lending State Statutes” (2009).

*Variable Type:* Binary.

*Values:* 0/1 (no/yes): If the state prohibits payday loans or has an APR cap, the variable receives a 0; if not, it receives a 1.

*Years Available:* 2005, 2009, 2010. The National Consumer Law Center provides data on payday loan restriction as of 2005. Information on state law as of 2009 is provided by the National Conference of State Legislatures. In 2010, reviewers from the Conference of State Bank Supervisors and the Treasury Department reviewed the data and advised us on the identification of states where payday restrictions had changed during the study period. Some states did change their payday loan restrictions during the study period. In these cases, we conferred with reviewers and with the state code to determine the timing and nature of the change.

*Notes:* See notes for variables “payday loans prohibited” and “APR cap amount on payday loans” above.

## **State pawnshop restrictions**

### **1. Pawnshop monthly interest rate cap amount**

*Source:* Shackman and Tenney, “The Effects of Government Regulations on the Supply of Pawn Loans: Evidence from 51 Jurisdictions in the U.S.” (2006).

*Variable Type:* Continuous.

*Values:* A continuous interest rate cap for states that have a rate cap.

*Years Available:* 2005, 2010. Shackman and Tenney (2006) provide information on state caps on monthly interest rates for pawn loans in 2005. In 2010, a reviewer from a national pawnbroker association advised that the Shackman and Tenney (2006) data are generally current.

*Notes:* Based on the 2010 reviewer comments, we assume that the 2005 policies were in place across the 2004 to 2009 study period.

### **2. Pawnshop monthly interest rate – no cap**

*Source:* Shackman and Tenney, “The Effects of Government Regulations on the Supply of Pawn Loans: Evidence from 51 Jurisdictions in the U.S.” (2006).

*Variable Type:* Binary.

*Values:* 0/1 (no/yes): If the state has an interest rate cap, the variable receives a 0; if not, it receives a 1.

*Years Available:* 2005, 2010. Shackman and Tenney (2006) provide information on state caps on monthly interest rates for pawn loans in 2005. In 2010, a reviewer from a national pawnbroker association advised that the Shackman and Tenney (2006) data are generally current.

*Notes:* Based on the 2010 reviewer comments, we assume that the 2005 policies were in place across the 2004 to 2009 study period.

### **3. Pawnshop return requirement**

*Source:* Shackman and Tenney, “The Effects of Government Regulations on the Supply of Pawn Loans: Evidence from 51 Jurisdictions in the U.S.” (2006).

*Variable Type:* Binary.

*Values:* 0/1 (no/yes): If the state requires the pawnshop to return excess proceeds upon sale of collateral, the variable receives a 1; if not, it receives a 0.

*Years Available:* 2005, 2010. Shackman and Tenney (2006) provide information on state caps on return requirements for pawn loans in 2005. In 2010, a reviewer from a national pawnbroker association advised that the Shackman and Tenney (2006) data are generally current.

*Notes:* Based on the 2010 reviewer comments, we assume that the 2005 policies were in place across the 2004 to 2009 study period.

## **State refund anticipation loan (RAL) restrictions**

### **1. Refund anticipation loan disclosure requirement**

*Sources:* Wu and Fox (2004, 2005, 2007, 2008, and 2009); Wu, Fox, and Woodall (2006).

*Variable Type:* Binary.

*Values:* 0/1 (no/yes): If the state has rules requiring disclosure of loan information, the variable receives a 1; if not, it receives a 0.

*Years Available:* 2004-2010. In addition to the sources listed above, reviewers from the Conference of State Bank Supervisors and the Treasury Department reviewed the data in 2010.

*Notes:* Disclosure requirements vary across states. The most common requirements were for the disclosure of the loan’s APR, tax preparation fees, loan fee schedules, filing fees, and information on alternative e-filing options. More detailed disclosure requirements were also enacted, including font size requirements and posting requirements. A standard core of disclosure requirements is shared by almost all states. Since variations in additional requirements beyond this core are generally more trivial (i.e., font requirements), all disclosure requirements were condensed into a single disclosure measure.

## **State rent-to-own (RTO) restrictions**

### 1. Rent-to-own total cost price cap

*Sources:* Data from McKernan et al. for “Empirical Evidence on the Determinants of Rent-to-Own Use and Purchase Agreements” (2003); Association of Progressive Rental Organizations, “State Rent-to-Own Statutes and Economic Impact” (2009) (<http://www.rtohq.org/apro-state-rent-to-own-statutes-and-economic-impact.html>) and “RTO Legislative Activity” (2010) (<http://www.rtohq.org/apro-rent-to-own-legislative-activity-and-resources.html>).

*Variable Type:* Binary.

*Values:* 0/1 (no/yes): If the state limits the amount rent-to-own businesses can charge for a product, the variable receives a 1; if not, it receives a 0.

*Years Available:* 2003, 2009, 2010. McKernan et al. (2003) provides data on rent-to-own restrictions as of 2003. Retrospective information on state law as of 2009 is provided by the Association of Progressive Rental Owners (APRO) at <http://www.rtohq.org>. In 2010, reviewers from the Conference of State Bank Supervisors and APRO reviewed the data and advised us on the identification of states where rent-to-own restrictions had changed during the study period. APRO’s state legislative updates (2010) are also used to identify any changes in this state restriction between 2003 and 2009.

*Notes:* If the APRO legislative updates do not show any changes from 2003, we make the assumption that the rent-to-own restrictions were also in effect for all intervening years. Some states did change their rent-to-own price cap restrictions during the study period. In these cases, we conferred with reviewers to determine the timing and nature of the change.

### 2. Rent-to-own APR price cap

*Sources:* Data from McKernan et al. for “Empirical Evidence on the Determinants of Rent-to-Own Use and Purchase Agreements” (2003); Association of Progressive Rental Organizations, “State Rent-to-Own Statutes and Economic Impact” (2009) (<http://www.rtohq.org/apro-state-rent-to-own-statutes-and-economic-impact.html>) and “RTO Legislative Activity” (2010) (<http://www.rtohq.org/apro-rent-to-own-legislative-activity-and-resources.html>).

*Variable Type:* Binary.

*Values:* 0/1 (no/yes): If the state limits the APR rent-to-own businesses can charge for a product, the variable receives a 1; if not, it receives a 0.

*Years Available:* 2003, 2009, 2010. McKernan et al. (2003) provides data on rent-to-own restrictions as of 2003. Retrospective information on state law as of 2009 is provided by the Association of Progressive Rental Owners (APRO) at <http://www.rtohq.org>. In 2010, reviewers from the Conference of State Bank Supervisors and APRO reviewed the data. APRO’s state legislative updates (2010) are also used to identify any changes in this state restriction between 2003 and 2009.

*Notes:* The APRO legislative updates do not show any changes during the study period; we make the assumption that these restrictions were in effect for all intervening years.

### 3. Rent-to-own contract disclosures

*Sources:* Data from McKernan et al. for “Empirical Evidence on the Determinants of Rent-to-Own Use and Purchase Agreements” (2003); Association of Progressive Rental Organizations, “State Rent-to-Own Statutes and Economic Impact” (2009) (<http://www.rtohq.org/apro-state-rent-to-own-statutes-and-economic-impact.html>) and “RTO Legislative Activity” (2010) (<http://www.rtohq.org/apro-rent-to-own-legislative-activity-and-resources.html>).

*Variable Type:* Binary.

*Values:* 0/1 (no/yes): If the state requires a lessor to provide standard information on the product contract, the variable receives a 1; if not, it receives a 0.

*Years Available:* 2003, 2009, 2010. McKernan et al. (2003) provides data on rent-to-own restrictions as of 2003. Retrospective information on state law as of 2009 is provided by the Association of Progressive Rental Owners (APRO) at <http://www.rtohq.org>. In 2010, reviewers from the Conference of State Bank Supervisors and APRO reviewed the data. APRO’s state legislative updates (2010) are also used to identify any changes in this state restriction between 2003 and 2009.

*Notes:* The APRO legislative updates do not show any changes during the study period; we make the assumption that these restrictions were in effect for all intervening years.

### 4. Rent-to-own total cost label disclosures

*Sources:* Data from McKernan et al. for “Empirical Evidence on the Determinants of Rent-to-Own Use and Purchase Agreements” (2003); Association of Progressive Rental Organizations, “State Rent-to-Own Statutes and Economic Impact” (2009) (<http://www.rtohq.org/apro-state-rent-to-own-statutes-and-economic-impact.html>) and “RTO Legislative Activity” (2010) (<http://www.rtohq.org/apro-rent-to-own-legislative-activity-and-resources.html>).

*Variable Type:* Binary.

*Values:* 0/1 (no/yes): If the state requires rent-to-own businesses to disclose the total cost of purchase on the product label, the variable receives a 1; if not, it receives a 0.

*Years Available:* 2003, 2009, 2010. McKernan et al. (2003) provides data on rent-to-own restrictions as of 2003. Retrospective information on state law as of 2009 is provided by the Association of Progressive Rental Owners (APRO) at <http://www.rtohq.org>. In 2010, reviewers from the Conference of State Bank Supervisors and APRO reviewed the data. APRO’s state legislative updates (2010) are also used to identify any changes in this state restriction between 2003 and 2009.

*Notes:* The APRO legislative updates do not show any changes during the study period; we make the assumption that these restrictions were in effect for all intervening years.



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