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In Harm's Way?

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Abstract

Does borrowing at 400 percent APR do more harm than good? The Pentagon asserts that payday loans harm military readiness and successfully lobbied for a binding 36 percent APR cap on loans to military members and their families (effective October 1, 2007). But existing evidence on how access to high-interest debt affects borrower behavior is inconclusive. We use within-state variation in state lending laws and exogenous variation in the assignment of Air Force personnel to bases in different states to estimate the effect of payday loan access on personnel outcomes. We find significant average declines in overall job performance and retention and significant increases in severely poor readiness. These results provide some ammunition for the private optimality of the Pentagon's position. The welfare implications for military members are less clear-cut, but our results are consistent with the interpretation that payday loan access causes financial distress and severe misbehavior for relatively young, inexperienced, and financially unsophisticated airmen. Overall job performance declines are also concentrated in these groups, and several pieces of evidence suggest that these declines are welfare-reducing (and not the result of airmen optimally reducing effort given an expanded opportunity set); e.g., performance declines are larger in *high* unemployment areas with payday lending.

Keywords: credit access, subprime credit market, predatory lending, military readiness, behavioral economics, psychology and economics, financial sophistication, financial literacy, household finance, consumer finance, behavioral finance

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I. Introduction

Does borrowing at 400 percent APR do more harm than good?[1] Some previous studies find that, on average, expensive consumer loans help borrowers smooth negative shocks (Morse 2007; Wilson, Findlay, Meehan, Welford and Schurter 2008), make productive investments in job retention (Karlan and Zinman 2008), or better manage liquidity to alleviate financial distress (Morgan and Strain 2008). Other studies find that increased access to expensive credit increases financial distress (Melzer 2007; Campbell, Martinez-Jerez and Tufano 2008; Skiba and Tobacman 2008a).

The Pentagon is convinced that payday borrowing does more harm than good for the military. Following evidence that payday lenders target military markets (Graves and Peterson 2005), and internal studies showing high prevalence of borrowing and concomitant adverse effects on personnel stress levels and job attentiveness (Department of Defense 2006), the Pentagon successfully lobbied Congress for a binding federal cap on loans to military members and their families (36 percent APR, effective October 1, 2007). The Pentagon argued that "predatory lending undermines military readiness, harms the morale of troops and their families, and adds to the cost of fielding an all volunteer fighting force" (Department of Defense 2006, p. 9).[2] The president of the Navy Marine Corps Relief Society called payday lending in particular "the most serious single financial problem that we have encountered in [a] hundred years" (Center for Responsible Lending et al. 2007).[3] Payday borrowing is viewed as particularly problematic given its high annualized cost (390 percent APR),[4] prevalence (e.g., an estimated 20-25 percent of military households borrowed in 2005),[5] and the high frequency of serial borrowing.[6]

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[1] In theory, the effects can go either way. Neoclassical models predict that borrowers will be weakly better off on average (at least in expectation); otherwise they would not borrow. Some behavioral models can generate negative effects; e.g., if consumers have self-control problems (Skiba and Tobacman 2008b), systematically underestimate the costs of short-term debt (Stango and Zinman 2008), or are overly optimistic about future prospects (Brunnermeier and Parker 2005; Browning and Tobacman 2007).

[2] The Department of Defense (DoD) 2006 report states that serial borrowers with financial problems "begin to lose their mission effectiveness, their security clearances, and their career status" (p. 36). The DoD has for several years listed predatory lending among "ten priority issues identified… as having a strong impact on military families at the state level" (Tanik 2005; Department of Defense 2008).

[3] The Navy Marine Corps Relief Society argues that "Marines who are preoccupied with their financial troubles are distracted from their main obligations." See Fernald, Hamad, Karlan, Ozer, and Zinman (2008) for a review of the literature on credit access and stress and for some corroborating evidence from a field experiment on a civilian population that subprime consumer credit access increases stress.

[4] The standard payday loan contract is "$15 per $100" for a two-week loan, usually in the $100-$300 range, secured by a check post-dated to the date of the borrower's next paycheck deposit.

[5] 20-25 percent prevalence is from Stegman (2007) and Tanik (2005). Prevalence estimates that are based simply on self-reported surveys of potential borrowers (e.g., Brown and Cushman 2006) are much lower due to substantial underreporting (Tanik 2005, footnote 19; Zinman 2007; Karlan and Zinman forthcoming).

Our work is the first attempt to identify the causal effects of payday loan access on military members ("servicemen"). A key challenge is the likelihood that lenders locate strategically (borrowers may do so as well). So borrowing, or proximity to lenders, may be correlated with omitted variables that have independent effects on borrower well-being or productivity.[7]

We tackle endogeneity using two sources of quasi-experimental variation. One source is the extensive within-state variation in laws authorizing or prohibiting payday lending; this addresses the endogeneity of lender location decisions. The second source is the assignment of Air Force personnel to bases in different states based primarily on "the needs of the Air Force" (Powers 2008). Other researchers have shown that, conditional on occupation, year, and experience, a virtually identical assignment system used by the U.S. Army[8] is orthogonal to various sets of individual and location characteristics (Antecol and Cobb-Clark 2006; Lleras-Muney 2006).[9] Air Force personnel assignment rules (Air Force 2005a) thus help us address the endogeneity of borrower location decisions.

Our outcome variables are four measures of military personnel performance and retention[10] for all enlisted members of the U.S. Air Force ("airmen"), stationed at all 67 domestic Air Force bases, in 35 states,[11] for the periods 1996-2001 or 1996-2007 (depending on the outcome). Two measures capture what the military considers critically poor job readiness: forced enrollment in the weight management program and the presence of an unfavorable information file. Another measure—reenlistment eligibility—provides a summary statistic for job performance because airmen are eligible to reenlist only if their job performance has been satisfactory. Our fourth measure—reenlistment itself—might be affected independent of the eligibility channel if payday

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[6] See Department of Defense (2006) and Brown and Cushman (2006) on prevalent serial borrowing among servicemen.

[7] Previous studies estimating effects on civilian populations have addressed the endogeneity issue using a variety of experimental and quasi-experimental methods. Morgan and Strain (2008) use law changes in three states; Campbell et al. (2008) use a change in one state. Morse (2007) uses natural disasters (with a propensity-score matched control group) and lender prevalence. Melzer (2007) uses household distance to the nearest border of a payday-permitting state in a sample of low- and middle-income households from three payday-prohibiting states. Skiba and Tobacman (2008a; 2008b) use a discontinuity in the approval criteria of a single large lender. Wilson et al. (2008) use a lab experiment. Karlan and Zinman (2008) use a field experiment that randomly assigns loans within a pool of marginal rejected applicants.

[8] Department of Defense (DoD) Directive 1315.7, "Military Personnel Assignments,, provides guidelines for assignment of personnel for all branches of the military.

[9] We have relatively limited data on individual characteristics except for AFQT scores, which are not correlated in economically significant magnitudes with state payday lending regime.

[10] Our four personnel outcomes are topical, given the military's concern about the effects of payday borrowing on military readiness. But they are only a subset of outcomes that might be affected by high-interest borrowing; e.g., we lack direct measures of financial condition or subjective well-being.

[11] We count the District of Columbia as a state. Carrell and West (2005) list the 67 domestic Air Force bases and their locations.

loan access changes outside options for airmen. The three performance and readiness measures are arguably of greater interest to the Pentagon than reenlistment itself because the military (and the Air Force in particular) has been exceeding its reenlistment targets.[12]

We find some evidence that payday loan access has adverse effects on job performance and readiness. Access significantly increases the likelihood that an airman is ineligible to reenlist by 1.1 percentage points (i.e., by 3.9 percent). We find a comparable decline in reenlistment. Payday loan access also significantly increases the likelihood that an airman is sanctioned for critically poor readiness (as measured by the presence of an unfavorable information file) by 0.2 percentage point (5.3 percent). These results provide some ammunition for the private optimality of the Pentagon's position.

Our data do not permit sharp tests of the welfare implications for military members, and in principle, the adverse effects we find could be the result of optimal shirking.[13] Airmen might optimally reduce on-the-job effort if payday loan access increases outside options in the civilian labor market and/or if borrowing enables them to avoid hazardous duty.

We explore optimal shirking hypotheses to the extent permitted by the available data and find little evidence of shirking. The reenlistment decline disappears if we condition on eligibility, suggesting that payday loan access decreases reenlistment through job performance declines rather than voluntary separation. Unfavorable information files (UIFs) are created only for outcomes that are likely welfare-reducing: poor job performance, criminal behavior, and documented severe financial irresponsibility. We find no support for the alternative hypothesis that airmen intentionally use payday loans to get out of hazardous duty: the results are similar across occupations with different likelihoods of combat deployment, and the results actually seem to be driven by airmen in occupations where security clearance is *not* required for missions. Moreover, UIFs significantly increase with payday loan access only among first-term (relatively young and inexperienced) airmen. The effects on reenlistment ineligibility are stronger for first-term, low-clearance, and low financial sophistication occupations. Moreover, eligibility declines more in *high* unemployment areas (that presumably have *fewer* outside options).

Overall, our results suggest that payday loan access produces welfare-reducing declines in job

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[12] See http://www.defenselink.mil/ for several news releases and articles on reenlistment targets and successes for the different Armed Forces branches through the years. On the Air Force in particular see also Powers (2004).

[13] In practice it seems unlikely that even airmen who are seriously contemplating exiting the military would find it optimal to reduce effort to the point where they are sanctioned for critically poor readiness or deemed ineligible to reenlist, since poor job performance adversely affects the type of discharge and recommendations one can get from commanding officers, thereby adversely affecting civilian labor market options and veterans' benefits. See Section V-B for more details.

performance, financial distress, and/or severe misbehavior. The external validity of our findings to other branches of the military is likely high. The external validity for civilian populations is uncertain, for reasons we discuss in the Conclusion.

The remainder of the paper proceeds as follows. Section II describes the payday loan product, market, and the prevalence of military borrowing. Section III describes state regulation of payday lending. Section IV describes the assignment of servicemen to bases in different locations. Section V describes our measures of job performance and separation from the Air Force. Section VI details our empirical strategy and identifying assumptions. Section VII presents our main results. Section VIII concludes with a discussion of policy and welfare implications.

II. Payday Lending and the Military

In a standard payday loan contract the lender advances the borrower $100-$300[14] in return for a post-dated check, dated to coincide with the borrower's next paycheck, in the amount of $115-$345. The market rate is about $15 per $100 advanced (390 percent APR for a two-week loan), although fees as high as $30 per $100 are not uncommon.[15] Nearly all transactions are face-to-face in retail outlets, although Internet lending is growing.[16]

The closest substitute for a payday loan is arguably overdraft protection on a bank account (Stegman 2007; Morgan and Strain 2008).[17] The other expensive loan products labeled "predatory" by the Pentagon and consumer advocates require collateral (pawn, auto title, subprime home equity) or a durable purchase (rent-to-own), or are available only once a year (tax refund anticipation).[18] In some cases less expensive alternatives may be available on-base; the Department of Defense (2006) reports that the Air Force Aid Society provided an average of $800 in no-interest loans or grants to nearly 15,000 financial distress cases and also notes that "the banks and credit unions on military installations have begun to provide lending products that

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[14] Stegman (2007) estimates that 80 percent of payday loans are for $300 or less, and we draw much of the information in this section from his overview of the industry. See also Barr (2004); Caskey (1994; 2005).

[15] See Flannery and Samolyk (2005), DeYoung and Phillips (2006), and Skiba and Tobacman (2007) for evidence on competition, pricing, and profitability in the payday loan industry.

[16] Stephens Inc. (2007) estimates that Internet payday lending is growing at 40 percent annually and comprised 12 percent of total volume in 2006.

[17] Bouncing checks is quite costly due to legal ramifications and has negative effects on the credit score (CheckSys) banks use to screen applicants for a deposit account (Campbell, Martinez-Jerez and Tufano 2008). With overdraft protection a bank pays overdrawn checks rather than returning them. In exchange the bank charges the account holder a $20 to $30 fee. Hence in many cases getting a payday loan is cheaper than overdrawing the checking account (particularly if the account holder runs the risk of overdrawing multiple checks).

[18] The one exception is the relatively rare "military installment loan.. The Department of Defense (2006) reports that payday lending outlets outnumber military installment loan outlets by orders of magnitude.

fulfill the need for quick cash" (p. 29). But these sources can bring servicemen unwanted scrutiny from commanding officers and peers.[19]

Most payday lenders are non-depository institutions. Many are check-cashers ("multi-line" lenders), but stand-alone ("mono-line") lenders are common as well. The industry's growth has been striking: from very few outlets in the early 1990s to an estimated 24,000 in 2006 (Stephens Inc. 2007). As others have noted, this means that there are now more payday lending outlets in the U.S. than McDonald's and Starbucks combined.[20]

Payday borrowing among servicemen has been prevalent. Stegman (2007) estimates that 20 percent of military households took a payday loan in 2005, and Tanik (2005) presents some data suggesting that annual prevalence may in fact be as high as 25 percent. It seems likely that prevalence is substantially higher among junior servicemen.[21] Overall we estimate that perhaps 19 percent of military households used payday loans in 2001 (Appendix Table 1). As the table illustrates, estimating prevalence in earlier years is hindered by data limitations.[22]

The prevalence of payday borrowing in the military can be explained by both demand- and supply-side factors (Graves and Peterson 2005; Department of Defense 2006; Stegman 2007). On the demand side, military families may be relatively prone to smooth consumption (due, e.g., to their youth, births, frequent moves, pay fluctuations from hazardous vs. non-hazardous assignments), and relatively reliant on credit to smooth consumption (due, e.g., to limited labor market options for spouses, geographic isolation from family members). On the supply side, military borrowers are relatively attractive credit risks: they offer a steady paycheck (the primary requirement for obtaining a payday loan) and may also face pressure (both implicit and explicit) from their employer to repay. Military borrowers are also concentrated geographically, which allows lenders to efficiently amortize the fixed costs of outlet operations.

As noted at the outset, the Pentagon is concerned that payday borrowing creates financial distress among rank-and-file personnel. The Pentagon holds that this financial distress creates

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[19] The Department of Defense (2006) states that on-base alternatives "do require Service members to bring their financial problem into the light; whereas their underlying financial concerns can remain undetected when borrowing from payday lenders…." (p. 35). The report also stresses that service members "must be encouraged to use available [on-base] resources without stigma" (p.29).

[20] The McDonald's 2007 annual report shows U.S. 13,862 restaurants at year-end 2007. Horovitz (2006) reports that Starbucks had 7,950 U.S. stores during 2006; a graph in the 2006 Starbucks annual report (p. 16) suggests a comparable number.

[21] For example, assuming overall payday borrowing prevalence of 20 percent in the Air Force in 2005, the self-reported data from Brown and Cushman suggest that perhaps 30 percent of airmen in their first enlisted term of duty used a payday loan in 2005, while only 6 percent of career-termers did (career-termers are the most experienced and generally highest-ranking airmen we observe, since we do not have data on officers).

[22] See Sections VII-A and –D for related analysis of time-varying effects of payday loan access.

stress and other distractions that adversely affect job performance. Moreover, heavily indebted servicemen are viewed as security risks and sometimes stripped of their security clearances due to concerns of bribery and treason (Associated Press 2006; Department of Defense 2006).

III. State Laws Governing Payday Lending

State laws are an important determinant of access to payday loans. Many states have laws that effectively prohibit payday lending by imposing binding interest rate caps on payday loans or consumer loans more generally. Other states explicitly outlaw the practice of payday lending.[23] These laws prohibiting or discouraging payday lending are generally well-enforced, if not always perfectly enforced (King and Parrish 2007), and hence provide a good source of variation in availability of payday loans across states and time.[24] In contrast, many states have laws that restrict *serial* payday borrowing and/or lending, but only three states had the means to enforce these restrictions (a central database, most critically) during any part of our sample period.[25]

Table 1 summarizes the substantial variation in payday lending laws for the 35 states covered in our samples. Column 1 describes the variation for our reenlistment sample (for which we have outcomes data over October 1995-September 2001). Column 2 describes the variation for our

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[23] We define a state as permitting payday lending if its laws do not prohibit the standard payday loan contract defined in Section II, for a loan of $100 of more. For most state-years classifying states this way is relatively straightforward. Our primary sources are the laws themselves (statutes, superseded statutes, and session laws). We then consulted several secondary sources to confirm that our readings of the laws were sensible. Three particular issues involved in classifying a state-year as permitting or prohibiting bear mention. First, beginning in 2005 or 2006, five states that otherwise permitted payday lending banned lenders from locating in areas deemed off-limits by military commanders. We code these state-fiscal year cells as prohibiting. The second issue is that litigation resulting in court decisions affected the interpretation and enforcement of laws for several years in Alabama and Arkansas. We classify these state-fiscal years based on the interaction of laws and court decisions. The third issue is that two states have regulated particular contract terms in ways that may be binding but do not evidently restrict access. Oklahoma for several years imposed a minimum loan term of 60 days. Texas for several years allowed only $14 per $100 (a shade below the standard $15). Following Fox and Mierzwinski (2001) we code these Oklahoma years as prohibiting and the Texas years as permitting. Appendix Table 2 (Columns 5-8) shows that dropping the cells affected by these issues does not significantly change the results.

[24] Publicly available time series data on lending outlets in all states is scarce, but Stephens Inc (2004; 2005; 2006; 2007) is an exception. Using these data our Appendix Table 3 shows the strong correlation between state legal authorization and store outlets per capita in our cross-section of states. We do not include state fixed effects because there are only six law changes during this sample period (12/31/03-7/1/06), four of which might not have affected state-level store counts because they did not apply statewide: they only authorized military command to place payday outlets off-limits to servicemen. Other reports note rapid and widespread lender entry and exit following law changes (Fox 1999; Reisdorph 2005; Graves 2007).

[25] Appendix Table 2 (Column 9) shows that results do not change if we drop cells from state-years in which there was a database that might have helped prevent serial borrowing. The reenlistment outcome results are unaffected by this issue because all databases were implemented post-2001, the last year for which we have eligibility and reenlistment data.

weight management program sample (for which we have outcomes data over October 1995-September 2004). Column 3 describes the variation for our unfavorable information file sample (for which we have outcomes data over October 1995-September 2007). Since we use within-state variation to help identify the causal effects of payday loan access, the most important count for our purposes is the number of law changes (from permitting to prohibiting or vice versa). For instance, 12 states made 13 changes during our reenlistment sample period, and 17 states made 25 changes during our unfavorable information file sample period. The last row of the table shows that state laws permitted payday lending in more than 60 percent of the state-fiscal year cells represented in each of our samples.

IV. Military Assignments: An Exogenous Source of Variation in Location

The second source of variation we use to estimate the causal effects of payday loan access is the fact that Air Force personnel do not generally *choose* to live in a particular location. Rather, personnel are distributed across locations based on the overall manpower needs of the Air Force. The primary factor in selecting individuals for an assignment is the individual's "qualifications to fill a valid manpower requirement and perform productively in the position for which being considered."[26] Thus, individuals are assigned based on their occupation and experience. There are up to 428 enlisted occupations (Air Force Specialty Codes) in our data set and the average domestic Air Force base has personnel in 163 of these occupations.[27] Frequent movement of personnel from location to location is necessary due to the rotational system of overseas assignments. This creates a situation where airmen tend to move to a new location every two to four years.[28] Because the 67 domestic Air Force bases are spread out across 35 states, this results in Air Force households moving frequently across state lines.[29]

Other studies have used military assignments as a source of variation in location that is exogenous, conditional on occupation*year*(experience or rank). Lleras-Muney (2006) uses

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[26] The Air Force assigns personnel to locations without regard to race, age, gender, religion, national origin, spouse's employment, etc. Co-location issues are considered for married couples who are both in the military, but these assignments are also based on job qualifications and not location preferences.

[27] This statistic is from our separation and reenlistment sample, which categorizes occupation data at the five-digit alphanumeric level. Our UIF and WMP data have occupations collapsed at the three-digit level, and the average base has 108 of the 141 three-digit occupations represented.

[28] Once members with the required qualifications are identified to fill a position, other factors such as how long the individual has been at his or her current assignment, volunteer status, and individual preferences "may be considered to the extent these factors are consistent with operational manning requirements." Assignments "based solely on the fact a member can be used or prefers assignment elsewhere" are explicitly forbidden (Air Force 2005a).

[29] On average, personnel in each occupation are observed in 25 different states in our separation and reenlistment sample and in 29 different states in the UIF and WMP samples.

Army assignments to identify the effects of air pollutants on children's health. Angrist and Johnson (2000) and Lyle (2006) use Army assignments to identify the effects of parental absences (which are higher at certain bases for operational reasons) and household relocations on children's academic achievement, divorce rates, spousal employment, and children's disability rates. Antecol and Cobb-Clark (2006) use Army assignments to examine racial discrimination. These previous studies find that the location of assignment for Army personnel is largely uncorrelated with the demographic characteristics of the individual (Antecol and Cobb-Clark 2006) and uncorrelated with age, gender, education, number of dependents and a host of health variables (Lleras-Muney 2006). Lyle (2006) also showed that the Army largely assigns absences and relocations without regard to the academic achievement of military children.[30]

Our grouped-level data lack many demographic details, but we conduct a similar exogeneity test by regressing Armed Forces Qualifying Test (AFQT) scores for Air Force personnel from 1996 through 2007 on a dummy variable for whether state laws permitted payday lending.[31] Appendix Table 4 reports the results for the different enlisted terms (down rows) and AFQT measures (across columns). Each cell reports the result on the variable that equals one if the state law permitted payday lending in that location-fiscal year. Because assignments are made based on manpower needs, we control for a full set of occupation*fiscal year*term fixed effects in all specifications as well as for base fixed effects.

The results show little evidence of any economically significant correlation between personnel AFQT scores and payday lending access laws. Across all terms (i.e., all airmen) only one of the seven correlations between an AFQT measure and the law variable is statistically significant, and this one implies only a 1 percent increase in the probability of being in the 31st-49th percentile of AFQT scores. We do find some statistically significant results for first- and second-term airmen, but none of these coefficients imply more than a 2 percent change in the outcome variable. Notably, the correlation between the law variable and the AFQT group mean (column 1) flips signs across first and second terms and is small in both cases: the coefficients each imply a less than one-half percent difference in AFQT scores across payday access regimes.

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[30] Lleras-Muney notes anecdotal evidence that higher-ranking, more experienced personnel may have a bit of influence over where they are assigned (Segal 1986; Croan, LeVine and Blankinship 1992). This provides additional motivation for estimating our specifications separately by term of enlistment; see Section V for more details.

[31] As we discuss in Section V, our data are grouped at the occupation by location by year by term level. We lack the demographic information used for exogeneity tests in previous studies.

V. Job Performance Measures

We use four different measures of job performance and retention as dependent variables. Table 2a contains summary statistics. Below we detail each of the four measures and then summarize how they might be affected by access to payday loans.

A. Background: Organization and Evaluation of Air Force Personnel

Enlisted personnel in the Air Force (a.k.a. "airmen") enlist under contracts for four- to six-year terms. After completing two enlistment terms an airmen becomes "career term." With few exceptions, airmen must enlist in the Air Force prior to age 27, but a vast majority (approximately 80 percent in 2006) enlists between the ages of 18 and 21. Those who serve multiple terms nearly always do so without interruption; consequently, term of enlistment is highly correlated with age, experience, and rank. For example, in 2000, 90 percent of first-term airmen were below the rank of E-5 and 80 percent were below the age of 25.

All airmen complete a six-and-a-half-week basic military training (BMT) at Lackland Air Force Base in San Antonio, Texas. After completing BMT they attend a technical training course that lasts between four and 52 weeks, depending on occupational specialty. Then airmen are assigned to their permanent duty location. For the domestic assignments observed in our data, airmen typically remain at their first duty assignment for the remainder of their initial enlistment. Subsequent assignments generally occur every two to four years and are not necessarily concurrent with reenlistment.

Supervisors continuously evaluate each airman's job performance. At a minimum, each airman receives an annual enlisted performance report (EPR). We do not have access to these reports but observe a summary measure of performance (reenlistment eligibility), and two measures of extremely bad performance/behavior: the presence of an unfavorable information file and forced enrollment in the weight management program.

B. Reenlistment Ineligibility

Reenlistment eligibility depends on satisfactory job performance and readiness. Airmen are automatically ineligible to reenlist if they engage in specific types of bad behavior, including if they are: 1) Five or more days absent without leave (AWOL); 2) Serving suspended punishment pursuant to Article 15, Uniform Code of Military Justice (UCMJ); 3) Serving on the Control

Roster (probation);[32] 4) Convicted by civil authorities, or 5) in the weight management program (Air Force 2001). Beyond these minimum eligibility criteria, unit commanders are also instructed "to ensure the Air Force retains only airmen who consistently demonstrate the capability and willingness to maintain high professional standards" (Air Force 2001). Therefore, three to 12 months before the end of each enlistment term the unit commander decides whether an airman is "selected" eligible to reenlist.[33] The selective reenlistment program (SRP) instructs commanders to consider: 1) enlisted performance report (EPR) ratings, 2) unfavorable information from any substantiated source, 3) the airman's willingness to comply with AF standards, and 4) the airman's ability to meet required training and duty performance levels. Reenlistment ineligibility affects the type of military discharge and hence outside options (e.g., veteran's benefits, civilian labor market).[34] Thus we use reenlistment ineligibility as an indicator of substandard overall job performance.

The available data on reenlistment ineligibility is *grouped* by five-digit occupation (Air Force Specialty Code),[35] location (i.e., the base), fiscal year, and term of enlistment (first, second, career).[36] These groupings are based more on reporting considerations than actual functional/operational groups. The data provide the total number of airmen in each group who ended their term in that fiscal year (average of 5.03 per group), the number who were eligible to reenlist (average of 3.67 per group, see below for more details), and the number who reenlisted (average of 1.92 per group). In total, our reenlistment data encompass 428 different occupations, across the 67 domestic Air Force bases in 35 different states, from fiscal years 1996 through 2001. This gives us 26,255 first-term, 23,061 second-term, and 40,106 career-term occupation-base-year groups.

Of the 376,000 individual-year observations that we disaggregate from these data, 28 percent of airmen were ineligible to reenlist at the end of their term. Ineligibility is u-shaped in term. First-term airmen are much more likely to be ineligible than second-term airmen (27 percent vs.

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[32] According to Air Force (2005b) Section 2.1, "The control roster is a rehabilitative tool for commanders to use. Commanders use the control roster to set up a 6-month observation period for individuals whose duty performance is substandard or who fail to meet or maintain Air Force standards of conduct, bearing, and integrity, on or off duty."

[33] The unit commander typically is the squadron commander at the location of assignment.

[34] See http://www.tpub.com/content/advancement/14325/css/14325_487.htm for information on different types of discharges and some (anecdotal) evidence on their implications for veterans' benefits and civilian labor market options.

[35] Five-digit is the finest level of disaggregation for AFSCs. Digits in the AFSC correspond to career category, career group, career field, skill level, and career field subdivision.

[36] Reenlistment eligibility and separation data are maintained by the Headquarters Air Force Personnel, Retention Status Reports (R-STATUS).

16 percent), most likely because the first term is used to weed out poor performers. But then career-term airmen have the highest ineligibility rates (34 percent) because of mandatory retirement at age 55 and up-or-out policies regarding promotions (Air Force 2001).[37]

C. Separation

Conditional on satisfactory job performance, reenlistment is a voluntary decision made by active enlisted members of the military at the end of their term.[38]

Separation (failure to reenlist) rates are critical because lateral entry is rare in the U.S. Armed Services. Accordingly, retention is the only way to ensure that qualified personnel are available to fill future leadership positions. As the Deputy Chief of Staff for Air Force Personnel stated: "It takes eight years to replace the experience lost when an 8 year noncommissioned officer (NCO) leaves the Air Force."[39] The Pentagon has taken several steps in recent years to prevent separation, including changes to the compensation system.[40]

However, it is important to note that in recent years the military in general, and the Air Force in particular, has been meeting or exceeding reenlistment targets. For our purposes this suggests that the Pentagon is indeed concerned with first-order effects of payday borrowing on job performance, rather than with second-order effects that cause some marginal airmen to separate. The Air Force has more than enough airmen to fill slots; it is concerned primarily with the quality of the airmen it retains.

Thus, for our purposes we are primarily interested in whether we find treatment effects of payday loan access on reenlistment ineligibility and separation that are significantly different from each other. For example, finding significant increases in separation but not ineligibility with payday loan access would be compelling evidence that payday loans increase outside options for airmen.

We measure separation from the same grouped data used to measure reenlistment ineligibility and find that 48 percent of airmen separate at the end of their term. Separation declines with term, from 62 percent at the end of the first term to 39 percent at the end of a career term. This pattern is due largely to the military retirement system that vests after twenty years of service.

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[37] For example, to be eligible for reenlistment after 10 years of active service an airman must have achieved the rank of E-6, technical sergeant, or higher.

[38] Airmen are occasionally "administratively" discharged mid-term, usually for medical reasons or extremely poor performance/behavior.

[39] Lt. Gen. Donald L. Peterson, quoted in Parr (2001, p.1).

[40] Economists have long pointed out that the military pay table does not adequately distinguish between occupational subgroups within the services (Rosen 1992; Asch 1993; Asch and Warner 2001). The Pentagon has implemented occupation-specific bonuses and special payments to combat this problem.

D. Unfavorable Information File (UIF)

An unfavorable information file (UIF) is an "official repository of substantiated derogatory data concerning an Air Force member's personal conduct and duty performance" (Gittins and Davies 1996). Mandatory entries in a UIF include records of: 1) Nonjudicial punishment suspensions greater than one month; 2) Civilian court convictions; and 3) Court martial convictions. Additionally, commanders have the discretion to place other documented misbehavior in a UIF, including letters of reprimand, confirmed incidents of sexual harassment, less severe civilian court convictions and non-judicial punishment, and financial irresponsibility (Department of Defense 1984). Thus an airmen with a UIF has been sanctioned for severe misbehavior and is presumed to have unusually poor job performance and/or readiness (Gittins and Davies 1996; Air Force 2005b).

We are not aware of any evidence that payday *borrowing* itself produces UIFs. It is unlikely that a commanding officer would even be aware of an airman's borrowing unless it produced some sort of distress (e.g., declines in performance, requests for financial advice or help, or loan delinquencies).[41] Appendix Table 2, Columns 4 and 5 show that our results do not change if we drop state-year cells in which industry best practices or state laws prohibited collection calls to commanding officers.

Thus we interpret a UIF as an indicator of some combination of severe misbehavior and financial distress.

We measure UIF status from records grouped by three-digit occupation, base, fiscal year, and term of enlistment for fiscal years 1996 through 2007.[42] The data specify the total number of airmen in the group and the number with a UIF. We have data for different 141 occupations and 141,434 occupation-base-year-term cells.

Of the 2.4 million individual-year observations we disaggregate from these data, 3.6 percent have a UIF. UIFs decrease in term, with first-term airmen at 6.1 percent and career-term at 1.6 percent.

E. Weight Management Program (WMP)

Air Force policy states that being physically fit is necessary for both military readiness and a

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[41] Morgan and Strain (2008) find that access to payday loans *reduces* dunning, presumably by providing borrowers with liquidity that they use to keep other debts current.

[42] Data obtained from the Headquarters Air Force Personnel, Interactive Demographic Analysis System (IDEAS) and unavailable for FY 2003.

professional military image (Air Force 1994). Airmen who fail to meet weight standards are ineligible to reenlist unless they take successful corrective action (Air Force 2001). Until 2004 airmen with weight problems were placed in the weight management program (WMP).[43] Thus we use participation in the WMP as an indicator of poor readiness.

We measure WMP status from records grouped by three-digit occupation, base, fiscal year, and term of enlistment for fiscal years 1996 through 2004.[44] The data specify total number of airmen in the group and the number participating in the WMP. We have data on 139 occupations and 103,776 occupation-base-year-term cells.

Of the 1.8 million individual-year observations we disaggregate from this data, 2.2 percent are in the WMP. Second-term airmen are most likely (3.3 percent) and first-term least likely (1.8 percent).

F. Payday Borrowing, Performance, and Retention

As noted at the outset, the Pentagon asserts that payday borrowing impairs readiness and job performance by distracting airmen from their duties. There are at least two potential channels for such distractions. The one cited by the Pentagon is that payday borrowing causes financial distress and related distractions. Another possibility is that payday loan access increases the opportunity set for some households, e.g., by permitting liquidity constrained households to invest in side ventures, a spouse's job, etc. A larger opportunity set makes separation from the military a more viable option and might induce optimal shirking: a lower level of effort and job performance that is privately optimal for the airman.

VI. Data and Methodology

We estimate the causal effect of payday lending access on personnel outcomes by disaggregating the grouped data and estimating the following model using ordinary least squares (OLS):[45]

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[43] The WMP included exercise and monitoring of physical condition. Entry into the WMP was based on body-fat standards by age and gender: 20 percent for men 29 years old and younger; 24 percent for men 30 years old and older; 28 percent for women 29 years old and younger; and 32 percent for women 30 years old and older. Individuals were measured for body fat percentage if they exceeded the prescribed weight for their height and gender; e.g., a six-foot tall male would be measured for body fat if his weight exceeded 200 pounds. The WMP was discontinued after 2004 and replaced with a fitness test that includes a 1.5-mile run, sit-ups, push-ups, and a waist measurement. Individuals who fail the fitness test are placed on a mandatory exercise program. Data were not available on fitness scores or the new program.

[44] WMP data obtained from the Headquarters Air Force Personnel, Interactive Demographic Analysis System (IDEAS) and unavailable for FY 2003.

[45] Because our data are aggregated to occupation-location-year cells, as a robustness check we also estimate the model using weighted least squares with the grouped logistic transformation of the dependent variable suggested by Cox (1970). Specifically, the dependent variable is computed as follows: log (p + 1/2n) - log

[1] $\Pr(Outcome_{ijbte}) = \beta_0 + \beta_1 Payday_{st} + X_{jbt}\beta_2 + \gamma_b + \phi_{jte} + \varepsilon_s$

where the probability of the personnel outcome (*Outcome*) of individual *i*, in occupation *j*, on base *b*, in fiscal year *t* and enlisted term *e*, is a function of whether payday lending is permitted (*Payday=1*) in the base's state *s* in year *t*. The vector *X* includes group characteristics (AFQT scores and mean wage income)[46] and time-varying location characteristics (fair market rent in the MSA or county, unemployment rate in the county, lagged number of military personnel in the state).[47] These control variables are summarized in Table 2b. γ is a base fixed effect that controls for any time-invariant level differences across bases that might be correlated with payday lending laws. Since airmen are assigned conditional on the manpower needs of the Air Force in a given year, we also condition on ϕ_{jte}, the full set of occupation-year-term fixed effects. We cluster our standard errors at the state level to correct for potential serial error correlation at our level of variation in payday loan access: within states across years (Bertrand, Duflo and Mullainathan 2004).

Thus, we use within-state variation in payday lending laws to estimate the causal effects of state laws permitting (or prohibiting) payday lending. As discussed in Section III it appears that (changes in) state laws do have very large effects (of perhaps 100 percent) on the penetration and hence availability of payday loan outlets. And as discussed in Section IV the exogenous variation in airman location (conditional on occupation*year*term) makes it unlikely that the error term contains omitted trends in the outcome that are correlated with changes in payday lending law.

Our estimates of the law effects—and hence the effects of payday loan access—are reduced-form because we lack any data on borrowing, and we lack comprehensive data on lending locations. Hence knowing the prevalence of payday borrowing is key to interpreting the results. As discussed in Section II it seems likely that 15-25 percent of military households used payday loans annually throughout most of our sample. But it is possible that prevalence was lower during the first few years of our sample, and we explore the implications of this in Section VII-A.

(1 - p + 1/2n), where p represents the proportion of individuals in the occupation-base-year cell who stay in the Air Force and n is the cell size. Results are qualitatively similar using this estimator.

[46] We include the group's mean AFQT and the proportion below the 31st percentile (an Air Force cutoff). Although exact income is not known for each individual, the military pay system makes imputation straightforward because income varies formulaically by rank, years of service, location, and in some cases occupation; see Carrell (2007) for details.

[47] We use fair market rent for two-bedroom apartments (for the base's MSA or county) as published annually by the U.S. Department of Housing and Urban Development, and the county-level calendar year average annual unemployment rate obtained from the Bureau of Labor Statistics (BLS).

Pentagon priors that young, inexperienced, relatively poor, and financially unsophisticated airman are particularly likely to exhibit negative effects from payday borrowing motivate estimating [1] on particular sub-samples as well as on the entire population of enlisted airmen. Below we report results by term of enlistment (which is highly correlated with age, experience, and income) and occupation subgroups (that may be correlated with financial sophistication and risk exposure).

VII. Results

A. Average Effects of Acces, and Effects by Term of Enlistment

The first row of Table 3 presents our full sample results for each of the four personnel outcomes. Each cell of the table presents an OLS estimate on the variable for whether state law permits payday lending (i.e., $Payday_{st} = 1$) from equation (1).[48]

Column 1 shows that reenlistment ineligibility (our measure of overall substandard job performance) increases by 1.1 percentage points with payday loan access (p=0.032). This is a 3.9 percent increase on the full sample mean of 0.28 reported in Table 2a. Column 2 shows that we find a comparable percentage point increase in separation (failure to reenlist). This pattern holds throughout Tables 3-6: the results suggest that any separation increases are driven by reenlistment ineligibility (and hence not by voluntary separation). But we do not have the power to distinguish small differences in treatment effects across the two outcomes. Column 5 shows that the point estimate on separation falls sharply, and becomes insignificant, if we condition on eligibility. This again is consistent with a payday loan access effect that works only through job performance and not through voluntary separation.

Column 3 shows that the likelihood of an unfavorable information file (UIF) increases by 0.19 percentage point with payday loan access (p=0.043). This is a 5.3 percent increase on the full sample mean. As discussed above we interpret UIFs as capturing some combination of financial distress and severe misbehavior.

Appendix Table 2, Columns 4 and 5 suggest that the full sample effect on UIF is due at least in part to declines in job performance. Column 4 drops all cells from fiscal years 2005-2007 because, beginning in January 2005, one of the two major payday lending trade associations (FISCA) prohibited its members from making collection calls to commanding officers. Column 5 drops cells from five states that forbid collection calls and moreover prohibited lending from outlets deemed off-limits to servicemen by commanding officers. In both cases we find that the

[48] Appendix Table 5 shows results from different control variable specifications.

point estimate on the effect of payday loan access actually *increases* slightly, contrary to what one would expect if the UIF effect was driven by purely by financial distress and dunning.

Returning to Table 3, Column 4 shows an insignificant effect on weight management program status. The point estimate implies a 0.13 percentage point (5.9 percent) increase in airmen with weight problems.

Appendix Table 2 explores whether these effects have varied over time. Column 2 restricts the unfavorable information and weight management sample to the 1996-2001 fiscal years, to see if we find markedly different effects pre-9/11 (recall that our reenlistment data end in 2001 and hence are unaffected by this restriction). The point estimates are largely unchanged. Column 3 drops the first three years of our sample to explore whether lower borrowing prevalence in these years drives down our estimated effects (which are intention-to-treat effects). The point estimates suggest a different story: they fall instead of rise when the earlier years are dropped.

B. Heterogeneity: Access Effects by Term of Enlistment (Proxy for Age and Experience)

Table 3 also presents results for sub-samples based on term of enlistment. Recall that each cell of the table presents an OLS estimate on the variable for whether state law permits payday lending (i.e., $Payday_{st} = 1$) from equation (1).

The full sample results seem to be driven by the youngest and least experienced (i.e., the first-term) airmen. Their likelihood of reenlistment ineligibility increases by 1.9 percentage points (7.0 percent) with payday loan access, with a p-value of 0.08. And their likelihood of an unfavorable information file increases by 0.34 percentage point (5.6 percent), again with a p-value of 0.08.

We find little evidence of significant effects in second- or career-terms. But these are not precise zeros, given the power limitations of using state-level variation. The confidence intervals contain substantial effects on both sides of zero in most cases.

C. Heterogeneity: Access Effects by Additional Proxies for Financial Sophistication

There are many reasons why the declines in job performance and readiness documented in Table 3 might be concentrated among first-term airmen. Among the most likely reasons are relatively high borrowing prevalence (which we do not observe directly) and lack of financial experience and hence financial sophistication. Table 4 explores the role of financial sophistication further by splitting the sample based on occupation characteristics. Again each cell of the table presents an OLS estimate on the variable for whether state law permits payday lending (i.e., $Payday_{st} = 1$) from equation (1).

Table 4, Panel A splits the full sample into finance and acquisition (procurement) vs. other occupations. The latter constitute the bulk of the sample, and unsurprisingly, their results track the full sample closely. So our discussion focuses on the finance and acquisition sub-sample. Airmen in these occupations presumably have greater financial acumen and/or experience and hence greater financial sophistication. Columns 1 and 2 show that these airmen do not exhibit significant increases in reenlistment ineligibility or separation with payday loan access; in fact the coefficients flip signs (suggesting that eligibility and retention increase with access), although the standard errors are far too large to conclude anything definitively. In contrast, the unfavorable information point estimate in Column 3 suggests an even larger increase for these financially sophisticated airmen than in the full sample (here of 0.35 percentage point, or 15 percent), although the p-value is only 0.154 given the small sub-sample.

Table 4, Panel B splits the full sample into above- and below-median AFQT score occupations. This split is likely a cruder proxy for financial sophistication, since the correlation between cognitive ability and financial sophistication may be weak (we are not aware of any direct evidence on this correlation), and there may be other sources of heterogeneity across occupations that is correlated with AFQT and drives the effects of payday loan access on our outcomes. We find similar effects across the high- and low-AFQT sub-samples except on weight management, where we find a large and significant increase only in the above-median AFQT sample.

D. Heterogeneity: Optimal Effort Reductions? Effects for Airmen with Different Risk Exposure

There is anecdotal evidence that airmen intentionally take on high debt loads to avoid hazardous duty. This suggests the hypothesis that the performance and readiness declines documented thus far might be the result of strategic, privately optimal responses by airmen to payday loan access.

Table 5 casts doubt on this hypothesis. Again, each cell of the table presents an OLS estimate on the variable for whether state law permits payday lending (i.e., $Payday_{st} = 1$) from equation (1). Panel A presents results for airmen in occupations with higher (vs. lower) risk of combat deployment. The results are similar across the sub-samples and in the pre-9/11 period (columns 5 and 6). Panel B present results for airmen in occupations where security clearance is critical for deployment (military intelligence) vs. other occupations. We find no evidence of significant effects in the high-clearance occupations; the results are driven by other occupations.

E. Heterogeneity: Optimal Effort Reductions? Access Effects by a Proxy for Outside Options

Table 6 provides another indirect test of the hypothesis that performance and readiness declines are due to effort reductions that are privately optimal for airmen. If this were the case, we might expect larger declines with payday loan access in areas where there is low civilian unemployment and hence greater outside options for servicemen and/or their spouses. In presenting the results we deviate from the format used in Tables 3-5 in two ways: 1) we show results on the $Payday_{st}$*$High\ Unemployment_{bt}$ variable, instead of splitting the sample by unemployment rates, because here we are interested primarily in whether treatment effects *differ* significantly as outside options vary; 2) we present results on other RHS variables (the payday access and unemployment level main effects) besides the treatment effect of interest.

The results do not support the hypothesis that performance and readiness declines will be greater in low unemployment (high outside option) areas that allow payday lending. Panel A shows results for the full sample and finds no significant difference in the effect on Unfavorable Information. The significant difference on reenlistment ineligibility runs counter to the hypothesis: we find that the payday loan access causes greater increases in *high* unemployment (low outside option) areas. Panels B-D show results for the term sub-samples and suggest that the results are again driven by first term airmen.

F. From Access Effects to Effects on Borrowers: Implied Treatment-on-the-Treated Effects

Thus far we have focused on estimating the effects of payday loan access; i.e., we estimate the effects of payday loan availability on pooled samples of borrowers and non-borrowers. We do not have microdata on borrowing and hence cannot directly estimate effects on borrowers. A simple indirect way to estimate these treatment-on-the-treated effects is the Wald estimator: take our access estimates (i.e., our intention-to-treat effects) and divide by estimated borrowing prevalence (i.e., by treatment likelihood).[49] But the Wald estimator may be biased here for at least two reasons. One is negative spillovers, which seem plausible, especially in the military setting. If a borrower's performance decline adversely affects the performance of someone else (e.g., a squadron-mate), then the Wald estimator will overstate treatment-on-the-treated effects. A second reason is that the relevant horizon for measuring a treatment "dose" is unknown. Borrowing

[49] Large treatment-on-the-treated effects on individuals are common in the existing literature; see, e.g., Melzer (2007) for large negative effects and Karlan and Zinman (2008) for large positive effects.

treatment effects may last longer or shorter than one year. Both of these reasons speak to the importance of gathering data on the borrowing behavior of servicemen for future research.

VIII. Conclusion

We estimate the effects of payday loan access on military readiness and performance using Air Force personnel data, within-state variation in state lending laws, and exogenous variation in the assignment of personnel to bases in different states.

Overall the results provide ammunition for the Pentagon's concern that payday borrowing has adverse effects on military readiness. We find that payday loan access produces a significant decline in overall job performance (as measured by a 3.9 percent increase in reenlistment ineligibility), and a concomitant decline in retention. We also find that a measure of severely poor readiness (the presence of an unfavorable information file) increases by 5.3 percent.

The social welfare implications of our results are less clear-cut but suggest that the performance and readiness declines from payday loan access are welfare-reducing. Most of the negative effects of payday loan access on UIFs and reenlistment ineligibility seem to be driven by young, inexperienced, and financially unsophisticated airmen. The UIF effect likely stems from increases in outcomes that are truly bad for airmen as well as for the military as a whole: financial mismanagement (distress) and/or severe misbehavior. These outcomes may produce negative externalities as well.

The alternative hypothesis that the performance and readiness declines are the result of optimal effort reductions, from airmen enjoying expanded opportunity sets as the result of credit access, receives no support in the data. We find no evidence that effects on separation are due to anything other than reenlistment ineligibility (as opposed to voluntary separation). We find no evidence that the payday loan access effects are driven by airmen in relatively hazardous or high security-clearance occupations. Performance declines are significantly greater in *high* unemployment (i.e., presumably low outside option) areas that allow payday lending.

Questions about the external validity of our findings are important along several dimensions. One is whether our treatment effects capture the most relevant policy margin at this juncture. The new federal cap on loans to military households (36 percent APR) may have different effects than

the state laws we use.[50] But state-level regulation continues to be a relevant margin, as evidenced by recent binding restrictions enacted in Ohio, Oregon, and Virginia.[51]

A related issue is external validity to other populations. We are not aware of any reason for concern that our results do not apply to other branches of the military.

Whether our results apply to civilians is very much an open question. Given the concentration of payday loan outlets outside military bases, servicemen may have greater payday loan access (or at least less travel time) than civilians; this could intensify negative treatment effects if self-control problems loom large. On the other hand, servicemen tend to face greater scrutiny of their financial affairs (from superiors) than civilians, and in recent years the military has implemented mandatory financial education and other treatments that are specifically designed to promote financial soundness and discourage expensive borrowing (Department of Defense 2004; 2006). Other differences between servicemen and civilians—in preferences, risks, or endowments—could cut either way. Any differences in outside borrowing options would be particularly critical because even "behavioral" borrowers may be better off borrowing at 400 percent APR if they have less-regulated outside options that are even worse (e.g., loan sharks).

In any case, more work will be needed to identify the causal effects and welfare implications of access to expensive credit. In particular our results highlight the value of treatments that vary at the individual level, and thereby increase power, and the value of richer data. Baseline data would help identify the role of outside borrowing options and any behavioral biases. Borrowing data would help identify treatment duration and spillovers. Richer outcome data would help pin down mechanisms and welfare implications.

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[50] The federal law has applies broadly to all loan products and may also have differential enforcement (time will tell whether it is enforced more or less effectively than state laws).

[51] For details see http://www.ncsl.org/programs/banking/PaydayLend_2008.htm and http://www.ncsl.org/programs/banking/PaydayLend_2007.htm .

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Table 1. Summary Description of State Laws Prohibiting or Permitting Payday Lending

	Reenlistment sample	Weight Management Program sample	Unfavorable Information File sample
	(1)	(2)	(3)
time period	October 1995-September 2001	October 1995-September 2004*	October 1995-September 2007*
# of states	35	35	35
# of law changes	13	18	25
# changes from prohibit to permit	10	14	16
# changes from permit to prohibit	3	4	9
# of states with a law change	12	14	17
# of states with multiple law changes	1	4	7
# of state-fiscal year cells	210	280	385
proportion of state-fiscal year cells with payday lending permitted	0.62	0.63	0.69

Beginning in 2005 five states passed laws prohibiting lending to military personnel if a commanding officer declared the payday lending premises off-limits; we code these cells as prohibited and report results after dropping these cells in Appendix Table 4 Column (5).

Alabama and Arkansas are unusual due to litigation resulting in court decisions affecting the interpretation and enforcement of laws. We classify several state-year cells for Alabama and Arkansas based on the interaction of laws and court decisions interpreting those laws. We report results after dropping these cells in Appendix Table 4, Column (6).

* No Weight Management Program or Unfavorable Information File data available for October 2002-September 2003.

Primary sources for law classification: state statutes, superseded statutes, and session laws.

Secondary sources consulted for law classification:

National Conference of State Legislatures: summary of current state laws as of 3/14/08, at http://www.ncsl.org/programs/banking/paydaylend-intro.htm; annual summaries of "Enacted Payday Lending Legislation" for 2000-2007 also online.

Consumer Federation of America: "The High Cost of 'Banking' at the Corner Check Casher..." (1997), "The Growth of Legal Loan Sharking" (1998), "Safe Harbor for Usury" (1999), "Show me the Money…." (2000, joint with the State Public Interest Research Groups), "Rent-a-Bank Payday Lending…" (2001, joint with the U.S. Public Interest Research Group).

National Consumer Law Center: 2005 Summary of State Payday Loan Acts (2005).

Consumer Financial Services Association, internal report (2006).

Table 2a. Outcome Variable Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
1= Separation	390,621	0.476	0.50	0	1
First-Term	132,234	0.619	0.49	0	1
Second-Term	74,018	0.426	0.49	0	1
Career-Term	184,369	0.394	0.49	0	1
Finance/Acquisition Occupations	7,422	0.423	0.49	0	1
Military Intelligence Occupations	12,859	0.496	0.50	0	1
Bottom 50th percentile AFQT Occupations	160,720	0.473	0.50	0	1
Top 50th percentile AFQT Occupations	72,307	0.502	0.50	0	1
Higher Risk Occupations	170,901	0.475	0.50	0	1
Lower Risk Occupations	219,720	0.477	0.50	0	1
High Unemployment Locations	116,201	0.469	0.50	0	1
Low Unemployment Locations	274,420	0.479	0.50	0	1
1=Reenlistment Ineligibility	390,617	0.282	0.45	0	1
First-Term	132,234	0.270	0.44	0	1
Second-Term	74,018	0.160	0.37	0	1
Career-Term	184,365	0.340	0.47	0	1
Finance/Acquisition Occupations	7,422	0.269	0.44	0	1
Military Intelligence Occupations	12,859	0.277	0.45	0	1
Bottom 50th percentile AFQT Occupations	160,720	0.285	0.45	0	1
Top 50th percentile AFQT Occupations	72,307	0.276	0.45	0	1
Higher Risk Occupations	170,897	0.282	0.45	0	1
Lower Risk Occupations	219,720	0.282	0.45	0	1
High Unemployment Locations	116,201	0.278	0.45	0	1
Low Unemployment Locations	274,416	0.284	0.45	0	1
1=Unfavorable Information File	2,437,616	0.036	0.19	0	1
First-Term	923,186	0.061	0.24	0	1
Second-Term	415,464	0.035	0.18	0	1
Career-Term	1,098,966	0.016	0.13	0	1
Finance/Acquisition Occupations	41,450	0.023	0.15	0	1
Military Intelligence Occupations	85,049	0.025	0.16	0	1
Bottom 50th percentile AFQT Occupations	992,351	0.043	0.20	0	1
Top 50th percentile AFQT Occupations	421,816	0.026	0.16	0	1
Higher Risk Occupations	982,674	0.037	0.19	0	1
Lower Risk Occupations	1,454,942	0.035	0.18	0	1
High Unemployment Locations	887,136	0.034	0.18	0	1
Low Unemployment Locations	1,550,480	0.038	0.19	0	1
1=Weight Management Program	1,802,573	0.022	0.15	0	1
First-Term	650,823	0.018	0.13	0	1
Second-Term	295,263	0.033	0.18	0	1
Career-Term	856,487	0.021	0.14	0	1
Finance/Acquisition Occupations	31,900	0.023	0.15	0	1
Military Intelligence Occupations	56,468	0.023	0.15	0	1
Bottom 50th percentile AFQT Occupations	737,964	0.022	0.15	0	1
Top 50th percentile AFQT Occupations	317,592	0.024	0.15	0	1
Higher Risk Occupations	714,397	0.020	0.14	0	1
Lower Risk Occupations	1,088,176	0.023	0.15	0	1
High Unemployment Locations	678,470	0.020	0.14	0	1
Low Unemployment Locations	1,124,103	0.023	0.15	0	1

Observations are individual-year, disaggregated from grouped data. Finance/Acquisition Occupations are those in the "6F" Air Force Specialty Code's (AFSC). Military Intelligence Occupations are those in the "1N" AFSC's. Higher Risk Occupations are Aircrew Operations, Command & Control, Intelligence, Aircrew Protection, Aerospace Maintenance, Communications & Electronics, Fuels, and Munitions & Weapons. High unemployment location has greater than county mean rate among our base-year cells 1996-2007.

Table 2b. Control Variable Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Wage Income (monthly)	2,437,616	3,048.72	713.96	1,907.10	5,995.38
First-Term	923,186	2,585.92	466.12	1,907.10	4,348.38
Second-Term	415,464	2,988.34	597.80	2,194.80	4,969.78
Career-Term	1,098,966	3,460.32	679.93	2,603.40	5,995.38
AFQT: Group Mean	2,412,074	63.71	9.12	15.00	96.50
First-Term	923,115	65.38	9.54	15.00	96.50
Second-Term	414,911	64.58	9.58	15.00	96.50
Career-Term	1,074,048	61.95	8.21	15.00	96.50
AFQT: Percent of Group Below 31st percentile	2,412,074	0.020	0.04	0	1
Fair Market Rent (county)	2,437,616	603.87	170.33	353.00	1,419.00
Unemployment Rate (county)	2,437,616	4.79	1.60	2.08	14.40
Number of Military Personnel (state twice lagged)	2,437,616	45,759.38	41,404.33	2,243.00	151,945.00
Non-housing 2000 price level (MSA/county-level)	2,337,176	1.09	0.06	1.01	1.28
Percent Black (county)	2,437,616	0.16	0.16	0.01	0.60
Percent Hispanic (county)	2,437,616	0.13	0.14	0.01	0.76
Percent Asian (county)	2,437,616	0.03	0.06	0.00	0.46
Percent of the population in rental occupied housing (county)	2,437,616	0.34	0.06	0.16	0.54
Population (county)	2,437,616	462,726	689,507	24,253	9,519,338
Per Capita Income (county)	2,437,616	19,742	3,306	12,096	31,199
Percent of the population in the same house 1995-2000 (county)	2,437,616	0.45	0.05	0.29	0.56
Percent of the population in the Armed Forces (county)	2,437,616	0.003	0.00	0	0.02

Observations are individual-year, disaggregated from grouped data. Finance/Acquisition Occupations are those in the "6F" Air Force Specialty Code's (AFSC). Military Intelligence Occupations are those in the "1N" AFSC's. Higher Risk Occupations are Aircrew Operations, Command & Control, Intelligence, Aircrew Protection, Aerospace Maintenance, Communications & Electronics, Fuels, and Munitions & Weapons. High unemployment location has greater than county mean rate among our base-year cells 1996-2007.

Table 3. Effects of Payday Loan Access for Full Sample, and by Proxy for Age and Experience

Outcome Measure:	1=Reenlistment Ineligibility	1=Separation	1=Unfavorable Information File^	1=Weight Management Program^	1=Separation (eligibles only)
Sample	(1)	(2)	(3)	(4)	(5)
All Terms	0.0111**	0.0095*	0.0019**	0.0013	0.0022
	(0.0050)	(0.0052)	(0.0009)	(0.0012)	(0.0043)
observations	376,236	376,240	2,412,050	1,785,131	270,152
First-Term	0.0189*	0.0115	0.0034*	0.0023	0.0004
	(0.0104)	(0.0087)	(0.0018)	(0.0018)	(0.0070)
observations	128,234	128,234	923,091	650,810	93,443
Second-Term	0.0079	0.0067	0.0010	-0.0014	0.0029
	(0.0075)	(0.0105)	(0.0011)	(0.0018)	(0.0086)
observations	70,680	70,680	414,911	294,981	59,288
Career-Term	0.0049	0.0068*	0.0005	0.0011	0.0028
	(0.0036)	(0.0035)	(0.0005)	(0.0008)	(0.0035)
observations	177,322	177,326	1,074,048	839,340	117,421
Base fixed effects?	Yes	Yes	Yes	Yes	Yes
Occupation*year*term fixed effects?	Yes	Yes	Yes	Yes	Yes
Personnel-specific controls?	Yes	Yes	Yes	Yes	Yes
Location-specific controls?	Yes	Yes	Yes	Yes	Yes
Fiscal Years	1996-2001	1996-2001	1996-2007^	1996-2004^	1996-2001

Each cell presents an OLS estimate of the variable for whether state law permits payday lending, following equation 1 in the text.

Standard errors are clustered at the state level.

Observations are individual-year, disaggregated from grouped data.
^ Data missing for 2003 fiscal year (October 2002-September 2003).

Personnel-specific controls include wage income and AFQT scores.
Location-specific controls include annual fair market rent, annual unemployment rate, and the twice lagged number of military personnel in the state.

Table 4. Effects of Payday Loan Access by Proxies for Financial Sophistication and Ability

Outcome Measure:	1=Reenlistment Ineligibility	1=Separation	1=Unfavorable Information File^	1=Weight Management Program^
Panel A. Finance/Acquisition vs. Other Occupations	(1)	(2)	(3)	(4)
Finance/Acquisition Occupations	-0.0224	-0.0192	0.0035	0.0026
	(0.0206)	(0.0190)	(0.0024)	(0.0030)
observations	7,224	7,224	41,450	31,900
Non-Finance/Acquisition Occupations	0.0116**	0.0099	0.0019**	0.0012
	(0.0052)	(0.0054)	(0.0009)	(0.0012)
observations	369,012	369,016	2,370,624	1,753,277
Panel B. High vs. Low AFQT Occupations				
Bottom 50 Percentile Occupations	0.0094*	0.0076	0.0018**	0.0004
	(0.0053)	(0.0058)	(0.0009)	(0.0014)
observations	265,469	265,473	1,665,373	1,228,886
Top 50 Percentile Occupations	0.0160*	0.0120**	0.0020	0.0031***
	(0.0082)	(0.0055)	(0.0013)	(0.0010)
observations	121,786	121,786	746,723	556,291

Each cell presents an OLS estimate of the variable for whether state law permits payday lending, following equation 1 in the text.
Standard errors are clustered at the state level.
Observations are individual-year, disaggregated from grouped data.
^ Data missing for 2003 fiscal year (October 2002-September 2003).
All specifications include the same controls as in Table 3: personnel and location-specific controls, occupation*year*term fixed effects, and base fixed effects.

Table 5. Effects of Payday Loan Access by Hazardous Duty Risk

Outcome Measure:	1=Reenlistment Ineligibility	1=Separation	1=Unfavorable Information File	1=Weight Management Program	1=Unfavorable Information File^	1=Weight Management Program^
fiscal years	1996-2001	1996-2001	1996-2007	1996-2004	1996-2001	1996-2001
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A. Combat Deployment Risk						
Higher Risk Occupations	0.0095	0.0067	0.0020	0.0017	0.0029	0.0014
	(0.0086)	(0.0076)	(0.0014)	(0.0015)	(0.0021)	(0.0015)
observations	166,085	166,089	982,670	714,397	533,149	533,118
Lower Risk Occupations	0.0117***	0.0108*	0.0017**	0.0011	0.0013	0.0019
	(0.0039)	(0.0056)	(0.0008)	(0.0011)	(0.0012)	(0.0015)
observations	210,151	210,151	1,429,404	1,070,780	811,459	811,449
Panel B. Security Clearance Critical for Deployment						
Military Intelligence Occupations	-0.0072	-0.0123	0.0014	0.0048	0.0028	0.0031
(more critical)	(0.0218)	(0.0252)	(0.0019)	(0.0037)	(0.0032)	(0.0060)
observations	9,818	9,818	85,048	56,468	43,093	43,101
Non-Military Intelligence Occupations	0.0115**	0.0098*	0.0019**	0.0011	0.0018	0.0015
(less critical)	(0.0049)	(0.0052)	(0.0009)	(0.0012)	(0.0013)	(0.0013)
observations	366,418	366,422	2,327,026	1,728,709	1,301,515	1,301,466

Each cell presents an OLS estimate of the variable for whether state law permits payday lending, following equation 1 in the text.
Standard errors are clustered at the state level.
Observations are individual-year, disaggregated from grouped data.
^ Data missing for 2003 fiscal year (October 2002-September 2003).
All specifications include the same controls as in Table 3: personnel and location-specific controls, occupation*year*term fixed effects, and base fixed effects.
Higher Risk Occupations include: Aircrew Operations, Command & Control, Intelligence, Aircrew Protection, Aerospace Maintenance, Communications & Electronics, Fuels, and Munitions & Weapons.

Table 6. Differential Effects of Payday Loan Access for High Unemployment Locations

Outcome Measure:	1=Reenlistment Ineligibility	1=Separation	1=Unfavorable Information File^	1=Weight Management Program^
Panel A. All Terms	(1)	(2)	(3)	(4)
Payday	0.0081	0.0080	0.0017	0.0015
	(0.0048)	(0.0051)	(0.0010)	(0.0013)
High Unemployment	-0.0067	-0.0064	0.0001	0.0012
	(0.0048)	(0.0060)	(0.0008)	(0.0012)
Payday * High Unemployment	0.0120**	0.0042	0.0007	-0.0007
	(0.0053)	(0.0067)	(0.0011)	(0.0015)
observations	376,236	376,240	2,412,074	1,785,177
Panel B. First Term				
Payday	0.0133	0.0073	0.0027	0.0028
	(0.0098)	(0.0084)	(0.0020)	(0.0017)
High Unemployment	-0.0018	-0.0195	-0.0002	0.0021*
	(0.0084)	(0.0144)	(0.0018)	(0.0011)
Payday * High Unemployment	0.0225**	0.0106	0.0025	-0.0015
	(0.0102)	(0.0156)	(0.0025)	(0.0016)
observations	128,234	128,234	923,115	650,810
Panel C. Second Term				
Payday	0.0058	0.0054	0.0009	-0.0026
	(0.0083)	(0.0116)	(0.0013)	(0.0019)
High Unemployment	-0.0010	-0.0026	-0.0008	-0.0022
	(0.0111)	(0.0097)	(0.0014)	(0.0024)
Payday * High Unemployment	0.0105	0.0054	0.0004	0.0035
	(0.0115)	(0.0105)	(0.0014)	(0.0026)
observations	70,680	70,680	414,911	294,981
Panel D. Third Term				
Payday	0.0041	0.0068*	0.0006	0.0017
	(0.0039)	(0.0034)	(0.0005)	(0.0011)
High Unemployment	0.0026	0.0022	0.00002	0.0017
	(0.0064)	(0.0065)	(0.0006)	(0.0012)
Payday * High Unemployment	0.0040	-0.0001	-0.0002	-0.0017
	(0.0073)	(0.0068)	(0.0005)	(0.0016)
observations	177,322	177,326	1,074,048	839,386

High versus low unemployment is based on the sample mean unemployment rate (4.867%) for base/year cells from 1996-2007.

Standard errors are clustered at the state level.

Observations are individual-year, disaggregated from grouped data.

^ Data missing for 2003 fiscal year (October 2002-September 2003).

All specifications include the same controls as in Table 3: personnel and location-specific controls, occupation*year*term fixed effects, and base fixed effects.

Appendix Table 1. Estimates of Payday Borrowing Prevalence in the Military

	2001	1999
Estimated total number of households borrowing that year	9000000*	6,000,000?
Estimated percent of borrowing households in military	3%**	3%?
Estimated number of military households borrowing	270,000	200,000?
Total number of military households***	1,400,000	1,100,000
Estimated proportion of military households borrowing	0.19	0.18

* Fox and Mierzwinski (2001).

** Tanik (2005), p.6.

*** All estimates include active-duty military only.

Total number of military households from U.S. Census and DoD Population Reports:
http://www.defenselink.mil/prhome/PopRep_FY06/download.html

Notes on 1999 estimates:

Total number of borrowing households is imputed based on number of lending outlets estimated in Stephens (2004): 8,000 in 1999 vs. 12,000 in 2001.

Percent of borrowing households in military is taken from 2001 because no earlier estimates exist.

Appendix Table 2: Results After Dropping State-Year Cells with Different Types of Law Variation

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1=Reenlistment Ineligibility	0.0111** (0.0050)	NA	0.0018 (0.0049)	NA	NA	0.0110** (0.0053)	0.0088* (0.0053)	0.0106* (0.0056)	NA
1=Separation	0.0095* (0.0052)	NA	0.0058 (0.0108)	NA	NA	0.0082 (0.0055)	0.0068 (0.0055)	0.0076 (0.0054)	NA
1=Unfavorable Information File	0.0019** (0.0009)	0.0019 (0.0013)	0.0017 (0.0011)	0.0023* (0.0012)	0.0022** (0.0011)	0.0023** (0.0009)	0.0018* (0.0010)	0.0011 (0.0008)	0.0019** (0.0009)
1=Weight Management Program	0.0013 (0.0012)	0.0016 (0.0012)	0.0003 (0.0020)	NA	NA	0.0015 (0.0012)	0.0014 (0.0013)	0.00004 (0.0009)	0.0012 (0.0012)
all terms in sample?	yes	yes	yes	yes	yes	yes	yes	yes	yes
Sample Restriction	None	1996-2001 only	drop 1996-1998	drop 2005-2007 (no collection calls)	drop states that allowed commanders to place lenders off-limits	drop court-related	drop binding min term	drop TX	drop database states

Each cell presents an OLS estimate of the variable for whether state law permits payday lending, following equation 1 in the text.
Standard errors clustered at the state level.
Observations are individual-year, disaggregated from grouped data.
All specifications include the same controls as in Table 3: personnel and location-specific controls, occupation*year*term fixed effects, and base fixed effects.
"NA" means no state-year cells affected in the sample for that outcome (fiscal years 1996-2001 for separation and reenlistment, fiscal years 1996-2004 for Weight Management Program).
Motivation for sample restrictions:

(1) reproduces Table 3 row 1 for reference.
(2) pre-9/11; same timeframe for UIF and WMP outcomes as for reenlistment and separation outcomes.
(3) drops earlier years because military borrowing prevalence might have been lower.
(4) drops years in which many lenders adopted best practices including not contacting commanding officers for help with debt collection
(5) drops cells from 5 states in fiscal years 2006 and 2007 that prohibited lending from outlets that military commanders designated off-limits and prohibited lenders from contacting commanding officers for help with collecting debt
(6) drops cells from Alabama and Arkansas where we classify based on the interaction of court actions and the laws themselves.
(7) drops cells from Oklahoma when law specified minimum loan term of 60 days.
(8) drops cells from Texas; first two fiscal years difficult to classify definitively, 2000 law permitted $14 per $100 (standard is $15), then military-specific prohibition (see Column 3) in fiscal years 2006 and 2007.
(9) drops cells from 3 states with loan databases that made restrictions on serial borrowing enforceable in later years.

Appendix Table 3. Payday Loan Legal Authorization Effects on Stores Per Million State Inhabitant

	LHS: stores per million inhabitants (mean = 103, median = 100)	
Right-hand-side variable(s)	(1)	(2)
1=law permitted >= 6 months prior	96.24	111.24
	(18.01)	(15.38)
1= restriction applies only if military designates off-limits		87.00
		(9.41)
r-squared	0.25	0.29
N	137	137

Annual stores data for year-end 2003-2006 from Stephens (2006, 2007); three state-year cells are missing counts because a later report noted that an earlier count was mis-estimated but did not revise that count.
Population data from Stephens (2004, 2005, 2006, 2007).
We only include states with Air Force bases.
OLS with standard errors clustered on state.
We do not include state fixed effects because there are only six law changes during this sample period, four of which might not have affected state-level store count because they did not apply statewide: they only authorized military command to place payday outlets off-limits.

Appendix Table 4. Exogeneity Test: Mean AFQT Percentile on Payday Loan Access

	AFQT score:	Group Mean	1= Below 31st Percentile	1= in 31st-49th Percentile	1= in 50-64th Percentile	1= in 65th-92nd Percentile	1= in 93rd-100th Percentile	Category	
Sample		(1)	(2)	(3)	(4)	(5)	(6)	(7)	Observations
All Terms		-0.0078	0.00002	0.0032***	-0.0018	-0.0017	0.0007	-0.0037	
		(0.0653)	(0.0005)	(0.0011)	(0.0014)	(0.0013)	(0.0007)	(0.0029)	2,437,084
	Sample Mean:	63.7140	0.0194	0.2244	0.2692	0.4236	0.0596	3.2806	
First-Term		0.1564*	-0.0002	0.0034**	-0.0054***	0.0001	0.0025	0.0019	
		(0.0923)	(0.0002)	(0.0014)	(0.0019)	(0.0017)	(0.0017)	(0.0040)	948,125
	Sample Mean:	65.3806	0.0037	0.2030	0.2799	0.4453	0.0627	3.3623	
Second-Term		-0.2113*	0.0003	0.0057**	0.0019	-0.0057*	-0.0009	-0.0142***	
		(0.1084)	(0.0003)	(0.0026)	(0.0026)	(0.0029)	(0.0009)	(0.0049)	414,911
	Sample Mean:	64.5764	0.0043	0.2056	0.2916	0.4415	0.0510	3.3313	
Career-Term		-0.0674	-0.0001	0.0022	-0.0009	-0.0016	-0.0002	-0.0041	
		(0.0952)	(0.0009)	(0.0014)	(0.0017)	(0.0017)	(0.0010)	(0.0047)	1,074,048
	Sample Mean:	61.9485	0.0391	0.2505	0.2511	0.3975	0.0601	3.1893	

Each cell presents an OLS estimate of the variable for whether state law permits payday lending, following equation 1 in the text.
Standard errors clustered at the state level.
All specifications include the same controls as in Table 3: personnel and location-specific controls, occupation*year*term fixed effects, and base fixed effects.
Individual-year observations from October 1995-September 2007 inclusive, except for October 2002-September 2003.
AFQT category values: 1 for 0-30th percentile, 2 for 31-49th percentile, 3 for 50-64, 4, for 65-92, 5 for 93-100.

Appendix Table 5. Effects of Payday Loan Access: Estimates from Different Specifications

Panel A: 1=Reenlistment Ineligibility	(1)	(2)	(3)	(4)	(5)	(6)	(7)	Observations
All Terms	0.0023	0.0044	-0.0018	0.0079	0.0116**	0.0092*	0.0111**	360,178-
	(0.0107)	(0.0106)	(0.0089)	(0.0055)	(0.0057)	(0.0050)	(0.0050)	390,617
First-Term	-0.0173	-0.0167	-0.0230	-0.0017	0.0157	0.0206*	0.0189*	121,982 -
	(0.0220)	(0.0216)	(0.0221)	(0.0108)	(0.0111)	(0.0108)	(0.0104)	132,234
Second-Term	-0.0024	0.0036	0.0005	-0.0023	-0.0040	0.0038	0.0079	67,641 -
	(0.0059)	(0.0047)	(0.0045)	(0.0038)	(0.0037)	(0.0078)	(0.0075)	74,018
Career-Term	0.0173	0.0195*	0.0132	0.0174**	0.0132**	0.0024	0.0049	170,555 -
	(0.0108)	(0.0113)	(0.0070)	(0.0070)	(0.0062)	(0.0037)	(0.0036)	184,365
Panel B: 1=Separation								
All Terms	0.0148	0.0129	0.0095	0.0147*	0.0132*	0.0071	0.0095*	360,182-
	(0.0107)	(0.0098)	(0.0083)	(0.0076)	(0.0070)	(0.0057)	(0.0052)	390,621
First-Term	0.0021	0.0021	-0.0007	0.0071	0.0102	0.0095	0.0115	121,982 -
	(0.0147)	(0.0135)	(0.0133)	(0.0099)	(0.0097)	(0.0096)	(0.0087)	132,234
Second-Term	0.0186	0.0210*	0.0160	0.0166*	0.0096	0.0017	0.0067	67,641 -
	(0.0128)	(0.0119)	(0.0106)	(0.0095)	(0.0081)	(0.0116)	(0.0105)	74,018
Career-Term	0.0180*	0.0172*	0.0144**	0.0180**	0.0147**	0.0047	0.0068*	170,559 -
	(0.0091)	(0.0088)	(0.0064)	(0.0067)	(0.0060)	(0.0034)	(0.0035)	184,369
Panel C: 1= Unfavorable Information File								
All Terms	0.0041**	0.0047***	0.0044**	0.0009	0.0004	0.0019**	0.0019**	2,312,528 -
	(0.0018)	(0.0016)	(0.0017)	(0.0009)	(0.0009)	(0.0009)	(0.0009)	2,437,616
First-Term	0.0092**	0.0091**	0.0090**	0.0019	0.0009	0.0032*	0.0034*	881,489 -
	(0.0044)	(0.0038)	(0.0039)	(0.0016)	(0.0015)	(0.0017)	(0.0018)	923,186
Second-Term	0.0003	0.0032**	0.0026*	0.0006	0.0006	0.0010	0.0010	396,308 -
	(0.0018)	(0.0015)	(0.0013)	(0.0012)	(0.0012)	(0.0012)	(0.0011)	415,464
Career-Term	-0.0002	0.0016**	0.0014*	0.0003	0.0003	0.0006	0.0005	1,034,731 -
	(0.0009)	(0.0008)	(0.0007)	(0.0007)	(0.0006)	(0.0005)	(0.0005)	1,098,966
Panel D: 1=Weight Management Program								
All Terms	-0.0019	0.0010	0.0009	0.00003	-0.0004	0.0011	0.0013	1,711,901-
	(0.0011)	(0.0011)	(0.0012)	(0.0009)	(0.0008)	(0.0012)	(0.0012)	1,802,573
First-Term	-0.0014	0.0024	0.0025	0.0018	0.0010	0.0023	0.0023	621,695 -
	(0.0016)	(0.0022)	(0.0022)	(0.0013)	(0.0013)	(0.0017)	(0.0018)	650,823
Second-Term	-0.0056**	-0.0009	-0.0011	-0.0017	-0.0017	-0.0019	-0.0014	281,792 -
	(0.0024)	(0.0016)	(0.0017)	(0.0015)	(0.0014)	(0.0020)	(0.0018)	295,263
Career-Term	-0.0009	0.0007	0.0002	-0.0006	-0.0006	0.0010	0.0011	808,414 -
	(0.0011)	(0.0009)	(0.0011)	(0.0008)	(0.0008)	(0.0009)	(0.0008)	856,487
Personnel-specific controls	No	No	Yes	Yes	Yes	Yes	Yes	
Location-specific controls	No	No	No	Yes	Yes	Yes	Yes	
Fixed effects	None	1	1	1	1, 2	1, 2, 3	1, 4	

Each cell presents an OLS estimate of the variable for whether state law permits payday lending, following equation 1 in the text.

Standard errors are clustered at the state level.

Observations are individual-year, disaggregated from grouped data.

Fixed effects: 1=Occupation by Year by Term, 2=Command (each Air Force base is under one of three mission Commands: Air Combat, Air Mobility, or Air Training), 3= State, 4=Base (each located in a single state).

Personnel-specific controls include wage income and AFQT scores.

Location-specific controls include annual fair market rent, annual unemployment rate, twice-lagged number of military personnel in the state, and the following data for 2000 only: non-housing and utility price-level, per capita income, population, percent of the population in the Armed Forces, percent of the population in rental occupied housing, percent of the population in the same house 1995-2000, and demographic characteristics. These 2000-only controls drop out when base fixed effects are included.