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DO CREDIT CARD MARKETING RESTRICTIONS AFFECT FINANCIAL WELL-BEING?

by

KYUNG NAHIOMY ALVAREZ

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

In the late 1990s, growing concerns about credit card debt among college students fuelled extensive debates about whether credit card marketing to college students should be regulated. While some argued early access to credit cards was beneficial for students, others argued students needed protection from what were seen as predatory marketing strategies. Despite the number of regulations that were ultimately passed, and the lack of agreement that continues to exist, the effect of regulations has been the subject of little economic analysis. This paper fills this gap by examining the effects of some of the most common regulations: (1) a ban on the use of gifts in exchange for a completed credit card application, (2) restrictions on the time and place of marketing activities, (3) a ban on the sale of student information for marketing purposes, and (4) mandating that students be provided with financial information and/or training prior to solicitation. Using Survey of Income and Program Participation (SIPP) data on the balance sheets of 22- through 26-year olds, and exploiting cross-state variation in the passage of marketing regulation over time, I examine whether regulations had an effect on the financial well-being of individuals who were exposed to these while in college. I also examine whether regulations had a differential effect on low net worth individuals, one group of at-risk consumers whom marketing regulations were meant to protect. I find weak evidence that credit card marketing restrictions had any significant on financial well-being, including among low net worth individuals.

1. Introduction

Every year, banks spend billions of dollars marketing their consumer financial products. This is especially true of credit cards, financial products with high interest rates and fees – the two largest revenue sources for banks (NPR 2012). According to a Consumer Finance Protection Bureau study of 6,000 U.S. financial institutions, in 2012, for instance, banks spent $5 billion on "awareness advertising," or ads, and another $12 billion on "direct marketing," such as mail-in offers and "other strategies aimed at prompting individuals to make an immediate purchase" (CFPB 2013). A considerable amount of these funds, however, including 56 percent of all awareness advertising, was allotted to credit card marketing specifically (CFPB 2013).

Though banks offer and market their credit cards to most consumers, college students are a particularly enticing credit card consumer group and marketing target for many reasons, including their future earning potential, their purchasing power, and the growing number of students pursuing higher education, among other reasons (Oldenburg 1993). For years, banks have sought out students with different credit card marketing strategies, some of which have become contentious (GAO 2001). For instance, in 2009, credit card issuers paid over $83 million to institutions of higher education or affiliated groups (e.g., fraternities, alumni associations, etc.) specifically to promote their credit cards. These "affinity" or exclusivity contracts, which have come under scrutiny, resulted in over 53,000 new credit card holders in just one year (Federal Reserve 2010). Even before affinity contracts, starting in the 1990s, banks sought out students in different ways, such as by setting up tables, stocked with free T-shirts, mugs, and other gifts at student centers and school events (GAO 2001; Johnson 2005). In what has been compared to "a carnival atmosphere," vendors would lure students in to complete a credit card application by offering free gifts and other enticements (GAO 2001).

Unsurprisingly, credit card use and debt among college students has risen in the last two decades. Sallie Mae, which has analyzed credit card usage among college students since 1998, finds that average credit card debt among college students increased from $1,879 in 1998 to $2,748 in 2000 (Sallie Mae 2009). And, while in 1998, 67 percent of college students owned a credit card, by 2000 that percentage had risen to 78 percent, reaching an all-time-high in 2002 at 83 percent (Sallie Mae 2009). Coupled with negative media coverage of students falling hopelessly into debt after obtaining a credit card on campus, in the last decade, surveys like Sallie Mae's have sparked debates about whether credit card marketing practices should be restricted. These debates, most of which took place in the early 2000s, both on and off at least 1,500 college campuses, ultimately resulted in a mix of institutional and state-level responses that varied both in scope and over time (Johnson 2005; Manning 1999). From 1999 through 2001 alone, at least 24 states[1] introduced legislation that ranged from prohibiting or restricting the time and locations for on-campus solicitations to proposals mandating financial literacy courses, among others (GAO 2001). Later, in 2009, the Credit Card Accountability Responsibility and Disclosure Act (H.R. 637), or CARD Act, signed into law by President Obama, mandated all states to impose restrictions on some forms of credit card marketing to college students.

Interestingly, despite the number of regulations that were proposed and laws that were ultimately passed, to my knowledge, their effect has been the subject of no economic analysis. This paper exploits cross-state variation in state-level regulations over time to explore whether the most common restrictions had an effect on the financial well-being of individuals. First, I construct a complete coding of the laws in place in a subset of states over a broad set of years. Then, I gather cross-sectional data from the Survey of Income and Program Participation (SIPP)

[1] Arkansas, California, Delaware, Hawaii, Kansas, Kentucky, Louisiana, Maryland, Massachusetts, Missouri, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Oklahoma, Pennsylvania, Rhode Island, South Carolina, Tennessee**,** Virginia, Washington, West Virginia.

on the balance sheets and demographic characteristics of individuals between 22 and 26 years old with some college education or higher. Individuals in their early 20s are the most relevant age group to consider, given that they are in a prime age to make important financial decisions, which may or may not have been influenced by regulations they were recently exposed to. Finally, I perform a series of cross-sectional analyses exploring whether there are statistical differences in the balance sheets of individuals whose state of residence restricted campus credit card solicitation when they were enrolled in college, relative to those whose states did not have those restrictions. Using SIPP individual-level data, I am also able to construct a collapsed state-level average of the credit conditions of a given state in order to corroborate that states that enacted laws did not have residents with systematically worse balance sheets than those that did not enact laws.[2]

Both SIPP and Survey of Consumer Finances (SCF) data are well suited to my research question. Ultimately, I opt for SIPP data even though wealth is better measured in the SCF, in the interest of a larger sample (as explained later in this paper). One limitation of both datasets, however, is that the state in which an individual attends college is not reported. Therefore, I use current state of residence to match individuals with the legal regime they were exposed to. The assumption that college graduates will live in the same state where they attended college within one to five years of graduation is supported by some research (Wirtz 2003; Modestino 2013). And, given that most students who are still enrolled in school attend a college or university in the state they attended high school, using an individual's state of residence to match them to a legal regime is also a valid approach for individuals who have not yet graduated from college (NCES 2013). Regardless, in Appendix III, I show results for an analysis of only individuals who are

[2] If states that enacted laws had systematically worse balance sheets than those that did not enact laws (perhaps a reason why the reforms were adopted), this would bias my results toward not finding a beneficial effect of reforms.

heads of household, which excludes students who are assigned their parents' address during the SIPP interview,[3] and presumably most out-of-state college students. Though it would be interesting to examine the effect of regulations during these individuals' college years, given that this would be the primary channel through which the reforms would affect the balances for 22-26-year-olds, the SIPP does not record the state of college attendance for students who officially remain in their parents' households while attending college. In Section 4.3, however, I briefly change my sample restrictions to only those currently enrolled in college, to show estimates of the effect of regulations on the credit card debt of students.

This paper contributes to the debate over whether credit card marketing to college students should be restricted, and more broadly, to the large body of research that has looked at the effects of greater access to credit and has arrived at different conclusions.[4] Restrictions on credit card marketing that aimed to curb access to credit were especially contentious given that credit cards have both advantages and disadvantages. From a theoretical perspective, there are many ways in which credit card marketing restrictions can be linked to subsequent measures of financial well-being, such as net worth. For instance, hyperbolic discounting (Strotz 1956) can explain why a relaxation of credit constraints could result in higher indebtedness. That is, because a person more heavily discounts things that happen in the future in a nonlinear way – in this case the problems associated with future credit card debt – they may be more likely to over consume today in the absence of policies that limit their choice. Indeed, one study shows that present-biased individuals are more likely to have credit card debt and have higher amounts of

[3] This approach risks selection bias, given that individuals in their early 20s who do not live with parents may also be more likely to manage their finances more responsibly than those who do live with parents.

[4] Existing literature on consumer access to credit has focused on payday loans. Most studies find evidence that greater access to payday loans has negative effects on household financial well-being (e.g., Melzer 2009) though some studies also find evidence that greater access to payday loans can have positive effects (e.g., Morgan and Strain 2008).

debt, even when controlling for disposable income, credit constraints, and various demographic factors (Meier and Sprenger 2010). Moreover, research has also looked at adverse selection in the credit market, and found that consumers who respond to lenders' inferior credit card solicitation offers (e.g., higher APR offers) tend to have poorer credit quality attributes than those who did not respond (Ausubel 1999).[5] By this reasoning, credit card offers on campuses may have disproportionately appealed to students more likely to mismanage their credit. Credit card marketing restrictions can also be linked to subsequent positive financial outcomes. Establishing a good credit history early on, for instance, can promote asset accumulation later on in life (Sherraden 1990). Indeed, some anti-regulation advocates conceded that while restrictions might be able to help the few who were more likely to amass large burdens, it would be at the expense of other students who generally managed their debt wisely and were able to get an early start building credit (Merzer 2008).

In this paper, I find little evidence that credit card marketing restrictions have any effect on financial well-being; this is true among all college students/graduates, *and* among only low net worth college students/graduates. Out of the four restrictions included in these analyses, only Regulation 3, a ban on the sale of student information for marketing purposes, has a significant *positive* effect on the level and probability of carrying credit card debt among individuals ages 22 through 26 years old. Regulation 1, a ban on the use of gifts and incentives, has a marginally significant *negative* effect on net worth, though this significant association disappears when using a measure of net worth that excludes real estate, and when dropping observations from the 2008 panel. There is no association between any of the restrictions and the value of gross liquid

[5] Although this study was not restricted only to college students, who could arguably be lower-risk borrowers relative to the general population, another study found the same results when focusing on only low-risk "prime" borrowers (Agarwal et al. 2010).

assets. Changing the sample restrictions to only household heads yields similar (insignificant) results.

The rest of this paper proceeds as follows. In section 2, I provide an overview of credit card use and marketing on college campuses, the arguments in favor of and against restrictions on marketing, and noteworthy institutional and legal responses, focusing on why certain proposals were considered but ultimately not passed. Then, in section 3, I describe how state regulations were coded, my data, the various measures of financial well-being constructed, and the empirical methodology used in the rest of the paper. In section 4, I present my results, followed by a discussion in section 5. Section 6 concludes and offers avenues for future research.

2. Background

2.1 Credit Cards on College Campuses

Though credit cards were first made available to consumers in the United States as early as the 1920s,[6] the general-purpose credit card was not introduced until the latter half of the century (Montgomerie 2006). In fact, although other innovations in banking in the 1960s (e.g., the ATM in 1969) allowed for further expansion in credit access and credit card ownership, until at least the 1980s, credit cards were seen as a symbol of status, and largely reserved for higher income households (Manning 2010). The expansion of credit cards to the general population was actually prompted by policy changes, such as the Supreme Court's *Marquette* (1978) ruling; *Marquette* deregulated interest rates and allowed banks to charge less credit-worthy consumers high interest rates in order to compensate for the higher risk of non-repayment (Ellis 1998; Manning 2010).[7]

[6] The first credit cards, called charge cards, allowed consumers to make purchases on credit in a particular store.
[7] Today, only nonprofit credit unions must abide by a federally mandated interest rate ceiling of 15 percent.

In the 1980s, as the number of credit card holders increased, the demand for credit shifted from the corporate sector to households, prompting banks to develop many of the credit card marketing strategies still used today (Manning 2010). While it is hard to pinpoint exactly in what year banks focused their marketing on the college student market, newspaper editorials generally seem to date it to some time around the early 1990s and as late as the 2000s. It was around this time that media coverage focused on the suicides of students like Sean Moyer, Mitzi Pool, and others in similar situations. According to media reports, the day he committed suicide, 22-year-old Sean Moyer, a junior at the University of Oklahoma, owned 12 cards, including a MasterCard, Discover, Neiman-Marcus, and two Visas, among others (Brobeck and Gillis 1999). Like many students his age, Sean had been bombarded with credit card offers regularly from the moment he stepped foot on his university campus (Chubb Group of Insurance Companies 2002). However, earlier editorials suggest some form of credit card marketing on college campuses existed before the 1990s, as well. A 1993 *Washington Post* article mentions how "twenty years ago, college seniors nearing graduation were the prime targets of *charge card* marketers" (Oldenburg 1993, emphasis added). And indeed, as early as 1992, 55 percent or 2.8 million of all full-time undergraduate students held a credit card (Roper Organization Survey, cited in Oldenburg 1993). The same 1993 piece, however, centers on the notion that "pomp and circumstance" surrounding credit card marketing had since changed, and that students, especially freshmen, were now aggressively sought out with gifts and other marketing strategies. Indeed, over 10 years later, Federal Reserve data from the Survey of Consumer Finances show that, in 2004, 24 to 34-year-olds averaged $4,358 in credit card debt, 47 percent greater, in real terms, than the average credit card debt carried by the late Baby Boomers in 1989 (Draut 2006).

One reason credit card marketing may have become widespread in the 1990s is the further deregulation of the credit card industry. In what was seen as another victory for banks, for instance, the Supreme Court's ruling in *Smiley v. Citibank (1996*) lifted state-regulated fee caps on credit cards, including late fees and other penalties (Manning 2010). Consumer groups argued that as older, more credit-savvy, credit card holders figured out how to avoid paying these exorbitant fees, less credit-savvy consumer groups, such as college students, would become vulnerable targets. Meanwhile, credit card industry executives defended their marketing to college students by arguing that students were generally low-risk borrowers, and at the very least, should be trusted with their own credit (Manning 2010).

There are many reasons that banks might have had, and still have, a vested interest in college students, aside from whether they are low- or high-risk borrowers. First, although most students have little to show in the way of a credit rating, credit card issuers recognize a growing market with high future earnings potential and parental support. As Edward Solomon, president of College Credit Card Corp., a Philadelphia-based firm that specialized in marketing credit cards to students, said in 1993: "the assumption is that students whose families can afford a college education have some income and potential income" (Oldenburg 1993). Perhaps more importantly, some students have parents that may have the financial resources and willingness to help them reduce or eliminate credit card debt, if need be. Moreover, with a growing number of college enrollees every year, the market for credit cards is almost guaranteed to grow steadily, as a new and larger group of student credit card holders enters the market every year (Oldenburg 1993). This is not a trivial factor: while there were under 7 million full-time undergraduate students enrolled in 1995, that number had grown to 11 million by 2010 (NCES 2015). Moreover, students tend to hold their credit card longer than other consumers. According to an

old piece on The Nilson Report, an advisory newsletter for credit card executives, students remained loyal, for an average of 15 years, to issuers that granted them their first line of credit (cited in Oldenburg 1993).

How well did college students actually manage their credit cards? Most data on this question come from surveys of specific campuses, and or from correlational studies. The most comprehensive overview of studies comes from the 2001 General Accounting Office report (cited previously), responding to Congressional concerns about growing levels of debt among college students. Among other information, the report compiles data on 1) college student credit card use, 2) marketing strategies used by credit card companies, and 3) how states and institutions responded to growing concerns (an overview of these responses is covered later in this paper). The report shows that in 2001, 58 percent of all students reported paying off their balance in full by the end of the month, and among those who carried a balance, 82% reported paying more than the minimum amount. In fact, only 16 percent of those who carried a balance had an average balance of more than $1,000 (GAO 2001; similar results in Institute for Higher Education Policy 1999 report). Among those who paid in full, the reported average monthly balance was $577. Other studies, however, show that among all college students, the average credit card debt had risen from $1,879 in 1998 to $2,748 by 2000 (Sallie Mae 2009). In terms of what they paid with their credit cards, students mostly used them to pay for everyday living expenses, but also for education-related expenses and occasional large purchases.

As far as when and how students were acquiring their cards, over half of all students in 2001 reported acquiring a credit card during their first year of college (GAO 2001).[8] A different study showed that incoming freshmen received as many as eight credit card offers during their

[8] In the same report, more than one-third of students reported owning a credit card before they entered college.

first week of school (Martin 2004). Interestingly, although in the early 2000s negative media attention largely focused on the on-campus solicitation campaigns – under the assumption that it was primarily these which had succeeded in significantly increasing the percentage of student cardholders, the number of cards held, and the amount of debt carried among college students – only 21 percent of students in 2001 reported obtaining their credit card from an on-campus display or solicitation; in fact, more students, 36 percent, reported acquiring a credit card by mail. GAO reported that according to the American Bankers Association, in 2001 the preferred marketing technique for potential customers, including college students, was direct mail. Indeed, a staggering 3.54 billion pieces of mail in solicitations were sent out in 1999.

Meanwhile, direct marketing on campuses was delegated to hired contractors - including student groups or local shops (GAO 2001). Hired contractors, especially those who were paid by the number of completed applications, often sought to incentivize students by offering free gifts, such as t-shirts, tote bags, stress balls, and pizza. According to a 2008 PIRG study, 76 percent of students reported stopping at tables staffed by credit card marketers, and 31 percent reported accepting a gift.

2.2 – Arguments in Favor of and Against Restrictions on Marketing

Credit cards can have both advantages and disadvantages for college students. On one hand they provide convenience, offer security in the case of emergencies, and allow students to establish credit histories that can facilitate additional credit later on (GAO 2001). On the other hand, college students who mismanage their credit cards in college may end up with debt that is particularly difficult to repay given credit cards' high interest rates and fees (GAO 2001). Moreover, late payments and delinquent activity can remain in a consumer's credit history for up to seven years, making credit history an important determinant of future financial well-being.

Thus, arguments in favor of and against specific restrictions on credit card marketing, which would make credit cards less accessible, were difficult to reconcile, given that students could in theory both benefit and be harmed by restrictions.

Following this reasoning, supporters of a ban on solicitation often cited growing levels of student credit card debt to argue credit cards posed serious financial burdens on both current students and college graduates. At the other end of the debate, opponents of regulation cited the same data to show that while average debt may have increased, most students were not deeply in debt and paid their credit card bill every month (GAO 2001). In fact, they argued, these laws might be able to help the few students who were more likely to amass large burdens, but only at the expense of other students who managed their debt wisely. Thus, data alone was rarely enough to support the passage of a given proposal. One notable exception is California in the early 2000s, where the use of data was key in the passage of AB 521 – an almost identical version of senate Bill 796, which had lacked data. This may have something to do with the fact that, as AB 521 highlights, "on average, one-third of college students graduate with more than $5,000 worth of credit card debt and one-quarter graduate with more than $7,500 worth of credit card debt," which was much higher than the average reported by the General Accounting Office the same year. Additionally, the bill's supporters also cited at least one instance where a student committed suicide presumably due to mounting pressure of credit card debt.

When arguments in favor of and against credit card marketing did not focus on the magnitude of the problem, they sometimes turned to ideology or politics. Anti-regulation advocates, for instance, argued that because college students eighteen or older could legally obtain a credit card off campus, lawmakers and university administrators could and should not mandate personal responsibility on campus (Johnson 2005). As evidenced by legislative notes of

bills and editorials, this debate often resulted in another impasse, where proponents of restrictions argued protections on credit card marketing were warranted for the same reasons behind limits on alcohol consumption and other behaviors on college campuses (Johnson 2005). That is, while some students could legally purchase alcohol, for instance, it would be frowned upon if institutions and states allowed alcohol vendors to lure students into making purchases during class hours, the way credit card vendors were luring in students to fill in credit card applications (Johnson 2005).

In the end, perhaps the one argument that was less debatable was the idea that students lacked financial education. Indeed, extensive research supported the claim that students scored significantly lower on measures of financial literacy compared to their adult counterparts (Chen & Volpe 1998; Tan 2003; Mierzwinski and Lindstrom 2008). However, as was the case with most proposals later discussed in this paper, even the extent to which financial education was promoted differed within and across institutions and states.

2.3 – Institutional Responses to Student Credit Card Solicitation

Institutional responses to solicitation practices in the early 2000s varied both across and *within* campuses throughout the United States. Across campuses, some schools banned solicitation altogether while other schools chose to impose restrictions; within campuses that chose to impose restrictions, some policies were campus-wide while other policies were decentralized, allowing individual entities, such as bookstores, student unions, and alumni associations to set their own rules (GAO 2001). Often, an institution's response depended on the administration's views on the issue. For instance, the Director of University Relations and other faculty at the University of Wisconsin at Marathon County (UWMC), for instance, were concerned that marketing lured less financially secure consumers, such as financial aid students,

without necessarily having data to support these claims; nonetheless, the school promptly passed a centralized ban on all credit card marketing to their students (Johnson 2005).

A common type of restriction, one that could please both ends of the debate, focused on promoting financial literacy. In some cases institutions required informational brochures with each credit card that was marketed, or that students attend an information session before accepting an offer (GAO 2001). Another of the most common types of institutional restrictions was the creation of a code of conduct for credit card issuers, where issuers would be required to register with the school (Johnson 2005 citing Heavner and Hystad 2004). In some cases, institutions chose to allow vendors on campus provided they paid tabling fees. But given that at many schools students still voiced complaints about having tabling areas in places like student unions, and that issuers could still market to students from non-designated tabling areas regardless, a later form of institutional regulation explicitly imposed geographical or time restrictions for solicitation. For example, Buffalo State College allowed solicitations on campus during the first two weeks of each semester, and after that period, credit card vendors that sponsored school organizations were only allowed to solicit on Mondays (Volke 2002).

The extent to which codes of conduct were effective in reducing persistent credit card solicitation to students, however, is unclear, especially in cases where policies were decentralized. Under decentralized policies, individual private entities, such as bookstores, were free to set their own rules (Johnson 2005); in fact they might have had a vested interest in offering credit cards to students given that issuers paid commission fees. The University of Texas Dallas (UTD), for instance, banned solicitors from university space but the private shops near campus allowed solicitors (Johnson 2005 citing Wertheimer 2002). In other cases, credit card vendors resorted to paying the owners of privately owned businesses near campuses both to

market in front of their premises and to be able to put their credit applications into the businesses' shopping bags (Johnson 2005). As a 2002 *Dallas Morning News* piece explains,

> Anyone who visits OSU can readily see numerous credit card vendors line the east side of High Street for several blocks to market their credit cards to students leaving the union or any other university-owned building on the west side of High Street. Because the majority of food, clothing, and entertainment establishments are on the east side of High Street, OSU students are drawn there and therefore are not protected from problems associated with overly aggressive solicitation practices.

Ultimately, it is hard to gather conclusive data on the stringency and effectiveness of responses taken at the institutional level (if any) given that there is no database or research listing all institutions and their respective responses; proposals that were never passed are even harder to track. In the sample of twelve institutions GAO researchers visited, most had decentralized policies – while credit cards were restricted from some places on campus, non-academic campus areas offered credit card applications. In fact, only two state universities had relatively restrictive and centralized policies, and, both schools were located in a state with an existing state solicitation law (GAO 2001).

Finally, another institutional response to credit card marketing was the shift to affinity contracts. Affinity contracts are exclusive marketing/licensing contracts between credit card issuers and affiliated institutions, such as universities and colleges (GAO 2001). They are often lucrative for both parties given that in return for exclusive access to students and alumni (and their personal information), credit card companies issue credit cards bearing the university's logo and pay the university either a fixed amount or a commission fee based on the number of cards issued, the charges made to the cards, and in some cases even on the balance held on each card (GAO 2001).

University officials (e.g., Texas' A&M University Director of Contract Administration), argued that "affinity" or exclusivity contracts reduced marketing by limiting solicitation to one vendor (Johnson 2005 citing Wertheimer 2002). But as was the case with restrictions to time and place, allowing only one vendor *on campus,* through an affinity contract, does not address the issue of solicitation near or around a college campus. More importantly, affinity contracts were probably seen as an appropriate response given that schools also stood to gain from a multi-million dollar affinity relationship. The University of Tennessee, for instance, signed a $16 million contract in 1998 and almost a decade later another $10 million contract with Chase (Silver-Greenberg 2007). Revenues from tabling fees, on the other hand, could hardly compete with affinity contracts. Oklahoma State University, for instance, allowed credit card vendors to solicit at the student union for an *annual* fee of approximately $10,000 (Johnson 2005 citing Hinton 2004).[9]

2.4 – Legal Responses to Student Credit Card Solicitation

Like institutional responses, legislative responses to aggressive credit card solicitation to college students varied widely. State-level restrictions ranged from very lenient to relatively stringent restrictions, and different combinations of each, although my analysis focuses on the four broad types: (1) a ban on the use of gifts in exchange for a completed credit card application, (2) restrictions on the time and place of marketing activities, (3) a ban on the sale of student information for marketing purposes, and (4) mandating that students be provided with financial information and/or training prior to solicitation. For instance, some states merely called for studies to identify the problems arising from student solicitation, while others passed more restrictive policies mandating colleges and universities to both carry out studies and set policies

[9] Today, affinity contracts amount to millions of dollars per year. In 2008, Bank of America had agreements with about 700 colleges and alumni associations (Glater 2008; Federal Reserve 2010).

and procedures for credit card solicitation accordingly. Only a handful of states resorted to very stringent policies, such as banning specific marketing techniques or solicitation altogether. This is not to say that bans were not proposed at all.

Comparing policies across states from stringent to less stringent comes with an array of caveats. Take Washington's SB 5506, signed into law by Governor Christine Gregoire in 2005. SB 5506 allows all of the state's institutions to develop their own official on-campus marketing policy to students, and it requires institutions to consider several issues specifically. The law states,

> The process of development of these policies must include consideration of student comments [and] the official policies must, at a minimum, include consideration of and decisions regarding (a) the registration of credit card marketers, (b) limitations on the times and locations of marketing, and (c) prohibitions on material inducements to complete credit card applications, unless the student has been provided credit card debt education literature.

In other words, institutions are required to consider, but not required to restrict, existing and future credit card marketing practices. Based on this law, individual institutions could have chosen to impose either highly restrictive or highly *un*-restrictive policies. Like Washington's SB 5506, Connecticut's HB 6483, signed by Republican Governor Jodi Rell four years later, requires "the Board of Governors of Higher Education to adopt policies regulating credit card issuer marketing practices." Both the language and content of Connecticut's law seem to convey greater stringency than Washington's law. First, the law states that the policies instituted by Connecticut's schools "must require" credit card issuers to register with the institution before marketing on a campus. Moreover, Connecticut's higher education institutions "must restrict" the time and place for marketing credit cards and "must prohibit" several practices, including solicitation of undergraduate students during orientation and class registration periods, the use of gifts and incentives in marketing at intercollegiate athletic events, and public employees from

marketing credit cards to students, among others – all issues the Washington law either takes a lighter stance on or does not acknowledge. However, upon closer inspection, it is hard to determine whether solicitation was more or less restricted in Connecticut compared to Washington. One main reason is that unlike Washington's law, Connecticut's law limits its scope to *public* college campuses; another reason is that its definition of student differs. While under the Washington law, "student" refers to any person enrolled full-time at an institution of higher education, the Connecticut law limits the definition of "student" to a person under age 21 and enrolled full- or part-time at a public college. It is unclear whether these different definitions had different implications for institutional responses.

Moreover, bills aiming to increase financial literacy also existed at the state level, but took various forms. The Washington bill, for instance, requires that marketers inform students about good credit management practices through programs developed in concert with the institution; and that institutions make the official credit card marketing policy available to all students upon request. Both the Connecticut and Washington bills, in fact, require the distribution of credit card management education material along with any marketing material (which in both states includes, but is not limited to, brochures). And, Connecticut's law also states that at least once every year that issuers market on campus, they must personally appear at an on-campus location open to all students to provide educational information and answer questions, and that the school must advertise the appearance.

Another proposed state-level restriction looked to curb credit card issuers' access to personal student information. Although some state bills prohibit an institution from selling student information for marketing purposes, under the Family Educational Records and Privacy Act, or FERPA, students' personal contact information is made public, and is referred to as

"directory information."[10] Moreover, none of these bills explicitly addressed affinity contracts, one of the main ways in which issuers obtained students' information. In states where proposals of this sort were blocked, more often than not, opposition stemmed from the existence of long-term affinity contracts between issuers and state schools.

Lastly, on a federal level, U.S. Representative Louise Slaughter (D-NY) introduced a bill to prevent credit card companies "from taking unfair advantage of full-time, traditional-aged, college students," as early as 1999.[11] However, it was not until the Credit Card Accountability Responsibility and Disclosure Act (H.R. 637), or CARD Act, signed into law by President Obama in 2009, that all of the United States saw restrictions on credit card marketing to college students. The CARD Act was passed with the goal of establishing "fair and transparent practices relating to the extension of credit." Among other protections, it imposed restrictions on promotional credit card marketing across the nation's campuses. Section 301 amends Section 127(c) of the Truth in Lending Act (15 U.S.C. 1637(c)) adding a requirement that consumers under the age of 21 years old provide a co-signer older than 21 years old (need not be a parent) in order to apply for a credit card. Alternatively, a consumer under the age of 21 may apply for a credit card without a co-signer if he or she submits "consumer financial information" showing an independent means of repaying any obligation. Section 304 amends Section 140 of the Truth in Lending Act (15 U.S.C. 1650) by adding a provision that prohibits credit card companies from offering gifts as inducements to apply for a credit card, including at college- and university-sponsored events.

[10] FERPA prohibits the disclosure of undergraduate students' identifying information to any unauthorized party, unless the schools provide the students with notice and the opportunity to opt out.

[11] The College Student Credit Card Protection Act, H.R. 3142, 106th Cong. (1999) would have amended the Consumer Credit Protection Act and limited the amount of credit available to college students.

The CARD Act also addresses the issue of affinity agreements, by adding a disclosure provision that requires an institution of higher education to publicly disclose any contract made with a credit issuer for the purpose of marketing credit cards, and requires creditors to submit an annual report to the government containing the terms and conditions of all promotional agreements and college affinity card agreements with any institution or group. The Federal Reserve then makes this information publicly available. However, even after the passage of this bill, in 2010, a Huffington Post Investigative Fund report found many schools were not only "contractually obligated to share students' names, phone numbers, and addresses with banks [but also], entitled to receive 0.4 percent of all retail purchases made with student cards, typically receive $1 for each student who keeps a credit card open for 90 days, and when students carry a balance some can collect up to $3 per card" (Neumann and Protess 2010).

3. Data and Methodology

In order to examine whether restrictions on credit card marketing led to changes in the financial well-being of college students, first, I construct a coding of the most common laws in place in a subset of states over a broad set of years. For the purposes of an empirical analysis, I use restrictions on credit card marketing passed at the state level – rather than at the institutional level – given than state level data show with certainty whether and when regulations of certain criteria were passed and generally include a legislative history. Using cross-sectional individual-level data from the Survey of Income and Program Participation (SIPP) on the balance sheet of individuals, I then construct several measures of financial well-being, including net worth and the value of gross liquid assets. Finally, I use an Ordinary Least Squares estimation strategy, in which the dependent variable is one of the several constructed measures of financial well-being,

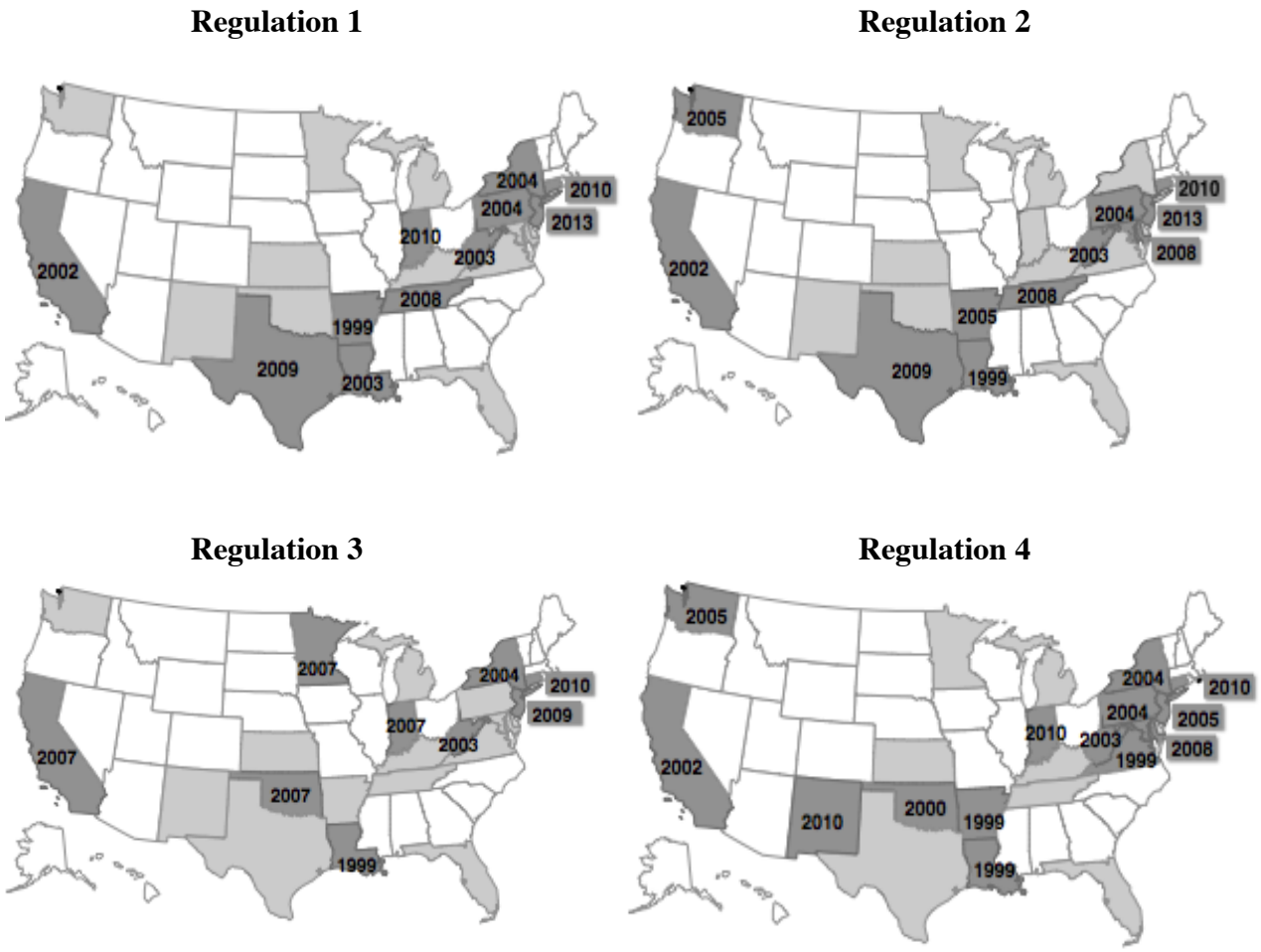
to test the effect of a given regulation on an individual at a point in time. I also perform a series of robustness checks with different samples and estimation strategies to corroborate my results.

3.1 – Coding of State Laws

The first part of the state law coding process involved summarizing and organizing state legislative actions collected from the National Conference of State Legislatures, state legislature archives, and other pieces found in Lexis databases, into broad categories, by type of restrictions on credit card marketing. I call the four broad types of restrictions **Regulations 1-4.** Regulation 1 refers to a ban on the use of gifts as incentives; Regulation 2 refers to restrictions on the location and time of tabling on campuses; Regulation 3 refers to the prohibition of selling of student information; and Regulation 4 is a mandate to provide students with financial literacy courses or information during solicitation events.

Ultimately, I only code the regulations from twenty-two states where I was able to resolve ambiguity about the legal regime and timing of enactment: Arkansas, California, Connecticut, Delaware, Florida, Illinois, Kansas, Kentucky, Louisiana, Maryland, Michigan, Minnesota, New Jersey, New Mexico, New York, Oklahoma, Pennsylvania, Tennessee, Texas, Virginia, Washington, and West Virginia. Figure 1 shows the states used in my analysis, and among states that passed a given regulation, the year in which a given regulation became law. The states shown in dark gray are states that passed a regulation, the states in lighter gray are the other states included in my analysis that did not pass the given regulation, and the states in white are states where my research of the legislative sessions and literature *either* offered no indication of the existence or inexistence of marketing regulation in place at some point in time, or showed inconclusive evidence on whether a proposed law was ever implemented. Only 4 states: Florida, Kansas, Kentucky, and Michigan did not pass any of the four regulations.

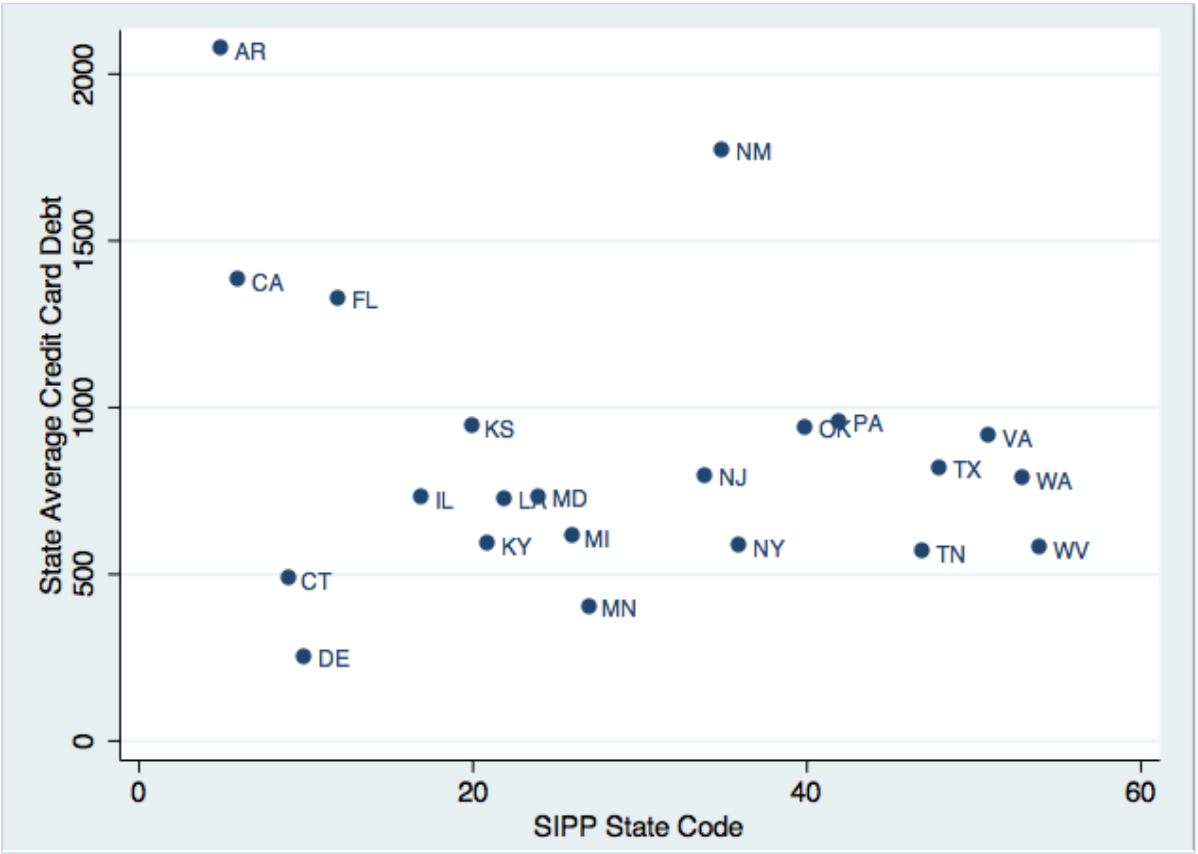
Figure 1. Year Select States Passed Regulation 1-4, By Regulation Type



Notes: The dark gray states are states that passed the given regulation. The light gray states are states that are part of my analyses but did not pass the given regulation, though they may have considered it. The white states are the states not used in this paper. Regulation 1 refers to the ban of gifts in exchange for a credit card application. Regulation 2 refers to restrictions on location and time of marketing activities on college campuses. Regulation 3 refers to a ban on the selling of student information to credit card marketers. Regulation 4 refers to mandated financial literacy when credit card marketing takes place on a higher education campus. Refer to Appendix I: Table A for tabular display of same information.

One important question to address is whether states that enacted laws had systematically worse debt levels than those that did not enact laws, which could explain why the reforms were adopted but would bias my results. Using SIPP individual-level data, I construct a state-level average of different types of debt in a given state in 2001. Average state credit card levels, computed for those who carry a balance, are shown in Figure 2. SIPP credit card debt data is only collected for individuals who report carrying a balance during the reference period. Most states appear to have an average credit card debt level between $500 and $1000, in line with estimates provided by the GAO 2001 report, with some exceptions.

Figure 2. State Average Credit Card Debt: 2001



Notes: The figure shows the average state credit card debt among college students (ages 19-22) who reported carrying a balance in the 2001 panel reference period, in the states used in this paper. Only Florida, Kansas, Kentucky, and Michigan did not pass any regulation.

Using an Ordinary Least Squares regression I then examine whether a state's average debt level in 2001 is a predictor of the passage of a regulation during the subsequent year. As Table 1 shows, credit card debt is not a strong predictor of whether any of the regulations used in this paper are passed. Interestingly, "other debt," which includes educational loans, medical bills, and money owed to private individuals, and excludes secured liabilities (e.g., home equity and vehicle loans) is a marginally significant *negative* predictor of Regulation 1, or a ban on the use of incentives in exchange for completed credit card applications. That is, having a higher state average level of "other debt" decreases the likelihood of regulation. Given the results presented in the table as a whole, this is likely a spurious result.

Table 1. Predictors of Regulations 1-4

	Dependent Variable			
	Regulation 1	Regulation 2	Regulation 3	Regulation 4
1. Net Worth Pre-Regulation	-0.01	-0.00	0.02	0.03
	(0.059)	(0.047)	(0.039)	(0.064)
2. Credit Card Debt Pre-Regulation	0.08	0.08	-0.15	0.13
	(0.286)	(0.184)	(0.151)	(0.283)
3. Unsecured Loan Debt Pre-Regulation	0.03	0.04	-0.06	0.12
	(0.118)	(0.096)	(0.079)	(0.144)
4. Other Debt Pre-Regulation	-0.14+	-0.07	-0.04	-0.12
	(0.082)	(0.071)	(0.061)	(0.092)
Observations	18	21	21	18

Notes: Each cell corresponds to a different regression. Debt and net worth are shown in thousands. Regulation 1 refers to the ban of gifts in exchange for a credit card application. Regulation 2 refers to restrictions on location and time of marketing activities on college campuses. Regulation 3 refers to a ban on the selling of student information to credit card marketers. Regulation 4 refers to mandated financial literacy when credit card marketing takes place on a higher education campus. Robust standard errors are in parentheses. +, * and ** denote significance at the 10, 5 and 1 percent levels, respectively.

Having provided some evidence consistent with the exogeneity of state law passage, I turn to matching individuals with the regulations they were exposed to using their current state of residence. I assume that for my young sample there will be a high degree of correspondence

between state of current residence and college state. Though there is variation in the retention rates of college graduates across states, retention rates are generally high. A 2003 Federal Reserve report, for instance, finds that 76 percent of those who graduated from a Minnesota college or university in the last five years remained in Minnesota (Wirtz 2003). Later, a report from the Federal Reserve Bank of Boston analyzing retention rates by region of the country, found that most college graduates stayed in the region where they attended college for at least one year after graduation (Modestino 2013). For instance, even in New England, the region with the lowest retention rate, 63.6 percent of 2008 graduates were still living there one year after graduation (Modestino 2013). I assign an individual a value of 1 (meaning they were exposed to credit card regulation) if there was a credit regulation in place in the person's state in the year he/she turned 18 years old. The assumption is that this individual would have entered college at age 18 in the same state of later residence and would have been exposed to the regulation as a freshman. Table 2 reports the fraction of individuals in my sample exposed to each type of regulation (refer to Appendix I: Table A for more information on when and what regulations were passed in each of the states used).

Table 2. Percentage of SIPP Respondents Subject to Regulations 1-4

Variable	N=	Mean	S.D.
Regulation 1	5668	0.0785109	0.2689977
Regulation 2	5668	0.0732181	0.2605171
Regulation 3	5668	0.0215243	0.1451371
Regulation 4	5668	0.1353211	0.3420964

Notes: Summary statistics for proportion of all individuals ages 22 through 26 with some college education who were freshmen in college during a year when their state had a regulation to address credit card solicitation on college campuses. Regulation1 is a dummy equal to one if a state passed a law banning the use of gifts as incentives; Regulation 2 refers to restrictions on the location and time of tabling on campuses; Regulation 3 refers to prohibition of selling of student information; and Regulation 4 refers to mandated financial literacy courses or information during solicitation events. Coding of regulations was done for 22 states.

Lastly, because I do not have information on the type of higher education institution attended, I assume everyone in a given state is affected by a given regulation, even in cases where there is within-state variation or regulations implemented unevenly (e.g., only in public institutions). Given that well over three quarters of all full-time undergraduate students have attended a public university in the U.S. since at least 1990 (NCES 2015), it is reasonable to assume that most people in my sample will be matched to the regime in place at their state's public colleges. Furthermore, it could be the case that institutions in states that passed these laws were generally being more proactive than institutions in states where these regulations were not stirring up much deliberation, which if true should expose a larger proportion of students than mandated by law. One example is Louisiana. Under H.B. 1147, passed in 1999, only public post-secondary educational institutions were subject to the legislation prohibiting the dissemination of solicitations during registration for classes. But, as the GAO 2001 reports mentions, private institutions often took the lead in restricting solicitation practices. According to a 1999 *CBS MarketWatch* report, the same year Louisiana passed H.B. 1147, more than 300 colleges and universities had already banned credit marketers from their campuses and another 140 universities were planning to impose restrictions on tabling and the use of gifts.

3.2 – Survey of Income and Program Participation (SIPP)

Next, I turn to SIPP data. The SIPP is a national panel survey interviewing a random sample of households every four months, with the period covered by an interview referred to as a wave. During the core interview of a given wave, economic and demographic information is collected at the household and individual level. Supplementing the core questions, an accompanying topical module covers detailed questions on topics of special interest that vary by wave. In this paper I use the topical module that provides comprehensive coverage of asset

ownership. Table 3 summarizes the assets and liabilities that are covered in the SIPP and included in this paper, which include but are not limited to: deposits in financial institutions (savings accounts, interest-earning checking accounts, certificates of deposit); equity in business, real estate, and vehicles; value of other interest-earning assets, such as U.S. Government securities, and municipal, corporate and U.S. savings bonds; and amount owed for both secured and unsecured credit (e.g., credit cards and store bills).

Table 3. SIPP Variables on Assets and Liabilities Used For Empirical Analysis

Assets	Liabilities
Interest-earning assets at financial institutions	**Secured Liabilities**
Passbook savings accounts	Debt on real estate
Money market accounts	Debt on vehicles
Certificates of deposit	Debt on business or profession
Regular checking accounts	**Unsecured liabilities**
Stocks and mutual fund shares	Credit card and store bills
Equity in own home	Unsecured loans
Rental property	Other unsecured debt
Other real estate	Medical bills
Vehicles	Education loans
Business or profession	Money owed to individuals
U.S. Saving Bonds	
IRA or KEOGH Accounts	
401K & Thrift Savings Plan	
Other financial assets	
U.S. government securities	
Municipal or corporate bonds	

Notes: This table shows the complete list of SIPP assets and liabilities used in this paper. Different combinations of these are later used to construct different measures of financial well-being at the individual level. For instance, financial well-being defined as total net worth includes all variables listed, while financial well-being defined as gross liquid assets excludes secured debt, unsecured debt, and equity in relatively illiquid assets, such as real estate, business, and vehicles.

SIPP data are well suited to my research question. As shown in Table 3, the wealth module covers detailed information on asset and liability holdings for a representative sample of

U.S. adults. The core provides information on education and other factors that may explain variation in wealth. For the purposes of this paper, the SIPP is preferable to the Survey of Consumer Finances (SCF), which also collects information on demographic and economic characteristics (including assets and liabilities) of U.S. households, given that the SCF heavily oversamples the wealthy (Kennickell 2007) and may have fewer observations for the sample of young individuals in the narrow age band I am interested in – individuals who typically have not accumulated high levels of wealth.

In the analyses that follow, I use data from the 2001, 2004, and 2008 SIPP panels. Rather than collecting information from each wave of each panel, I only use the core module (for demographic data) and its accompanying topical module (for data on the balance sheet of the same individuals) from the first wave of each panel in which the topical module on asset and liability holdings was introduced. Specifically, I extract data from the third wave of the 2001 and 2004 panels and the fourth wave of the 2008 panel. Because the wave in which the Asset and Liabilities topical module is introduced varies by panel, some of the observations from a module do not correspond to the calendar year of the panel. Specifically, in the case of the 2001 and 2004 panels the data collected from wave 3 corresponds to those calendar years, respectively, but in the 2008 panel, observations collected from wave 4 actually cover 2009 calendar year data.[12] After cleaning my data and imposing age, education, and work-impeding-disability restrictions, my sample includes 5,668 individuals (n=1,551 from 2001; n=2,134 from 2004; and n=1,983 from the 2008 panel).

3.3 – Measures of Financial Well-being

[12] Although not relevant to my analysis, it is worth noting that the duration of each panel and thereby the number of waves in each panel varies – with the duration of a panel ranging from 2 ½ years to 4 years. The 2001 panel for instance only had one wave that included the Assets and Liabilities topical module.

After cleaning the SIPP data, I then use it to construct various measures of financial well-being. The first measure, total net worth, refers to the value of all assets covered in the SIPP minus the value of liabilities (unsecured or secured debt). One measure of net worth excludes net equity in real estate, as real estate is a highly illiquid asset, while a second measure of net worth includes real estate. The other main measure of financial well-being is gross liquid assets.[13] The liquid financial assets used in the construction of this variable are the same ones used in both net worth variables: checking accounts, savings bonds, IRA or Keogh accounts, stocks and mutual funds, and interest-earning assets at financial institutions (Table 2).

From a theoretical perspective, credit card marketing restrictions can be linked to subsequent measures of financial well-being, such as net worth, in various ways. For instance, hyperbolic discounting (Strotz 1956) can explain why a relaxation of credit constraints may result in higher indebtedness, as individuals more heavily discount events that may happen in the future in a nonlinear way. In this case the problems associated with future credit card debt may be discounted leading individuals to overuse their credit today. Indeed, one study shows that present-biased individuals are more likely to have credit card debt and have higher amounts of debt, even when controlling for disposable income, credit constraints, and various demographic factors (Meier and Sprenger 2010). Adverse selection in the credit market can also explain why a relaxation of credit constraints may result in lower net worth, on average. One study found that consumers who respond to lenders' inferior credit card solicitation offers (e.g., higher APR offers) tend to have poorer credit quality attributes than those who did not respond (Ausubel 1999). By this reasoning, credit card offers on campuses may have disproportionately appealed to students more likely to mismanage their credit. Credit card marketing restrictions can also be

[13] Note that the variable "net assets excluding real estate" is essentially a net liquid wealth measure.

linked to subsequent positive financial outcomes. Establishing a good credit history early on, for instance, can enable asset accumulation by increasing the chances an individual is approved for loans to buy other financial assets (Sherraden 1990). Moreover, exposure to credit cards early on may increase financial knowledge and/or savvy credit practices as individuals learn from practice. However, research shows the relationship between personal financial knowledge and credit card behavior is complex. While one study finds that individuals with lower levels of debt literacy tend to transact in high-cost manners, incurring higher fees and using high-cost borrowing (Lusardi and Tufano 2009), a different study shows that those with higher levels of financial knowledge had significantly higher credit card balances (Robb and Sharpe 2009). A more recent study, using New York Federal Reserve Bank Consumer Credit Panel data and the CARD act as a quasi-experiment, analyzed the relationship between age and default among young borrowers, in order to identify whether individuals who entered the credit card market early in life (before age 21) differed from those who entered later (in their early 20s). They find that individuals who choose early credit card use default less and are more likely to get a mortgage while young (Debbaut et al. 2013).

Table 4A reports the median net worth of individuals in my sample, including the median value of the assets used in the construction of my net worth measures, alongside published SIPP data estimates for 2001 and 2009, the earliest and latest panel used. Medians are reported for individuals who own an asset of a particular type. In comparison to published SIPP estimates, the median values of my sample are lower in both years. For instance, while the median value held in regular checking accounts for my sample is $400 in 2002 and $450 in 2009 (columns 1 and 2), published SIPP data estimates have a median value of $500 for 2000 and $600 for 2009 (columns 3 and 4). It is worth noting, however, that the sample in this paper is restricted to

individuals between 22 and 26 years old with at least some college education or higher, while the sample used in the published data (columns 3 and 4) has no education restriction and a higher age restriction (all individuals under 35 years old).

Table 4A. Median Net Worth of Householders, by Type of Asset Owned: 2001, 2009

	Sample Used		Published Data	
	2001 (n=1,551)	**2009** (n=1,983)	**2001**	**2009**
Total Net Worth	**2,725** (n=1,551)	**1,768** (n=1,983)	**5,438**	**3,475**
Total Net Worth (Excl. home)	**900** (n=1,551)	**850** (n=1,983)	**2,446**	**2,000**
Interest-earning assets at financial institutions	**600** (n=645)	**500** (n=1,017)	**1,400**	**1,000**
Regular checking accounts	**400** (n=395)	**450** (n=469)	**500**	**600**
Stocks and mutual fund shares	**1,000** (n=263)	**2,000** (n=200)	**3,000**	**5,000**
Equity in own home	**18,249** (n=122)	**21,000** (n=150)	**29,000**	**23,500**
Rental property	**53,250** (n=6)	**57,750** (n=10)	**65,000**	**75,000**
Other real estate	**20,000** (n=12)	**0** (n=9)	**22,000**	**30,000**
Vehicles	**2,354** (n=918)	**2, 434** (n=1,053)	**3,150**	**3,103**
Business or profession	**250** (n=116)	**500** (n=130)	**3,000**	**2,000**
U.S. saving bonds	**250** (n=121)	**500** (n=147)	**500**	**500**
IRA or KEOGH accounts	**3,250** (n=111)	**6,500** (n=171)	**5,500**	**7,000**
401K & Thrift Savings Plan	**3,000** (n= 272)	**3,050** (n=478)	**7,400**	**8,500**
Other financial investments*	**2,725** (n=9)	**2,107** (n=12)	**6,000**	**1,076**

Notes: Medians are calculated for only individuals who own a given asset. Median values of zero are explained by the presence of both positive and negative values. * Includes mortgages held for sale of real estate, amount due from sale of business or property, and other financial assets not included in other categories. The sample used for the analyses in this paper (columns 1 and 2) is restricted to individuals between 22 and 26 years old with at least some college education or higher. The sample used in published data (columns 3 and 4) has no education restriction and estimates are reported for all individuals under 35 years old.

Moreover, the lower median values of my younger sample support the lifecycle hypothesis (LCH), which posits that asset holdings increase during working years and then decrease during retirement (Modigliani and Ando, 1964). Indeed, breaking down net worth by age in my sample shows that median net worth for individuals, across all household types, increases with age from a median of $200 at age 22 to $3250 at age 26. Given that college students typically expect steep growth in their earnings profiles (and are therefore likely to feel credit constrained in their early working years), my (low) measures of net worth should be taken as a snapshot measure of financial well-being, and not an indicator of long-term wealth.

Although the net worth variables used in this paper follow the SIPP convention of presenting net worth measures that include and then exclude equity in own home, when presenting the latter, my net worth variable also excludes equity in other homes and rental property. Table 4B shows descriptive statistics for these net worth variables and the variables used in their construction for all three panels. Given that several assets and liabilities have highly skewed distributions, after using all variables to construct a total net worth variable, I winsorize the top 1 percent of observations from the created dependent variable. Additionally, because some equity values are provided at the household level, in order to assign the value of an asset to the owner and avoid systematically overestimating the value of net assets of individuals (if, say, two owners in the same household jointly owned the same asset), I assign the value of the asset only to the first owner. This is relevant in the case of vehicles and real estate.

As shown in column 2, the most common types of assets held in my sample are vehicles, interest-earning assets at financial institutions, and 401K and Thrift Savings Plans. Although all individuals in my sample have at least one of the assets used in the creation of the net worth

measure, the median net worth for my sample is zero. The proportion of individuals who own a given asset in my sample roughly matches existing literature, although, again, published estimates are generally reported with fewer restrictions.

Table 4B. Summary Statistics of Net Worth Variables and Assets Used

Type of Asset	N=	Count	Mean	S.D.	Min	Mdn	0.75	Max
Total Net Worth	5668	5668	8328	49667.2	-250000	153	6675	260000
Total Net Worth (Excl. real estate)	5668	5668	2990.36	26440	-240000	0	5207	160000
Interest-earning assets	5668	2,774	1548	6637.9	0	0	500	120000
Regular checking accounts	5668	847	236.9	858	0	450	1000	9000
Stocks and mutual fund shares	5668	709	773	8253	0	0	0	330000
Equity in own home	5668	848	4568.24	30200.4	-140000	0	0	750000
Rental property	5668	31	615.6	15105.7	0	0	0	800000
Other Real Estate	5668	39	246	6805.4	0	0	0	400000
Vehicles	5668	3,342	1108.68	4311.8	-25000	0	2500	39330
Business or profession	5668	205	2854.17	51647.2	-130000	0	0	2000000
U.S. Saving Bonds	5668	478	141.6	1303.5	0	0	0	30000
IRA or KEOGH Accounts	5668	509	511.495	4166.7	0	0	0	220000
401K & Thrift Savings Plan	5668	1,226	3056	18,219	0	0	0	300000
Other financial Investments*	5668	31	139.7	5488.5	0	0	0	200000
Unsecured Loans	5668	436	793.13	5255.15	0	0	0	150000
Credit Cards & Store Bills	5668	1920	1104.81	3158.34	0	0	500	130000
Other debt **	5668	1099	3139.92	10428.2	0	0	0	175000

Notes: The statistics correspond to all 22 through 26 year-old individuals with at least some college education across three panels: 2001, 2004, and 2008, including those who do not own a given asset. Count refers to the number of individuals who own a given asset. The three unsecured debt categories are mutually exclusive, and only include debt in own name. * Refers to the amount from sale of real estate, the amount due from sale of business or property, and other financial assets not included in other categories. Values for net worth values are not winsorized, or top coded, as they are later in my analyses. ** Refers to medical bills not covered by insurance, educational loans, money owed to private individuals, and excludes home equity loans car loans.

For instance, in the sample about 16 percent of individuals own a home, while published estimates show that home ownership rates for all Americans under 25 are close to 21 percent (Peralta 2014). More importantly, roughly a third of my sample carried some credit card debt (column 2), and 1 in 5 had more than $1000 in credit card debt (not shown). Though the median credit card debt is zero among all individuals in my sample (Table 4B), among those who carried a balance the median was $1500 in 2001 and $2000 by 2008. These estimates are roughly in line with published estimates, finding a median credit card debt of $1,236 in 2000, $1,770 in 2002, and $1,645 in 2008 (Sallie Mae 2009).

3.1 – Empirical Methodology

In the analyses that follow, I first use an Ordinary Least Squares estimation strategy, in which the dependent variable is one of the several constructed measures of individual-level financial well-being on one of four regulation measures, separately, controlling for various demographic factors, and including state and year fixed effects. I then use quantile regressions in order to examine whether regulations had a differential effect on different parts of the distribution, particularly low net worth individuals. In most cases, I restrict my sample to 22- through 26-year-old individuals with at least some college education, living in coded states. In other cases I change my sample restriction to only household heads. The age restrictions are set taking into consideration the limitations of SIPP data, and the assumptions about migration of college graduates presented earlier in this paper; namely, that the proportion of students living in the same state where they attended school declines over time rather than immediately after college (Groen et al. 2004). I set no upper bound on the education level restriction. The model is as follows:

$$Y_{ist} = \beta_0 + \beta_1 \text{Regulation} X_{s(t-(\text{Age}-18))} + \gamma \text{Controls}_{ist} + \lambda_t \text{year} + d_s \text{State} + \varepsilon_{ist},$$

where the subscripts *s*= state, *t* = year and *i* = individual; Y_{ist} is the outcome of interest, financial well-being, and X corresponds to Regulations 1 through 4. Regulation coefficients should be interpreted as the average difference in the predicted financial net worth of individuals who attended college in a state that passed the given regulation relative to those who attended college in a state that did not pass it. For instance, if regulation X had a positive coefficient of 100, we would expect the financial net worth of individuals who attended college in a state that passed Regulation X to be $100 higher, on average, than the net worth of those attending college in a state without regulation. In all analyses I include the same individual-level controls: sex, age, race, marital status, yearly income, employment status (whether the individual worked all weeks of the reference period), number of children, highest grade completed, and whether the individual is currently enrolled in school, plus a vector of state and year fixed effects. Descriptive statistics for these controls are provided in Table 5.

Table 5. Descriptive Statistics for Demographic (Control) Variables

Variable	N=	Mean	S.D.
Male	5668	0.44	0.5
Age	5668	23.81	1.39
White	5668	0.78	0.42
Married	5668	0.23	0.42
Yearly Income Est.*	5668	21,498	24,518
Always Employed	5668	0.73	0.44
Number of Children	5668	0.35	0.71
B.A. or Higher	5668	0.37	0.48
Currently Enrolled	5668	0.36	0.48

Notes: Summary statistics of the demographic characteristics of all individuals ages 22 through 26 with some college education used in this sample. *Yearly Income is estimated by multiplying the amount of income earned in the 4-month reference period by three. In later analyses, the Yearly Income Est. refers to the log of the estimated yearly income presented in this table. Always employed refers to having worked all weeks during the 4-month reference period.

One factor I should ideally control but cannot due to limitations in my data is an individual's level of financial literacy or confidence in their ability to manage their own finances**.** Additionally, I cannot control for variation in financial literacy programs across schools even though it is likely substantial, as well financial literacy provided in high school or at home; this caveat in my analysis is important to consider, given research findings suggesting that only financial information provided by parents showed a significant relationship with credit use among college students; specifically, more information from parents was associated with lower outstanding balances carried on students' credit cards (Pinto et al. 2005).

Lastly, I perform a serious of robustness checks and different analytical approaches to complement my results. For instance, given that regulations that were passed may have not immediately taken effect, an additional set of analyses also includes lagged regulation terms.

4. Results

In this section, first I examine whether exposure to a given regulation has an effect –or a meaningful change in average values– on the credit card debt of individuals ages 22-26 with at least some college education. I examine each regulation separately, and follow this set of results with estimates for 18- through 22-year-old students currently enrolled in college. Next, I examine whether exposure to a given regulation has an effect on any of the constructed measures of financial well-being, and conduct various robustness checks. Lastly, I examine whether exposure to a given regulation has an effect on different parts of the net worth distribution, with a particular focus on the negative tail, taking into consideration that regulations were initially proposed to protect these credit card users. The assumption is that individuals with negative net worth may be more vulnerable to the effects of policies that change their access to credit, and therefore worth examining.

4.1 – Effect of Regulations on Debt

Tables 6A and Table 6B show OLS regression estimates for the effect of Regulations 1 through 4, on the level and probability of carrying credit card debt, respectively. All else held constant, 22- through 26 year old individuals who were college freshmen in states with bans on gifts for credit card applications (Regulation 1), restrictions on the time and place of credit card marketing (Regulation 2), and mandated financial education (Regulation 4), did not carry statistically significant different levels of credit card debt than individuals in states without these regulations (Table 6A). None of these three regulations had a statistically significant effect on the *probability* of carrying credit card debt either (Table 6B). However, individuals exposed to Regulation 3, a ban on the sale of student information to credit card marketers for marketing purposes, had $580.90 more in credit card debt (column 3, Table 6A), and a 9-percentage-point higher probability of carrying credit card debt (column 3, Table 6B), than individuals in states without these bans, all else held constant. Though the magnitude of the negative coefficient on Regulation 3 is equivalent to roughly half of the mean level of credit card debt, this is equivalent to less than a fifth of one standard deviation (Table 4B).

As far as demographic factors that are significant predictors of credit card debt, age, marital status, yearly income, and number of children were strong predictors of both the level of (Table 6A) and the probability of holding (Table 6B) credit card debt, all else held constant. Age was positively associated with higher credit card debt, while being married was associated with lower credit card debt. Interestingly, number of children was negatively associated with the level and probability of holding credit card debt, and (estimated) yearly income had a smaller but statistically significant positive effect on both, as well. The positive coefficient on yearly income may indicate that higher levels of income facilitate access to credit. Given that the effect of

annual income on debt may not be linear, I run a separate analysis where I simultaneously control for yearly income and yearly income squared; my results remain the same.

Table 6A. OLS Regressions of Having Any Credit Card Debt on Regulations 1-4

VARIABLES	Any Credit Card Debt			
	(1)	(2)	(3)	(4)
Regulation 1	0.01			
	(0.028)			
Regulation 2		0.00		
		(0.029)		
Regulation 3			0.09+	
			(0.049)	
Regulation 4				0.02
				(0.024)
Male Dummy	-0.06**	-0.09**	-0.07**	-0.04+
	(0.012)	(0.022)	(0.019)	(0.022)
Age	0.02**	0.02*	0.05**	0.00
	(0.005)	(0.008)	(0.009)	(0.008)
White Dummy	0.03*	0.08**	0.03	0.02
	(0.015)	(0.026)	(0.024)	(0.023)
Married Dummy	-0.17**	-0.25**	-0.02	-0.09**
	(0.014)	(0.023)	(0.066)	(0.026)
Log Yearly Income Est.	0.02**	0.02**	0.02**	0.02**
	(0.002)	(0.005)	(0.003)	(0.003)
Always Employed Dummy	0.03	-0.00	0.04	0.02
	(0.019)	(0.034)	(0.027)	(0.027)
Number of Children	-0.04**	-0.05**	-0.00**	-0.04**
	(0.008)	(0.014)	(0.011)	(0.012)
B.A. or Higher Dummy	-0.01	-0.00	0.06	0.04+
	(0.013)	(0.023)	(0.083)	(0.023)
Currently Enrolled Dummy	0.02	0.01	0.02	0.04*
	(0.014)	(0.014)	(0.014)	(0.021)
State & Year Fixed Effects	YES	YES	YES	YES
Constant	-0.23+	-0.22+	-0.24+	-0.25+
	(0.128)	(0.125)	(0.124)	(0.130)
Observations	5,665	5,665	5,665	5,665
R-squared	0.071	0.071	0.071	0.071

Notes: Regulation 1 refers to the ban of gifts in exchange for a credit card application. Regulation 2 refers to restrictions on location and time of marketing activities on college campuses. Regulation 3 refers to a ban on the selling of student information to credit card marketers. Regulation 4 refers to mandated financial literacy when credit card marketing takes place on a higher education campus. Robust standard errors are in parentheses. +, * and ** denote significance at the 10, 5 and 1 percent levels, respectively.

Table 6B. OLS Regressions of Level of Credit Card Debt on Regulations 1-4

VARIABLES	Credit Card Debt Level			
	(1)	(2)	(3)	(4)
Regulation 1	14.38			
	(198.820)			
Regulation 2		-125.35		
		(198.700)		
Regulation 3			580.90+	
			(317.146)	
Regulation 4				-34.25
				(162.978)
Male Dummy	-80.33	-79.90	-82.32	-79.94
	(84.383)	(84.438)	(84.493)	(84.362)
Age	143.56**	140.12**	149.58**	141.64**
	(31.113)	(31.003)	(30.537)	(31.752)
White Dummy	187.97+	189.26+	182.82+	188.17+
	(97.908)	(98.014)	(97.864)	(97.856)
Married Dummy	-544.81**	-542.78**	-545.23**	-544.06**
	(96.019)	(95.935)	(96.142)	(95.953)
Log Yearly Income Est.	85.36**	85.33**	86.13**	85.29**
	(13.740)	(13.688)	(13.717)	(13.701)
Always Employed Dummy	97.65	98.79	94.16	98.25
	(122.029)	(121.839)	(121.666)	(121.825)
Number of Children	-176.75**	-177.11**	-177.74**	-176.85**
	(48.385)	(48.371)	(48.449)	(48.430)
B.A. or Higher Dummy	54.49	54.77	52.64	54.85
	(94.425)	(94.279)	(94.253)	(94.255)
Currently Enrolled Dummy	-15.49	-14.08	-15.49	-14.91
	(93.200)	(93.282)	(93.047)	(93.156)
State & Year Fixed Effects	YES	YES	YES	YES
Constant	-2,949.05**	-2,838.86**	-3,101.01**	-2,873.14**
	(944.397)	(901.171)	(889.207)	(962.333)
Observations	5,665	5,665	5,665	5,665
R-squared	0.031	0.031	0.032	0.031

Notes: Regulation 1 refers to the ban of gifts in exchange for a credit card application. Regulation 2 refers to restrictions on location and time of marketing activities on college campuses. Regulation 3 refers to a ban on the selling of student information to credit card marketers. Regulation 4 refers to mandated financial literacy when credit card marketing takes place on a higher education campus. Robust standard errors are in parentheses. +, * and ** denote significance at the 10, 5 and 1 percent levels, respectively.

These findings merit closer inspection; if it is the case that credit card restrictions generally have no significant effect on the credit card debt levels of students, then it could also be the case that these restrictions have no significant effect on credit card use, and/or other behaviors that could affect financial net worth, the main outcome of interest discussed in the next section. To explore this question we could examine the effect of regulations during these individuals' college years, given that this would be the most plausible channel through which the reforms would affect the balances for 22-26-year-olds. In Table 7, I show estimates for individuals currently enrolled in college and ages 18 through 22. Interestingly, the three regulations that appeared to have no statistically significant association with credit card debt among individuals ages 22 through 26, are all negatively associated with the level of credit card debt among students who are currently enrolled in college (column 3). For instance, regulation 1 is associated with $417 lower credit card debt (column 3, row 1). These coefficients are also economically significant.

Table 7. OLS Regressions of Credit Card Debt on Regulations 1-4 Among Individuals Currently Enrolled in College

	Any Credit Card Debt	Credit Card Debt Level
Regulation 1	-0.01	-417.60*
	(0.044)	(177.184)
Regulation 2	-0.01	-501.39*
	(0.051)	(219.284)
Regulation 3	0.10	41.78
	(0.080)	(150.670)
Regulation 4	-0.01	-490.42**
	(0.046)	(185.910)
Controls	YES	YES
Observations	1,756	1,756

Notes: Robust standard errors are in parentheses. +, * and ** denote significance at the 10, 5 and 1 percent levels, respectively.

4.2 – Effect of Regulations on Net Worth

Next, I regress the constructed measures of financial well-being on regulations 1-4, separately. In the first four rows of Table 8A, I present OLS estimates of regressions using the most inclusive measure of net worth (including the net value of real estate); in the next four rows, Table 8A shows estimates for OLS regressions using the net worth variable that excludes real estate; and, in the last four rows, Table 8A shows estimates for OLS regressions using the value of gross liquid assets as the dependent variable. All regression estimates are presented on an individual basis, first for all individuals in the sample (column 1), and then separately for married individuals in the sample (columns 2) and single individuals (columns 3). Refer to Appendix III for the original version of the tables summarized in Table 8A.

Generally, OLS regression results do not show a statistically significant association between credit card marketing restrictions and net worth or between credit card marketing restrictions and the value of gross liquid assets. Specifically, OLS regression results show that restricting the time and place of credit card marketing (Regulation 2), banning the selling of student information for credit card purposes (Regulation 3), and mandating financial education (Regulation 4), never significantly affected the financial well-being of the full sample. A ban on the use of gifts (Regulation 1), on the other hand, is negatively associated with the most inclusive measure of net worth; individuals who were exposed to laws banning the use of gifts had on average $4,226 lower net worth than individuals who were not exposed to the same ban, all else held constant (row a, column 1). Broken down by marital status, OLS regression results show this modest negative association only exists among individuals who are single (row a, column 3). However, when using the measure of net worth excluding real estate, the relationship is *positive*, as we would expect, but only significant among *married* individuals (row e, column 2).

Table 8A. OLS Regressions of Financial Wellbeing on Regulations 1-4

VARIABLES	Net Worth		
	All	Married	Single
a. **Regulation 1**	-4,226.48+	1,865.43	-5,924.40*
	(2,312.867)	(4,622.712)	(2,664.906)
b. **Regulation 2**	-1,575.77	2,212.41	-2,627.90
	(2,381.454)	(4,513.752)	(2,739.945)
c. **Regulation 3**	941.78	2,791.68	96.48
	(4,218.903)	(7,661.851)	(4,751.516)
d. **Regulation 4**	-2,028.58	2,899.88	-3,312.22
	(2,079.941)	(4,401.877)	(2,366.483)
	Net Worth (Excluding Real Estate)		
	All	Married	Single
e**. Regulation 1**	137.36	5,891.82+	-1,115.37
	(1,594.385)	(3,189.922)	(1,849.978)
f. **Regulation 2**	1,241.93	4,487.85	407.95
	(1,628.356)	(3,282.422)	(1,872.739)
g. **Regulation 3**	1,323.51	8,522.13	-839.47
	(2,850.984)	(5,994.056)	(3,233.807)
h. **Regulation 4**	-98.12	3,817.80	-1,092.25
	(1,354.965)	(2,653.954)	(1,582.928)
	Gross Liquid Assets		
	All	Married	Single
i. **Regulation 1**	-909.50	2,729.14	-1,949.77
	(1,525.595)	(2,961.889)	(1,807.455)
j. **Regulation 2**	-24.82	2,104.25	-893.45
	(1,596.957)	(3,035.997)	(1,863.949)
k. **Regulation 3**	2,025.45	4,140.77	1,107.34
	(3,081.925)	(5,881.291)	(3,474.353)
l. **Regulation 4**	-990.51	1,329.77	-1,848.68
	(1,372.733)	(2,546.517)	(1,646.362)
Controls	YES	YES	YES
Observations	5,665	1,403	4,262

Notes: Regulation 1 refers to the ban of gifts in exchange for a credit card application. Regulation 2 refers to restrictions on location and time of marketing activities on college campuses. Regulation 3 refers to a ban on the selling of student information to credit card marketers. Regulation 4 refers to mandated financial literacy when credit card marketing takes place on a higher education campus. Robust standard errors are in parentheses. +, * and ** denote significance at the 10, 5 and 1 percent levels, respectively.

Given that none of the other regulations had a statistically significant effect on the net worth of individuals aged 22 through 26 with at least some college education, regardless of marital status, in a separate set of analyses I restrict my sample to only household heads. This yields insignificant results for all regulations, regardless of marital status (Appendix IV: Table 8B). OLS coefficients for demographic controls (shown in Appendix tables) generally match expectations. For instance, male and age are consistently strong positive predictors of (both measures of) net worth, all else held constant, and the number of children is a strong negative predictor of net worth among single individuals.

I perform various robustness checks on the modest results of Regulation 1 on the most inclusive measure of net worth. Results for these checks are shown in table 9A.[14] First, I replace the current regulation term with a lagged regulation term, under the assumption that implementing some of these regulations, such as financial literacy programs mandated by Regulation 4, might take at some time to implement and take effect. This does not make a difference in my results; the coefficient for Regulation 1 remains the only significant one. Next, I drop states one at a time from each analysis and re-run all regressions. Results again do not change, even when dropping states such as California (row c), which due to its relative size contributed a larger share to the sample, and Virginia (row d), which had a relatively stringent set of regulations. Thus, no particular outlier state is driving the overall pattern of results. Then, I re-run my analysis with only individuals who have never been to college, and therefore, should have not been exposed to regulations. Reassuringly, no regulations showed a significant association with financial well-being among individuals with no college education (row e), including Regulation 1. Lastly, I drop the 2008 panel to ensure that declines in asset value due to

[14] Refer to Appendix IV: Table 9B for an identical table with regressions using the measure of financial well-being that excludes real estate. All estimates of the effect of regulation are insignificant.

the Great Recession did not affect my results. Dropping these observations removes all significance from my results, which coupled with the results in Table 8A suggest there may be some spurious correlation caused by real estate value. This issue is discussed at length in Section 5. Worth noting is that in a separate check, not shown in Table 9A, I run OLS regressions with the narrowest measure of wealth, a given asset. Using real estate alone, OLS regression estimates show that real estate value is negatively associated with three regulations, all else held constant. While the effect of regulations on other assets, such as the value of stocks, were also significant, dropping these assets from the net worth measure did not change my results. As shown in Table 8A (rows e-h), this is also the case with real estate value.

Table 9A. Robustness Checks Net Worth, Including Real Estate

	Net Worth			
	Regulation 1	**Regulation 2**	**Regulation 3**	**Regulation 4**
All individuals, 22-26, at least some college				
a. Lagged Regulation term (n=5,351)	-4,167.86+	-1,443.44	8,372.58	355.12
	(2,274.901)	(2,473.982)	(5,628.563)	(2,242.527)
b. Excluding California (n=4,755)	-6,237.80*	105.60	407.85	-1,714.51
	(3,101.859)	(3,829.434)	(4,266.439)	(2,470.982)
c. Excluding Virginia (n=5,326)	-3,931.34+	-1,261.49	1,145.04	-3,750.53
	(2,358.385)	(2,414.965)	(4,236.826)	(2,189.793)
d. Excluding 2008 Panel (n=3,684)	-6,066.93	3,337.11	3,337.11	817.24
	(4,090.423)	(3,021.114)	(3,021.114)	(3,545.196)
Placebo Test				
e. High School Students (n=3,568)	-567.46	-749.72	734.06	-965.49
	(1,754.902)	(1,748.975)	(3,073.344)	(1,604.423)

Notes: Regulation 1 refers to the ban of gifts in exchange for a credit card application. Regulation 2 refers to restrictions on location and time of marketing activities on college campuses. Regulation 3 refers to a ban on the selling of student information to credit card marketers. Regulation 4 refers to mandated financial literacy when credit card marketing takes place on a higher education campus. Robust standard errors are in parentheses. +, * and ** denote significance at the 10, 5 and 1 percent levels, respectively.

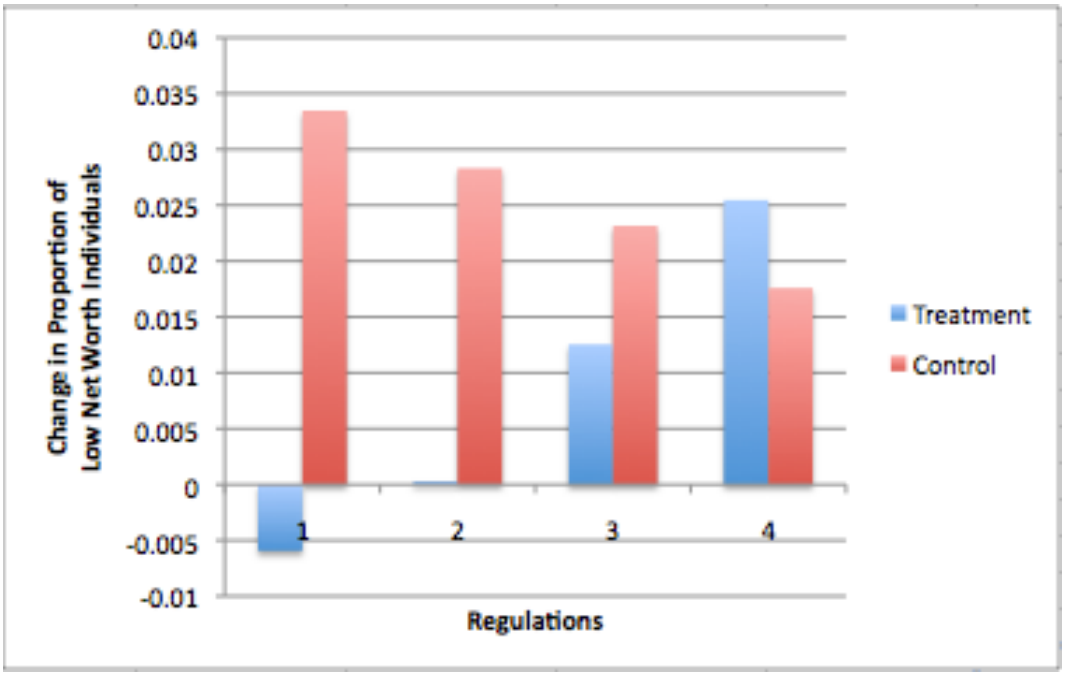
4.3 Additional Results

My results show a modest and inconsistent association, if any, between restrictions on credit card marketing and financial well-being. Nevertheless, it could be argued that the intent of most of this legislation was never to affect the central tendency of the distribution, but rather to avoid the worst disasters in the use of credit cards. In other words, a legislator may concede that despite the lack of significant effect on the whole population, these regulations were still justified if, say, they significantly cut the number of people aged 22 through 26 with very high negative net worth. To evaluate this possibility, I compare the proportion of individuals in my sample who have a net worth below -$500 and do not have a home in control states to those in treatment states.[15] I exclude individuals who own a home, given that presumably individuals with a home were not risky credit card users when they were approved for a home loan. Using individual-level data, Figure 3 shows the average difference, between 2001 and 2008, in the proportion of individuals with net worth below -$500 across all individuals who were and were not exposed to regulations. Treatment refers to those in states where a regulation would eventually be passed. The control group refers to those in states where a regulation was never passed. A positive value represents an increase in the proportion of individuals with net worth below - $500 between 2001 and 2008. In line with the idea that the number of individuals with low net worth increased over time in states without regulations, this figure shows an increase across all control groups. In treatment states, the proportion of individuals with low net worth decreased where regulation 1 was passed, and remained roughly the same in states where Regulation 2 was passed. Upon closer inspection, however, significance tests show that in 2001 there was no statistical

[15] In a separate analysis, I use this indicator as a dependent variable in a new regression. All results are insignificant.

difference across the treatment and control group, for any of the regulations. This was also the case in 2008.

Figure 3. Change in Proportion of Low Net Worth, By Regulation



Notes: Regulation 1 refers to the ban of gifts in exchange for a credit card application. Regulation 2 refers to restrictions on location and time of marketing activities on college campuses. Regulation 3 refers to a ban on the selling of student information to credit card marketers. Regulation 4 refers to mandated financial literacy when credit card marketing takes place on a higher education campus.

Additional evidence on possible heterogeneous effects comes from quantile regressions, shown in Table 10. Regulations continue to be unrelated to either measure of net worth, across the net worth distribution, regardless of whether the outcome of interest includes real estate value (columns 1, 3, and 5) or excludes real estate value (columns 2, 4, and 6).

Table 10. Quantile Regressions of Net Worth on Regulations 1-4

VARIABLES	25th Percentile		50th Percentile		75th Percentile	
	Net Worth	**NW (No Real Estate)**	**Net Worth**	**NW (No Real Estate)**	**Net Worth**	**NW (No Real Estate)**
Regulation 1	32.86	168.16	87.11	6.55	100.00	10.31
	(858.584)	(872.742)	(182.138)	(128.006)	(819.500)	(496.734)
Regulation 2	418.27	303.73	36.54	-29.72	15.95	-335.83
	(678.183)	(822.585)	(201.343)	(171.564)	(825.786)	(573.606)
Regulation 3	674.76	439.74	383.64	233.50	-49.13	-33.79
	(697.135)	(1,172.954)	(378.037)	(232.224)	(1,673.546)	(1,103.151)
Regulation 4	215.90	-66.36	115.76	45.45	-329.84	-579.08
	(609.336)	(545.060)	(198.216)	(191.362)	(835.830)	(516.952)
Controls	YES	YES	YES	YES	YES	YES
Observations	5,665	5,665	5,665	5,665	5,665	5,665

Notes: Regulation 1 refers to the ban of gifts in exchange for a credit card application. Regulation 2 refers to restrictions on location and time of marketing activities on college campuses. Regulation 3 refers to a ban on the selling of student information to credit card marketers. Regulation 4 refers to mandated financial literacy when credit card marketing takes place on a higher education campus. Robust standard errors are in parentheses. +, * and ** denote significance at the 10, 5 and 1 percent levels, respectively.

5. Discussion

Examining the effect that different state regulations might have had on the financial well-being of college students is interesting given that most regulations, including the four used in these analyses, were passed with the aim of protecting young consumers from a credit trap and the long-term consequences of large debt burdens. Indeed, research shows that large debt burdens can preclude the purchase and accumulation of assets, and affect lifetime income (Sherraden 1990). However, credit cards have many advantages, as well, such as helping individuals establish a credit history, which in turn can facilitate the accumulation of assets.

My results, however, show only a modest and inconsistent association, if any, between restrictions on credit card marketing and financial well-being; results vary depending on what

measure of financial well-being is used and marital status. For instance, while a ban on the use of gifts in exchange for credit card applications has a modestly significant *negative* effect on the net worth of individuals exposed to it, this is true only among single individuals and when net worth includes net real estate value. Alternatively, when net worth excludes the net value of real estate, the same ban on the use of gifts in exchange for credit card applications is only significant among married individuals; and, in this case the association is *positive*. The difference in results when using the different measures of net worth holds across all credit card marketing restrictions (if they are significant).

One reason results may differ when property is excluded could be that a few outliers who own homes are driving results. Indeed, less than a fifth of the individuals in my sample own real estate. Moreover, if my regressions are not adequately accounting for appreciation that might not be soaked up in year fixed effects, then the results from the measure of net worth without real estate values or one with only gross liquid assets may be more reliable than the one that includes real estate. Indeed, results from Table 9, showing estimates when the 2008 panel is dropped, point to the possibility that real estate value could be driving these results.

As far as reasons for differences across marital status, one reason significant results may be restricted to only single individuals when using the most inclusive measure of financial well-being is that single individuals may face more barriers to credit than married individuals, and therefore may be more affected by credit card marketing protections altering their access to credit. Indeed research finds that as far as the supply of credit, married couples could be given more credit because they are less mobile and loans may be jointly underwritten (Jappelli 1990). Additionally, if an individual without good credit marries someone with good credit, they could have access to assets unattainable if single, such as a home. Following this reasoning, credit card

marketing curbing an individual's access to credit could pose an additional and significant disadvantage for asset accumulation among individuals who are single. Lastly, one study finds that married individuals were more knowledgeable about all credit issues, such as interest rates and over balance fees (Ludlum 2012). It could be the case, then, that married individuals were better off due to higher baseline levels of financial literacy.

Using a measure of net worth that excludes net real estate values, however, shows that credit card marketing restrictions are not significantly associated with financial well-being among single individuals. And, among married individuals, the same restrictions that were negatively associated with net worth among single individuals (using the most inclusive measure of net worth) are significantly *positively* associated with financial well-being using the less inclusive measure of net worth. One reason for this difference is that perhaps socioeconomic status rather than marital status is what distinguishes who is affected by these regulations. For instance, it could be the case that regulations had more of an effect on low net worth individuals than on high net worth individuals. If it is the case that people who get married between the ages of 22 and 26 are of lower socioeconomic status, then the estimated effect of the regulation may be due to the fact that they started off at a lower level of assets rather than because they are married. If true, we would expect income to be a good predictor of whether an individual will respond to these regulations. Upon inspection of the differences in income of married versus single individuals, it seems to be the case that married individuals actually have higher individual-level incomes, on average. And, while income was a significant predictor of net worth among single individuals, this was not the case among married individuals. An alternative explanation for the inconsistency in results once we focus on marital status is that perhaps regulations had a greater effect at public universities rather than at smaller private colleges. If

individuals who got married between 22 and 26 years old were more likely to attend public universities, the estimated effect of the regulation may have something to do with other endogenous characteristics.

Ultimately, restrictions on credit card marketing may show inconsistent results perhaps because they had inconsistent effects. Indeed, restrictions did not vary uniformly over time, place, or in terms of stringency across and within states (Figure 1). That is, by measuring regulations at the state level, I assume the scope and effect of a law in a given state is similar to that of another state that passed the same law, though this may not be the case – not to mention the substantial within state variation that could have altered the average effect of any given restriction. In fact, even in cases where restrictions were presumably implemented uniformly and correctly, they may not have had the effect that was expected. For instance in one case, even when educational material was provided, 59 percent of student credit card holders in one study found the education materials provided with applications to be "unreadable," or unhelpful and one-quarter of all students found the offer of lower introductory rates to be misleading (Johnson 2005 citing a 2001 PIRG study).

In summary, credit card marketing restrictions did not significantly affect the financial wellbeing of individuals who were exposed to them, on average. There is also scant evidence that these restrictions may have protected low net worth college students more than the average student. Moreover, other measures of financial well-being, namely gross liquid assets, are also not significantly affected by any of the credit card marketing restrictions used in this paper, regardless of marital status.

6. Conclusion

During the 1990s, credit card issuers received negative media attention for heavily marketing to college students. The ways in which they did this included tabling on campuses regularly, offering free gifts in return for completed applications, and buying student contact information from colleges and universities, among other tactics. Meanwhile, concerns about whether students' financial well-being could be negatively affected by these practices were voiced throughout the country, ultimately resulting in a series of regulations that varied across time and place. This paper examines whether the most common regulatory actions addressing the credit card solicitation practices of credit vendors on college campuses affected the financial well-being of individuals exposed to them. My results suggest that regulatory actions on credit card marketing are modestly associated with the level or probability of having a credit card debt, more so among students currently enrolled in college. Moreover, regulatory actions had largely insignificant effects, if any, on net worth and the value of gross liquid assets. This is true for the financial well-being of the average student, and those in the lower tail of the net worth distribution.

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Legal Citations

State	State Code	History
AR	Arkansas Code Annotated § 4-104-201; § 4-104-202; § 4-104-203; § 4-104-204	- House Bill 1147, Act 1328, 1999 Regular Session - Senate Bill 1098, Act 1430, 2005 Regular Session
CA	California Education Code § 3-14-65-99030; § 3-14-65-99040 California Civil Code, § 1747.02	- Senate Bill 796, 2000 Regular Session, *vetoed by Governor*; - Assembly Bill 521, chapter 294, 2001-2 Regular Session - Assembly Bill 262, chapter 679, 2007 Regular Session
CT	Connecticut General Statutes § 185-10a-44b	- Substitute House Bill 6483, P.A. 09-167, 2009 Regular Session
DE	None	- Senate Bill 95, 2001 Regular Session, *died in committee* - Senate Bill 87, 2001 Regular Session, *died in committee*
FL	None	- Senate Bill 394, 2009 Regular Session, *died in committee*
IL	Illinois Compiled Statues § 105-5/10.38; § 110-26	- Public Act 95-331, 2007 Regular Session - Public Act 96-261, 2009 Regular Session
KS	None	None
KY	None	*Many bills considered but died in committee, such as:* - House Bill 57, 2003 Regular Session - House Bill 130, 2004 Regular Session - House Bill 96, 2005 Regular Session
LA	Louisiana Revised Statues § 17-3351.2; § 9-3577.3	- House Bill 1353, Act 1110, 1999 Regular Session, - House Bill 195, Act 934, 1999 Regular Session - House Bill 107, Act No. 1010, 2003 Regular Session
MD	Annotated Code of Maryland § 15-111	- House Bill 1210, Chapter 312, 2008 Regular Session *Many bills considered but died in committee, such as:* - House Bill 764, 1999 Regular Session - House Bill 45/ Senate Bill 470, 2000 Regular Session - House Bill 1155, 2000 Regular Session - House Bill 959, 2001 Regular Session

		- House Bill 875, 2001 Regular Session - House Bill 1373, 2002 Regular Session
MI	None	None
MN	Minnesota Statutes § 135A.145	- House File 1063, chapter 144 § 2-2.9, 2007 Session Laws
NJ	New Jersey Revised Statutes § 18A-62-54; § 18A-3C-2, § 18A-3C-3; § 18A-3C-4; § 18A-3C-5	- Act 1688, chapter 18, 2013 Chapter Laws - Senate Bill 1927, chapter 148, 2008 Chapter Laws
NM	Not codified into the New Mexico Annotated Code	- Senate Bill 152, chapter 71, 2010 Regular Session
NY	Consolidated Laws of New York § 129-A-6437	- Senate Bill 7663-B, chapter 713, 2004 Session Laws,
OK	Oklahoma Statutes § 70-3245; §14A-3-309.1	- Senate Bill 496, chapter 114 § 1, 2007 Session Laws - Chapter 260 § 24, 1990 Session Laws, amended by chapter 99 § 5, 2013 Session Laws
PA	Public Schools Code of 1949 § 24-2301-A; § 24-2302-A	Act 2303-A, Public Law 722, Number 82, 2004 Laws
TN	Tennessee Code Annotated § 49-7-143	- H.B. 3393, § 1000-1, 2008 Public Acts
TX	Texas Business and Commerce Code § 761-001; § 761-002; § 761-003; § 761-051; § 761-052; § 761-151	- Senate Bill 1969, chapter 87 § 4.014(a), 2009 Acts
VA	None	- Senate Joint Resolution 421, 1999 Regular Session - House Joint Resolution 735, 1999 Regular Session *Many bills considered but died in committee, such as:* - House Bill 1451, 2000 Regular Session
WA	Revised Code of Washington § 28.B.10.618	- Senate Bill 5506, § 74-1, 2005 Regular Session
WV	West Virginia Code Annotated § 18B-14-10	- Senate Bill 217, chapter 123, 2002 Regular Session

Note: All bills under “History” were passed unless noted otherwise. All legislation starts as a bill, but depending on where the bill is in the process, the title and type of bill will vary. "Session Bills,” also known as "Chaptered Bills," refer to individual state bills that have been signed into law. Once a given state bill is passed by both chambers, it is called a (public) act or a statute. A public act does not actually become law until the governor has signed it (or as long as the governor doesn't veto it). Similar to federal statutes/laws, state statutes originate from state legislative bills originally introduced by either the Senate or the House, or as joint resolutions between the two chambers. In all states, most (but not all) statutes are "codified," that is, they are integrated into the state's code of laws, by subject. For example in 2009, the Connecticut General Assembly passed House Bill 6483, which was subsequently signed into law as Public Act 09-167: *An Act Concerning Credit Card Offers on College Campuses,* and signed into law. This Act was then codified into Connecticut’s General Statutes, and is today listed under chapter 185 § 10a-44b. Thus, “acts,” “statutes,” “laws”, and “codes” can generally be considered synonymous. In this paper, I use “Regulation” to mean any of these acts, statues, laws, or codes regulating credit card marketing. However, it should be noted that “regulations” are technically not the acts/laws/statutes per se, but rather the standards that are adopted in order to interpret and implement them.

APPENDIX I: State Law Coding Information

Table A: Year Regulations Were Passed in Select States

STATE	Regulation 1	Regulation 2	Regulation 3	Regulation 4
Arkansas 05	1999	2005	No	1999
California 06	2002	2002	2007	2002
Connecticut 09	2010	2010	2010	2010
Delaware 10	No	No	No	No
Florida 12	No	No	No	No
Illinois 17	2010	No	2007	2010
Kansas 20	No	No	No	No
Kentucky 21	No	No	No	No
Louisiana* 22	2003	1999	1999	1999
Maryland 24	No	2008	No	2008
Michigan 26	No	No	No	No
Minnesota 27	No	No	2007	No
New Jersey 34	2013	2013	2009	2005
New York 36	2004	No	2004	2004
New Mexico 39	No	No	No	2010
Oklahoma 40	No	No	2007	2000
Pennsylvania 42	2004	2004	No	2004
Tennessee 47	2008	2008	No	No
Texas 48	2009	2009	No	No
Virginia 51	No	No	No	1999
Washington 53	No	2005	No	2005
West Virginia 54	2003	2003	2003	2003

Notes: The numbers next to the state name correspond to the state code in the SIPP. * denotes states imposing regulations for only public institutions of higher education. Regulation 1 = Ban on the use of gifts, Regulation 2 = Restrictions on the location and time of on-campus solicitations, Regulation 3= Ban on selling of student information to marketers, and Regulation 4 = Mandated financial literacy education

APPENDIX II: Generated Variables

Always Employed – Collapses information across four reference months of a wave. It is a binary variable equal to 1 if the created variables, unemployedref1=0, unemployedref2=0, unemployedref3=0, and unemployedref4=0, meaning an individual was never unemployed, that is fully employed, throughout all four reference months of the wave

Unemployedref# – Binary variable equal to 1 if rmesr=5, =6, =7, or =8, meaning an individual was unemployed for some or all of the weeks during the reference month

B.A. or Higher – Binary variable created using eeducate=44, =45, =46, or =47, or a Bachelor's degree, Master's degree, Professional School degree, and Doctorate degree, respectively.

Currently Enrolled – Binary variable equal to 1 if reenroll=1 or =2, or enrolled full-time and enrolled part-time, respectively

Male – Binary variable created using esex=1, or male

Married – Binary variable created using ems=1 or =2, married with spouse present and married with spouse absent, respectively. Married=0 includes widowed, divorced, separated, or never married

Net Worth – using following SIPP variables:

- thhtheq – home equity recode
- trtmv minus trtpri – the market value of rental property minus the principal owed on rental property
- tcarval1 minus ta1amt – the value of the first vehicle minus the total debt owed against the first vehicle
- tcarval2 minus ta2amt – the value of the second vehicle minus the total debt owed against the second vehicle
- tcarval3 minus ta3amt – the value of the third vehicle minus the total debt owed against the third vehicle
- tsmiv – the value of stocks/funds in own name,
- talsbv – the face value of U.S. Savings Bonds,
- talicha – the amount in non-interest checking accounts
- toaeq – (equity in) investments
- taltb – the market value of 401k,403b, or thrift plan in own name
- talrb – the market value of IRA account(s) in own name
- talkb – the market value of KEOGH account(s) in own name
- timia – the amount of bonds/securities in own name
- talidab – the amount owed for store bills/credit cards in own name

- talidal – the amount owed for loans obtained through bank/credit in own name (other than car loans or home equity)
- talidao – the amount owed for other debt in own name "that has not yet been mentioned" including medical bills not covered by insurance, money owed to private individuals, educational loans, etc and excluding mortgages, home equity loans, and car loans.
- tvbva1 minus tvbde1 – the value of the first business minus the total debt owed against the first business
- tvbva2 minus tvbde2 – the value of the second business minus the total debt owed against the second business

UnderNegNet500 – Binary variable equal to 1 if an individual has a net worth below -$500 and does not own a home

White – Binary variable created using erace=1, or only white. White=0 includes only Black, only Asian, and other

Yearly Income Est. – Collapses information across four reference months of a wave. It is a continuous variable created using tptotinc, or total personal income, across four months, multiplied by three to create the yearly estimate. The logs of the yearly estimates are used in all analyses

APPENDIX III: Full Tables

Table 8A, Row a. OLS Regressions of Net Worth (Including Real Estate) on Regulation 1

VARIABLES	(1) ALL	(2) Married	(3) Single
Regulation 1	-4,226.48+	1,865.43	-5,924.40*
	(2,312.867)	(4,622.712)	(2,664.906)
Male Dummy	6,210.76**	5,310.58+	6,298.59**
	(1,194.057)	(2,834.972)	(1,331.979)
Age	1,679.14**	3,480.46**	1,040.21*
	(418.023)	(878.350)	(474.763)
White Dummy	1,815.61	2,930.80	1,633.96
	(1,375.185)	(3,259.756)	(1,525.988)
Married Dummy	6,940.38**		
	(1,472.380)		
Log Yearly Income Est.	849.60**	290.54	1,034.12**
	(211.189)	(496.924)	(235.316)
Always Employed Dummy	1,502.38	3,052.62	1,199.23
	(1,691.561)	(3,770.214)	(1,893.033)
Number of Children	-129.19	1,198.29	-1,354.95+
	(779.728)	(1,504.173)	(803.644)
B.A. or Higher Dummy	2,037.48	3,825.81	1,554.52
	(1,291.243)	(2,823.370)	(1,463.571)
Currently Enrolled Dummy	-1,894.38	-1,345.87	-1,995.04
	(1,224.316)	(2,922.269)	(1,372.496)
State & Year Fixed Effects	YES	YES	YES
	(1,636.729)	(3,491.301)	(1,858.469)
Constant	-49,124.93**	-96,829.16**	-31,120.66*
	(10,963.384)	(22,977.326)	(12,613.582)
Observations	5,665	1,403	4,262
R-squared	0.034	0.053	0.028

Notes: Regulation 1 refers to the ban of gifts in exchange for a credit card application. The dependent variable, net worth, includes equity in real estate. Regression estimates are presented on an individual basis, and separately for: all individuals in the sample (column 1); only married individuals in the sample (column 2), only single individuals in the sample (column 3). Robust standard errors are in parentheses. +, * and ** denote significance at the 10, 5 and 1 percent levels, respectively.

Table 8A, Row b. OLS Regressions of Net Worth (Including Real Estate) on Regulation 2

VARIABLES	(1) All	(2) Married	(3) Single
Regulation 2	-1,575.77	2,212.41	-2,627.90
	(2,381.454)	(4,513.752)	(2,739.945)
Male Dummy	6,180.38**	5,320.85+	6,254.81**
	(1,193.856)	(2,833.035)	(1,332.318)
Age	1,760.68**	3,474.57**	1,142.92*
	(420.305)	(868.060)	(479.299)
White Dummy	1,789.93	2,928.81	1,571.94
	(1,375.933)	(3,255.773)	(1,526.034)
Married Dummy	6,906.47**		
	(1,473.222)		
Log Yearly Income Est.	861.42**	286.56	1,052.15**
	(211.014)	(494.949)	(235.452)
Always Employed Dummy	1,436.85	3,067.58	1,103.30
	(1,692.854)	(3,769.117)	(1,897.463)
Number of Children	-118.73	1,194.12	-1,355.84+
	(779.741)	(1,504.510)	(803.564)
B.A. or Higher Dummy	2,013.89	3,828.85	1,503.72
	(1,291.594)	(2,822.999)	(1,463.822)
Currently Enrolled Dummy	-1,909.17	-1,349.73	-2,026.15
	(1,224.970)	(2,920.788)	(1,373.182)
State & Year Fixed Effects	YES	YES	YES
Constant	-53,270.27**	-96,517.64**	-37,010.66**
	(10,758.016)	(22,334.477)	(12,373.086)
Observations	5,665	1,403	4,262
R-squared	0.034	0.053	0.028

Notes: Regulation 2 refers to restrictions on location and time of marketing activities on college campuses. The dependent variable, net worth, includes equity in real estate. Regression estimates are presented on an individual basis, and separately for: all individuals in the sample (column 1); only married individuals in the sample (column 2), only single individuals in the sample (column 3). Robust standard errors are in parentheses. +, * and ** denote significance at the 10, 5 and 1 percent levels, respectively.

Table 8A, Row c. OLS Regressions of Net Worth (Including Real Estate) on Regulation 3

VARIABLES	(1) All	(2) Married	(3) Single
Regulation 3	941.78	2,791.68	96.48
	(4,218.903)	(7,661.851)	(4,751.516)
Male Dummy	6,173.00**	5,293.12+	6,243.01**
	(1,192.745)	(2,831.432)	(1,330.852)
Age	1,809.27**	3,455.12**	1,211.24*
	(422.722)	(871.281)	(482.390)
White Dummy	1,766.84	2,893.18	1,532.82
	(1,373.093)	(3,254.322)	(1,521.328)
Married Dummy	6,882.41**		
	(1,472.702)		
Log Yearly Income Est.	862.62**	289.61	1,051.64**
	(211.606)	(495.849)	(235.923)
Always Employed Dummy	1,419.67	3,051.80	1,078.16
	(1,692.824)	(3,769.548)	(1,895.693)
Number of Children	-116.30	1,178.01	-1,348.05+
	(780.438)	(1,509.256)	(803.438)
B.A. or Higher Dummy	2,008.28	3,826.60	1,493.41
	(1,292.434)	(2,823.515)	(1,465.881)
Currently Enrolled Dummy	-1,925.69	-1,382.48	-2,063.40
	(1,225.832)	(2,920.376)	(1,375.134)
State & Year Fixed Effects	YES	YES	YES
Constant	-54,704.26**	-95,657.58**	-38,998.09**
	(10,769.331)	(22,297.690)	(12,404.874)
Observations	5,665	1,403	4,262
R-squared	0.034	0.053	0.027

Notes: Regulation 3 refers to a ban on the selling of student information to credit card marketers. The dependent variable, net worth, includes equity in real estate. Regression estimates are presented on an individual basis, and separately for: all individuals in the sample (column 1); only married individuals in the sample (column 2), only single individuals in the sample (column 3). Robust standard errors are in parentheses. +, * and ** denote significance at the 10, 5 and 1 percent levels, respectively.

Table 8A, Row d. OLS Regressions of Net Worth (Including Real Estate) on Regulation 4

VARIABLES	(1) All	(2) Married	(3) Single
Regulation 4	-2,028.58	2,899.88	-3,312.22
	(2,079.941)	(4,401.877)	(2,366.483)
Male Dummy	6,192.74**	5,275.43+	6,260.62**
	(1,193.383)	(2,834.737)	(1,331.070)
Age	1,708.99**	3,539.84**	1,056.43*
	(434.938)	(896.506)	(497.832)
White Dummy	1,779.18	2,969.43	1,561.41
	(1,375.530)	(3,268.426)	(1,524.277)
Married Dummy	6,916.01**		
	(1,473.468)		
Yearly Income Est.	859.41**	281.89	1,045.85**
	(211.115)	(494.427)	(235.627)
Always Employed Dummy	1,445.87	3,075.35	1,116.64
	(1,691.675)	(3,771.568)	(1,895.502)
Number of Children	-118.00	1,194.56	-1,349.47+
	(779.697)	(1,505.556)	(803.231)
B.A. or Higher Dummy	2,027.51	3,849.66	1,542.62
	(1,291.713)	(2,829.727)	(1,465.866)
Currently Enrolled Dummy	-1,897.93	-1,419.43	-2,022.02
	(1,223.991)	(2,918.992)	(1,372.726)
State & Year Fixed Effects	YES	YES	YES
Constant	-51,001.19**	-98,879.01**	-33,008.91*
	(11,582.905)	(23,704.435)	(13,443.995)
Observations	5,665	1,403	4,262
R-squared	0.034	0.053	0.028

Notes: Regulation 4 refers to mandated financial literacy when credit card marketing takes place on a higher education campus. The dependent variable, net worth, includes equity in real estate. Regression estimates are presented on an individual basis, and separately for: all individuals in the sample (column 1); only married individuals in the sample (column 2), only single individuals in the sample (column 3). Robust standard errors are in parentheses. +, * and ** denote significance at the 10, 5 and 1 percent levels, respectively.

Table 8A, Row e. OLS Regressions of Net Worth (Excluding Real Estate) on Regulation 1

VARIABLES	(1) All	(2) Married	(3) Single
Regulation 1	137.36	5,891.82+	-1,115.37
	(1,594.385)	(3,189.922)	(1,849.978)
Male Dummy	4,759.70**	5,553.79**	4,557.20**
	(721.010)	(1,501.848)	(826.353)
Age	630.02*	1,440.25**	398.78
	(249.540)	(481.274)	(292.809)
White Dummy	1,823.43*	2,278.44+	1,701.88*
	(730.529)	(1,358.184)	(859.997)
Married Dummy	2,320.49**		
	(806.883)		
Log Yearly Income Est.	453.17**	146.15	532.13**
	(133.247)	(250.041)	(157.277)
Always Employed Dummy	1,336.40	3,073.38	938.88
	(1,021.173)	(2,004.568)	(1,180.744)
Number of Children	-112.17	63.31	-291.41
	(439.414)	(794.226)	(524.946)
B.A. or Higher Dummy	1,033.22	3,236.19*	410.82
	(791.151)	(1,548.048)	(924.981)
Currently Enrolled Dummy	-1,993.74**	-3,006.53*	-1,786.63*
	(735.089)	(1,436.065)	(864.802)
State & Year Fixed Effects	YES	YES	YES
Constant	-23,508.53**	-41,438.08**	-17,503.89*
	(6,595.210)	(12,436.392)	(7,854.736)
Observations	5,665	1,403	4,262
R-squared	0.029	0.062	0.025

Notes: Regulation 1 refers to the ban of gifts in exchange for a credit card application. The dependent variable, net worth, does not include equity in real estate. Regression estimates are presented on an individual basis, and separately for: all individuals in the sample (column 1); only married individuals in the sample (column 2), only single individuals in the sample (column 3). Robust standard errors are in parentheses. +, * and ** denote significance at the 10, 5 and 1 percent levels, respectively.

Table 8A, Row f. OLS Regressions of Net Worth (Excluding Real Estate) on Regulation 2

VARIABLES	(1) All	(2) Married	(3) Single
Regulation 2	1,241.93	4,487.85	407.95
	(1,628.356)	(3,282.422)	(1,872.739)
Male Dummy	4,757.70**	5,579.01**	4,544.99**
	(720.592)	(1,501.594)	(825.917)
Age	656.22**	1,374.16**	441.18
	(250.083)	(476.195)	(294.684)
White Dummy	1,813.29*	2,241.96+	1,677.12+
	(730.603)	(1,360.445)	(859.915)
Married Dummy	2,304.17**		
	(806.805)		
Log Yearly Income Est.	452.70**	134.13	535.30**
	(133.024)	(249.972)	(156.930)
Always Employed Dummy	1,330.14	3,118.01	912.36
	(1,021.092)	(2,006.289)	(1,181.242)
Number of Children	-109.53	40.57	-288.89
	(439.206)	(794.279)	(524.897)
B.A. or Higher Dummy	1,032.12	3,233.14*	397.90
	(791.232)	(1,548.490)	(925.362)
Currently Enrolled Dummy	-2,005.61**	-3,021.02*	-1,805.36*
	(734.678)	(1,437.436)	(864.010)
State & Year Fixed Effects	YES	YES	YES
Constant	-24,249.13**	-38,735.17**	-19,285.18*
	(6,419.061)	(12,138.126)	(7,623.188)
Observations	5,665	1,403	4,262
R-squared	0.030	0.062	0.025

Notes: Regulation 2 refers to restrictions on location and time of marketing activities on college campuses. The dependent variable, net worth, does not include equity in real estate. Regression estimates are presented on an individual basis, and separately for: all individuals in the sample (column 1); only married individuals in the sample (column 2), only single individuals in the sample (column 3). Robust standard errors are in parentheses. +, * and ** denote significance at the 10, 5 and 1 percent levels, respectively.

Table 8A, Row g. OLS Regressions of Net Worth (Excluding Real Estate) on Regulation 3

VARIABLES	(1) All	(2) Married	(3) Single
Regulation 3	1,323.51	8,522.13	-839.47
	(2,850.984)	(5,994.056)	(3,233.807)
Male Dummy	4,756.01**	5,500.91**	4,548.80**
	(719.699)	(1,496.775)	(825.149)
Age	640.76**	1,357.83**	420.78
	(247.672)	(472.415)	(291.565)
White Dummy	1,812.70*	2,160.56	1,692.07*
	(729.909)	(1,363.734)	(857.499)
Married Dummy	2,320.94**		
	(807.557)		
Log Yearly Income Est.	454.63**	142.95	534.12**
	(133.266)	(249.778)	(157.241)
Always Employed Dummy	1,330.34	3,072.21	920.81
	(1,020.775)	(2,004.740)	(1,180.023)
Number of Children	-114.77	0.06	-289.73
	(439.661)	(797.554)	(524.963)
B.A. or Higher Dummy	1,029.67	3,237.74*	403.94
	(792.023)	(1,548.499)	(926.661)
Currently Enrolled Dummy	-1,992.97**	-3,118.93*	-1,801.47*
	(735.902)	(1,448.545)	(865.929)
State & Year Fixed Effects	YES	YES	YES
Constant	-23,723.50**	-37,667.81**	-18,720.38*
	(6,319.603)	(11,925.378)	(7,509.914)
Observations	5,665	1,403	4,262
R-squared	0.030	0.062	0.025

Notes: Regulation 3 refers to a ban on the selling of student information to credit card marketers. The dependent variable, net worth, does not include equity in real estate. Regression estimates are presented on an individual basis, and separately for: all individuals in the sample (column 1); only married individuals in the sample (column 2), only single individuals in the sample (column 3). Robust standard errors are in parentheses. +, * and ** denote significance at the 10, 5 and 1 percent levels, respectively.

Table 8A, Row h. OLS Regressions of Net Worth (Excluding Real Estate) on Regulation 4

VARIABLES	(1) All	(2) Married	(3) Single
Regulation 4	-98.12	3,817.80	-1,092.25
	(1,354.965)	(2,653.954)	(1,582.928)
Male Dummy	4,761.61**	5,514.65**	4,552.51**
	(720.430)	(1,504.175)	(825.415)
Age	621.78*	1,430.15**	380.08
	(256.013)	(493.467)	(301.207)
White Dummy	1,824.92*	2,276.43+	1,692.12*
	(729.908)	(1,371.350)	(858.280)
Married Dummy	2,323.92**		
	(807.476)		
Log Yearly Income Est.	452.70**	128.34	533.54**
	(133.133)	(250.473)	(157.186)
Always Employed Dummy	1,339.86	3,126.61	928.69
	(1,020.718)	(2,009.961)	(1,180.158)
Number of Children	-112.79	35.12	-290.59
	(439.411)	(795.516)	(524.894)
B.A. or Higher Dummy	1,034.85	3,252.56*	415.47
	(790.910)	(1,550.547)	(924.894)
Currently Enrolled Dummy	-1,991.39**	-3,114.23*	-1,785.82*
	(735.364)	(1,447.164)	(865.237)
State & Year Fixed Effects	YES	YES	YES
Constant	-23,170.38**	-40,760.89**	-17,016.19*
	(6,817.583)	(12,899.184)	(8,145.637)
Observations	5,665	1,403	4,262
R-squared	0.029	0.062	0.025

Notes: Regulation 4 refers to mandated financial literacy when credit card marketing takes place on a higher education campus. The dependent variable, net worth, does not include equity in real estate. Regression estimates are presented on an individual basis, and separately for: all individuals in the sample (column 1); only married individuals in the sample (column 2), only single individuals in the sample (column 3). Robust standard errors are in parentheses. +, * and ** denote significance at the 10, 5 and 1 percent levels, respectively.

Table 8A, Row i. OLS Regressions of Value of Gross Liquid Assets on Regulation 1

VARIABLES	(1) All	(2) Married	(3) Single
Regulation 1	-909.50	2,729.14	-1,949.77
	(1,525.595)	(2,961.889)	(1,807.455)
Male Dummy	4,090.69**	3,305.77*	4,389.75**
	(765.575)	(1,558.049)	(890.657)
Age	910.75**	1,273.74**	773.81**
	(242.706)	(381.120)	(284.873)
White Dummy	2,116.24**	406.66	2,345.96**
	(723.919)	(1,031.595)	(869.490)
Married Dummy	-603.75		
	(744.646)		
Log Yearly Income Est.	739.70**	639.34**	791.61**
	(119.452)	(149.739)	(150.192)
Always Employed Dummy	-374.51	-937.36	-106.30
	(1,045.846)	(2,118.173)	(1,210.705)
Number of Children	-776.40*	-663.84	-1,099.81*
	(377.805)	(531.834)	(479.033)
B.A. or Higher Dummy	4,278.55**	3,859.54**	4,469.54**
	(813.450)	(1,342.355)	(990.694)
Currently Enrolled Dummy	-217.53	-659.14	57.86
	(739.476)	(1,284.438)	(892.894)
State & Year Fixed Effects	YES	YES	YES
Constant	-26,918.36**	-32,093.15**	-24,512.88**
	(6,524.569)	(9,836.614)	(7,777.145)
Observations	5,665	1,403	4,262
R-squared	0.040	0.060	0.042

Notes: Regulation 1 refers to the ban of gifts in exchange for a credit card application. Regression estimates are presented on an individual basis, and separately for: all individuals in the sample (column 1); only married individuals in the sample (column 2), only single individuals in the sample (column 3). Robust standard errors are in parentheses. +, * and ** denote significance at the 10, 5 and 1 percent levels, respectively.

Table 8A, Row j. OLS Regressions of Value of Gross Liquid Assets on Regulation 2

VARIABLES	(1) All	(2) Married	(3) Single
Regulation 2	-24.82	2,104.25	-893.45
	(1,596.957)	(3,035.997)	(1,863.949)
Male Dummy	4,083.36**	3,317.52*	4,375.47**
	(764.933)	(1,556.986)	(889.885)
Age	935.91**	1,243.61**	806.88**
	(245.740)	(377.933)	(291.111)
White Dummy	2,107.82**	390.07	2,325.96**
	(723.233)	(1,031.282)	(866.603)
Married Dummy	-615.64		
	(745.575)		
Log Yearly Income Est.	742.22**	633.77**	797.55**
	(119.348)	(148.528)	(150.154)
Always Employed Dummy	-390.82	-916.66	-137.61
	(1,048.172)	(2,114.977)	(1,217.226)
Number of Children	-773.37*	-674.27	-1,100.19*
	(377.484)	(530.499)	(479.073)
B.A. or Higher Dummy	4,272.98**	3,858.25**	4,452.93**
	(814.284)	(1,342.828)	(992.404)
Currently Enrolled Dummy	-223.97	-665.83	48.03
	(738.612)	(1,284.282)	(891.547)
State & Year Fixed Effects	YES	YES	YES
Constant	-28,041.43**	-30,858.64**	-26,430.03**
	(6,345.699)	(9,601.577)	(7,556.528)
Observations	5,665	1,403	4,262
R-squared	0.040	0.060	0.042

Notes: Regulation 2 refers to restrictions on location and time of marketing activities on college campuses. Regression estimates are presented on an individual basis, and separately for: all individuals in the sample (column 1); only married individuals in the sample (column 2), only single individuals in the sample (column 3). Robust standard errors are in parentheses. +, * and ** denote significance at the 10, 5 and 1 percent levels, respectively.

Table 8A, Row k. OLS Regressions of Value of Gross Liquid Assets on Regulation 3

VARIABLES	(1) All	(2) Married	(3) Single
Regulation 3	2,025.45	4,140.77	1,107.34
	(3,081.925)	(5,881.291)	(3,474.353)
Male Dummy	4,075.94**	3,279.80*	4,368.87**
	(763.584)	(1,554.941)	(888.486)
Age	958.90**	1,237.12**	842.88**
	(237.363)	(372.869)	(279.647)
White Dummy	2,089.16**	351.44	2,301.10**
	(721.667)	(1,033.898)	(862.752)
Married Dummy	-618.15		
	(746.939)		
Log Yearly Income Est.	745.04**	638.03**	799.02**
	(120.473)	(149.108)	(151.573)
Always Employed Dummy	-404.07	-938.84	-152.07
	(1,050.200)	(2,117.024)	(1,217.162)
Number of Children	-776.57*	-693.66	-1,098.02*
	(378.127)	(530.221)	(479.758)
B.A. or Higher Dummy	4,266.20**	3,860.87**	4,443.63**
	(815.944)	(1,340.948)	(995.157)
Currently Enrolled Dummy	-224.60	-713.33	37.84
	(741.994)	(1,292.149)	(897.779)
State & Year Fixed Effects	YES	YES	YES
Constant	-28,652.43**	-30,392.51**	-27,439.71**
	(6,047.255)	(9,346.497)	(7,180.186)
Observations	5,665	1,403	4,262
R-squared	0.041	0.060	0.042

Notes: Regulation 3 refers to a ban on the selling of student information to credit card marketers. Regression estimates are presented on an individual basis, and separately for: all individuals in the sample (column 1); only married individuals in the sample (column 2), only single individuals in the sample (column 3). Robust standard errors are in parentheses. +, * and ** denote significance at the 10, 5 and 1 percent levels, respectively.

Table 8A, Row l. OLS Regressions of Value of Gross Liquid Assets on Regulation 4

VARIABLES	(1) All	(2) Married	(3) Single
Regulation 4	-990.51	1,329.77	-1,848.68
	(1,372.733)	(2,546.517)	(1,646.362)
Male Dummy	4,091.26**	3,293.54*	4,381.24**
	(765.030)	(1,558.280)	(889.600)
Age	892.63**	1,252.83**	743.95*
	(256.117)	(405.574)	(303.317)
White Dummy	2,109.43**	395.54	2,328.39**
	(721.839)	(1,044.060)	(865.081)
Married Dummy	-600.09		
	(744.265)		
Yearly Income Est.	741.30**	631.87**	794.18**
	(119.646)	(148.299)	(150.875)
Always Employed Dummy	-381.17	-914.23	-124.79
	(1,048.834)	(2,115.378)	(1,217.405)
Number of Children	-774.87*	-678.24	-1,098.34*
	(377.401)	(529.731)	(478.895)
B.A. or Higher Dummy	4,280.80**	3,862.27**	4,476.78**
	(814.546)	(1,347.937)	(993.681)
Currently Enrolled Dummy	-210.76	-698.79	58.51
	(738.623)	(1,292.420)	(893.301)
State & Year Fixed Effects	YES	YES	YES
Constant	-26,386.13**	-31,192.14**	-23,769.47**
	(6,963.978)	(10,727.604)	(8,382.759)
Observations	5,665	1,403	4,262
R-squared	0.041	0.060	0.042

Notes: Regulation 4 refers to mandated financial literacy when credit card marketing takes place on a higher education campus. Regression estimates are presented on an individual basis, and separately for: all individuals in the sample (column 1); only married individuals in the sample (column 2), only single individuals in the sample (column 3). Robust standard errors are in parentheses. +, * and ** denote significance at the 10, 5 and 1 percent levels, respectively.

APPENDIX IV: Additional Tables

Table 8B. OLS Regressions of Financial Wellbeing on Regulations 1-4, Heads of Household

	Net Worth		
	All	Married	Single
a. **Regulation 1**	-10,688.95*	-3,390.00	-11,926.04*
	(4,676.766)	(7,710.304)	(5,891.833)
b. **Regulation 2**	-6,268.25	-3,654.00	-5,850.67
	(4,910.326)	(7,295.204)	(6,260.692)
c. **Regulation 3**	2,808.97	-3,083.42	4,750.70
	(7,686.846)	(9,824.532)	(10,550.937)
d. **Regulation 4**	-2,150.92	1,466.95	-1,746.61
	(4,490.821)	(8,329.822)	(5,389.403)
	Net Worth (Excluding Real Estate)		
	All	Married	Single
e**. Regulation 1**	1,172.94	5,004.91	280.78
	(2,951.611)	(3,272.135)	(3,967.587)
f. **Regulation 2**	2,032.35	2,469.98	2,268.66
	(3,092.588)	(3,234.568)	(4,205.682)
g. **Regulation 3**	2,611.58	4,186.14	1,349.84
	(3,015.004)	(3,276.289)	(4,465.591)
h. **Regulation 4**	1,717.17	3,752.91	1,392.84
	(2,638.161)	(3,965.786)	(3,405.108)
	Gross Liquid Assets		
	All	Married	Single
i. **Regulation 1**	-517.92	-630.84	-622.01
	(1,900.678)	(2,263.480)	(2,513.171)
j. **Regulation 2**	1,038.60	-399.20	1,135.13
	(2,022.381)	(2,121.083)	(2,733.607)
k. **Regulation 3**	-921.50	-1,489.97	-1,932.92
	(1,750.566)	(2,241.692)	(2,386.837)
l. **Regulation 4**	772.11	774.83	332.47
	(1,857.300)	(3,749.763)	(2,207.338)
Controls	YES	YES	YES
Observations	5,665	1,403	4,262

Table 9B. Robustness Checks Net Worth, Excluding Real Estate

	Net Worth (Excluding Real Estate)			
	Regulation 1	**Regulation 2**	**Regulation 3**	**Regulation 4**
All individuals, 22-26, at least some college				
a. Lagged Regulation term (n=5,351)	-472.32	164.65	4,788.78	1,136.42
	(1,724.405)	(1,745.750)	(3,778.513)	(1,483.178)
b. Excluding California (n=4,755)	339.80	339.80	1,376.03	-1,219.66
	(2,852.549)	(2,852.549)	(2,873.320)	(1,639.850)
c. Excluding Virginia (n=5,326)	287.80	1,390.26	1,373.50	-557.69
	1,616.371)	(1,645.618)	(2,856.186)	(1,484.357)
d. Excluding 2008 Panel (n=3,684)	-1,520.50	2,226.07	2,226.07	-1,671.84
	(3,322.548)	(2,260.494)	(2,260.494)	(1,518.565)
Control				
e. High School Students (n=3,568)	254.76	1,136.52	3,177.71	532.59
	(1,109.741)	(1,068.884)	(2,128.426)	(948.019)