

When Nudges Spill Over: Student Loan Use under the CARD Act

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Choice Architecture in Policy

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In this paper, we apply a multi-market approach to study Section 304 of the Credit Card Accountability, Responsibility, and Disclosure (CARD) ACT (2009).

This landmark rule severely limited the availability of credit cards on college campuses in the United States.

Sec. 304 of the CARD Act (2009)

Sec. 304 of the CARD Act,

- 1 eliminated inducements to students for getting cards,
- 2 limited marketing of cards within 1,000 feet of a college campus,
- 3 regulated agreements between issuers and universities.

Its stated objective was to protect young students from card issuers' possibly deceptive and abusive practices – limiting their exposure to crippling debt at the start of their adult lives (Warren 2007).

Rather than restricting access to cards altogether, the rule sought to guide students susceptible to financial mistakes away from these high cost products and into (potentially) lower cost forms of credit.

Main Findings

The rule successfully steered students in need of liquidity away from cards (Sallie Mae 2008, 2015).

We document that it **also** raised student loan borrowing by 8%.

This substitution was concentrated among lower income students most in need of liquidity and most susceptible to financial mistakes.

We find that **low financial literacy** is the factor most closely tied to card debt and sub-optimal card use.

Our model maps this evidence to a rise in an average student's welfare stemming from the policy. We also find direct evidence on improved academic performance.

Strategy for Evaluating the Policy

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(1) Using administrative data from a large U.S. university, we document spill overs from the policy onto the student loan market.

(2) To evaluate welfare effects of the rule, we explore mechanisms underlying choices and the extent to which students use cards optimally:

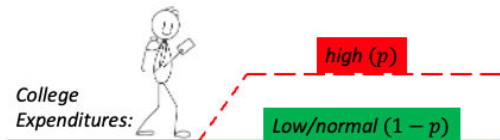
- develop model to characterize an optimal benchmark and deviations from it,
- design and administer a survey, linked to administrative records, to document departures from optimal financing decisions,
- link model to survey, derive, and calculate a linearized lower bound of welfare effects,
- complement model based results with direct (suggestive) evidence of the rule's effects on academic achievement.

Spillover to Student Loan Borrowing

Control Group: incoming freshmen – always make student loan choices prior to arriving on campus.

Treatment Group: Sophomores and Juniors – under 21 and exposed to cards prior to but not after the policy.

Students and Optimal Borrowing



Cost of credit card (**CR**) > cost of student loan (**SL**) financing if

$$p \cdot r^{CR} > r^{SL} \iff p > \frac{r^{SL}}{r^{CR}}$$

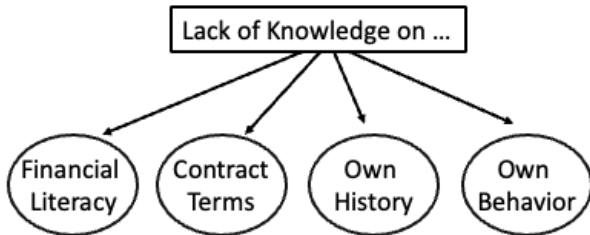
Cards dominate student loans only for uncertain expenditures.

In a more general setting, students can optimally cover uncertain expenditures using only cards, only student loans, or both.

Reducing students' access to cards – nudging them towards student loans – only helps those who choose sub-optimally.

Departures from Optimal Borrowing

We consider 4 departures from optimal borrowing detailed in Campbell (2016 AER):

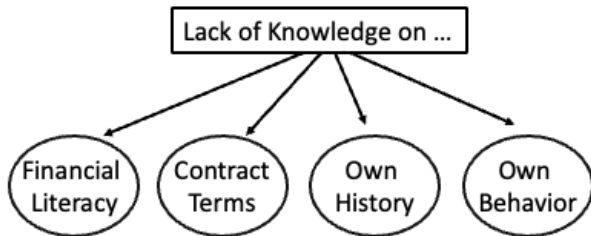


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... we study mechanisms with a survey.

Survey: Cards vs. Student Loans

About 53% of students have a card, down from $> 80\%$ before the CARD Act. About 20 percent of those with a card borrow on it.

Students from the most affluent communities are nearly 20% more likely to have a card. They are over 40% less likely to borrow on their card.

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Students weigh student loans and card financing in the short (next month) and long term (next year).

Students covering liquidity needs with card debt are over twice as likely to consider switching to student loan financing if they could no longer use their card.

Survey: Optimal Choice?

However, we find card use is not entirely optimal:

- Students who borrow use their card for predictable expenses, such as school fees and/or accommodation.
- Students who report a higher chance of emergency expenditure are also more likely to say they would use a card to cover it – even after conditioning on past expenditures.
- Most students with card debt also have unclaimed liquidity on student loans.
- Card debt among students is often long lasting.

Survey: Manner of Sub-optimal Choice

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	<i>Terms / Concepts / History / Own Behavior</i>						
	<i>Contract Terms</i>		<i>Concepts</i>	<i>History</i>	<i>Own Behavior</i>		
	DK Rate	Rate < 10%	DK Limit	Both Correct	Unaware of SL	Discount # Early	Too Much Debt
<i>All</i>	42.32	21.79	13.73	43.95	8.06	1.18	9.70
<i>By ZIP level Income Quartile</i>							
<i>1st</i>	34.17	27.14	10.05	40.20	7.54	1.35	14.07
<i>2nd</i>	42.86	23.28	14.81	37.04	10.05	1.17	10.58
<i>3rd</i>	43.01	18.65	11.92	44.56	9.33	1.02	8.81
<i>4th</i>	48.77	18.72	18.72	52.71	5.91	1.14	5.91

- (1) Awareness of contract terms is low - uncorrelated with ZIP income.
- (2) Financial literacy is also low and highly correlated with ZIP income.
- (3) (Un) awareness of unclaimed SL also correlated with ZIP income.

Survey: Manner of Sub-optimal Choice

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
OLS Depvar =	Has Card	Regularly Revolves a Balance			Regularly Revolves and has Unclaimed SL					
Concepts:	0.070**	-0.107**			-0.104**	-0.084**				-0.085**
Both Correct	(0.027)	(0.028)			(0.029)	(0.030)				(0.030)
History:							0.139*			0.136*
Unknown SL							(0.060)			(0.059)
Behavior:	-0.059*		0.043		0.031			0.030		0.017
Discount > 1	(0.026)		(0.030)		(0.030)			(0.031)		(0.031)
Terms:				-0.019	-0.019				-0.046	-0.044
DK Rate				(0.028)	(0.028)				(0.030)	(0.029)
Controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mean Dep. Var	0.527	0.196	0.196	0.196	0.196	0.150	0.150	0.150	0.150	0.150
R-Squared	0.035	0.066	0.052	0.050	0.068	0.059	0.059	0.048	0.050	0.076
N	1,489	784	784	784	784	579	579	579	579	579

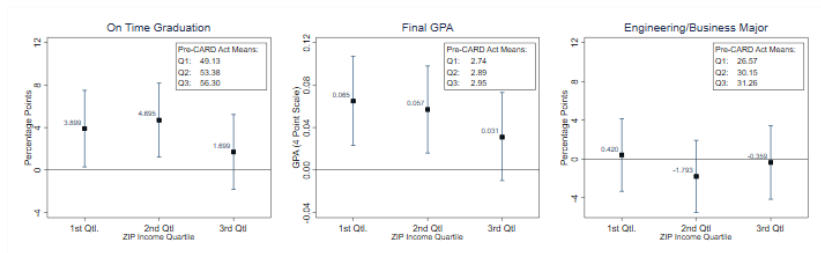
(1) We find “positive” selection into card adoption.

(2) Borrowing on a card is most associated with low financial literacy

(3) Card borrowing with unclaimed student loans significantly more prevalent among students who are not aware of that available liquidity.

Academic Achievement

We leverage heterogeneous effects of the policy to identify its impact on academic outcomes:



We find a rise in on-time graduation and final GPA.

This is consistent with a literature showing that alleviating financial concerns can improve productivity (Kaur et. al. 2021, Mullainathan and Shafir, 2013).

We find no effect on students' choice of academic major.

Conclusions

Our study argues for an evaluation of “nudge” based policies in consumer financial markets on the basis of their broad impact on individuals’ financial choices

In the context of the CARD Act (2009) we find that:

- In addition to reducing card use, the policy increased student loan borrowing.
- Sub-optimal use of cards, tied to lack of financial literacy, is a driver of high priced debt among students.
- This suggest a channel by which the rule was beneficial to students.
- Consistent with that view, we find that the policy also improved academic performance.

Thank You!



We use three sources of data:

(1) Administrative financial aid records for $\approx 70k$ students:

- all borrowing decisions
- detailed academic information
- demographic variables on race, gender, geography

(2) Survey matched to administrative records for $\approx 1.5k$ students:

- administered online during spring 2021 to all full time sophomores and juniors
- card vs. student loan choices, time preference, and financial literacy
- all responses linked to financial aid records

(3) ZIP code level demographic information from the ACS

Robustness and Alternative Explanations 1

- 1 Impact on Financial Crisis on Labor Market Expectations
- 2 Impact of Financial Crisis on Home Equity
- 3 Impact of Financial Crisis on Composition of College Students
- 4 Changes in Student Loan Limits
- 5 Changes in Supply of Cards
- 6 Definition of Post-Treatment Period

▶ Back

Robustness and Alternative Explanations 2

- 1 Incorrect expectations about future emergencies (Kahneman and Tversky 1979, Prelec 1998)
- 2 Bankruptcy
- 3 Access to Credit and Credit Scores

▶ Back

Welfare Equations

We derive a linear lower bound on welfare as a percent of the “worst case scenario” ($-\Delta V$). This is the case in which the likelihood of emergency expenditure is very small and only student loans are available to finance a shortfall.

These expressions are as follows (see paper for details):

$$\frac{\Delta W_{linear}^{opt}}{-\Delta V} = \begin{cases} p \cdot \frac{r^c}{r^s} - 1 & \text{if } p < \frac{r^s}{r^c}, \\ 0 & \text{if } p \geq \frac{r^s}{r^c} \end{cases}$$

$$\frac{\Delta W_{linear}^{br}}{-\Delta V} = p \cdot \frac{r^c}{r^s} - 1.$$

In the optimal case, students only use a credit card when $p < \frac{r^s}{r^c}$. In the bounded rationality case (*br*) students always use a credit card.