

Evaluating Hard Paternalism: Evidence From Tightening Credit Card Minimum Payments

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The views presented are the authors and do not necessarily reflect those of the Bank of Canada.

DISCLAIMER: WORK-IN-PROGRESS. RESULTS MAY CHANGE.

Research Questions:

- **Narrow:** What are the effects of policies tightening credit card minimum payments?

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One Slide Summary

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- **Broad:** Is hard paternalistic financial regulation effective?
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 - (Ideally) What is optimal credit card minimum payment policy?

Data:

- Canadian consumer credit reporting data.

Reduced-Form Methodology:

- Quebec policy changes vs. rest of Canada unaffected.

1. Motivation
2. Quebec Policies
3. New Cards Analysis
4. (Existing Cards Analysis)

1. Motivation

Stylized Motivating Example: Why Reduce Credit Card Debt?

Imagine two types of agents using credit cards:
(based on Heidheus & Köszegi, 10, 15; Campbell, 16)

- “Sophisticated”
- “Naïves” overborrow (e.g. financially illiterate, naïve present focus, anchoring)

Binding **liquidity constraints** for % of sophisticates & naïves agents.

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Non-ideal policies trade-off benefits of 1. vs. costs of 2.

What Policies Reduce Credit Card Debt?

Today's paper is latest in my research agenda testing **how to reduce credit card debt?**

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 - **Doesn't work** in US (Agarwal et al., 15 *QJE*; Keys & Wang 15 *JFE*), Mexico (Seria et al., 17 *AEJ: EP*), UK (Adams et al., 22 *Economica*).
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"Nudges are not enough" (Laibson, 20) & need to evaluate **hard paternalism** (e.g. Chater & Loewenstein, 17, 22).

"If nudges are unavailable or inadequate, consumer financial regulation must confront the tradeoff between the benefits of intervention to behavioral agents, and the costs to rational agents." - John Campbell (16 AEA)

Hard Paternalistic Policy To Reduce Credit Card Debt

Mandate tighter (higher) credit card minimum payments.

Account Summary

Previous Balance	\$2,184.78
Payments/Credits	-\$2,208.01
New Charges	+\$2,747.61
Fees	+\$0.00
Interest Charged	+\$0.00

New Balance	\$2,724.38
Minimum Payment Due	\$54.48

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Trade-off debt reduction benefits for naïves VS. costs of arrears for constrained.

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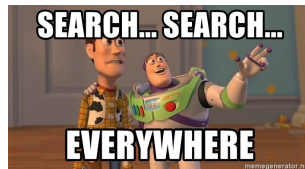
Trade-off debt reduction benefits for naïves VS. costs of arrears for constrained.

Why \uparrow minimum payments may not mechanically \downarrow debt?

- Δ non-payments $>$ Δ payments at higher minimum.
- Offsetting cardholder responses (e.g. \uparrow spending).
- Offsetting credit card lender responses (e.g. \uparrow APRs, limits).

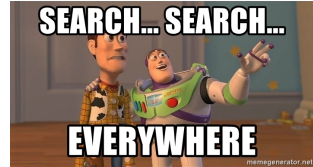
Where to Study Tighter Minimum Payments Policy

- Want policy forcing credit card lenders involuntarily ↑ minimum payment



Where to Study Tighter Minimum Payments Policy

- Want policy forcing credit card lenders involuntarily \uparrow minimum payment
- Policy variation does not exist in US.
 - small, idiosyncratic changes by a few lenders.
- Takes us to Quebec, Canada!



2. Quebec Policies

Quebec A Laboratory for Hard Paternalism Aiming to Reducing Credit Card Debt

Quebec Office de la protection du consommateur:

“These changes are part of the measures adopted by the government to prevent indebtedness.”

“It is advantageous to pay the balance of your credit card each month, because no credit charges are then applicable.”

Quebec rolls out new credit card rules aimed at lowering high household debt

By Reuters Staff

2 MIN READ



OTTAWA, Aug 2 (Reuters) - The Canadian province of Quebec has become the first in the country to require minimum credit card payments as legislators try to tackle rising household debt levels.

Quebec introduces credit card regulations aimed at curbing consumer debt

CTVNews.ca Staff



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[@cousins_ben](#) | [Contact](#)

Published Thursday, August 1, 2019 4:38PM EDT

Quebec Policy Experiments

No credit card minimum payment requirements:

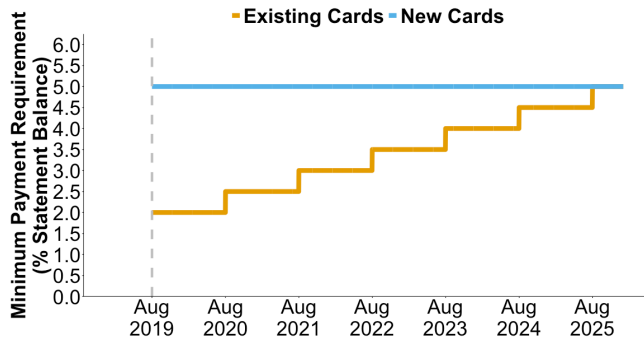
- Pre-August 2019: Anywhere in Canada.
- Post-August 2019: Outside Quebec.

Quebec Policy Experiments

No credit card minimum payment requirements:

- Pre-August 2019: Anywhere in Canada.
- Post-August 2019: Outside Quebec.

Quebec introduced credit card minimum payment policies from August 2019:



...by August 2025 all Quebec credit cards will have at least 5% minimum payment.

*“The amounts requested by credit card issuers as a minimum payment have decreased significantly since the late 1980s. Indeed, the percentage requested as a minimum payment has decreased from 5% to 2%. This practice has the effect of **considerably extending the period during which the consumer who pays only the minimum amount will have to repay the amount owed and of increasing the amount of credit charges that will have to be paid to pay the balance in full.**”*

- Lise Thériault, Quebec Liberal Party

*“We find it good that we are increasing, there, gradually to 5%, but **we were afraid of the price shock that it could have on the most vulnerable consumers.**”*

- Catherine Fournier, Parti Québécois

2. New Cards Analysis

5% Minimum Payment on New Cards in Quebec since Aug 2019 is Binding

Lender	Pre-Aug 2019 Formulae in Quebec & Ontario
A,B,C,D,E	\$10 + interest + fees
F,G	$\max \{1.0\% \text{ statement balance}, \$10\}$
H	$\max \{2.0\% \text{ statement balance}, \$10\}$
I	$\max \{2.5\% \text{ statement balance}, \$10\}$
J	$\max \{3.0\% \text{ statement balance}, \$10\}$

Post-Aug 2019 All new cards in Quebec: $\{\max \{5.0\% \text{ statement balance}, \$10\}$

Fees: Late, annual, overlimit, cash advance, foreign exchange & interest fees.

N.b. If over credit card limit, minimum payment can include (balance - credit limit).

Canadian Consumer credit reporting data

- Covers everyone (anonymized) with Canadian credit file monthly 2012 - present.
- Tradeline-level (e.g. each credit card, mortgage, cell phones etc).

Methodology

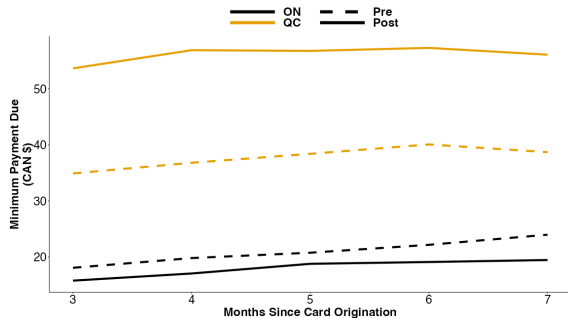
- Differences between cohorts of newly-issued credit cards.
- Ontario (ON) unaffected, Quebec (QC) affected.
- Jul 2019 (Pre), Aug 2019 (Post).

$$\delta_t = \left((\bar{Y}_{Aug2019,t}^{QC}) - (\bar{Y}_{July2019,t}^{QC}) \right) - \left((\bar{Y}_{Aug2019,t}^{ON}) - (\bar{Y}_{July2019,t}^{ON}) \right)$$

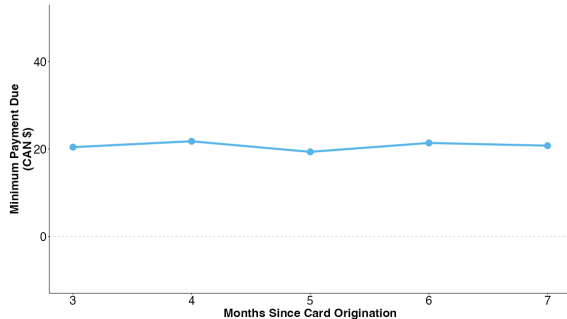
- Balanced panel covering 7 months since card origination.

↑ Minimum Payments by \$20 per month (60%)

Unconditional Means

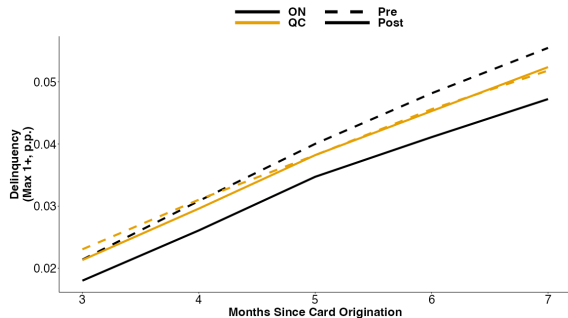


Regression Estimates

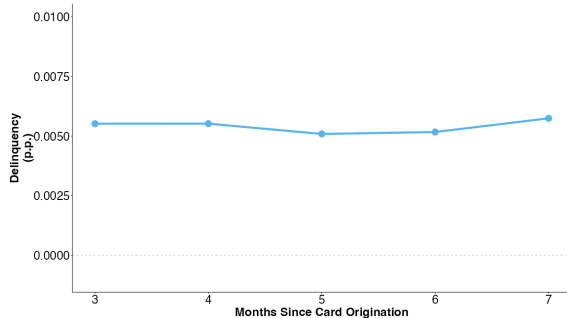


↑ Delinquencies in Quebec vs. Ontario

Unconditional Means

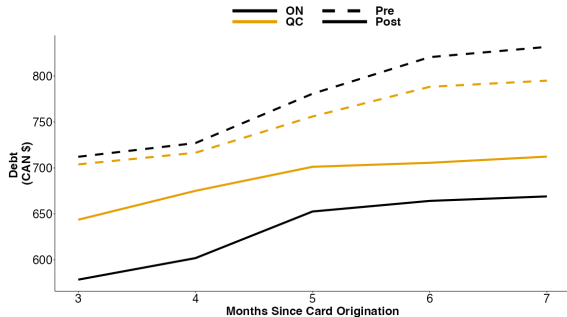


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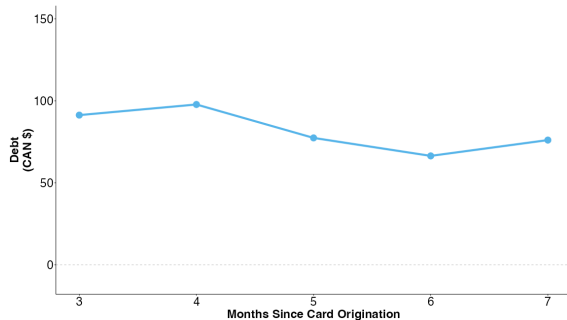


↑ Debt in Quebec vs. Ontario

Unconditional Means



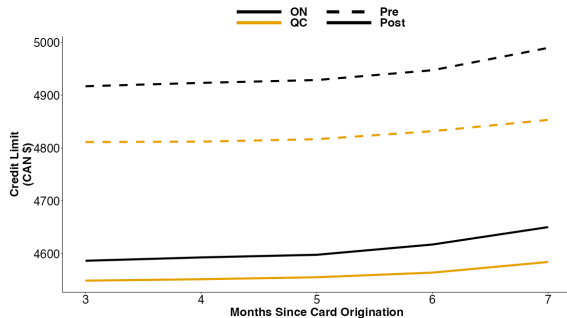
Regression Estimates



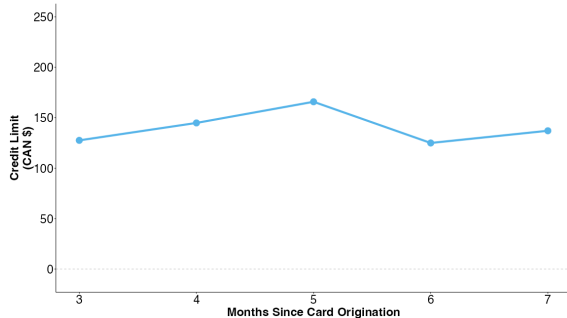
No signs policy led to debt reduction.

↑ Credit Limit in Quebec vs. Ontario

Unconditional Means

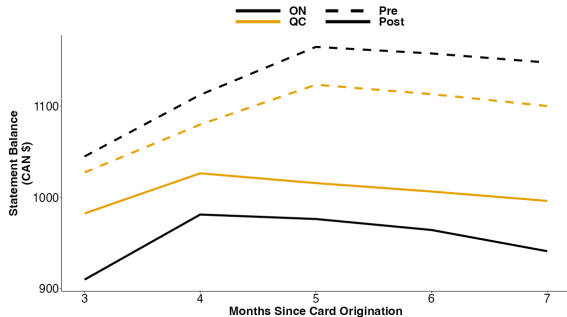


Regression Estimates

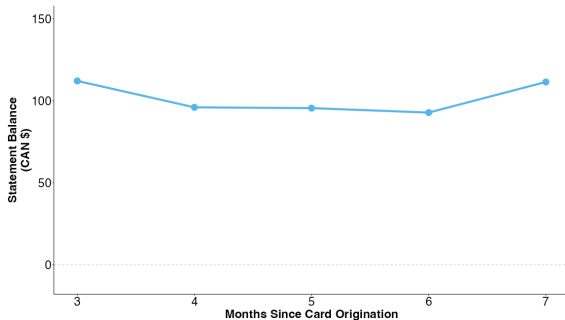


↑ Statement Balances in Quebec vs. Ontario

Unconditional Means



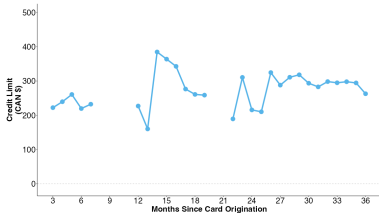
Regression Estimates



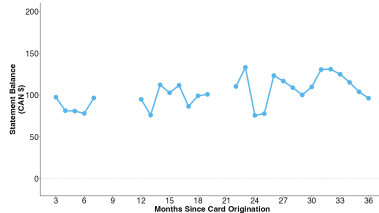
Calculating how much ↑ spending required to offset lost interest revenue.

Results Hold for Long-Run: 3 Years in Unbalanced Panel

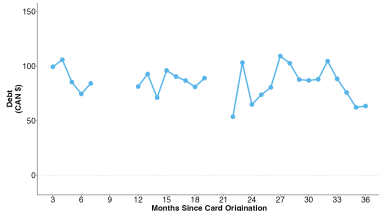
Credit Limit



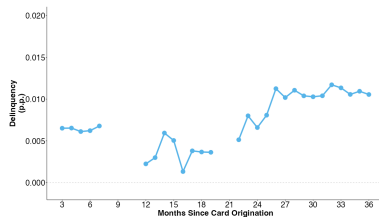
Statement Balances



Debt



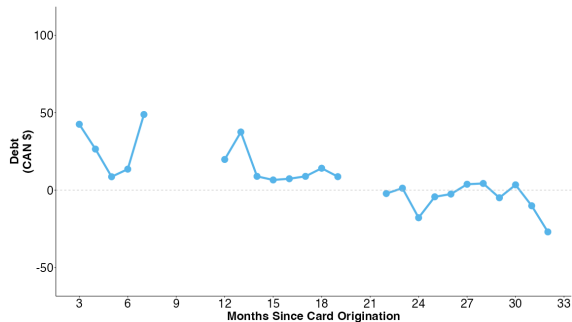
Delinquency



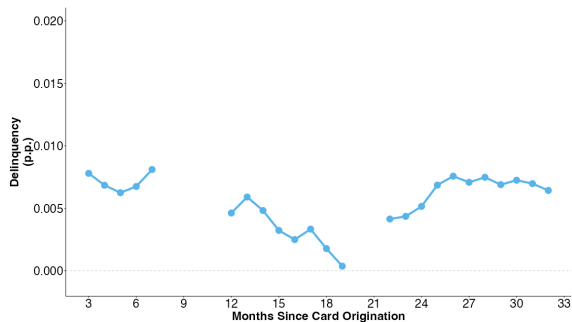
Adding Additional Cohorts (May - Nov 2019) in Unbalanced Panel

Still no (economically meaningful) average \downarrow debt.

Debt



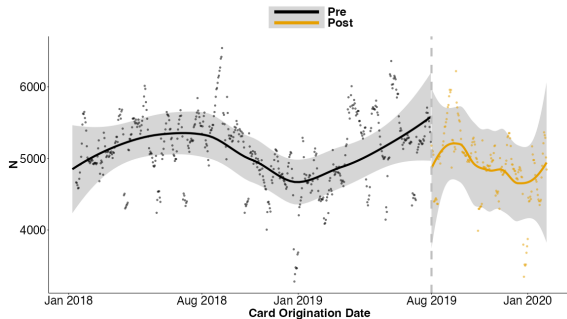
Delinquency



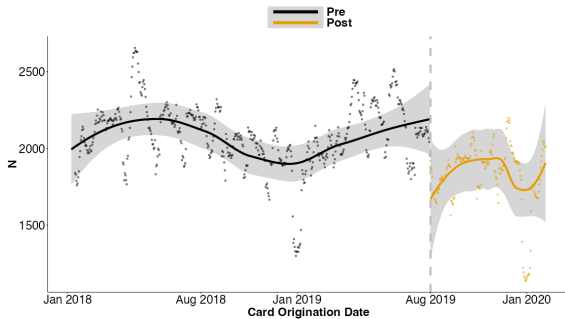
Potentially some interesting short-run to long-run dynamics to explore.

Extensive Margin: ↓ New Card Originations

Ontario



Quebec



Loess on daily data. Dots are 7 day moving average.

3. (Existing Cards Analysis)

Pre-Aug 2019 Minimum Payment Formulae

Lender	Pre-Aug 2019 Formulae in Quebec & Ontario
A	\$10 + interest + fees
B	\$10 + interest + fees
C	\$10 + interest + fees
D	\$10 + interest + fees
E	\$10 + interest + fees
F	$\max \{1.0\% \text{ statement balance}, \$10\}$
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Fees: Late, annual, overlimit, cash advance, foreign exchange & interest fees.

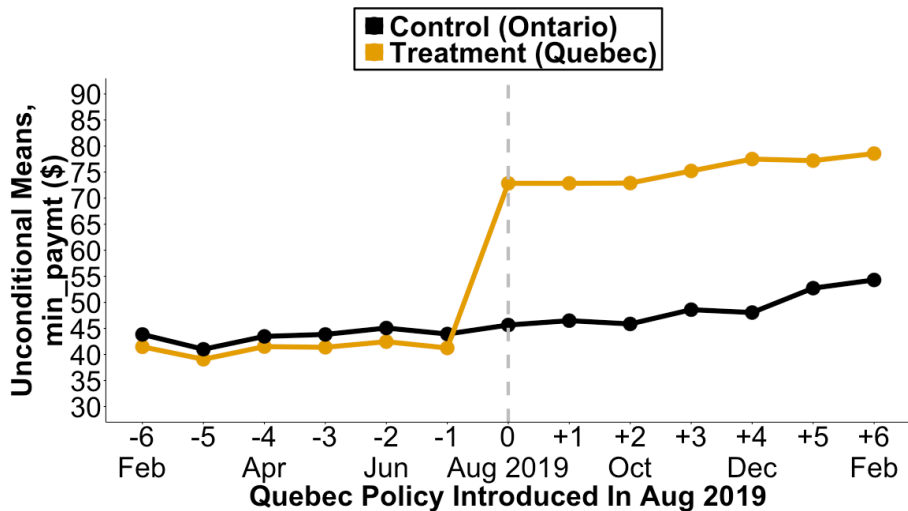
N.b. If over credit card limit, minimum payment can include (balance - credit limit).

How Lenders Implemented in Aug 2019? **Non-binding**, **Bind**, Bind and go beyond

Lender	July 2019		August 2019	
	Ontario	Quebec	Ontario	Quebec
A		\$10 + interest + fees		max {2.0% statement balance, \$10}
B		\$10 + interest + fees		max {2.5% statement balance, \$10}
C		\$10 + interest + fees		max {2.5% statement balance, \$10}
D		\$10 + interest + fees		max {2.5% statement balance, \$10}
E		\$10 + interest + fees		max {3.0% statement balance, \$10}
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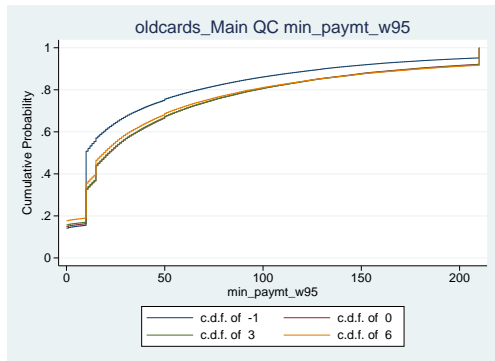
After 2019, lenders typically are increasing 0.5 p.p. p.a. until reaches 5%.

'First Stage': Quebec Unconditional Means Show \uparrow Minimum Payments

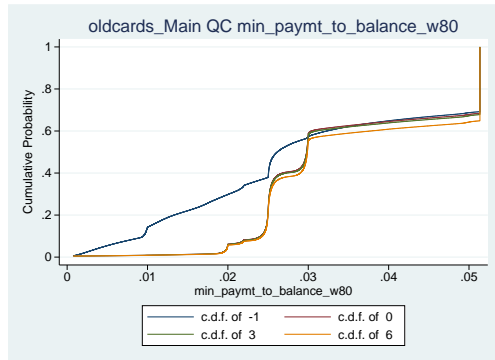


'First Stage': Quebec CDFs Show \uparrow Minimum Payments

Minimum Payments (\$)



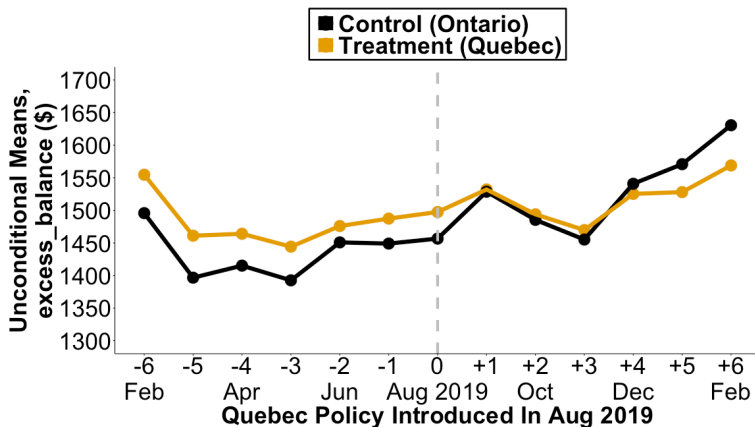
Minimum Payments (% statement balance)



Lots of heterogeneity: E.g. statement balances \$500+
experience mean minimum payments \approx \$50 to \$100 per month.

Effects On Credit Card Debt

'Debt': Balance Net of Payments (\$)



5. Next Steps

Next Steps

Reduced Form Analysis

- Analyze consumer-level heterogeneity.
 - By exposure to \uparrow minimum payment.
 - By financial sophistication proxies.
 - By liquidity constraints proxies.

Reduced Form Analysis

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- Relationship with business cycle variations.
(COVID, COVID debt relief, cost of living crisis)

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(?) Structural Modeling / Experiment

- Take reduced form estimates & do welfare analysis to evaluate optimal policy using behavioural public economic toolkit (e.g. Bernheim & Taubinsky, 19).
- Challenging but some groundwork in literature:
Allcott et al. (21 RESTUD), Heidheus & Köszegi (10 AER, 15 RIO), Choukhmane (22 WP).

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Appendix

Theory & Empirics on Credit Card Borrowing

- Standard models cannot explain observed levels of credit card indebtedness.
(e.g. Ausubel, 91; Angeletos et al., 01; Laibson et al, 03)
- Naïve present focus theoretically best explains.
(e.g. Heidheus & Köszegi, 10, 15; Laibson et al.,22)
- Empirically lack of financial illiteracy re: credit cards.
(e.g. Soll et al., 13; Lusardi & Tufano, 15; Seira et al., 17; Adams et al.,22)
- Empirically find concoction of mistakes & behavioural biases.
(e.g. Stewart, 09; Meier & Sprenger, 10; Gathergood et al., 19; Kuchler & Pagel, 21)
- But not all 'behavioural' - liquidity constraints more binding than previously thought.
(e.g. Guttman-Kenney et al., 22)

CARD Act Disclosures (e.g. Agarwal et al., 15 QJE)

If you make no additional charges using this card and each month you pay ...	You will pay off the balance shown in this statement in about ...	And you will end up paying an estimated total of ...
Only the minimum payment	10 years	\$3,284
\$62	3 years	\$2,232 (Savings of \$1,052)

Nudges (e.g. Adams et al., 22 *Economica*)



Your credit card number

Set your goal to repay your credit card years faster

Hello

It could take you a lot longer to pay off your balance than you might expect if you carry on paying the minimum amount each month. If you clear your balance more quickly, you could save money too.

You could still be paying off your balance in 38 years' time

Based on your December statement balance of €10,104 if you only pay your minimum payment (which reduces as you clear your balance) each month, it could take you 38 years to pay off your credit card and you'll pay €19,830 in interest costs.

Switch to a fixed Direct Debit to clear your balance sooner

We've used your December statement balance to create an illustration – see below – to show you how changing to a fixed Direct Debit could help you pay off your balance in one, two or three years. We've explained the assumptions we've made about your balance and minimum payments over the page.

Your outstanding balance was €10,104 on your December 2016 statement



Ready to make a change?

You can switch to a fixed Direct Debit through online account servicing or by calling us on 0800 111 1121 – you'll find all the info you need to do this over the page.

Kind regards

Head of Customer Services

Turn over to see how to fix your Direct Debit so you can pay off your balance sooner

Choice Architecture (e.g. Guttman-Kenney et al., 22 WP)

Control

Pay your card bill

To set up a Direct Debit you'll need to be the account holder and be able to authorise payments from the account.
Not the account holder or need joint signatures? Just download the Direct Debit instruction form fill it out and return it to us by post. If your joint account only needs one signature, just complete the form below.

How much would you like to pay each month?

The amount will be reduced by any payments received since your last statement

☐ **The minimum**
It will take longer and generally cost more to clear your balance this way. If you make extra payments, your direct debit will only collect the difference needed to reach the minimum

☐ **Statement amount**
You will clear your balance this way. If you make extra payments your direct debit will only reduce the difference to your last statement

☐ **This much**
€
We'll collect your fixed amount or the minimum payment due, whichever is the greater. If you make extra payments, your direct debit will still collect the fixed amount or the remaining balance if this is lower

Treatment

Pay your card bill

To set up a Direct Debit you'll need to be the account holder and be able to authorise payments from the account.
Not the account holder or need joint signatures? Just download the Direct Debit instruction form fill it out and return it to us by post. If your joint account only needs one signature, just complete the form below.

How much would you like to pay each month?

The amount will be reduced by any payments received since your last statement

☐ **Statement amount**
You will clear your balance this way. If you make extra payments your direct debit will only reduce the difference to your last statement

☐ **This much**
€
We'll collect your fixed amount or the minimum payment due, whichever is the greater. If you make extra payments, your direct debit will still collect the fixed amount or the remaining balance if this is lower

Nudging

- DellaVigna & Linos (21 ECTA) meta-analysis of BIT nudges: 8 % increase.
- Milkman et al. (Nature, 22) megastudy 8% of nudges tested had significant effects.
- Null results common: e.g. Linos et al. (AEJ: EP 22) testing nudges on EITC.
- John Campbell (AEA 2016): *“Beyond the easy cases where behaviorally biased households can be “nudged” to avoid mistakes with minimal effects on rational households, financial regulators face a difficult trade-off between the benefits of regulation to households that make mistakes, and the costs of regulation to other financial market participants.”*
- George Loewenstein & Nick Chater (BPP 2017, 2022) *“Nudges are the most prominent but not necessarily the most powerful.”* & *“Focusing on the individual-level solutions has led behavioral public policy astray.”*
- David Laibson (AEA 2020) *“Nudges are not enough”*.
- See Bernheim & Taubinsky (Handbook 2018) discussion.

Literature on Hard Paternalistic Regulation

Would love some seminal public economics examples in other fields!

Household Finance

- Melzer 11 *QJE* payday loan price caps.
- Agarwal et al. 15 *QJE*: US credit card fee limits.
- Defusco, Johnson & Mondragon 20 *RESTUD*: US mortgage ability-to-pay restrictions.
- Allcott et al. 21 *RESTUD*: US payday loan restrictions.
- Nelson, 22 *WP*: US credit card interest rate limits.
- Cuesta & Sepúlveda 22 *WP*: Chilean consumer loan price cap.

Non-Household Finance

- Soda & sugar taxes
- Cigarette & E-cigarette regulation
- Energy efficiency

Prior Minimum Payment Papers

Some prior papers studying changes in minimum payments:

- D'Astous & Shore (17, *JFQA*): Finds arrears \uparrow in response to minimum payment \uparrow .
- Keys & Wang (19, *JFE*): Show anchoring of consumers to minimum payments. Exploit small, idiosyncratic increases & decreases in minimum payments.
- Castellanos, Jimenez-Hernandez, Mahajan & Seira (20, *WP*): Studies credit access in developing countries. Mexico RCT finds arrears unresponsive to minimum payment \uparrow .
- Medina & Negrin (21, *MS*): Reference effect of Mexican minimum payment changes.

ALL of above study lenders doing idiosyncratic changes (unconstrained optimal).

NONE of above study show equilibrium effects of paternalistic policy constraining lenders.

“Developing more theory and evidence on optimal policy under consumer heterogeneity is an important area for future work.” - Keys & Wang (19, *JFE*).

Covid: A Feature Not Just A Bug!

A Bug:

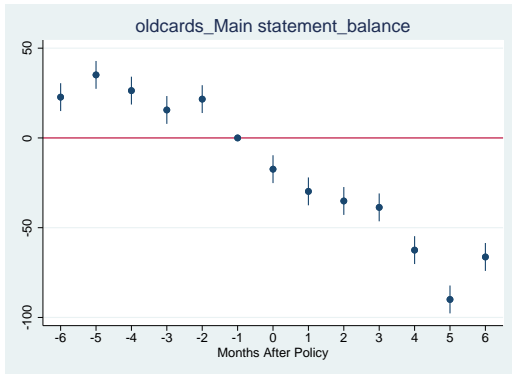
- 2nd & 3rd year (2.5% & 3%) of policy increases for existing cards during this period.
- Credit card debt relief in 2020 but only 8% take-up (Allen et al., 22 *Can J.Econ*).

A Feature:

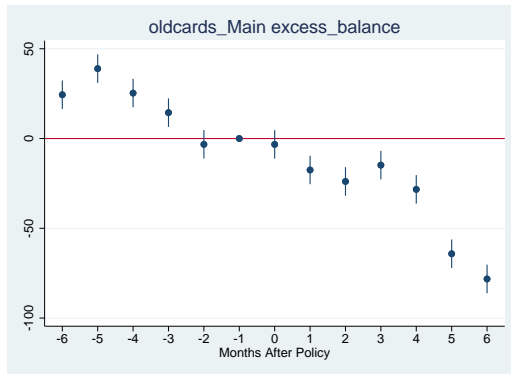
- Debt relief scheme varies in generosity depending on pre-pandemic minimum payment formula. How does take-up & outcomes vary?
 - Similar to a pro-cyclical minimum payment policy.
- Learn how relationships between minimum payments, debt & arrears vary across economic cycle.
 - Are short-run effects washed out in a crisis?
 - If pay down more pre-crisis is cardholder more financially resilient during it?

Effects On Credit Card Debt (Very Preliminary - Subject-To-Much-Change)

'Balance': Statement Balances (\$)



'Debt': Statement Balances Net of Payments (\$)



Possibly some decline in debt (but pre-trends).