Removing the Fine Print: Standardization, Disclosure, and Consumer Loan Outcomes

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Motivation

There is a tension in financial regulation: we want consumers to be informed about their purchases. However, this can lead to pages of fine print. To combat this, there are two (among many) types of financial regulations:

- **Disclosure** to make terms more salient.
- **Standardization** of contract features.

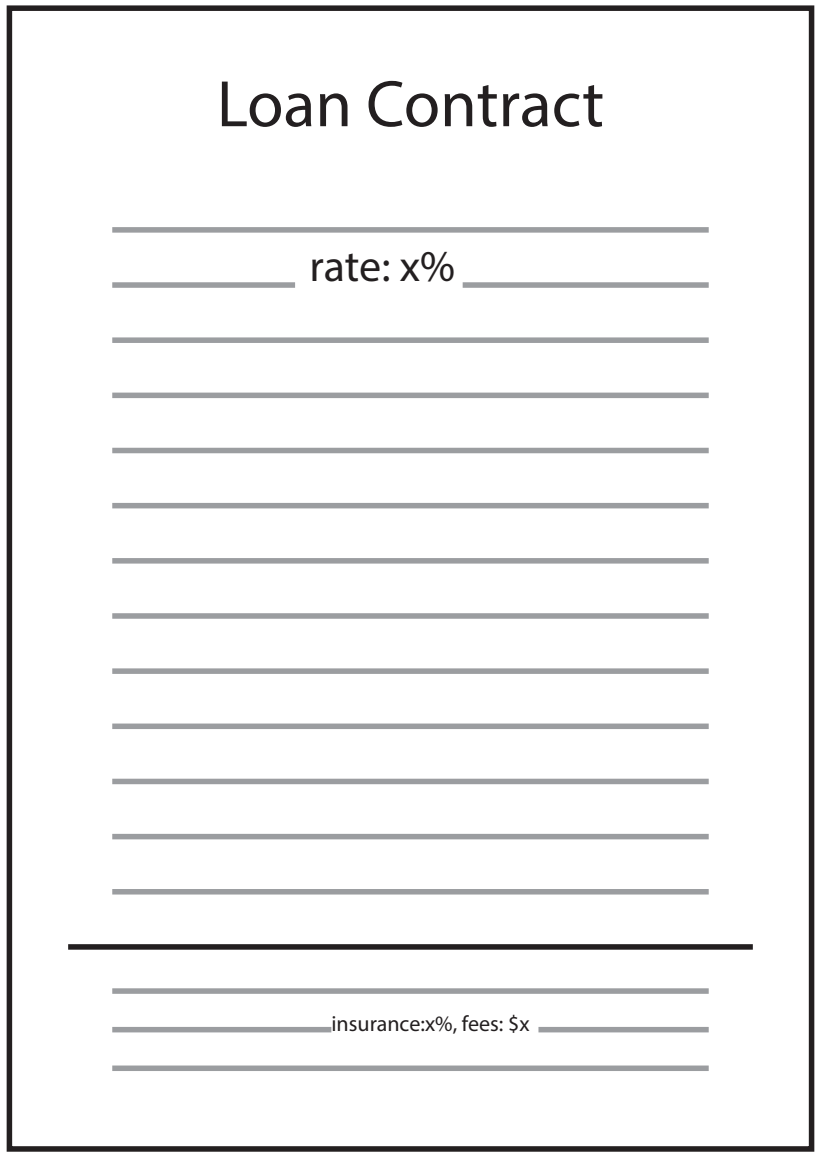
Motivation

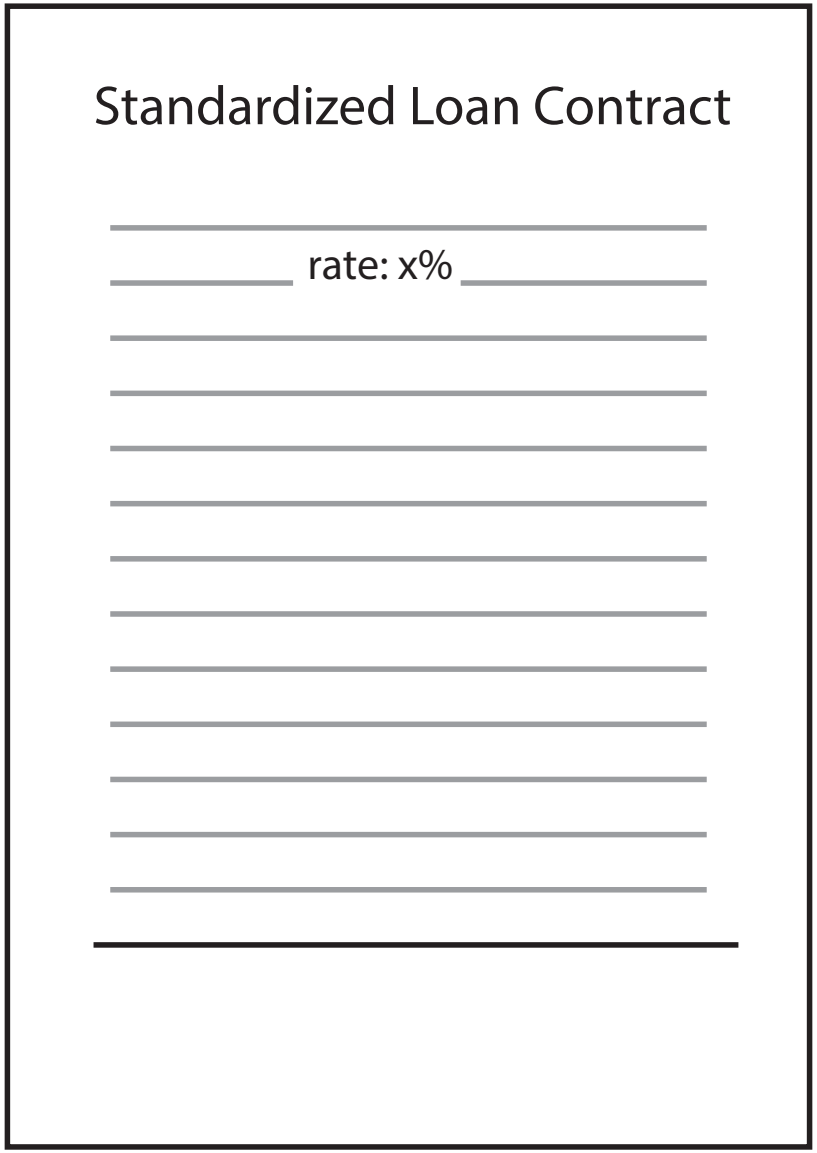
There is a tension in financial regulation: we want consumers to be informed about their purchases. However, this can lead to pages of fine print. To combat this, there are two (among many) types of financial regulations:

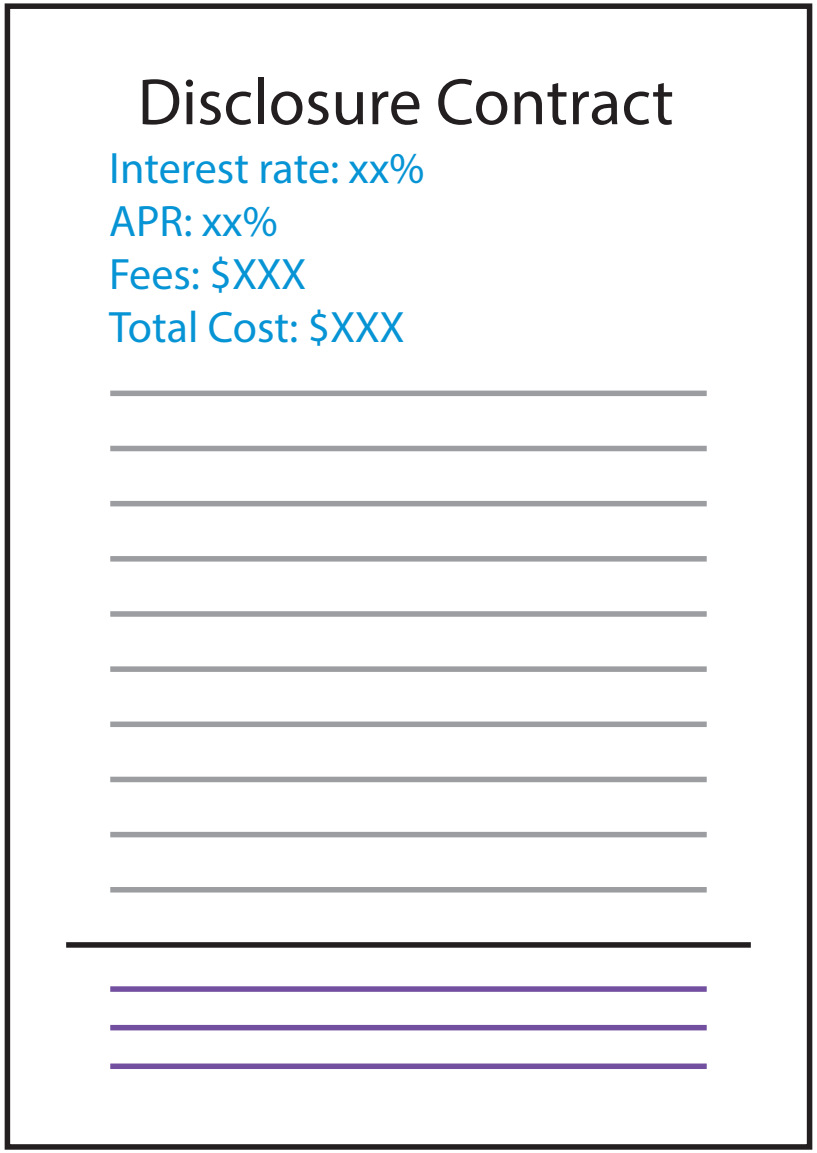
- **Disclosure** to make terms more salient.
- **Standardization** of contract features.

Questions:

- Which regulations lead to better outcomes for consumers?
- Are the effects the same across all consumers?


Loan Contract
rate: x%
insurance:x%, fees: $x


Standardized Loan Contract
rate: x%


Disclosure Contract
Interest rate: xx%
APR: xx%
Fees: $XXX
Total Cost: $XXX

Findings - Main Effects

Exploit a natural experiment in Chile to examine impact of standardization and disclosure on consumer loan outcomes.

1. What are the effects of standardization/disclosure on defaults and delinquencies?
   - Regression discontinuity on implementation cutoffs.
   - Consumers are 40% less likely to be delinquent on their loans and 1 percentage point (94%) less likely to default with more transparent disclosure. Standardization has no effect.

Findings - Main Effects

Exploit a natural experiment in Chile to examine impact of standardization and disclosure on consumer loan outcomes.

1. What are the effects of standardization/disclosure on defaults and delinquencies?
   - Regression discontinuity on implementation cutoffs.
   - Consumers are 40% less likely to be delinquent on their loans and 1 percentage point (94%) less likely to default with more transparent disclosure. Standardization has no effect.
2. Are the effects heterogeneous across borrowers?
   - Difference-in-differences with differentially educated borrowers.
   - Standardization: less educated borrowers miss fewer payments. Disclosure: more educated borrowers miss fewer payments.
   - Both policies (especially disclosure) helped more educated borrowers leave less “money on the table".

Consumption Loans

- Fixed loan amount, rate, maturity
- Unsecured
- From banks
- 15% of households use
- Average amount: $3,400 USD

Consumer credit is mostly used to purchase items for houses, clothes, retire other debts, or for vehicles.

Chile vs. US Other Credit Options

Data

- Administrative consumer loan data from the Superintendencia de Bancos e Instituciones Financieras (SBIF).
- Sample of 6,331,545 approved consumer credit loans from Jan 1, 2009 to Dec 31, 2014 ($\sim$ 95% of the population of consumer bank loans).
- Variables: Loan amount, interest rate, lender, income, credit score, geographic location, age, married, default.

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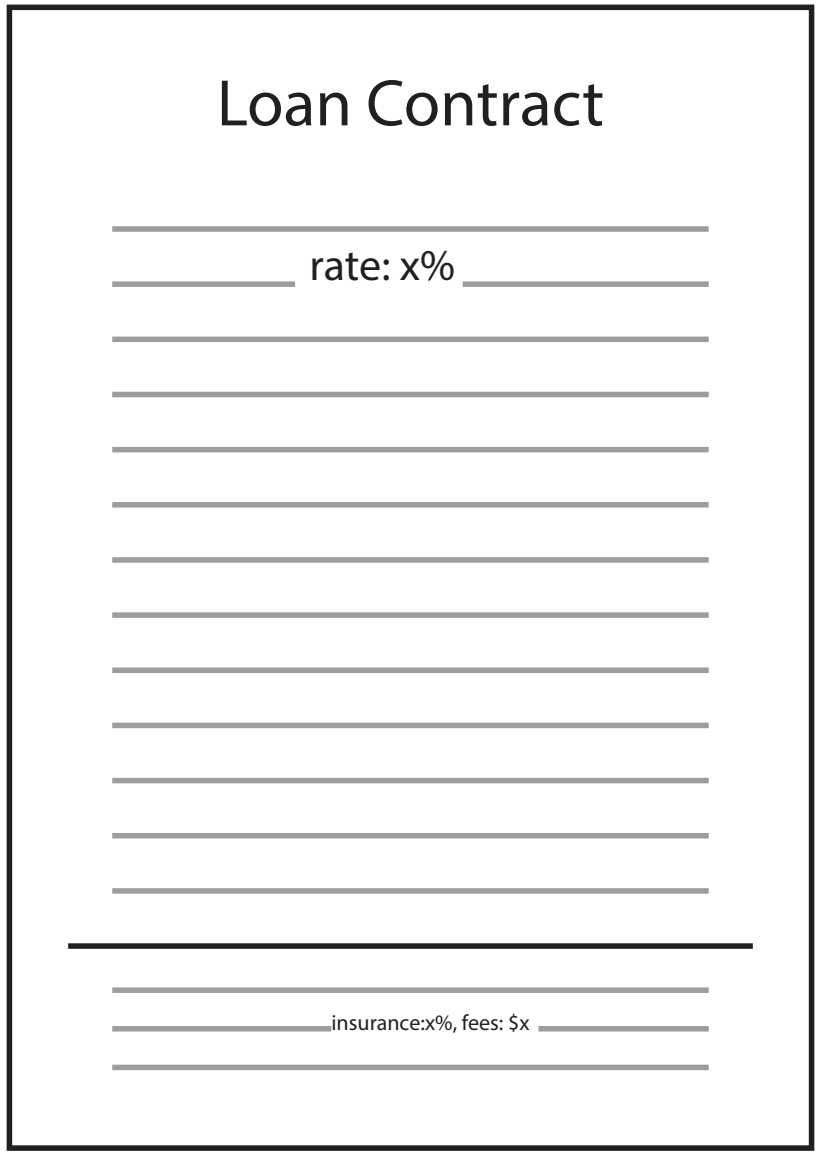
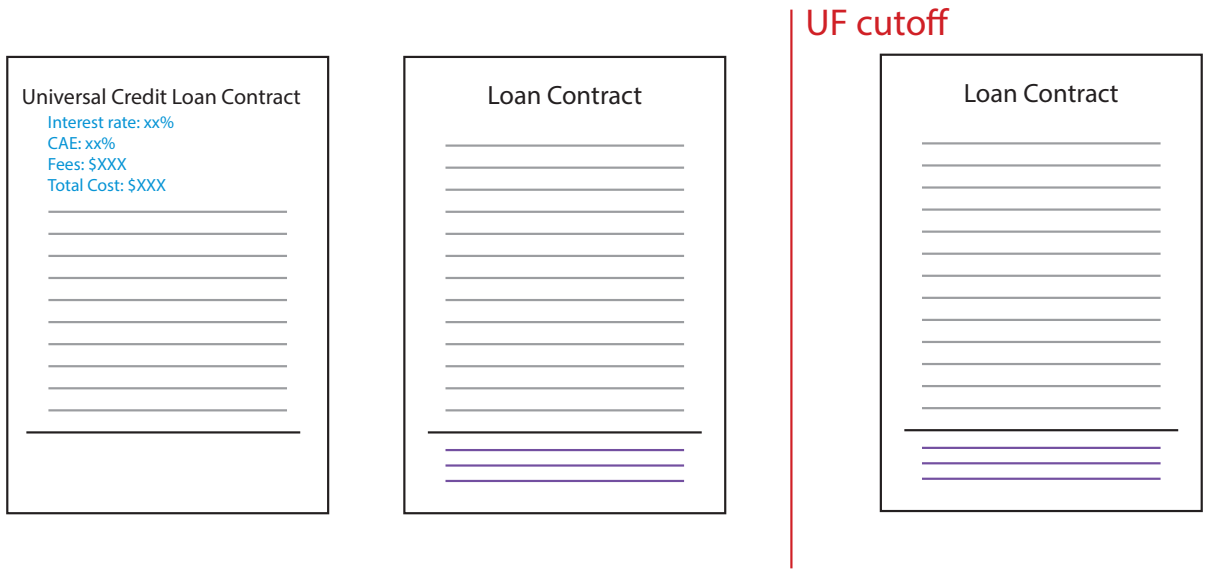
- Variables: Loan amount, interest rate, lender, income, credit score, geographic location, age, married, default.
- The average size of the loan is about $4,000 for two years with an average nominal rate of 25%.
- 1/4 of borrowers are delinquent in the full sample (1/5 in the RD sample), and 1% default.

Policy Changes

Pre-period



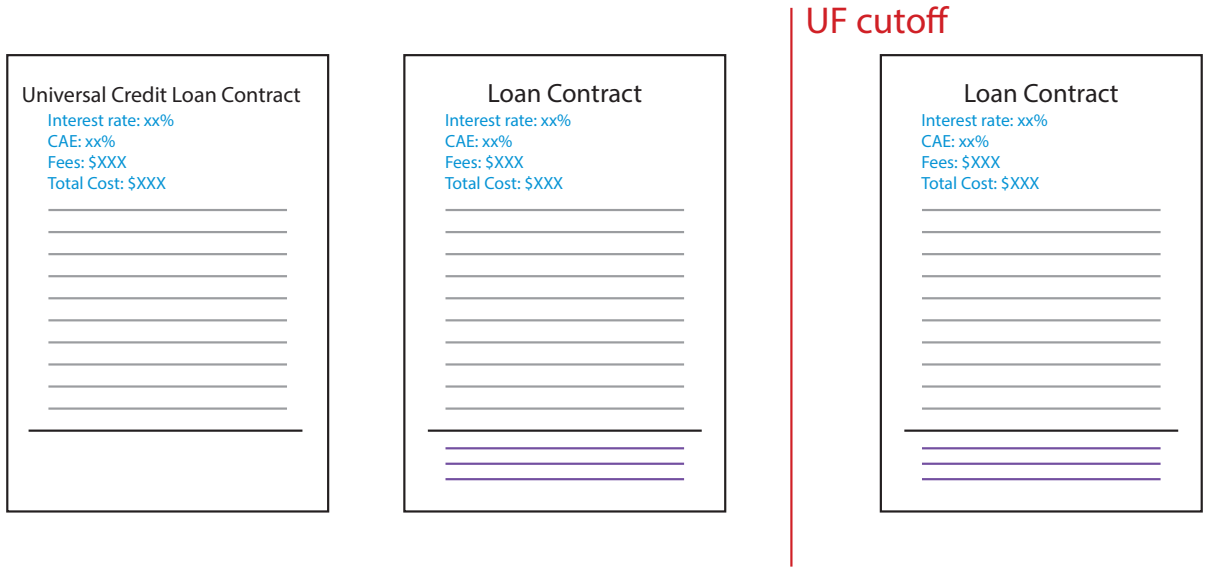
1.Standardization and Disclosure



- Universal credit option for any loan contract below 1,000 UF (40,000 USD) and $<$ 3 years maturity.
- Universal credits:
  - Provided easily located information on total rate with fees (APR), fees, total value of loan, etc.
  - Removed all superfluous insurance (e.g. disability).
- Implemented October 24, 2011.

Example

2. Disclosure

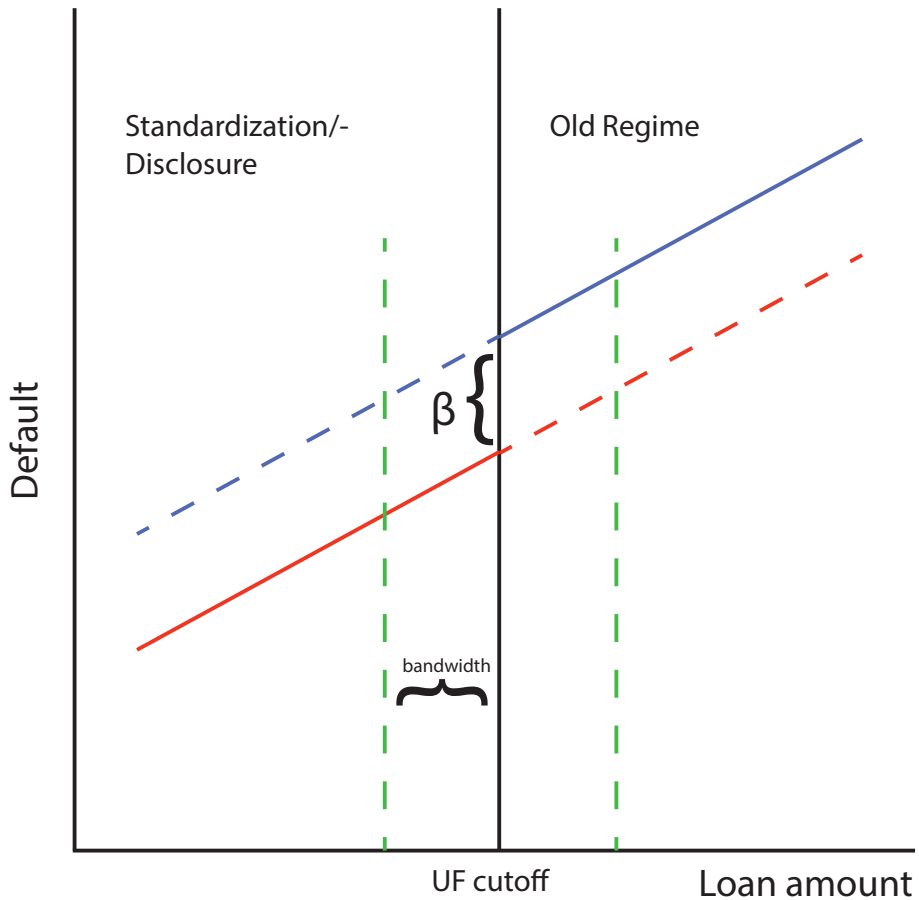


- Disclosure sheet for *all* loans.
- Universal credits still an option for loan contracts below 1,000 UF
- Implemented July 31, 2012.

Example

Results

Regression Discontinuity



Assumptions:

1. Agents don't manipulate their loan size to be above or below the cutoff
2. Agents are not selecting on other variables either side of the cutoff

Bandwidth selection

- Trade off between number of observations and bias
- Chosen by Calonico et al. (2014) and Calonico et al. (2018).

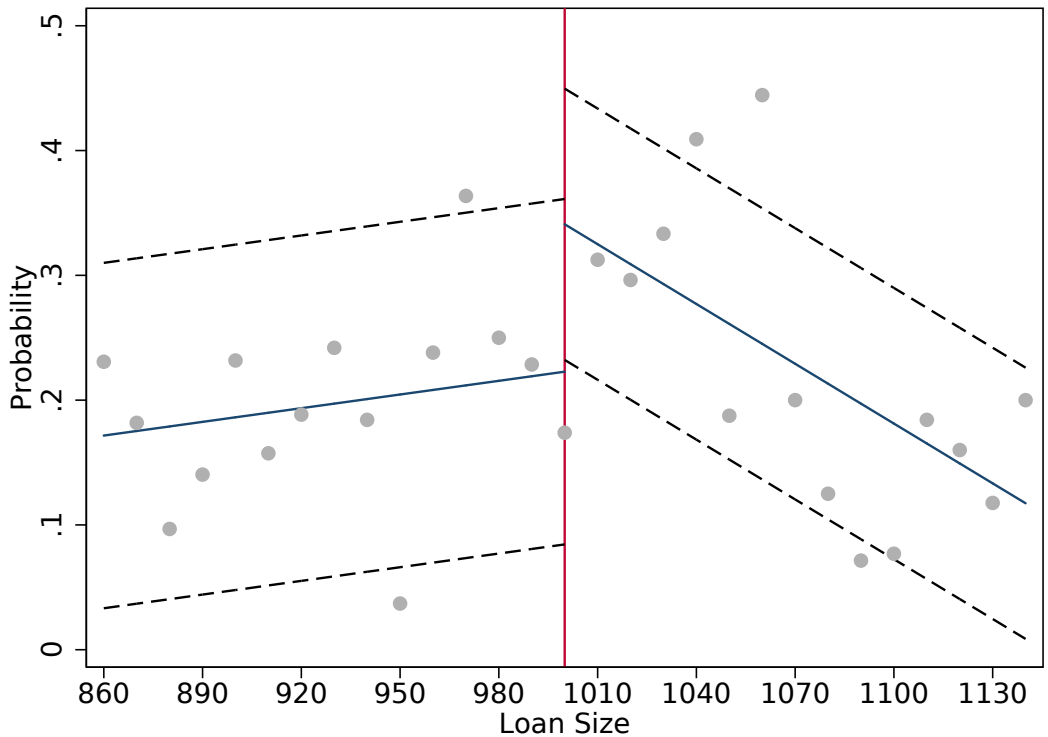
Regression Discontinuity

$$y_i = \beta_1 Loansize_i + \beta_2 \mathbb{1}_{\{Loansize_i < 1000\}} + \beta_3 \mathbb{1}_{\{Loansize_{it} < 1000\}} Loansize_i + \gamma_1 X_i + \epsilon_i$$

- y_i: ever delinquent, default, or extends their loan
- β_1, β_3: slope coefficient before and after cutoff
- X_i: individual borrower controls on age, credit risk, income, marital status; interest rate and maturity at issue, lender and neighbourhood fixed effects, and interbank rate and expected UF inflation rate at issuance.
- β_2: coeffcient of interest

Raw Regression Discontinuity

Figure: Ever Delinquent



Default Extended Regression No Slope

Regression Discontinuity

	(1) Ever Delinquent	(2) Ever Defaulted	(3) Ever Extended
Transparency	-0.144**	-0.0161**	0.00413
	(0.0711)	(0.00809)	(0.0311)
Loan Size	-0.148**	-0.00604	-0.000818
	(0.0623)	(0.00796)	(0.0328)
Transparency X Loan Size	0.163*	-0.00175	0.0189
	(0.0861)	(0.00943)	(0.0389)
Comuna Fixed Effects	Y	Y	Y
Lender Fixed Effects	Y	Y	Y
Controls	Y	Y	Y
Bandwidth	138	153	131
Kernel	Tri	Tri	Tri
Mean	.341	.017	.034
N	1088	1183	1033

Robust standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Pre-period Bandwidth Sensitivity Add. controls Placebo cutoffs Other Outcomes No Slope

Regression Discontinuity - Disclosure Period

	(1) Ever Delinquent	(2) Ever Defaulted	(3) Ever Extended
Transparency	-0.0272	-0.00364	0.00143
	(0.0201)	(0.00356)	(0.0102)
Loan Size	0.0256	0.00141	0.0122
	(0.0234)	(0.00520)	(0.0115)
Transparency X Loan Size	-0.0593*	-0.00573	-0.0222
	(0.0309)	(0.00606)	(0.0141)
Comuna Fixed Effects	Y	Y	Y
Lender Fixed Effects	Y	Y	Y
Bandwidth	138	153	131
Kernel	Tri	Tri	Tri
Mean	.081	.002	.015
N	4241	4680	4007

Robust standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

RD Assumption 1: No Manipulation of Loan Amount

Important for the identification of our regression discontinuity.

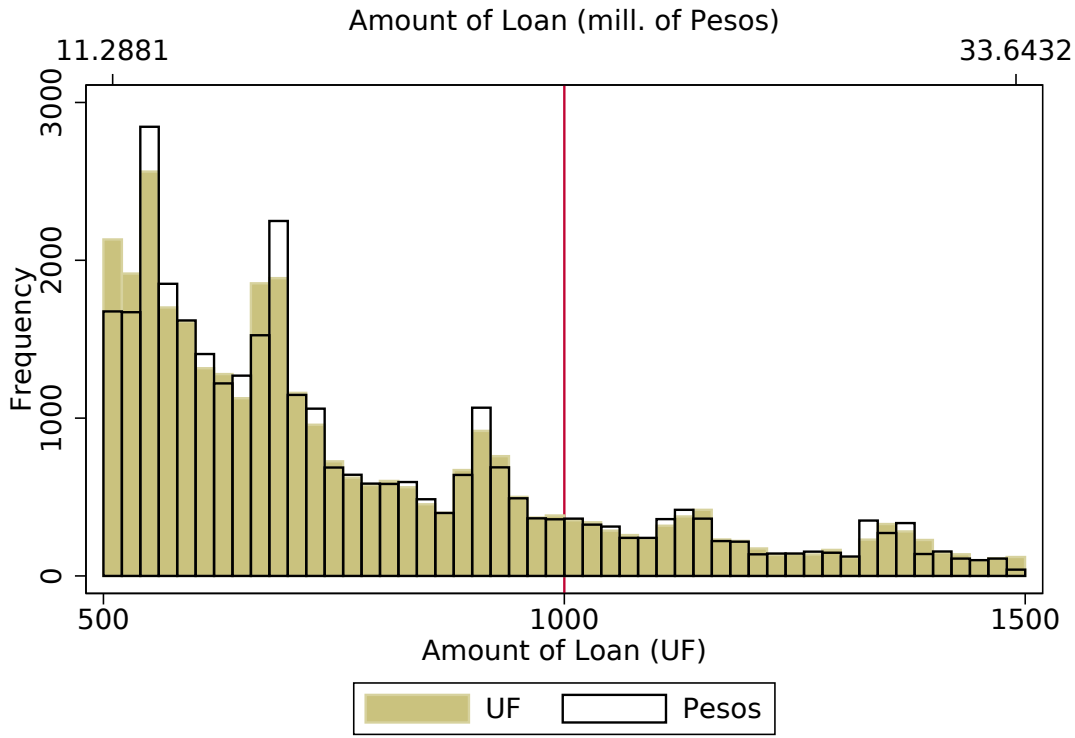
Currency:

- Transactions (and loans) are conducted in pesos.
- The regulation applies in UF (Unidad de Fomento), which is an inflation-adjusted currency.

Exchange rates:

- 1 UF = 26,669 pesos = $43 USD
- $1 USD = 627 pesos

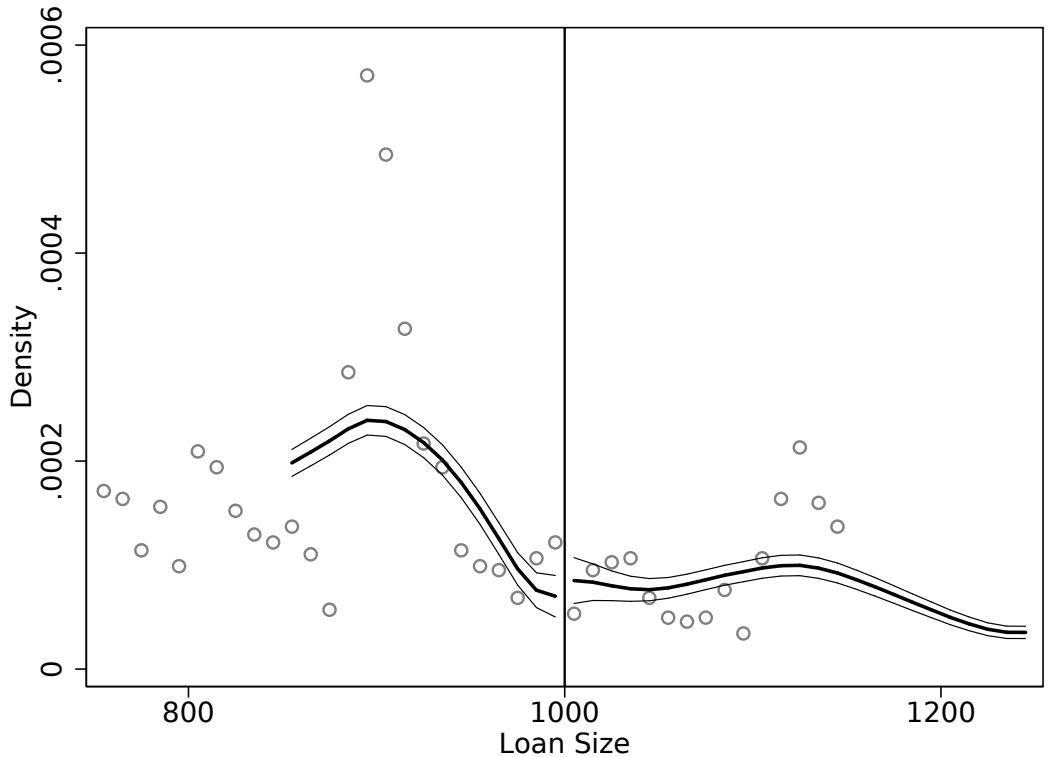
RD Assumption 1: No Manipulation of Loan Amount



- Use fluctuation in peso to UF rate.
- Loan contracts in pesos, regulation in UF.
- Suggests consumers targeted peso and not UF amounts.

RD Assumption 1: No Manipulation of Loan Amount

McCrary Density Test: Pre period Disclosure



- Discontinuity estimate: 0.22 (0.22)
- Passes McCrary density test, suggesting consumers and/or lenders did not manipulate loan amounts around the 1000 UF cutoff.

RD Assumption 2: Covariates Balanced

	(1) Interest Rate	(2) Maturity	(3) Credit Risk	(4) Income	(5) Age	(6) Expected Inflation
Transparency	-0.759	-1.292	0.000430	-326.2	-3.096	0.368*
	(0.508)	(1.228)	(0.0311)	(241.5)	(2.143)	(0.217)
Loan Size	-0.367	-1.586	0.0769**	1.744	0.661	-0.195
	(0.464)	(1.195)	(0.0310)	(232.7)	(1.789)	(0.206)
Transparency X Loan Size	-0.264	2.289	-0.141***	-623.8*	-4.004	0.469*
	(0.618)	(1.526)	(0.0400)	(342.1)	(2.513)	(0.262)
Comuna Fixed Effects	Y	Y	Y	Y	Y	Y
Lender Fixed Effects	Y	Y	Y	Y	Y	Y
Bandwidth	138	138	138	138	138	138
Kernel	Tri	Tri	Tri	Tri	Tri	Tri
Mean	13	19	0	1337	47	2
N	1,088	1,088	1,088	1,088	1,088	1,088

Robust standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Back

Difference-in-Differences

- RD says that borrowers are 40% less delinquent with more transparency and standardization doesn't have an effect.
- However, RD results are local for loans around $40,000 USD. These borrowers are usually more sophisticated than the median borrower.
- What about for consumers that the regulation aimed to target?

Difference-in-Differences

- RD says that borrowers are 40% less delinquent with more transparency and standardization doesn't have an effect.
- However, RD results are local for loans around $40,000 USD. These borrowers are usually more sophisticated than the median borrower.
- What about for consumers that the regulation aimed to target?
- Separate borrowers by level of education to proxy for sophistication.

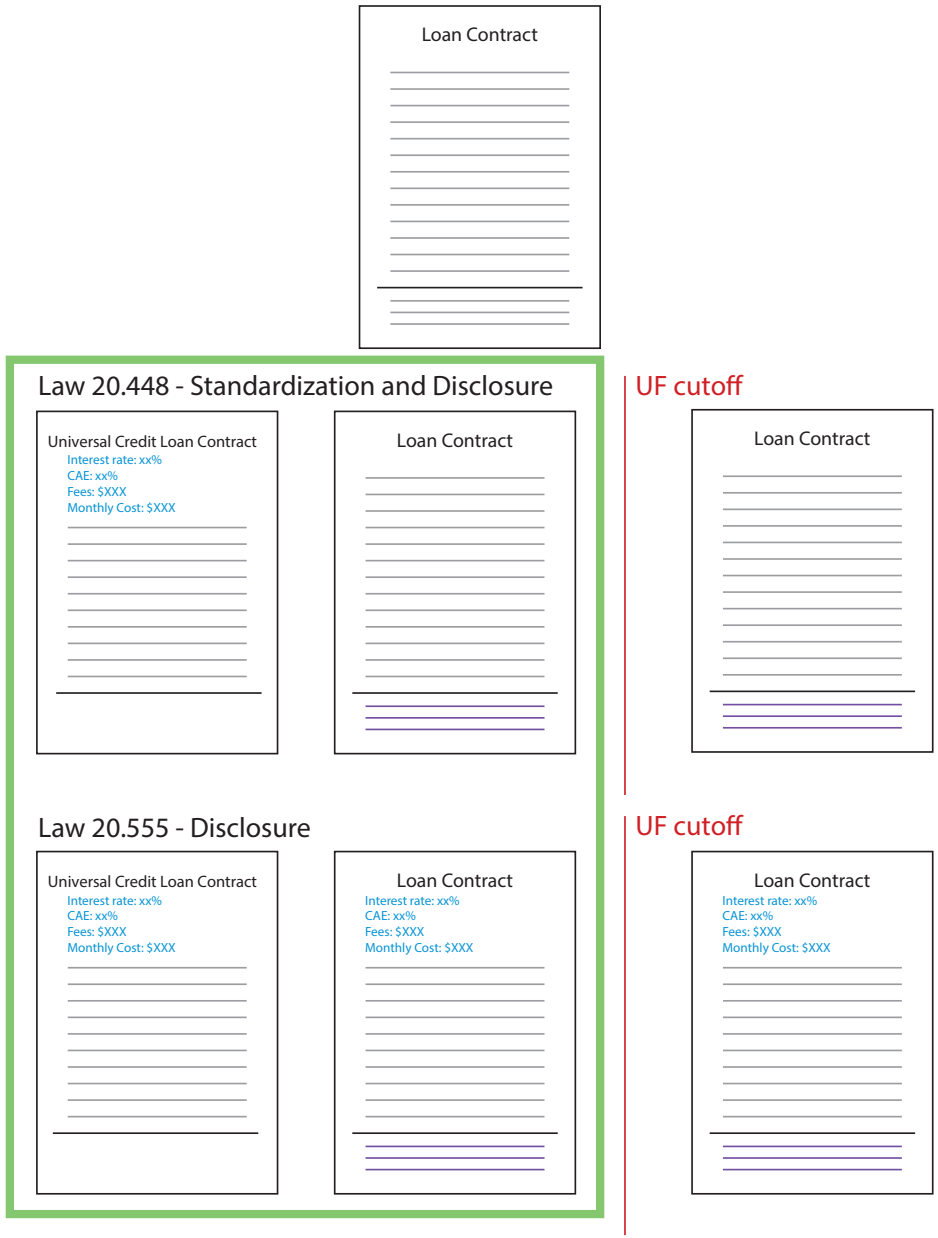
Difference-in-differences

$$y_i = \sum_{t(i)=-7}^{14} \left[\alpha_{\tau-t(i)} + \beta_{\tau-t(i)} \times \mathbb{1}_{\{LHS_i|MHS_i\}}\right] + \gamma X_i + \epsilon_i$$

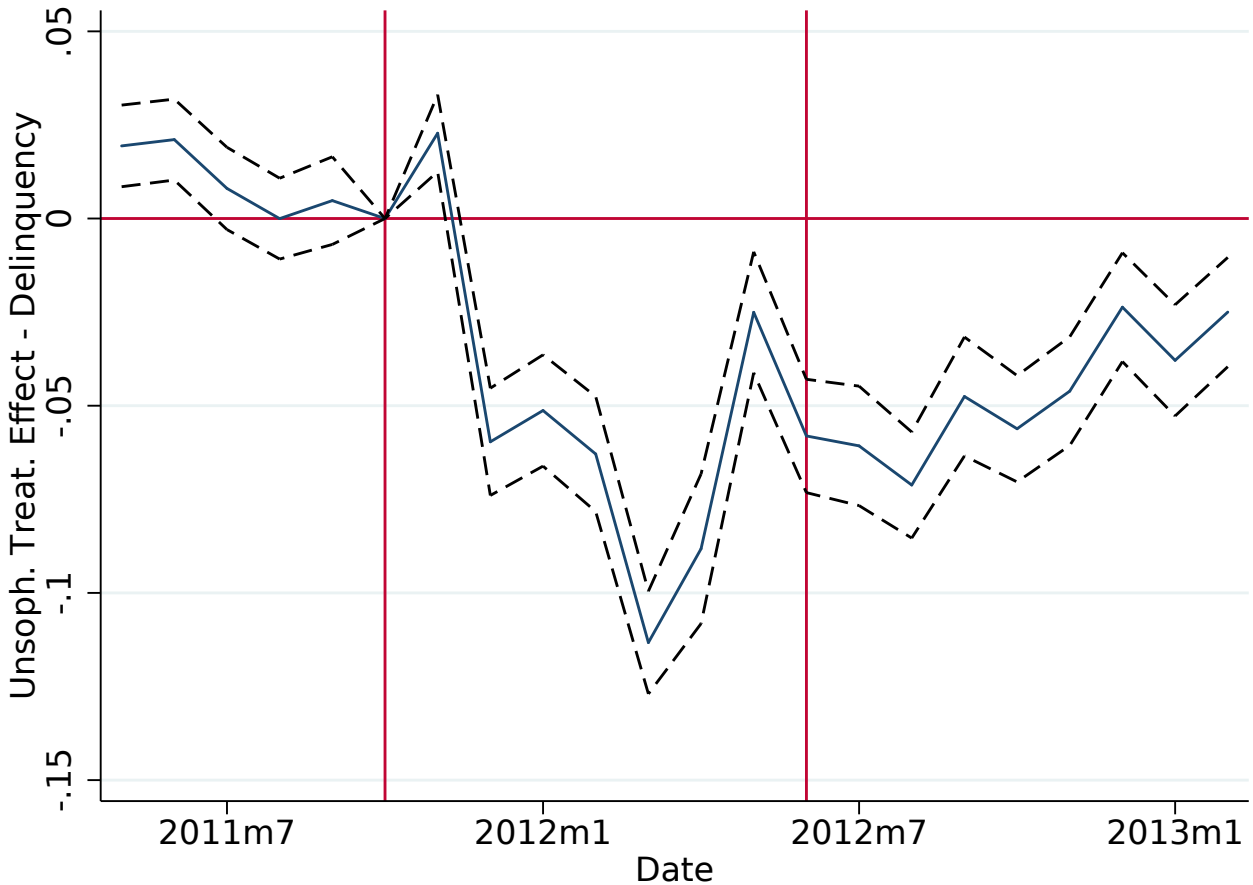
- y_i is an indicator for ever delinquent.
- $\beta_{\tau-t(i)}$s are unsophisticated or sophisticated borrower.
- τ is November 2011.
- Determining education: Average years of education completed by comuna ("neighbourhood").
  - $\geq$ 12 years: More than high school (MHS_i)
  - $\geq$ 11.5, $<$ 12 years: control
  - $<$ 11.5 years: Less than high school (LHS_i)
- Controls: married, age, female, expected inflation, base rate, comuna.

Observations

Pre-period

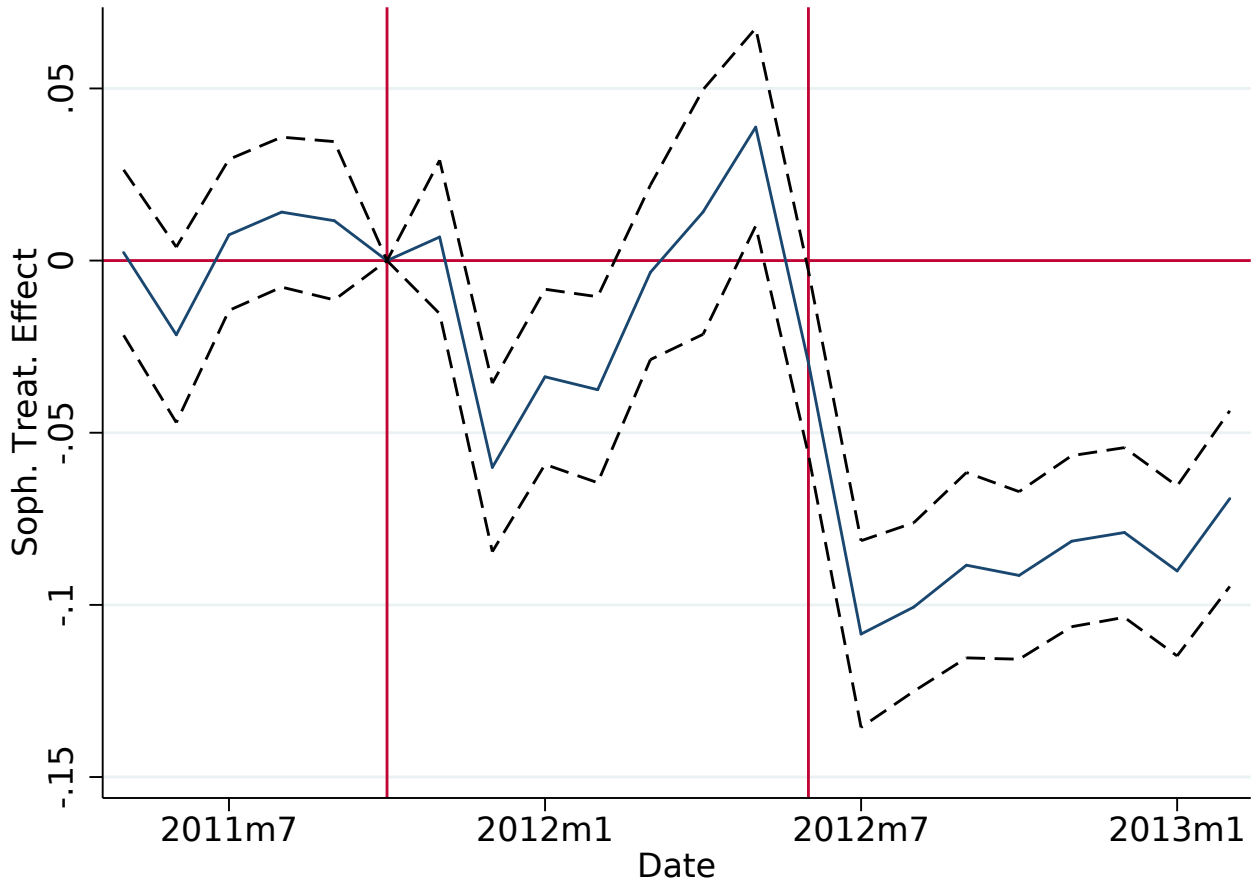

Loan Contract
Law 20.448 - Standardization and Disclosure
Universal Credit Loan Contract
Interest rate: xx%
CAE: xx%
Fees: $XXX
Monthly Cost: $XXX
Loan Contract
UF cutoff
Loan Contract
Law 20.555 - Disclosure
UF cutoff
Universal Credit Loan Contract
Interest rate: xx%
CAE: xx%
Fees: $XXX
Monthly Cost: $XXX
Loan Contract
Interest rate: xx%
CAE: xx%
Fees: $XXX
Monthly Cost: $XXX
Loan Contract
Interest rate: xx%
CAE: xx%
Fees: $XXX
Monthly Cost: $XXX

Ever Delinquent - Less than HS



Liberman (2018)

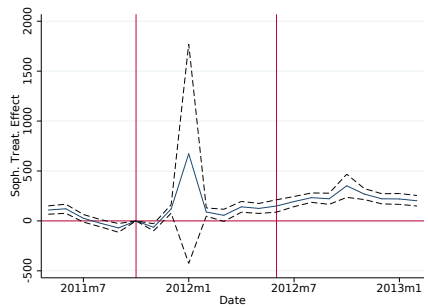
Ever Delinquent - More than HS



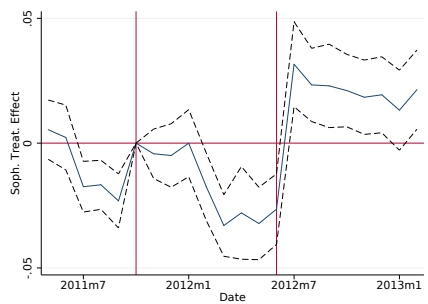
Quality of Borrowers

More than High School

- Income improves

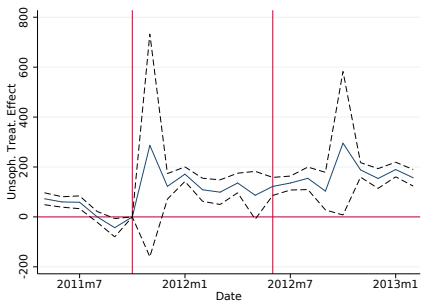


- Credit Risk declines

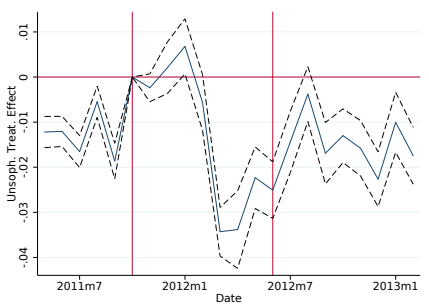


Less than High School

- Income improves



- Credit Risk improves



Summary of Results

- Sophisticated borrowers benefit from disclosure.
- Unsophisticated borrowers benefit from standardization.
- Borrower outcomes improve in terms of defaults and delinquencies.
- Why?

Summary of Results

- Sophisticated borrowers benefit from disclosure.
- Unsophisticated borrowers benefit from standardization.
- Borrower outcomes improve in terms of defaults and delinquencies.
- Why?
  - Better initial loan choices by getting lower rates?
  - Understand their loans better and so avoid costly surprises?

Money on the Table

We measure dispersion (function of search costs) and distance from “ideal" rate (Argyle et al., 2017).

- Less dispersion/distance $\Rightarrow$ better choices.
- Bucket groups of consumers together based on geography, income, age, credit risk quartiles, gender: 15,550 borrower bins.
- Bucket similar products: maturity, loan size: 96 product groups.
- Outcome variable: distance of rate to minimum rate, 25th pct rate and rate standard deviation in each borrower $\times$ product bin.

Money on the Table

More educated borrowers show less dispersion due to the policy changes than less educated borrowers.

	(1) Rate-25th pctile rate	(2) Rate-minimum rate	(3) Rate standard deviation
Standardization	0.800***	1.274***	0.337***
	(0.0260)	(0.0351)	(0.00730)
Disclosure	3.227***	4.904***	0.496***
	(0.0334)	(0.0436)	(0.00919)
Sophisticated	-0.359***	-4.533***	-1.198***
	(0.0182)	(0.0250)	(0.00683)
Sophisticated x Std.	-1.675***	-3.055***	-0.567***
	(0.0424)	(0.0577)	(0.0150)
Sophisticated x Disc.	-3.259***	-6.048***	-1.306***
	(0.0299)	(0.0404)	(0.00938)
Controls	Y	Y	Y
Year Fixed Effects	Y	Y	Y
N	3,453,372	3,453,372	3,445,282

Robust standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Conclusion

Exploit a natural experiment in Chile to examine impact of standardization and disclosure on consumer loan outcomes.

- Borrowers around the regression discontinuity cutoff were delinquent 14 percentage points (40%) less often and defaulted 1 percentage point less often with improved disclosure.
- Standardizing contracts improved default rates for less-educated borrowers with higher costs of studying.
- Both policies (especially disclosure) helped more educated borrowers leave less “money on the table".
- Regulatory policy should depend on which borrowers you intend to target.

Thank you!

Balance Sheet Comparison

Debt Type	Total	Consumption	Mortgage	Automotive	Educational	Other
Chile						
% of households	72.6	63.4	18.9	3.0	8.2	7.2
Average $ USD		1,000	30,000	4,000	3,500	300
U.S.						
% of households	77.1	56.9[1]	47.5	33.8	22.4	5.4
Average $ USD	123,400	8,570[1]	158,040	17,200	34,200	26,800

Source: Banco Central de Chile, Encuesta Financeria de Hogares 2014, Federal Reserve Survey of Consumer Finances 2017.

[1] Combined credit card, unsecured lines of credit, and other installment credit

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Consumer Debt Breakdown

Type	Total	Credit Cards	Lines of Credit	Consumer Credit	Total	Credit Cards	Loans & Adv	Loans
Lender	Banks				Dept. Stores			CyC
% hhlds	30.2	19.3	7.8	15.4	48.4	46.6	7.0	11.4
Av. $ USD	1,800	900	500	3,400	400	350	500	700

Source: Banco Central de Chile, Encuesta Financeria de Hogares 2014

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Example of Universal Mortgage Credit Contract

CRÉDITO HIPOTECARIO - SIMULACIÓN

Fecha : 24 de Octubre de 2011
UF : $ 22.079,1

Antecedentes del Crédito Hipotecario

	Valores en UF	Valores en $		
Valor Propiedad	5.000,00	110.395.500	Producto	MUTUO UNIVERSAL
Monto Solicitado	3.000,00	66.237.300	Objetivo Préstamo	VIVIENDA
Pago contado	2.000,00	44.158.200	Destino	COMPRA CASA
Porc. Financiamiento	60,00%		Antiguedad	NUEVA
			Meses de gracia	---

Cálculo de dividendo

			Crédito hipotecario				
Plazo (Años)	Tasa Anual %	Dividendo sin seguro UF	Sin seguro de Incendio UF	Seguro Desgravamen UF	Dividendo Total UF	Dividendo Total $	Renta Minima $
20	4,80	19,30	0,00	0,84	20,14	444.673	1.778.692

Gastos Operacionales

	Valores en UF	Valores en $
Tasacion	2,50	55.197
Legales	5,00	110.395
Notaria	3,00	66.237
Impuesto de Timbres y Estampillas	18,00	397.423
Conservador Bienes Raices	19,00	419.502
Total Gastos Operacionales	47,50	1.048.757

Seguros Involucrados

Seguro Desgravamen	1 Asegurado

CAE (**): **5,03%**
Costo Final de Crédito (***): **4.687,98**

(**) Carga Anual Equivalente (CAE) indicador que, expresado en forma de porcentaje, revela el costo de un crédito en un período anual, cualquiera que sea el plazo pactado para el pago de la obligación. Contempla el tipo de interés, todos los gastos asociados al crédito, el plazo de la operación; y se calcula sobre base anual.
(***) Costo Final de Crédito es un indicador que, expresado en una suma de dinero, da cuenta del monto total a pagar por el crédito solicitado, sumado lo adeudado por tasa de interés y los gastos asociados al crédito.

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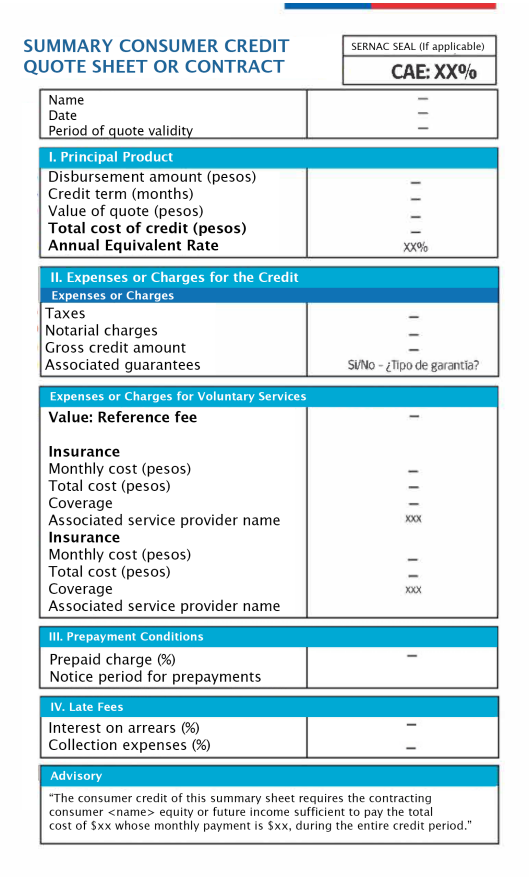
Example of Disclosure Regulation



SUMMARY CONSUMER CREDIT QUOTE SHEET OR CONTRACT

SERNAC SEAL (If applicable)

CAE: XX%

Name	–
Date	–
Period of quote validity	–
I. Principal Product	
Disbursement amount (pesos)	–
Credit term (months)	–
Value of quote (pesos)	–
Total cost of credit (pesos)	–
Annual Equivalent Rate	XX%
II. Expenses or Charges for the Credit	
Expenses or Charges	
Taxes	–
Notarial charges	–
Gross credit amount	–
Associated guarantees	Si/No - ¿Tipo de garantía?
Expenses or Charges for Voluntary Services	
Value: Reference fee	–
Insurance	
Monthly cost (pesos)	–
Total cost (pesos)	–
Coverage	–
Associated service provider name	xxx
Insurance	
Monthly cost (pesos)	–
Total cost (pesos)	–
Coverage	xxx
Associated service provider name	
III. Prepayment Conditions	
Prepaid charge (%)	–
Notice period for prepayments	
IV. Late Fees	
Interest on arrears (%)	–
Collection expenses (%)	–
Advisory	
"The consumer credit of this summary sheet requires the contracting consumer <name> equity or future income sufficient to pay the total cost of $xx whose monthly payment is $xx, during the entire credit period."	

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Interest Rates in Latin America

Country	Rates on Consumer Loans	Rates on Credit Cards
Panama	9-18%	
Argentina	34.5%	
Mexico		35-70%
Venezuela		29%
Costa Rica		32%
Brazil		58-700%

Back

Support for Continuity Assumption

	(1) Interest Rate	(2) Mat.	(3) C. Risk	(4) Income	(5) Age	(6) Exp. Infl.	(7) Bank Rate	(8) UF/peso
Trans.	-0.759	-1.292	0.000430	-326.2	-3.096	0.368*	-0.0718	-15.81
	(0.508)	(1.228)	(0.0311)	(241.5)	(2.143)	(0.217)	(0.0811)	(28.10)
Loan Size	-0.367	-1.586	0.0769**	1.744	0.661	-0.195	0.0675	34.49
	(0.464)	(1.195)	(0.0310)	(232.7)	(1.789)	(0.206)	(0.0748)	(28.02)
Trans. X L. S.	-0.264	2.289	-0.141***	-623.8*	-4.004	0.469*	-0.174*	-81.26**
	(0.618)	(1.526)	(0.0400)	(342.1)	(2.513)	(0.262)	(0.0924)	(35.95)
Comuna FE	Y	Y	Y	Y	Y	Y	Y	Y
Lender FE	Y	Y	Y	Y	Y	Y	Y	Y
Bandwidth	138	138	138	138	138	138	138	138
Kernel	Tri	Tri	Tri	Tri	Tri	Tri	Tri	Tri
Mean	12.61	19	.12	1,336	47	2.05	5.79	22,396
N	1,088	1,088	1,088	1,088	1,088	1,088	1,088	1,088

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Back Pre period Disclosure period Pictures

Support for Continuity Assumption - Pre period

	(1) Interest Rate	(2) Maturity	(3) Credit Risk	(4) Income	(5) Age	(6) Expected Inflation
Transparency	-0.241	0.298	-0.0249**	-154.3	1.880*	-0.657***
	(0.242)	(0.669)	(0.0106)	(207.8)	(1.042)	(0.162)
Loan Size	-0.178	-0.604	0.00346	-272.1	-0.313	-0.121
	(0.337)	(0.910)	(0.0161)	(289.7)	(1.455)	(0.227)
Trans. X L. Size	-0.525	3.260***	-0.0660***	277.2	1.999	-1.121***
	(0.401)	(1.096)	(0.0197)	(422.9)	(1.723)	(0.269)
Comuna FE	Y	Y	Y	Y	Y	Y
Lender FE	Y	Y	Y	Y	Y	Y
Bandwidth	138	138	138	138	138	138
Kernel	Tri	Tri	Tri	Tri	Tri	Tri
Mean	10.918	18.794	.062	1737.598	47.826	1.582
N	3283	3283	3283	3283	3283	3283

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Back

Support for Continuity Assumption - Disclosure period

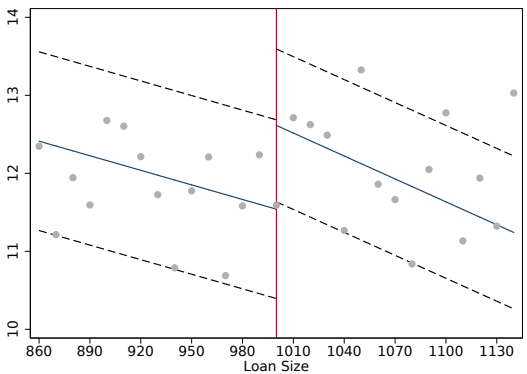
	(1) Interest Rate	(2) Maturity	(3) Credit Risk	(4) Income	(5) Age	(6) Expected Inflation
Transparency	0.371**	0.453	0.00957	-260.7	-1.437*	-0.00524
	(0.170)	(0.581)	(0.0143)	(201.8)	(0.774)	(0.0778)
Loan Size	0.638***	0.0826	-0.00598	-607.0***	0.0969	-0.323***
	(0.177)	(0.575)	(0.0148)	(179.4)	(0.760)	(0.0805)
Trans. X L. Size	-1.384***	-0.156	0.00469	830.9***	-1.076	0.540***
	(0.223)	(0.767)	(0.0195)	(284.5)	(1.025)	(0.104)
Comuna FE	Y	Y	Y	Y	Y	Y
Lender FE	Y	Y	Y	Y	Y	Y
Bandwidth	138	138	138	138	138	138
Kernel	Tri	Tri	Tri	Tri	Tri	Tri
Mean	10.72	17.965	.174	2471.958	48.847	2.694
N	4241	4241	4241	4241	4241	4241

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

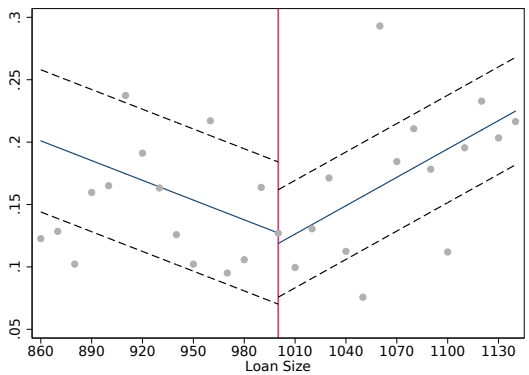
Back

RD Covariates plots

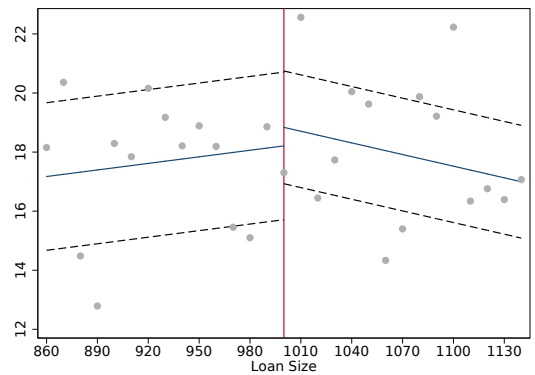
Interest Rate



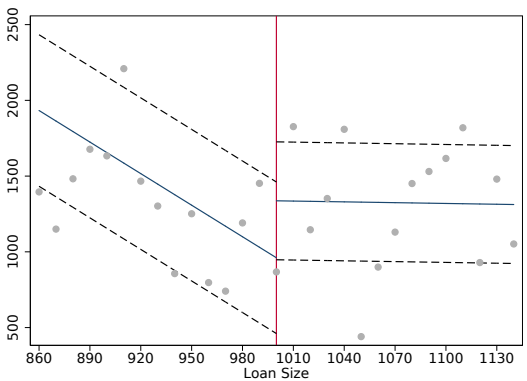
Credit Risk



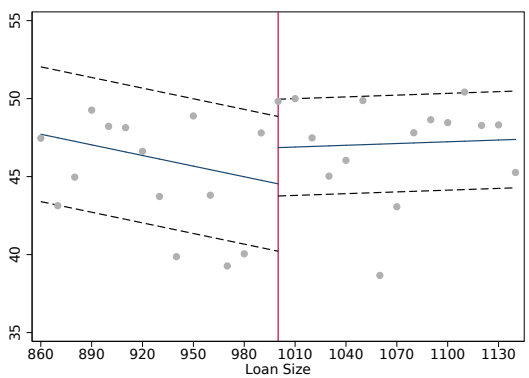
Maturity



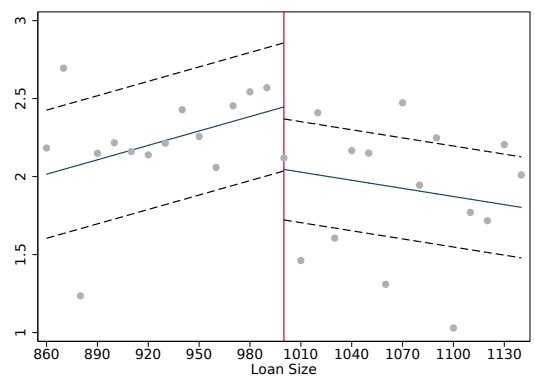
Income



Age



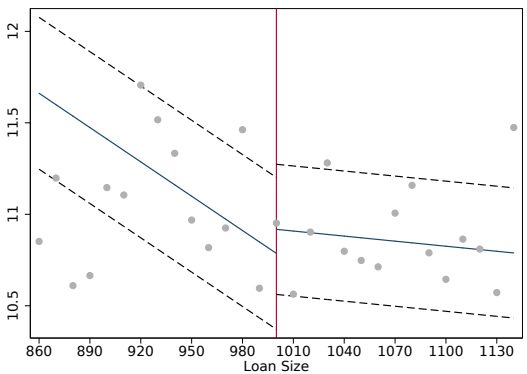
Expected Inflation



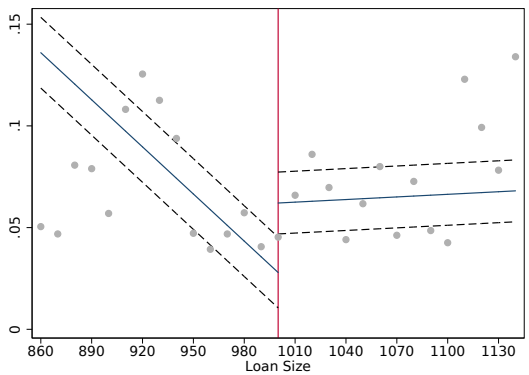
Back Pre period Disclosure period

RD Covariates plots - Pre period

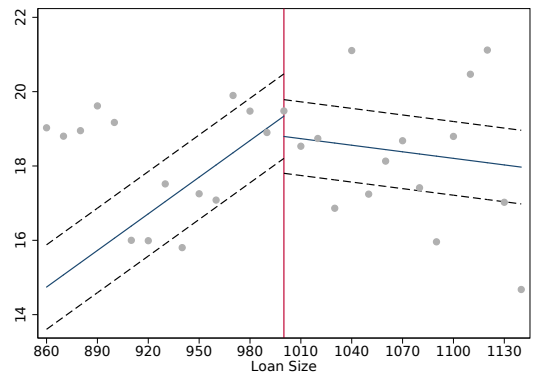
Interest Rate



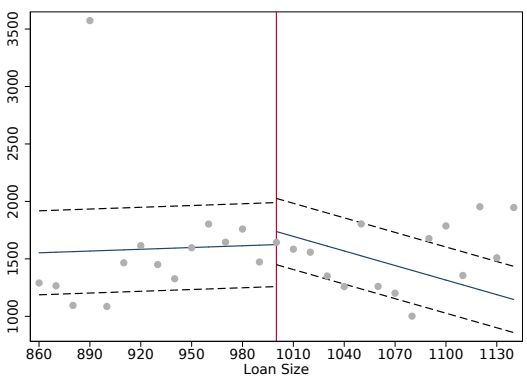
Credit Risk



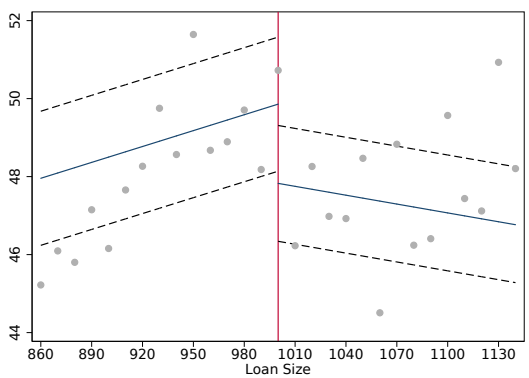
Maturity



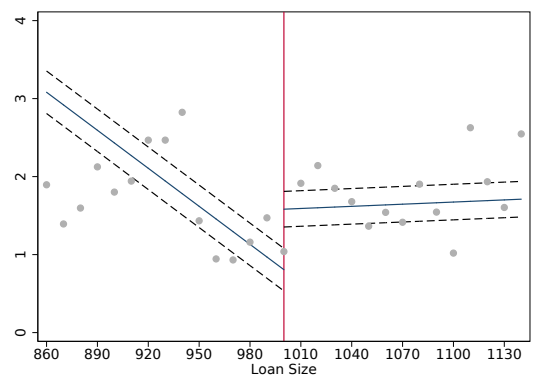
Income



Age



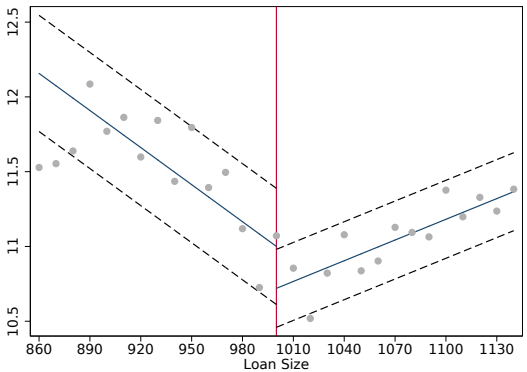
Expected Inflation



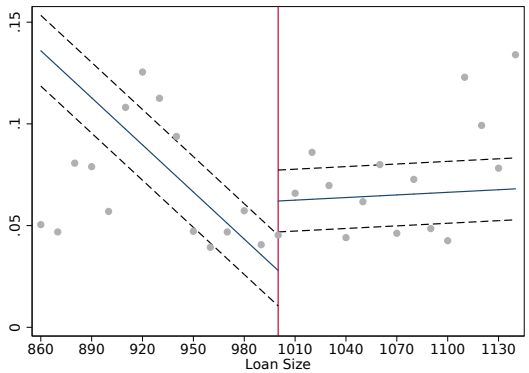
Back

RD Covariates plots - Disclosure period

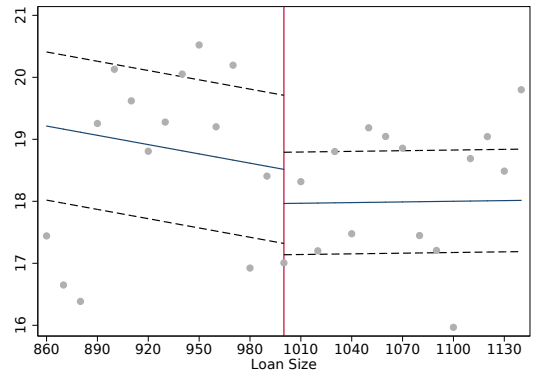
Interest Rate



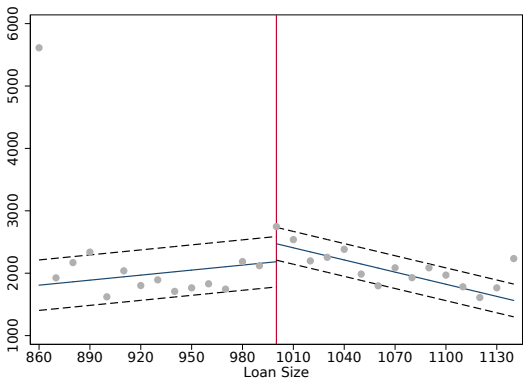
Credit Risk



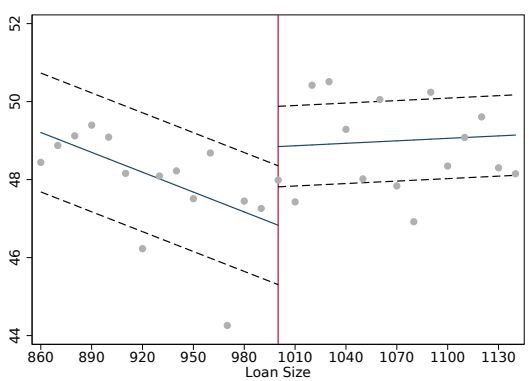
Maturity



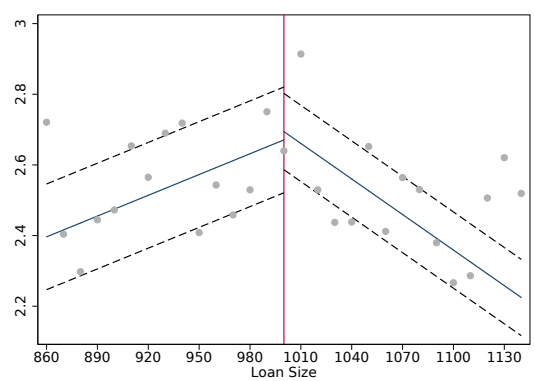
Income



Age



Expected Inflation



Back

Estimation Caveat

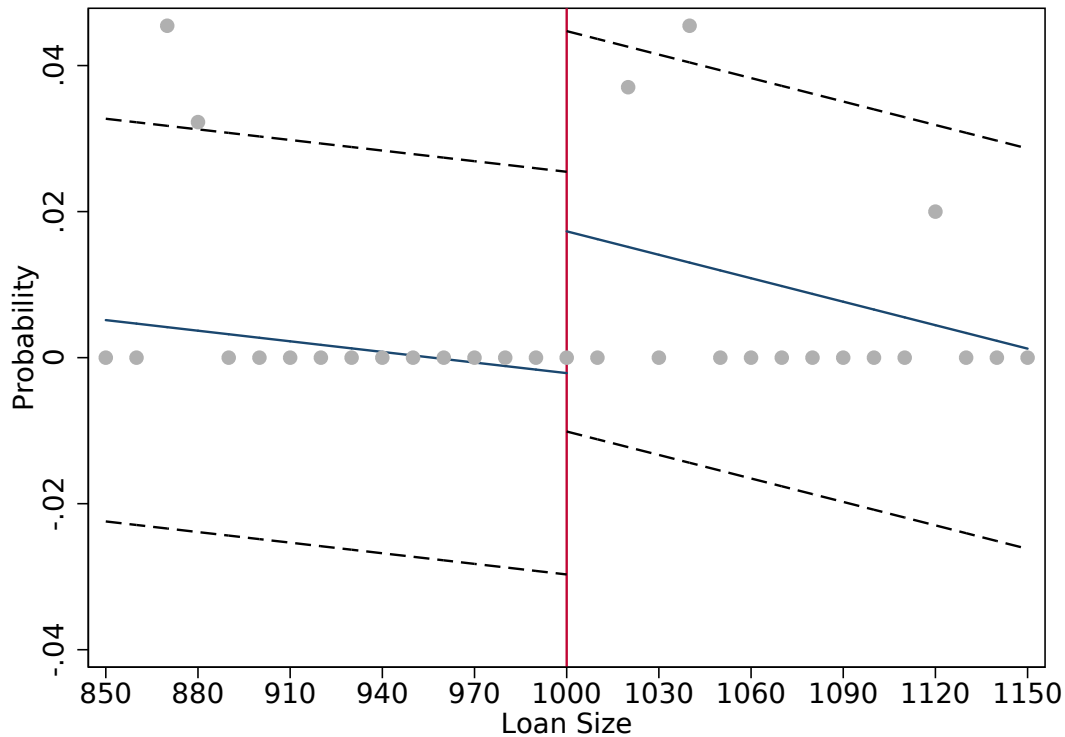
MEASURING INTRO OF NEW PRODUCT AND STANDARDIZATION, NOT JUST STANDARDIZATION.
TWO OPTIONS:

- Think through the literature/find it
- Try to find new product introduction by lenders in the pre period
- Try to identify UC contracts.

Back

Raw RD

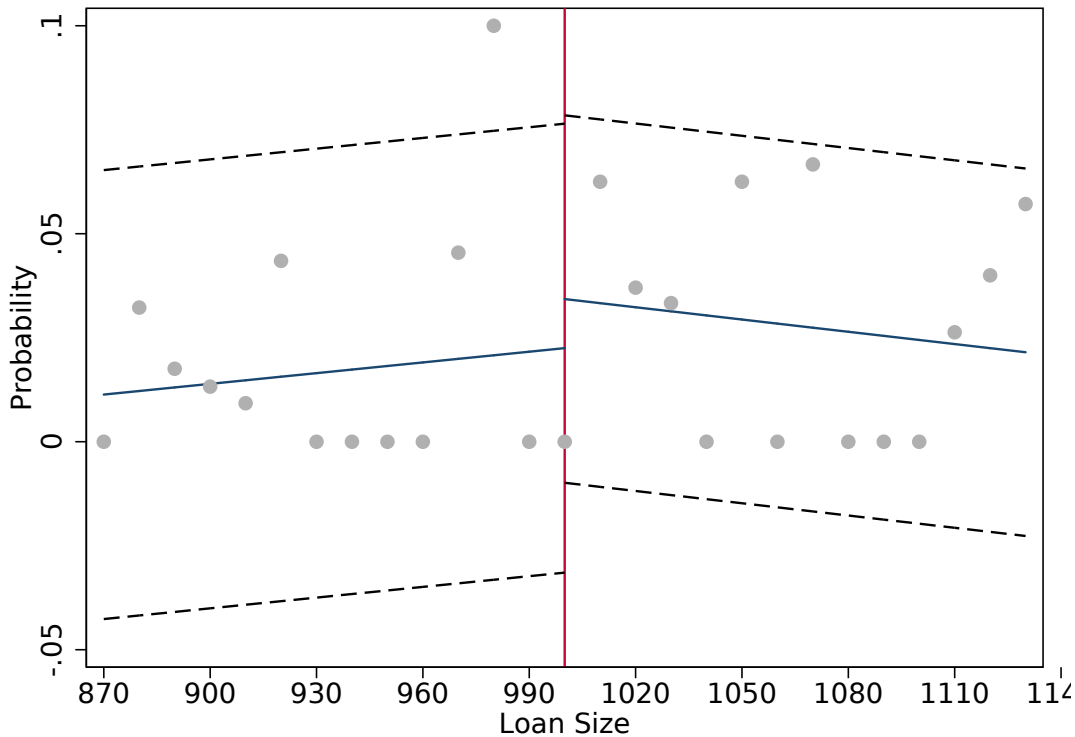
Figure: Ever Default



Back

Raw RD

Figure: Ever Extended



Back

Regression Discontinuity

Raw data

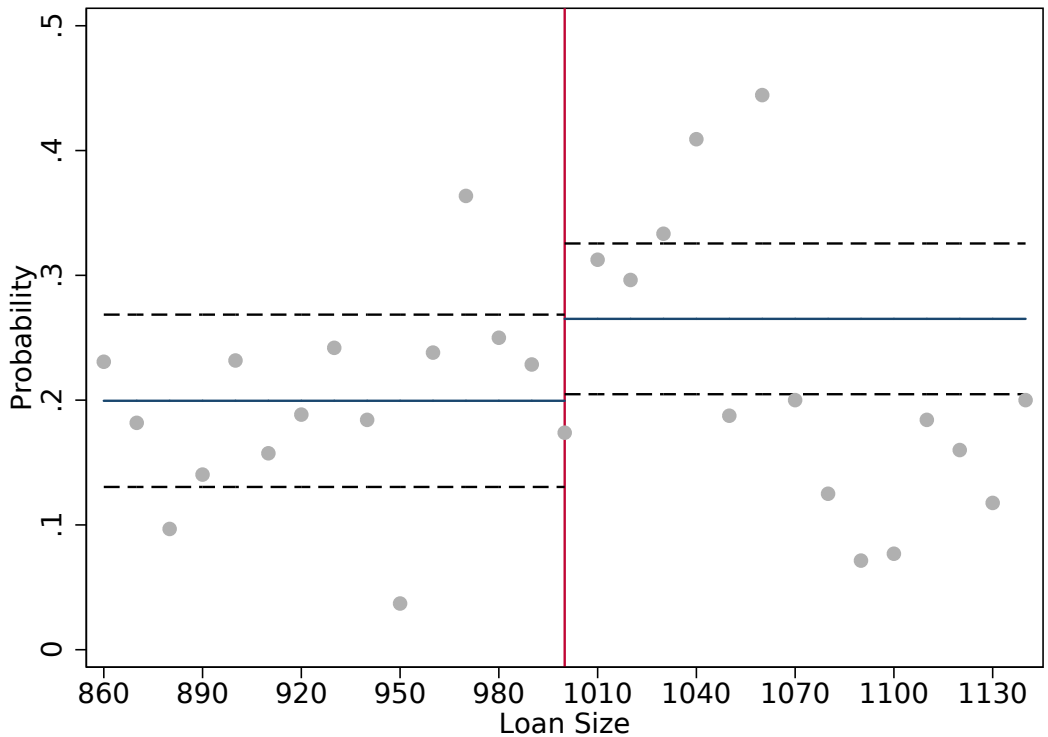
	(1) Ever Delinquent	(2) Ever Defaulted	(3) Ever Extended
Transparency	-0.118*	-0.0194	-0.0118
	(0.0706)	(0.0141)	(0.0275)
Loan Size	-0.160**	-0.0107	-0.00983
	(0.0662)	(0.0141)	(0.0307)
Transparency X Loan Size	0.196**	0.00587	0.0184
	(0.0841)	(0.0145)	(0.0360)
Comuna Fixed Effects	N	N	N
Lender Fixed Effects	N	N	N
Bandwidth	138	153	131
Kernel	Tri	Tri	Tri
Mean	.341	.017	.034
N	1088	1183	1033

Robust standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Back

Raw RD - No Slope

Figure: Ever Default



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Regression Discontinuity - Pre-period

	(1) Ever Defaulted	(2) Ever Delinquent	(3) Ever Extended
Transparency	-0.0328	0.00220	0.00847
	(0.0321)	(0.00207)	(0.0160)
Loan Size	0.0150	-0.000449	0.0102
	(0.0468)	(0.000766)	(0.0260)
Transparency X Loan Size	-0.0715	0.00343	0.0113
	(0.0547)	(0.00446)	(0.0316)
Comuna Fixed Effects	Y	Y	Y
Lender Fixed Effects	Y	Y	Y
Controls	Y	Y	Y
Bandwidth	138	153	131
Kernel	Tri	Tri	Tri
Mean	.103	0	.018
N	1997	2113	1920

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Back

Bandwidth Sensitivity

Figure: Ever Delinquent

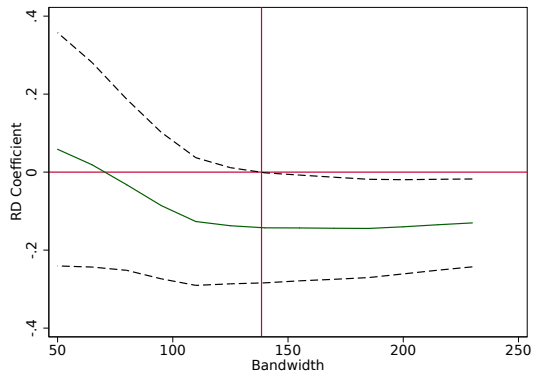


Figure: Ever Default

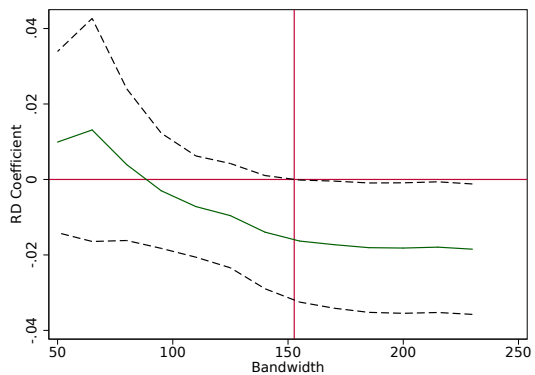
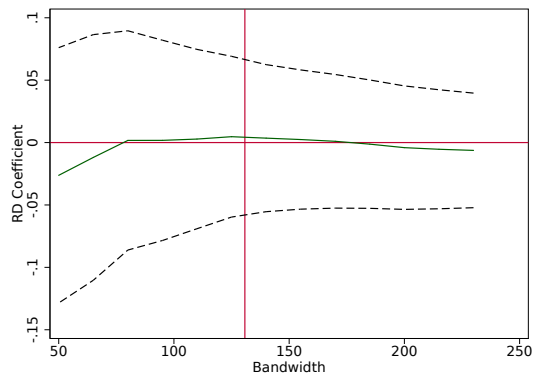


Figure: Ever Extended



Back

Loan Amount Density - Pre period

Figure: Histogram

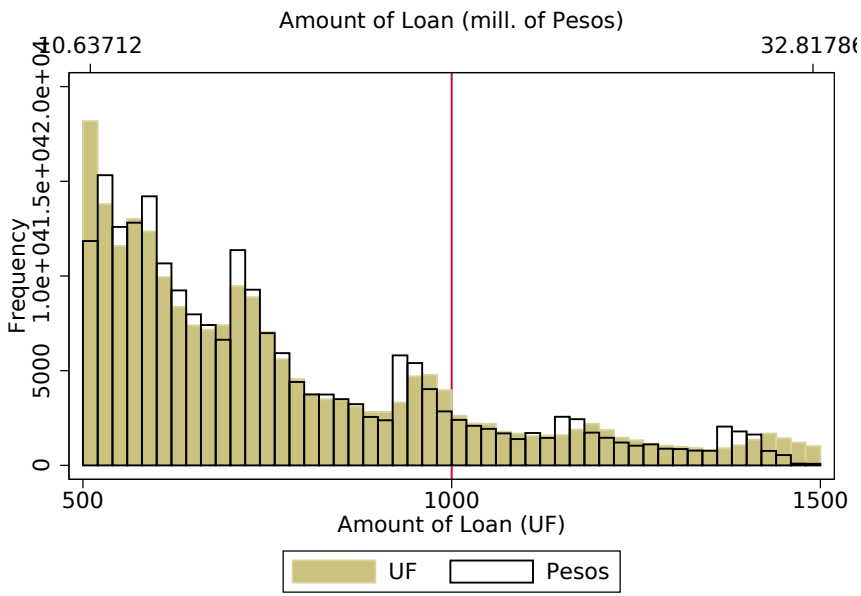
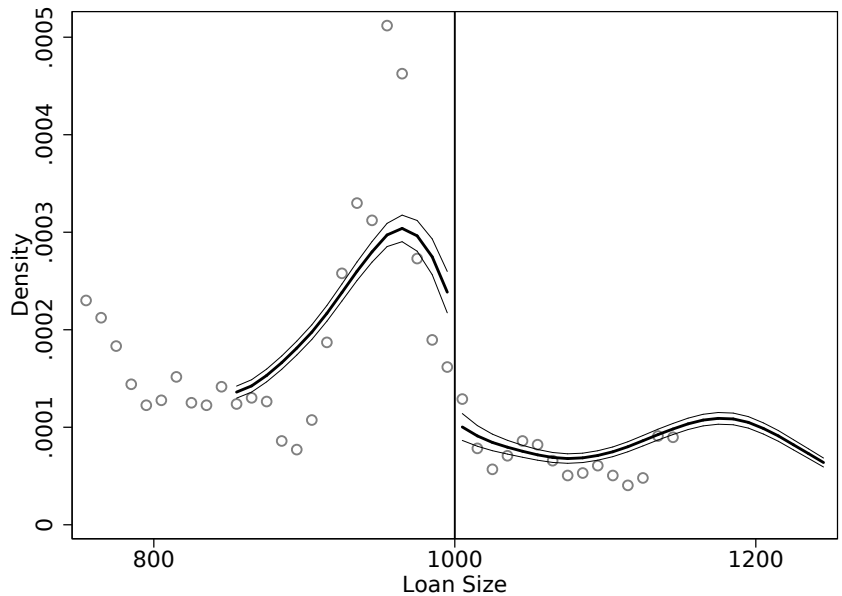


Figure: McCrary Density



Rounding at a peso amount close to the cutoff could explain why the pre period loan amount distribution does not pass the McCrary density test. Back

Loan Amount Density - Disclosure

Figure: Histogram

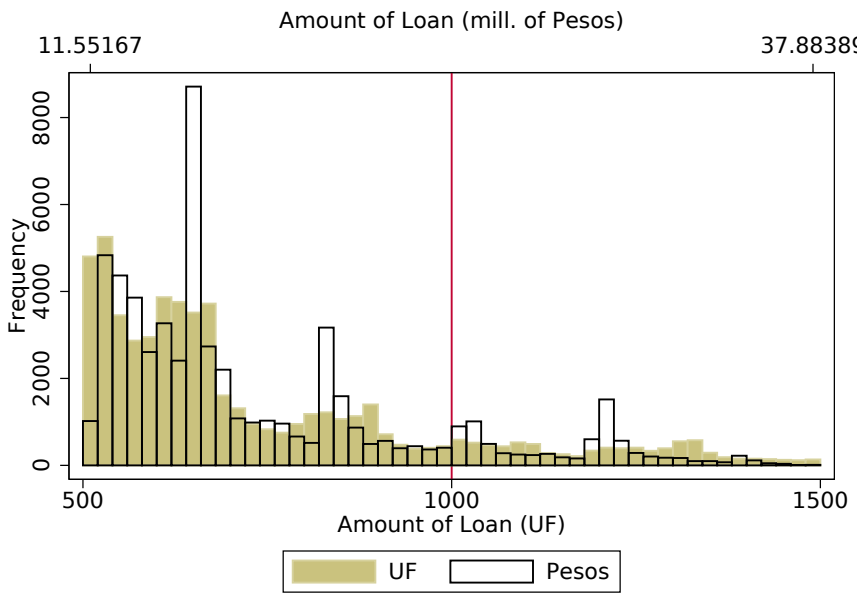
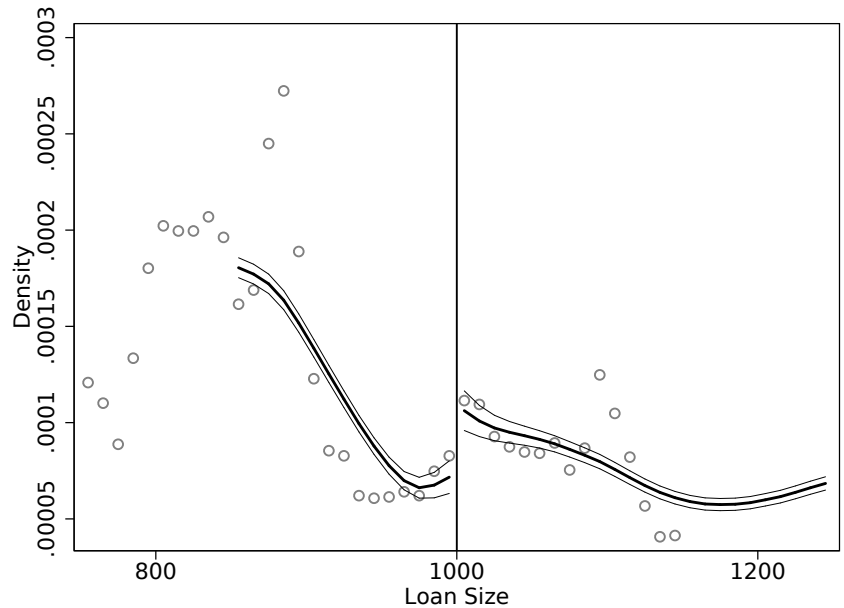


Figure: McCrary Density



Rounding at a peso amount close to the cutoff could explain why the disclosure period loan amount distribution does not pass the McCrary density test. Back

Regression Discontinuity

Added controls for leverage, outstanding debt, and number of loans.

	(1) Ever Defaulted	(2) Ever Delinquent	(3) Ever Extended
Transparency	-0.169**	-0.0203**	-0.0000357
	(0.0768)	(0.0103)	(0.0318)
Loan Size	-0.173***	-0.00991	-0.0118
	(0.0595)	(0.00948)	(0.0234)
Transparency X Loan Size	0.159*	0.00435	0.0290
	(0.0859)	(0.0121)	(0.0296)
Comuna Fixed Effects	Y	Y	Y
Lender Fixed Effects	Y	Y	Y
Bandwidth	150	174	201
Kernel	Tri	Tri	Tri
Mean	.298	.024	.048
N	957	1,045	1,157

Robust standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Back

Regression Discontinuity - Other Outcomes

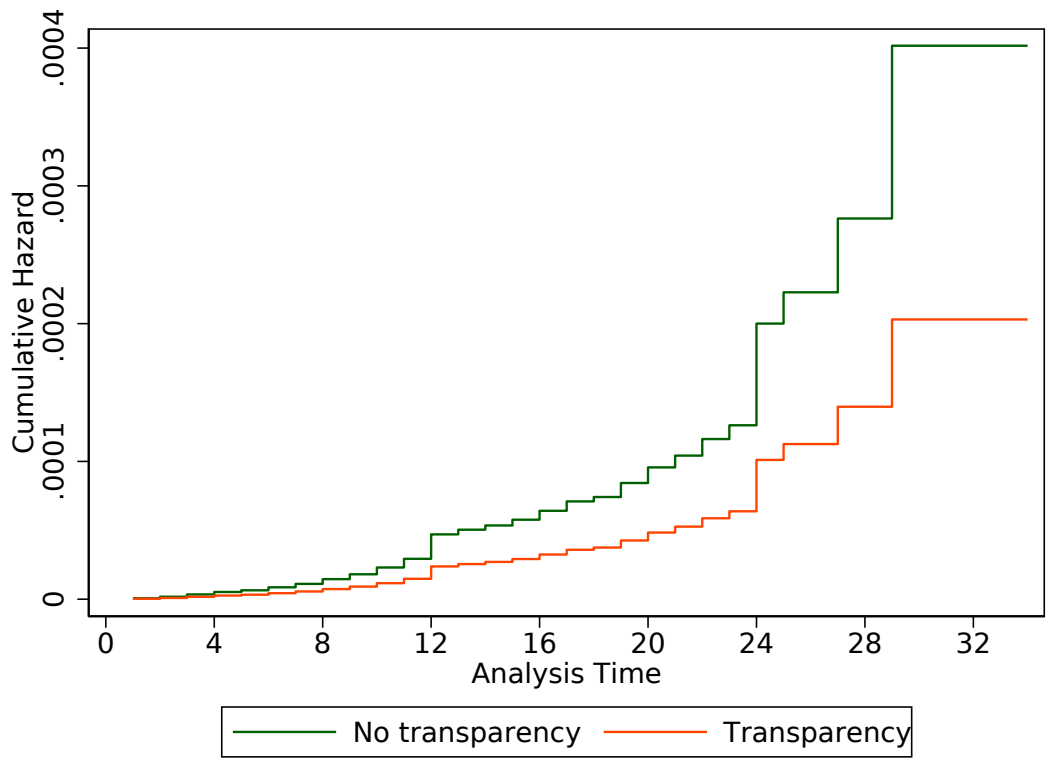
	(1) Month Default	(2) # Miss. Pmnts	(3) $ Miss. Pmnts	(4) Future debt
Transparency	0.419	-0.413**	-31.70**	284.0
	(4.584)	(0.196)	(15.61)	(212.1)
Loan Size	2.907	-0.335**	-25.77	356.2
	(9.208)	(0.153)	(17.70)	(245.2)
Trans. X Loan Size	-1.162	0.294	24.73	-289.6
	(10.17)	(0.191)	(20.06)	(316.3)
Comuna FE	Y	Y	Y	Y
Lender FE	Y	Y	Y	Y
Bandwidth	87	187	132	127
Kernel	Tri	Tri	Tri	Tri
Mean	7.141	.795	55.365	652.741
N	110	1369	1038	1005

Robust standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Back Hazard Model

Hazard Model

Figure: Ever Delinquent



Back

Regression Discontinuity - No Slope

	(1) Ever Defaulted	(2) Ever Delinquent	(3) Ever Extended
Transparency	-0.0802**	-0.00714	-0.00691
	(0.0342)	(0.00512)	(0.0153)
Comuna Fixed Effects	Y	Y	Y
Lender Fixed Effects	Y	Y	Y
Controls	Y	Y	Y
Bandwidth	138	153	131
Kernel	Tri	Tri	Tri
Mean	.265	.011	.03
N	1,088	1,183	1,033

Robust standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Back

Placebo Cutoffs

Figure: Ever Delinquent

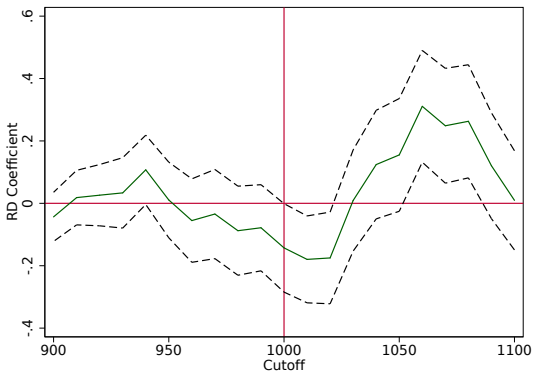


Figure: Ever Default

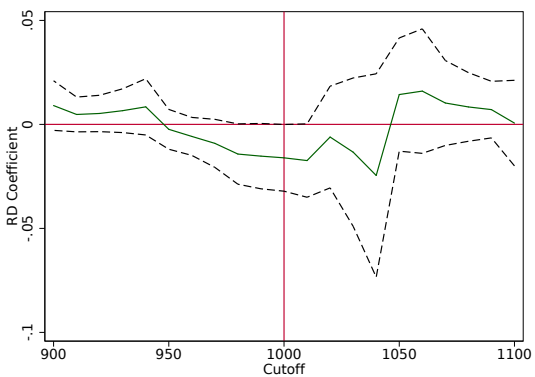
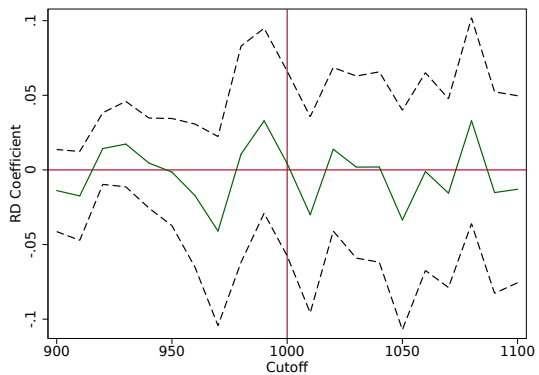


Figure: Ever Extended



Back

2. Covariate Balancing

	(1) Interest Rate	(2) Maturity	(3) Credit Risk	(4) Income	(5) Age	(6) Expected Inflation
Transparency	-0.759	-1.292	0.000430	-326.2	-3.096	0.368*
	(0.508)	(1.228)	(0.0311)	(241.5)	(2.143)	(0.217)
Loan Size	-0.367	-1.586	0.0769**	1.744	0.661	-0.195
	(0.464)	(1.195)	(0.0310)	(232.7)	(1.789)	(0.206)
Transparency X Loan Size	-0.264	2.289	-0.141***	-623.8*	-4.004	0.469*
	(0.618)	(1.526)	(0.0400)	(342.1)	(2.513)	(0.262)
Comuna Fixed Effects	Y	Y	Y	Y	Y	Y
Lender Fixed Effects	Y	Y	Y	Y	Y	Y
Bandwidth	138	138	138	138	138	138
Kernel	Tri	Tri	Tri	Tri	Tri	Tri
Mean	13	19	0	1337	47	2
N	1,088	1,088	1,088	1,088	1,088	1,088

Robust standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

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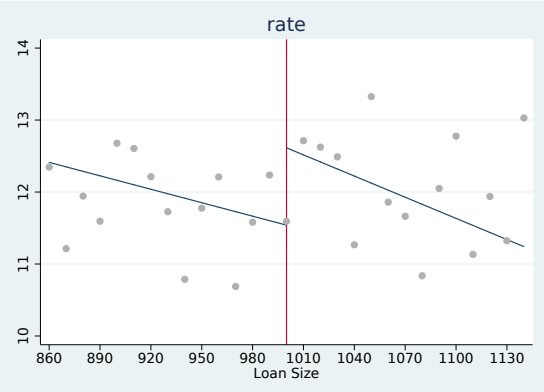
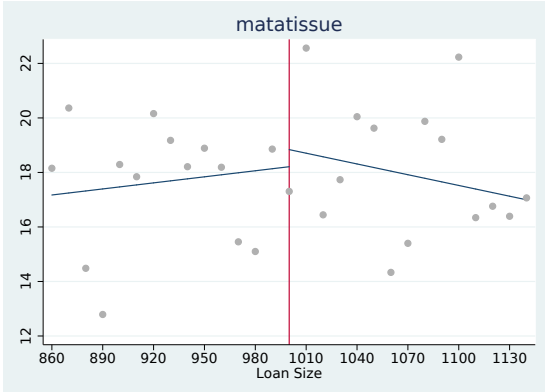
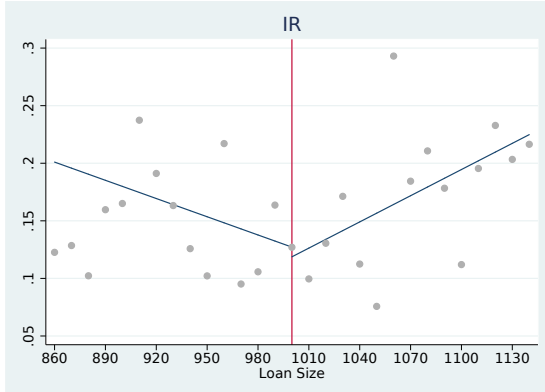
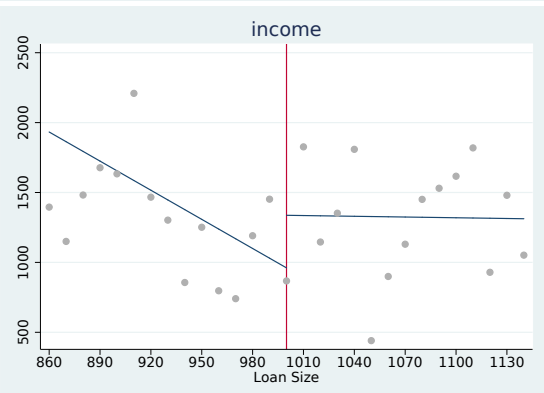
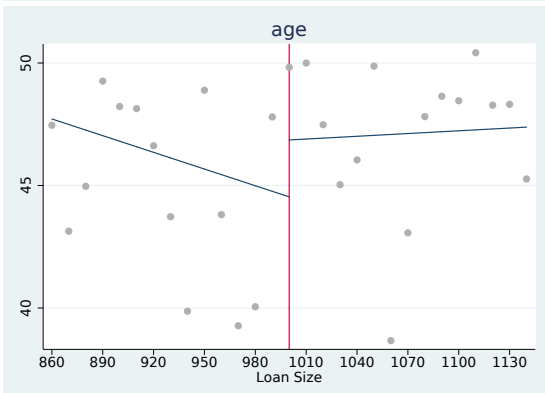
2. Covariate Balancing

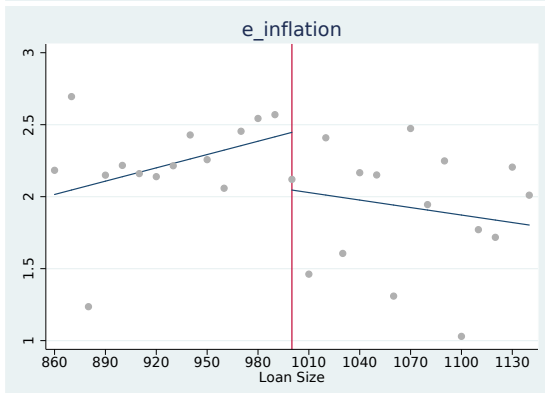












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Number of Observations by Education Category

Sophistication	Frequency	Delinquency Rate
$\geq$12 years school	43,495	18.8%
$>$11.5 to $<$12 years school	338,876	26.6%
$\leq$11.5 years school	356,946	25.3%
Total	739,317	

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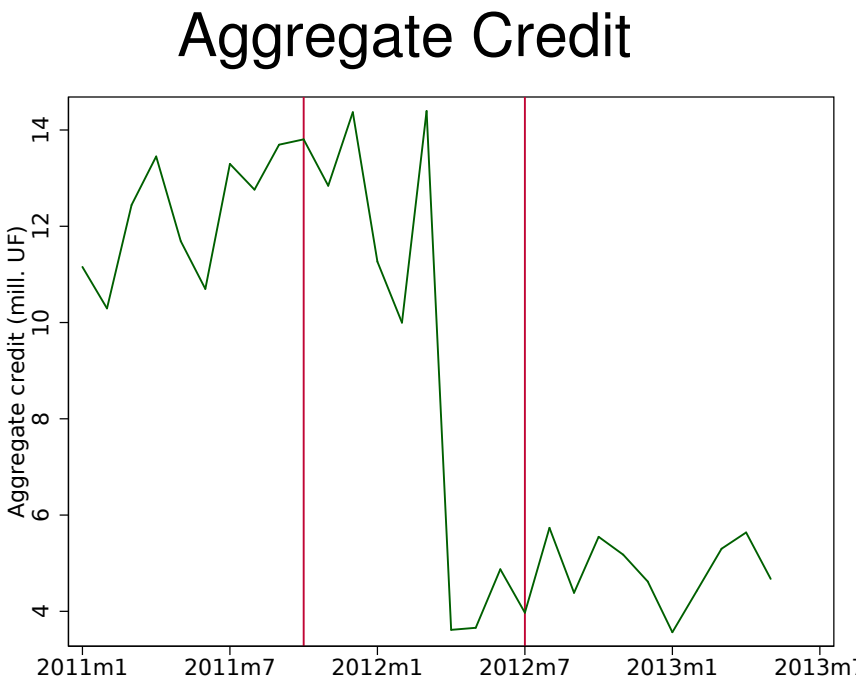
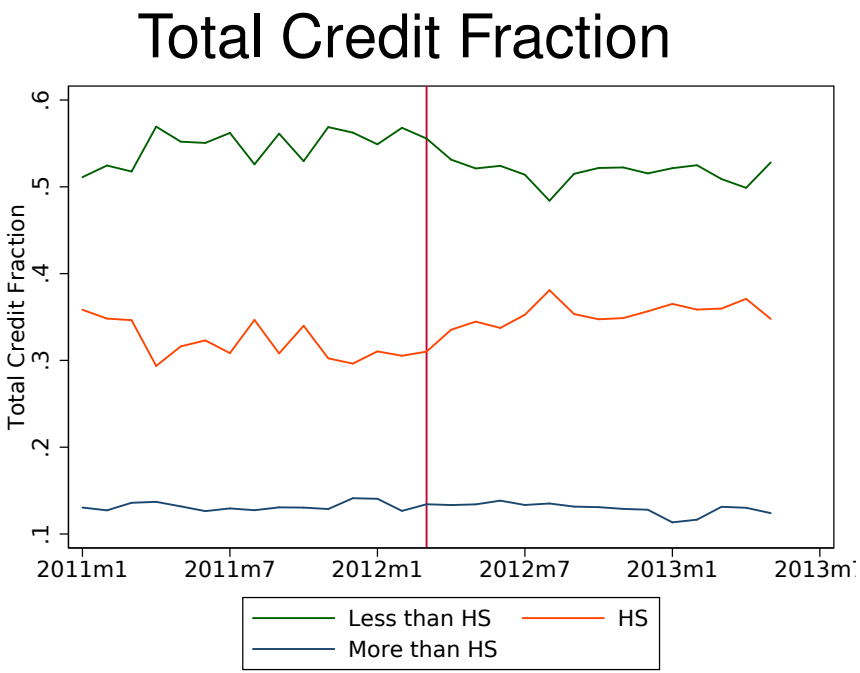
Credit Registry Deletion - March 2012



- March 2012 Credit Registry Deletion
- detailed in Liberman (2018)
- mostly affected non-bank loans
- “holiday": defaults prior to Dec 2011 removed



- Concern: selection of better borrowers explains default rather than response to regulation.
- Less than HS: looks like credit rationing, bias coefficients downwards, but we expected a zero result.
- More than HS: Credit risk suggests these borrowers got worse, so improved default should be result of regulations.

Credit Risk Back