# Price Comparison Tools in Consumer Credit Markets


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# Motivation: Price Dispersion in Consumer Credit Markets

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- In our survey data, average within-consumer standard deviation in annual interest rate is 5.8 pp
  - Compared to an average interest rate of 15%

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Consumers who are unaware of this dispersion may shop less and take out more expensive loans than is optimal

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Mexican consumers pay 31% more (or 1% of income) due to borrowing on higher-APR card (Ponce Seira Zamarripa 2017)

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Hard to compare prices

- Price shrouding and hidden fees (Campbell Jackson Madrian Tufano 2011; Alan Cemalcilar Karlan Zinman 2018)
- Complicated financial products that are cognitively costly to understand (Célérier Vallée 2017; Kulkarni Truffa Iberti 2023)

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High search costs

- Physical search across bank branches (Argyle Nadauld Palmer 2023)
- High rejection rates $\Rightarrow$ higher search costs for less creditworthy (Agarwal Grigsby Hortaçsu Matvos Seru Yao 2022)

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Inaccurate expectations about prices

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Randomized controlled trial where we randomize whether loan seekers:

1. are asked their priors about interest rates and search
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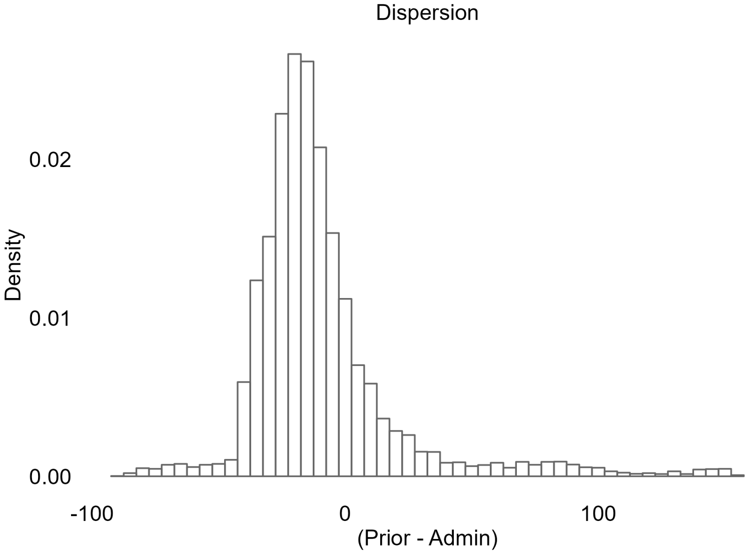
1. are asked their priors about interest rates and search
2. see a personalized price comparison tool, a simple tool quantifying the benefits of search, or neither

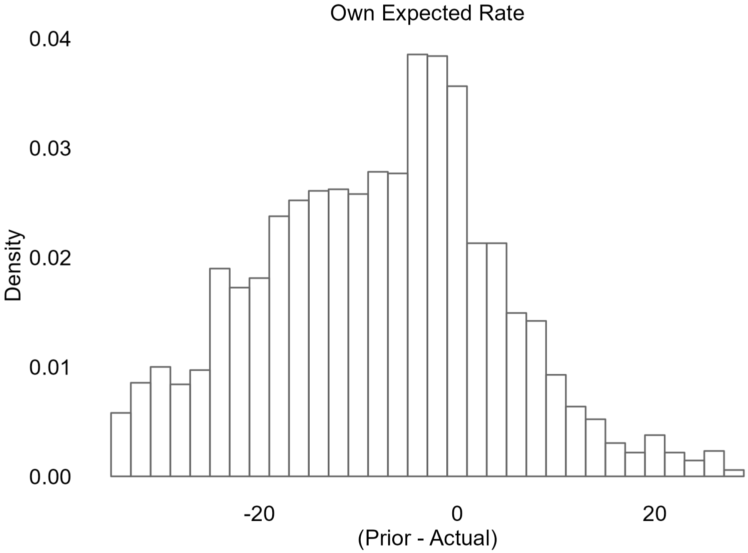
Combine administrative and survey data to measure effects on:

- Expectations about interest rates
- Search behavior
- Whether they take out a loan
- Terms of the loan they eventually take out

# Consumers Tend to Underestimate Dispersion



# Consumers Also Underestimate the Rate They Will Get



# Experimental Setting and Data

# Sample

Chileans who Googled keywords related to consumer loans between November 2021 and June 2023 received an ad for our study

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- “consumption loan”
- “apply for a loan online”
- “I need money urgently today”

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Most popular search queries:

- “consumption loan”
- “apply for a loan online”
- “I need money urgently today”

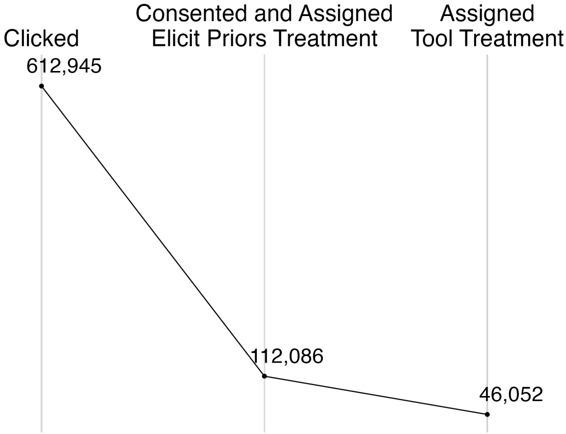
Example ad:

**Ad** · www.eligemejortucredito.cl/credito

Choose Your Loan Better | Comisión Mercado Financiero

We give you tools to help you search for and evaluate loans in the market. Participate in this 10-minute research study on the financial market.

# Sample: Participation Funnel




4,107,376 impressions (ads served)

612,945 clicked (15% of ads)

112,086 consented and assigned Elicit Priors Treatment (18% of clicks)

46,052 made it far enough in survey to be assigned Tool Treatment


▸ Percent getting a loan ▸ External validity

# Consumer Loans

Consumer loans are unsecured loans

- Most commonly used to purchase durables (appliances, vehicles), pay off other debts, or make home improvements
- Median interest rate is 20.1%
- Median loan amount is $4,582 USD
- Median maturity is 3.1 years

# Data

Administrative data from the CMF on loan and borrower characteristics for the universe of loans in Chile, merged with our RCT sample

- Loan type, loan amount, interest rate, maturity
- Borrower income, comuna (neighborhood) of borrower

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Baseline survey data immediately before and after treatment

- More detail on next slides

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Follow-up phone surveys

- Launched in January 2023 and still ongoing ▸ Follow-up survey

# Baseline Survey

COMISIÓN
PARA EL MERCADO
FINANCIERO

**Paso 1. Por favor ingresa tus datos para comenzar:**

Nombre (*)

RUT (*)

Edad (*)

Email (*)

Teléfono (nueve dígitos) (*)

+56

Key: National ID number (RUT) is commonly used in Chile

- e.g., at grocery store; phone repair store
- This will allow us to merge with future administrative data on originated loans

Also collect contact information for follow-up surveys

# Baseline Survey

Sociodemographic characteristics

Current bank products they have and at which banks

Intended use of the loan

How they formed priors

Financial literacy and cognitive ability

Expectations about search

- How many banks
- Which bank first

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Expectations about search

- How many banks
- Which bank first

Expectations about prices

¿Cuál crees que es la tasa de interés que tú conseguirás por este crédito?
(puedes utilizar decimales)

% -elige el período-

¿Cuál crees que es la tasa de interés más baja que un banco podría ofrecerte por este crédito?
(puedes utilizar decimales)

% -elige el período-

¿Cuál crees que es la tasa de interés más alta que un banco podría ofrecerte por este crédito?
(puedes utilizar decimales)

% -elige el período-

¿Cuál crees que es la tasa de interés promedio que personas como tú consiguen por un crédito como este?

# Experimental Design

# Treatment Arms

Randomize whether participants are asked expectations about interest rates and search ("Elicit Priors" treatment)

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After completing the survey questions, participants are randomized into one of three groups:

1. Full price comparison tool
2. Simple tool with information on benefits of search
3. Control: view placebo video made by the CMF
    - Defines key terms related to credit

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Randomize whether participants are asked expectations about interest rates and search ("Elicit Priors" treatment)

After completing the survey questions, participants are randomized into one of three groups:

1. Full price comparison tool
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3. Control: view placebo video made by the CMF
    - Defines key terms related to credit

After treatment, we ask again about their expectations about prices (if assigned to Elicit Priors treatment)

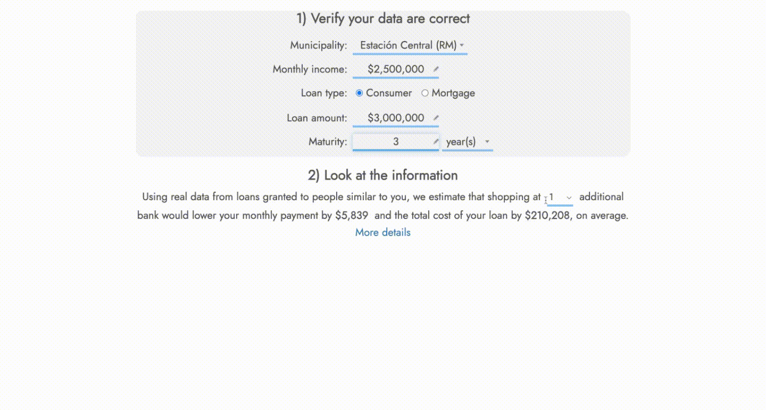
# Treatment 1: Full Price Comparison Tool


▸ Tutorial Video ▸ Other comparison tools

# Treatment 2: Simple Tool

Estimate personalized benefits of search based on simulations where we draw from their conditional distribution ▸ More details

Tell the user the expected benefit from searching at *X* additional banks



# Results

# Full Tool $\Rightarrow$ Consumers Update Beliefs Upwards

$$Posterior_i = \beta_0 + \beta_1 Prior_i + \beta_2 \mathbb{1}(\text{Simple Tool}) + \beta_3 \mathbb{1}(\text{Full Tool}) + \varepsilon_i$$

| | Expected (Own) | Expected (Others) | Lowest | Highest | Dispersion |
|---|---|---|---|---|---|
| (Intercept) | 27.850*** | 32.887*** | 22.063*** | 43.325*** | 19.403*** |
| | (1.845) | (2.319) | (1.489) | (3.220) | (1.886) |
| Prior | 0.806*** | 0.693*** | 0.794*** | 0.677*** | 0.517*** |
| | (0.022) | (0.021) | (0.023) | (0.021) | (0.021) |
| Simple Tool | −0.265 | −2.721*** | 0.467 | 0.921 | −1.905** |
| | (0.860) | (1.056) | (0.698) | (1.463) | (0.803) |
| Full Tool | 18.493*** | 20.179*** | 14.151*** | 37.953*** | 20.123*** |
| | (1.552) | (1.910) | (1.235) | (2.920) | (1.768) |
| Observations | 6751 | 6542 | 6693 | 6593 | 6215 |

# Eliciting Priors Leads to More Search and Lower Rates

| | Survey Data | | | | | Administrative Data | |
|---|---|---|---|---|---|---|---|
| | N of inst. they searched | N of inst. they applied | N offers (unconditional) | N offers (if applied) | Log mean interest rate offered | Pr(take-up loan) | Log interest rate |
| (Intercept) | 3.325*** | 1.144*** | 0.508*** | 0.878*** | 2.226*** | 0.188*** | 3.174*** |
| | (0.043) | (0.036) | (0.022) | (0.032) | (0.068) | (0.002) | (0.005) |
| Elicit Priors | 0.140*** | −0.012 | 0.000 | 0.008 | −0.172** | −0.004 | −0.011** |
| | (0.052) | (0.042) | (0.026) | (0.038) | (0.077) | (0.003) | (0.006) |
| Observations | 4659 | 4503 | 4470 | 2566 | 1081 | 112066 | 21872 |

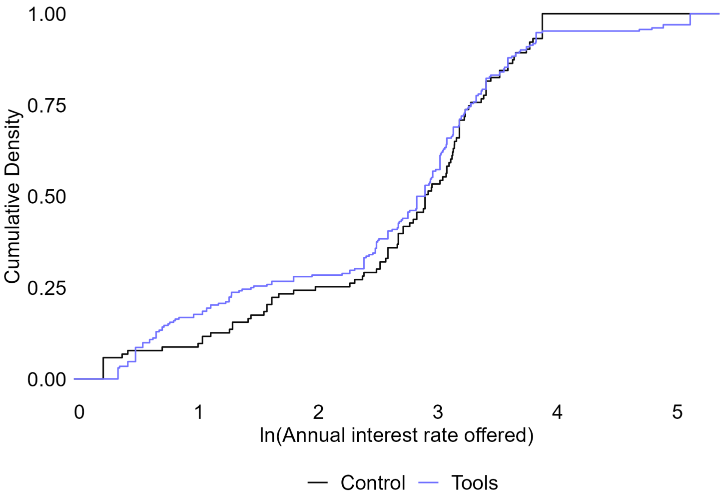
▸ Balance tables

# Price Comparison Tool Leads to More Offers

| | Survey Data | | | | | Administrative Data | |
|---|---|---|---|---|---|---|---|
| | N of inst. they searched | N of inst. they applied | N offers (unconditional) | N offers (if applied) | Log mean interest rate offered | Pr(take-up loan) | Log interest rate |
| (Intercept) | 3.437*** | 1.067*** | 0.452*** | 0.771*** | 2.650*** | 0.194*** | 3.180*** |
| | (0.054) | (0.041) | (0.024) | (0.034) | (0.093) | (0.003) | (0.007) |
| Simple Tool | 0.054 | 0.008 | 0.027 | 0.072 | −0.133 | 0.009* | 0.005 |
| | (0.079) | (0.058) | (0.035) | (0.050) | (0.138) | (0.005) | (0.010) |
| Full Tool | −0.019 | 0.011 | 0.060* | 0.094* | −0.132 | 0.009** | 0.002 |
| | (0.079) | (0.057) | (0.035) | (0.049) | (0.129) | (0.005) | (0.010) |
| Observations | 2659 | 2573 | 2559 | 1489 | 455 | 46052 | 9321 |

▸ Balance tables

# Distribution of Interest Rate Offers




▸ Admin data CDF

# Next Steps

# Next Steps: Follow-Up Survey

Continue collecting phone surveys to increase sample size to measure:

- How do people form priors? (Friends, ads, bank simulators)
- Mechanisms behind the effect of eliciting priors on search (forming less diffuse priors vs. implementation intentions)
- Mechanisms behind the effect of the tool on taking out a loan (how are people searching better?)
- Better data on search histories, negotiating offers with banks, etc.

# Next Steps

Scraping data from Google ads to understand if bank ads contribute to inaccurate priors

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Structural model of search in consumer credit market with incorrect priors

- Goal 1: quantify how much empirical search models overestimate search costs by assuming accurate priors
- Goal 2: counterfactuals such as search with correct priors, or correct about first moment but not second or vice versa
- Goal 3: supply side response to an aggregate improvement in priors

# Appendix

# Balance Table: Elicit Priors administrative outcomes 1

| | Group Mean | | | | |
|---|---|---|---|---|---|
| | Control | Elicit Priors | Diff. | *p-value* | N |
| *Personal characteristics* | | | | | |
| Age | 35.94 | 35.83 | -0.11 | 0.119 | 112063 |
| log(Income) | 13.62 | 13.62 | 0 | 0.914 | 109667 |
| Incomplete high-school | 0.04 | 0.04 | 0 | 0.569 | 108811 |
| Complete high-school | 0.36 | 0.36 | 0 | 0.385 | 108811 |
| Complete 2-year program | 0.21 | 0.21 | 0 | 0.541 | 108811 |
| Complete 5-year program or higher | 0.39 | 0.39 | 0 | 0.905 | 108811 |
| *Financial products* | | | | | |
| Bank account | 0.68 | 0.68 | 0 | 0.566 | 106222 |
| Any loan | 0.71 | 0.7 | -0.01 | 0.047 | 107130 |
| F-test Elicit Priors | | | | 0.543 | 112066 |
| Number of participants | 28198 | 83868 | | | |

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# Balance Table: Elicit Priors administrative outcomes 2

| | Group Mean | | | | |
|---|---|---|---|---|---|
| | Control | Elicit Priors | Diff. | *p-value* | N |
| *Personal characteristics* | | | | | |
| Age | 35.13 | 35.11 | -0.02 | 0.866 | 21872 |
| log(Income) | 14.04 | 14.04 | 0 | 0.696 | 21596 |
| Incomplete high-school | 0.01 | 0.01 | 0 | 0.996 | 21560 |
| Complete high-school | 0.21 | 0.21 | 0 | 0.562 | 21560 |
| Complete 2-year program | 0.2 | 0.2 | 0 | 0.687 | 21560 |
| Complete 5-year program or higher | 0.59 | 0.59 | 0 | 0.883 | 21560 |
| *Financial products* | | | | | |
| Bank account | 0.89 | 0.89 | 0 | 0.473 | 21557 |
| Any loan | 0.89 | 0.89 | 0 | 0.948 | 21632 |
| F-test Elicit Priors | | | | 0.964 | 21872 |
| Number of participants | 5594 | 16278 | | | |

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# Balance Table: Elicit Priors follow-up survey outcomes 1

| | Group Mean | | | | |
|---|---|---|---|---|---|
| | Control | Elicit Priors | Diff. | *p-value* | N |
| *Personal characteristics* | | | | | |
| Age | 36.65 | 36.35 | -0.3 | 0.353 | 4659 |
| Female | 0.4 | 0.4 | 0 | 0.884 | 4268 |
| log(Income) | 13.62 | 13.64 | 0.02 | 0.554 | 4577 |
| Incomplete high-school | 0.03 | 0.03 | 0 | 0.905 | 4557 |
| Complete high-school | 0.34 | 0.33 | -0.01 | 0.426 | 4557 |
| Complete 2-year program | 0.21 | 0.2 | -0.01 | 0.621 | 4557 |
| Complete 5-year program or higher | 0.42 | 0.44 | 0.02 | 0.26 | 4557 |
| *Financial products* | | | | | |
| Bank account | 0.68 | 0.69 | 0.01 | 0.483 | 4467 |
| Any loan | 0.74 | 0.72 | -0.02 | 0.258 | 4503 |
| F-test Elicit Priors | | | | 0.514 | 4659 |
| Number of participants | 1313 | 3346 | | | |

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# Balance Table: Elicit Priors follow-up survey outcomes 2

| | Group Mean | | | | |
|---|---|---|---|---|---|
| | Control | Elicit Priors | Diff. | *p-value* | N |
| *Personal characteristics* | | | | | |
| Age | 36.46 | 36.24 | -0.22 | 0.492 | 4503 |
| Female | 0.4 | 0.4 | 0 | 0.89 | 4132 |
| log(Income) | 13.65 | 13.66 | 0.01 | 0.839 | 4428 |
| Incomplete high-school | 0.02 | 0.02 | 0 | 0.931 | 4408 |
| Complete high-school | 0.33 | 0.32 | -0.01 | 0.563 | 4408 |
| Complete 2-year program | 0.21 | 0.2 | -0.01 | 0.656 | 4408 |
| Complete 5-year program or higher | 0.44 | 0.46 | 0.02 | 0.348 | 4408 |
| *Financial products* | | | | | |
| Bank account | 0.69 | 0.7 | 0.01 | 0.475 | 4337 |
| Any loan | 0.75 | 0.74 | -0.01 | 0.376 | 4369 |
| F-test Elicit Priors | | | | 0.644 | 4503 |
| Number of participants | 1267 | 3236 | | | |

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# Balance Table: Elicit Priors follow-up survey outcomes 3

| | Group Mean | | | | |
|---|---|---|---|---|---|
| | Control | Elicit Priors | Diff. | *p-value* | N |
| *Personal characteristics* | | | | | |
| Age | 36.75 | 36.46 | -0.29 | 0.352 | 4918 |
| Female | 0.4 | 0.4 | 0 | 0.93 | 4499 |
| log(Income) | 13.61 | 13.62 | 0.01 | 0.701 | 4825 |
| Incomplete high-school | 0.03 | 0.03 | 0 | 0.958 | 4804 |
| Complete high-school | 0.35 | 0.34 | -0.01 | 0.401 | 4804 |
| Complete 2-year program | 0.21 | 0.2 | -0.01 | 0.403 | 4804 |
| Complete 5-year program or higher | 0.41 | 0.43 | 0.02 | 0.129 | 4804 |
| *Financial products* | | | | | |
| Bank account | 0.68 | 0.69 | 0.01 | 0.433 | 4703 |
| Any loan | 0.73 | 0.71 | -0.02 | 0.263 | 4744 |
| F-test Elicit Priors | | | | 0.375 | 4918 |
| Number of participants | 1390 | 3528 | | | |

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# Balance Table: Tools administrative outcomes 1

| | Group Mean | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Control | Simple Tool | Full Tool | ST-C diff. | *p-value* | FT-C diff. | *p-value* | N |
| *Personal characteristics* | | | | | | | | |
| Age | 35.77 | 35.83 | 35.63 | 0.06 | 0.623 | -0.14 | 0.212 | 46051 |
| log(Income) | 13.46 | 13.46 | 13.46 | 0 | 0.763 | 0 | 1 | 44978 |
| Incomplete high-school | 0.04 | 0.04 | 0.04 | 0 | 0.358 | 0 | 0.607 | 44615 |
| Complete high-school | 0.43 | 0.42 | 0.42 | -0.01 | 0.234 | -0.01 | 0.183 | 44615 |
| Complete 2-year program | 0.22 | 0.22 | 0.23 | 0 | 0.348 | 0.01 | 0.206 | 44615 |
| Complete 5-year program or higher | 0.31 | 0.31 | 0.31 | 0 | 0.979 | 0 | 0.955 | 44615 |
| *Financial products* | | | | | | | | |
| Bank account | 0.62 | 0.63 | 0.64 | 0.01 | 0.022 | 0.02 | 0.004 | 43272 |
| Any loan | 0.67 | 0.68 | 0.67 | 0.01 | 0.311 | 0 | 0.706 | 43675 |
| *Loan characteristics* | | | | | | | | |
| log(Loan Amount) | 14.74 | 14.76 | 14.76 | 0.02 | 0.3 | 0.02 | 0.217 | 43775 |
| log(Maturity (years)) | 1.32 | 1.33 | 1.32 | 0.01 | 0.236 | 0 | 0.706 | 40920 |
| F-test FT vs C | | | | | | | 0.279 | 30718 |
| F-test ST vs C | | | | | 0.207 | | | 30690 |
| Number of participants | 15357 | 15333 | 15361 | | | | | |

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# Balance Table: Tools administrative outcomes 2

| | Group Mean | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Control | Simple Tool | Full Tool | ST-C diff. | *p-value* | FT-C diff. | *p-value* | N |
| *Personal characteristics* | | | | | | | | |
| Age | 35.09 | 35.1 | 35.05 | 0.01 | 0.964 | -0.04 | 0.84 | 9321 |
| log(Income) | 13.9 | 13.92 | 13.93 | 0.02 | 0.296 | 0.03 | 0.116 | 9178 |
| Incomplete high-school | 0.01 | 0.01 | 0.01 | 0 | 0.673 | 0 | 0.691 | 9155 |
| Complete high-school | 0.24 | 0.23 | 0.23 | -0.01 | 0.223 | -0.01 | 0.371 | 9155 |
| Complete 2-year program | 0.21 | 0.22 | 0.22 | 0.01 | 0.26 | 0.01 | 0.232 | 9155 |
| Complete 5-year program or higher | 0.54 | 0.54 | 0.54 | 0 | 0.97 | 0 | 0.773 | 9155 |
| *Financial products* | | | | | | | | |
| Bank account | 0.86 | 0.87 | 0.88 | 0.01 | 0.46 | 0.02 | 0.008 | 9155 |
| Any loan | 0.87 | 0.88 | 0.88 | 0.01 | 0.426 | 0.01 | 0.298 | 9190 |
| *Loan characteristics* | | | | | | | | |
| log(Loan Amount) | 15.43 | 15.48 | 15.49 | 0.05 | 0.119 | 0.06 | 0.052 | 8893 |
| log(Maturity (years)) | 1.43 | 1.45 | 1.47 | 0.02 | 0.173 | 0.04 | 0.014 | 8658 |
| F-test FT vs C | | | | | | | 0.104 | 6176 |
| F-test ST vs C | | | | | 0.875 | | | 6162 |
| Number of participants | 3017 | 3145 | 3159 | | | | | |

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# Balance Table: follow-up survey outcomes 1

| | Group Mean | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Control | Simple Tool | Full Tool | ST-C diff. | *p-value* | FT-C diff. | *p-value* | N |
| *Personal characteristics* | | | | | | | | |
| Age | 36.33 | 36.66 | 36.04 | 0.33 | 0.489 | -0.29 | 0.534 | 2659 |
| Female | 0.39 | 0.39 | 0.38 | 0 | 0.948 | -0.01 | 0.709 | 2418 |
| log(Income) | 13.56 | 13.57 | 13.52 | 0.01 | 0.798 | -0.04 | 0.465 | 2620 |
| Incomplete high-school | 0.03 | 0.03 | 0.03 | 0 | 0.887 | 0 | 0.769 | 2600 |
| Complete high-school | 0.39 | 0.37 | 0.36 | -0.02 | 0.461 | -0.03 | 0.208 | 2600 |
| Complete 2-year program | 0.21 | 0.22 | 0.24 | 0.01 | 0.554 | 0.03 | 0.16 | 2600 |
| Complete 5-year program or higher | 0.38 | 0.39 | 0.38 | 0.01 | 0.778 | 0 | 0.885 | 2600 |
| *Financial products* | | | | | | | | |
| Bank account | 0.63 | 0.66 | 0.65 | 0.03 | 0.13 | 0.02 | 0.305 | 2546 |
| Any loan | 0.68 | 0.7 | 0.73 | 0.02 | 0.462 | 0.05 | 0.014 | 2569 |
| *Loan characteristics* | | | | | | | | |
| log(Loan Amount) | 14.97 | 15.02 | 15.03 | 0.05 | 0.451 | 0.06 | 0.331 | 2523 |
| log(Maturity (years)) | 1.35 | 1.36 | 1.39 | 0.01 | 0.779 | 0.04 | 0.237 | 2405 |
| F-test FT vs C | | | | | | | 0.401 | 1745 |
| F-test ST vs C | | | | | 0.674 | | | 1793 |
| Number of participants | 879 | 914 | 866 | | | | | |

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# Balance Table: follow-up survey outcomes 2

| | Group Mean | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Control | Simple Tool | Full Tool | ST-C diff. | *p-value* | FT-C diff. | *p-value* | N |
| *Personal characteristics* | | | | | | | | |
| Age | 36.26 | 36.53 | 35.95 | 0.27 | 0.572 | -0.31 | 0.51 | 2573 |
| Female | 0.4 | 0.39 | 0.38 | -0.01 | 0.758 | -0.02 | 0.425 | 2343 |
| log(Income) | 13.57 | 13.59 | 13.53 | 0.02 | 0.742 | -0.04 | 0.512 | 2537 |
| Incomplete high-school | 0.02 | 0.02 | 0.02 | 0 | 0.912 | 0 | 0.976 | 2518 |
| Complete high-school | 0.38 | 0.36 | 0.35 | -0.02 | 0.313 | -0.03 | 0.167 | 2518 |
| Complete 2-year program | 0.21 | 0.22 | 0.24 | 0.01 | 0.494 | 0.03 | 0.144 | 2518 |
| Complete 5-year program or higher | 0.39 | 0.4 | 0.39 | 0.01 | 0.648 | 0 | 0.915 | 2518 |
| *Financial products* | | | | | | | | |
| Bank account | 0.64 | 0.68 | 0.66 | 0.04 | 0.092 | 0.02 | 0.295 | 2477 |
| Any loan | 0.69 | 0.71 | 0.74 | 0.02 | 0.314 | 0.05 | 0.014 | 2497 |
| *Loan characteristics* | | | | | | | | |
| log(Loan Amount) | 14.99 | 15.05 | 15.07 | 0.06 | 0.32 | 0.08 | 0.223 | 2443 |
| log(Maturity (years)) | 1.35 | 1.36 | 1.39 | 0.01 | 0.646 | 0.04 | 0.186 | 2337 |
| F-test FT vs C | | | | | | | 0.315 | 1690 |
| F-test ST vs C | | | | | 0.428 | | | 1735 |
| Number of participants | 852 | 883 | 838 | | | | | |

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# Balance Table: follow-up survey outcomes 3

| | Group Mean | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Control | Simple Tool | Full Tool | ST-C diff. | *p-value* | FT-C diff. | *p-value* | N |
| *Personal characteristics* | | | | | | | | |
| Age | 36.53 | 36.68 | 36.18 | 0.15 | 0.755 | -0.35 | 0.453 | 2823 |
| Female | 0.4 | 0.4 | 0.39 | 0 | 0.858 | -0.01 | 0.756 | 2560 |
| log(Income) | 13.54 | 13.56 | 13.51 | 0.02 | 0.762 | -0.03 | 0.544 | 2776 |
| Incomplete high-school | 0.03 | 0.03 | 0.02 | 0 | 0.698 | -0.01 | 0.5 | 2755 |
| Complete high-school | 0.39 | 0.36 | 0.36 | -0.03 | 0.171 | -0.03 | 0.139 | 2755 |
| Complete 2-year program | 0.21 | 0.22 | 0.24 | 0.01 | 0.569 | 0.03 | 0.127 | 2755 |
| Complete 5-year program or higher | 0.37 | 0.39 | 0.38 | 0.02 | 0.306 | 0.01 | 0.685 | 2755 |
| *Financial products* | | | | | | | | |
| Bank account | 0.63 | 0.67 | 0.65 | 0.04 | 0.079 | 0.02 | 0.397 | 2697 |
| Any loan | 0.68 | 0.7 | 0.72 | 0.02 | 0.417 | 0.04 | 0.041 | 2723 |
| *Loan characteristics* | | | | | | | | |
| log(Loan Amount) | 14.91 | 15.02 | 15.01 | 0.11 | 0.09 | 0.1 | 0.115 | 2675 |
| log(Maturity (years)) | 1.35 | 1.36 | 1.38 | 0.01 | 0.7 | 0.03 | 0.263 | 2541 |
| F-test FT vs C | | | | | | | 0.26 | 1861 |
| F-test ST vs C | | | | | 0.489 | | | 1902 |
| Number of participants | 940 | 962 | 921 | | | | | |

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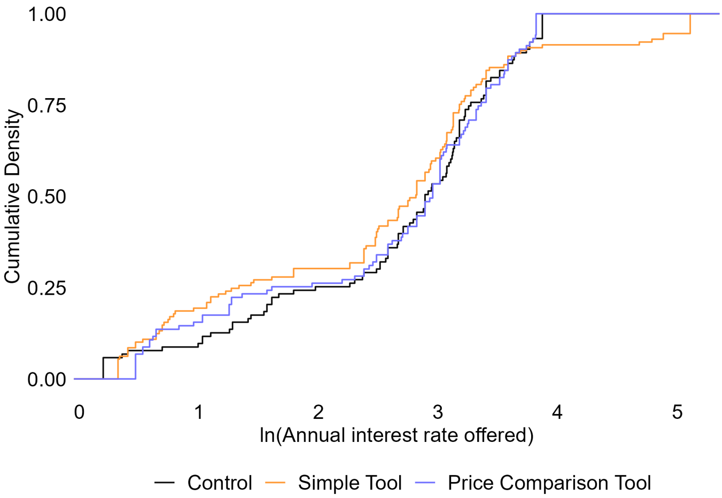
# Distribution of Interest Rate Offers

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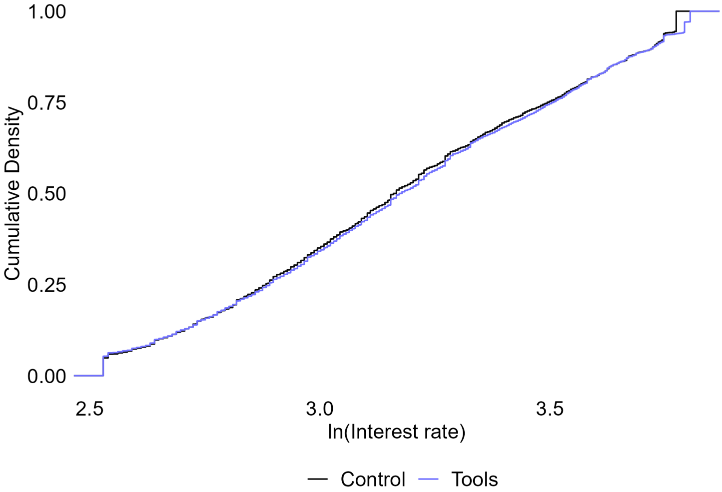
# Distribution of Interest Rates on Originated Loans

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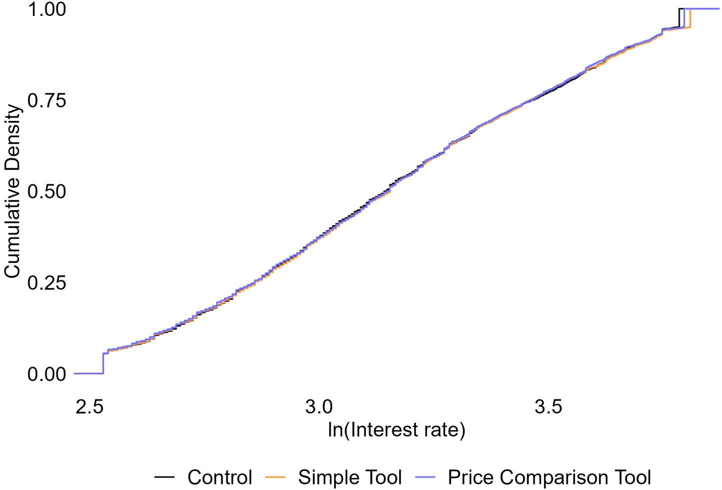
# Distribution of Interest Rates on Originated Loans (Tool)

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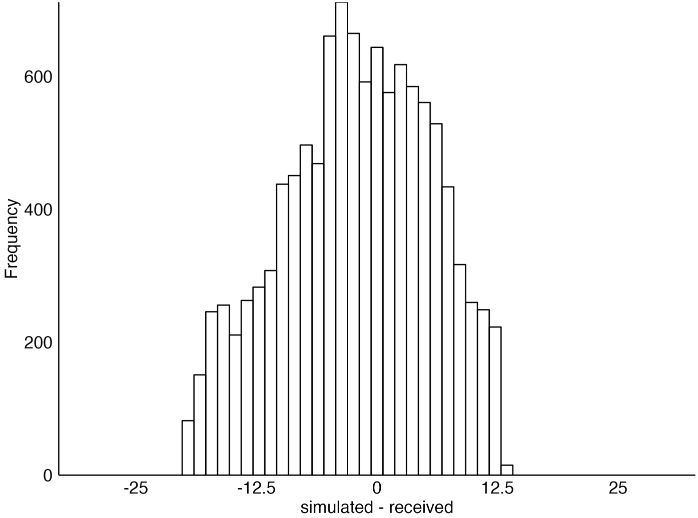
# Bank simulators vs. rates received

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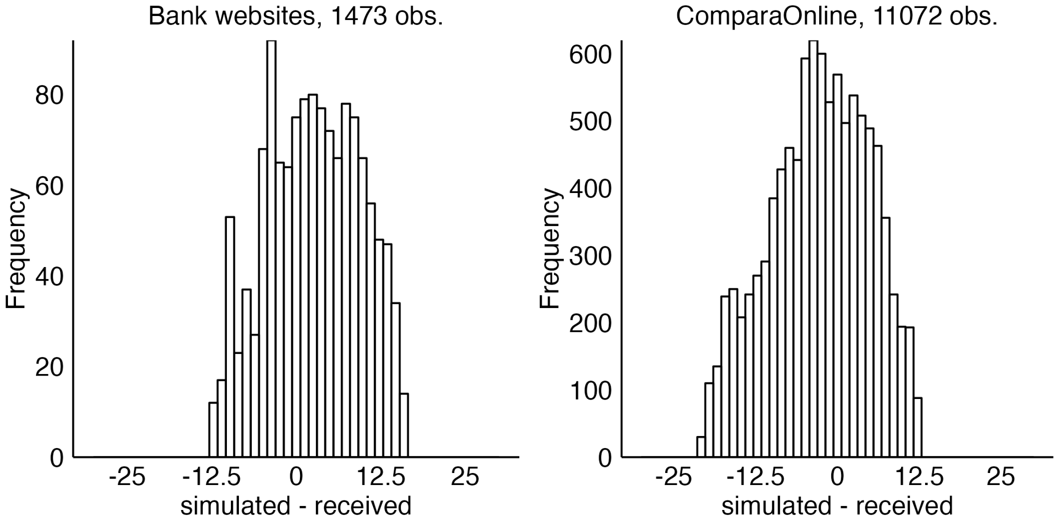
# Bank simulators vs. rates received

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# Follow-Up Phone Survey

How do consumers searching for loans form expectations?

- How do people form priors about the distribution of rates and the rate they will get?
  - Previous searches
  - Advertisements
  - Information from friends and family
- Did they have a “strategy” for their loan search?
  - Search until get offers from $X$ banks
  - Search until get an interest rate offer below $y$

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# Follow-Up Phone Survey

Search history. For each institution where they searched:

- How did they search (online, by phone, in person)?
- Did they try to get a sense of probability of approval or interest rate before applying?
- Did they submit an application?
- Were they approved?
- What were the loan terms?

Negotiating

- Did they use quotes from another institution to negotiate a lower rate at their “home bank”?

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# Google Search Terms


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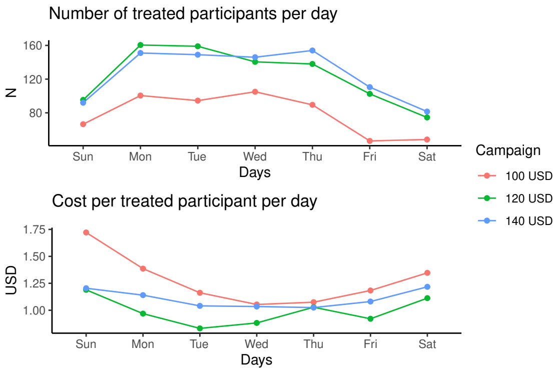
# Recruit: Google Ad Campaign

Decided on ad budget of $120 USD per day to maximize number of treated participants per day.

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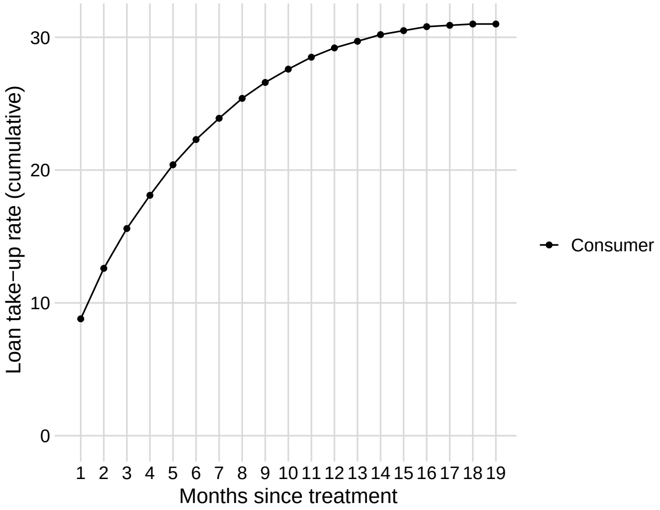
# Percent Getting a Loan

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# Tutorial Video

We ask participants to review whether their data is correct.

We summarize what the plot shows, and how lower rates translate into cheaper loans.

We summarize what the table shows: how different rates impact their monthly and total loan cost, and that they can play out with different rates.

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# Other Comparison Tools: ComparaOnline


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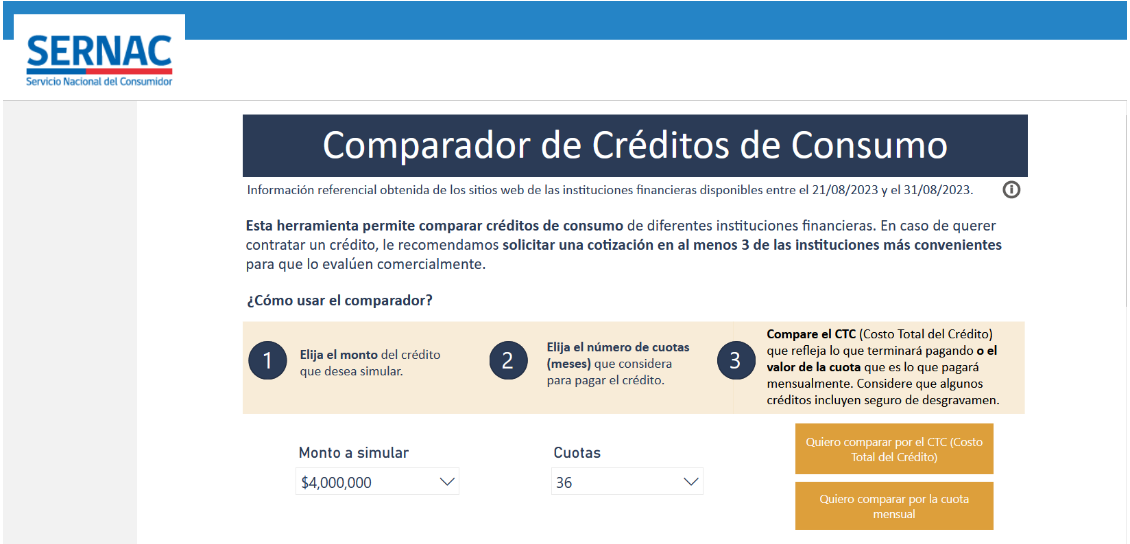
# Other Comparison Tools: SERNAC

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# More Details Button

We explain how we calculate how much your monthly payments would be reduced by shopping at one additional bank.

"We use real data of loan rates granted to people similar to you, for loans similar to the one you are searching for. We simulate your search by choosing one of these rates as the first one you would get and another one as the second one. If the second rate is lower than the first one, we calculate how much your monthly payment would be reduced. If the second rate is higher than the first one, we assume you would keep choosing the first rate and then your monthly payment would not be reduced."

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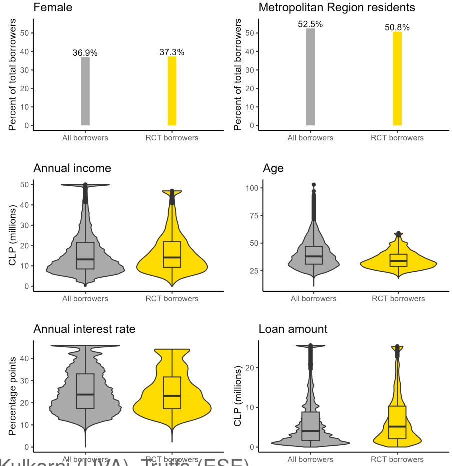
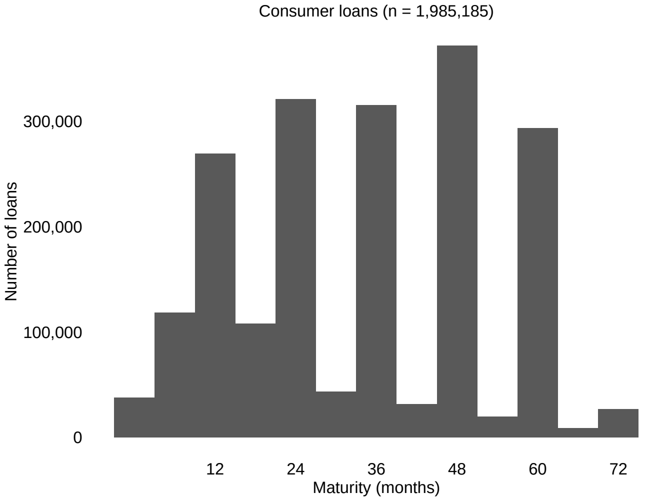
# External Validity

Consumer characteristics: similar to all borrowers; skew younger

Loan characteristics: similar Back



# Loan maturity, descriptive data

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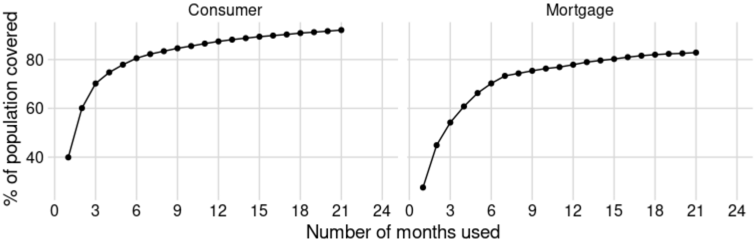
# Time window (I), % population covered




Note: Comunas' populations were uniformly divided among its histograms, for each loan type.

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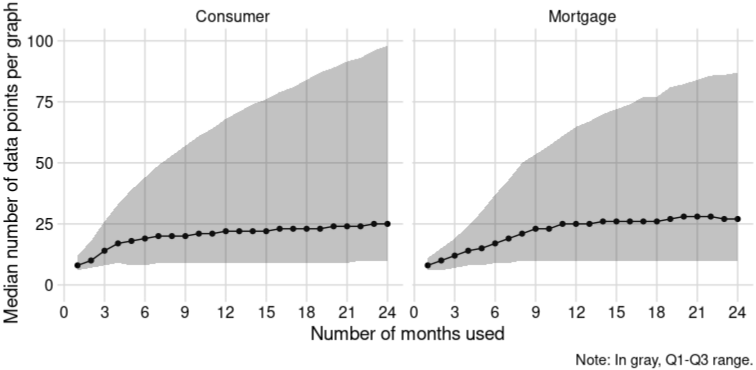
# Time window (II), number of data points per graph

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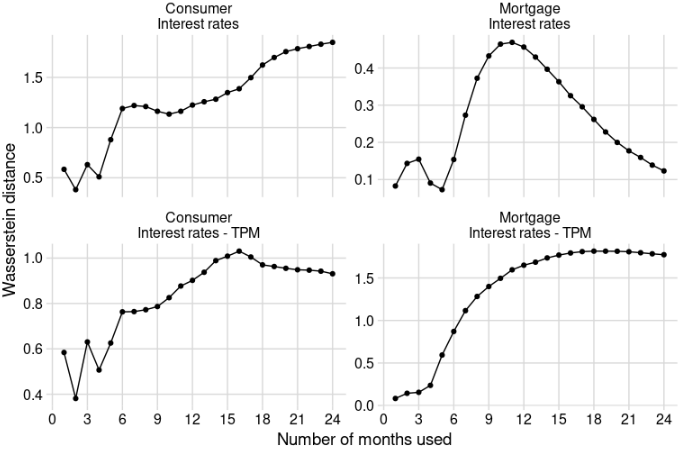
# Time window (III), differences in rate distributions




Notes: Comparisons are made using the non-sparse histograms of the anchor month.
2,864 graphs used for consumer loans (38% of population covered).
303 graphs used for mortgage loans (26.63% of population covered).

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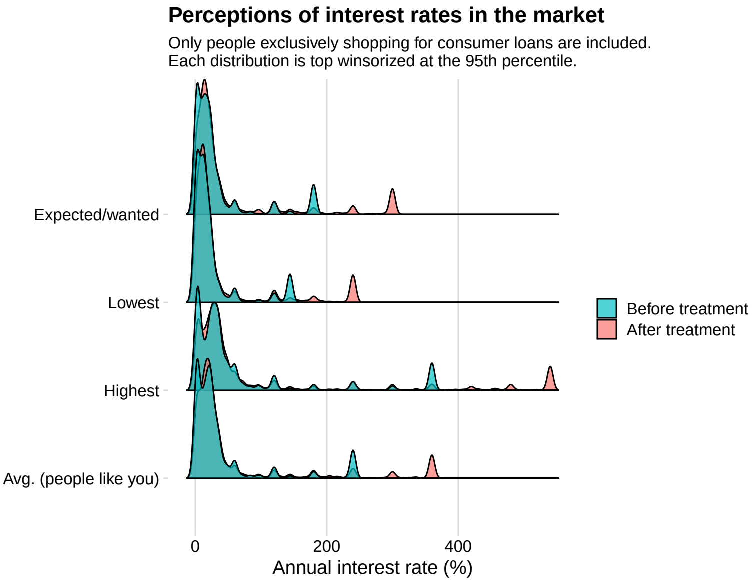
# Priors about Prices

Treatment seemed to shift their expected price distribution right



# Planned Search Behaviour

After treatment, not clear whether people planned to search at more banks

But planned search much higher than observed search