Assessing the Effects of Recent Provisioning Rules on Consumer Credit Allocation in Colombia

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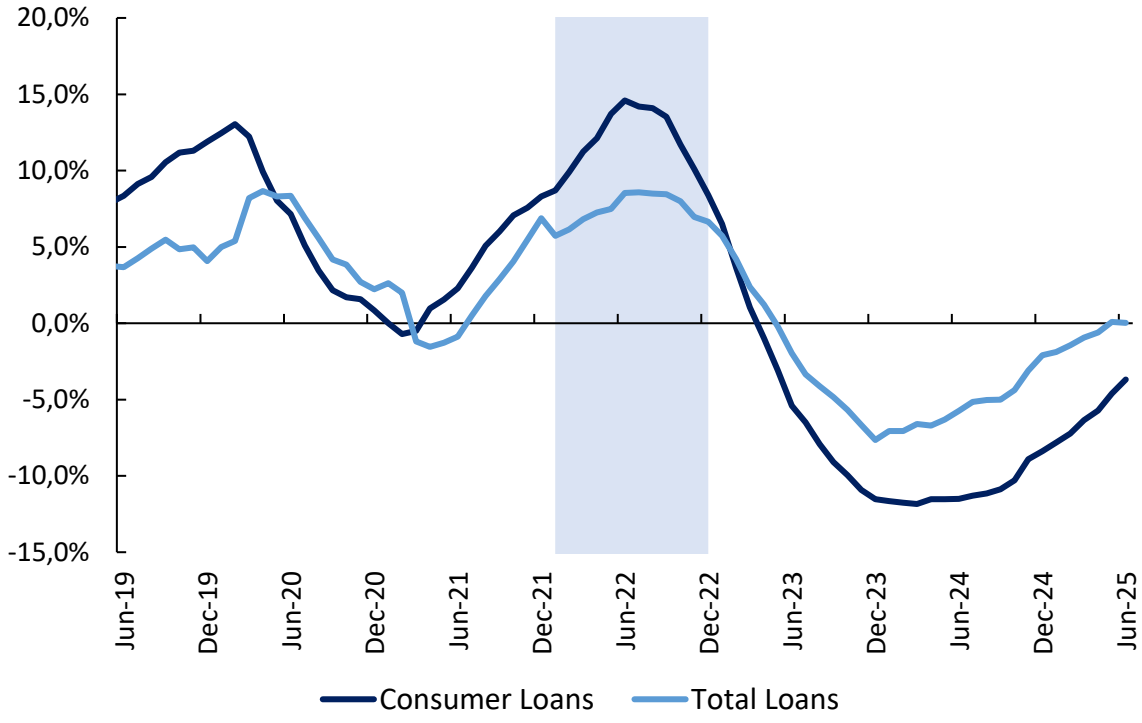
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Motivation

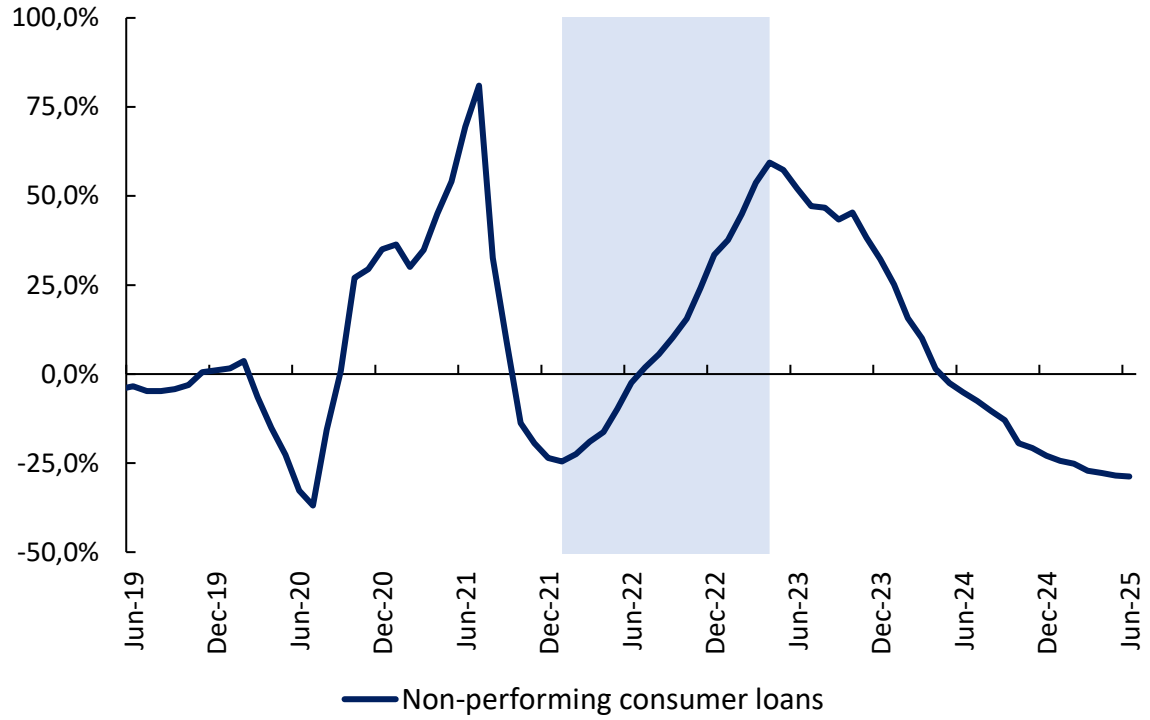
- The recovery of economic activity in Colombia during 2021 and 2022 was largely driven by strong real growth across all credit segments, with consumer credit experiencing particularly robust expansion.

- However, since the second half of 2022, the growth of the consumer credit portfolio was accompanied by a deterioration in credit quality indicators.

Annual real growth of total and consumer loan portfolio



30-day past-due consumer loan delinquency rate



Note: Series deflated using the Consumer Price Index excluding food. Source: Financial Superintendence of Colombia (SFC); authors´ calculations.

Motivation

In November 2022, the Superintendence of Finance of Colombia (SFC) introduced regulatory changes for credit institutions (CIs) on the provisioning of consumer loan risk:

- The regulation aimed to promote the healthy and sustainable growth of consumer loan portfolio while recognizing the potential deterioration in borrowers' repayment capacity amid an economic slowdown and persistent inflation.
- Credit institutions had to include a factor that accounts for the risk associated with the higher level of leverage of borrowers at longer maturities.
- For new loans issued since January 2023, additional provisioning percentages apply in calculation of provisions using the expected loss framework.

Research overview

- From the perspective of credit institutions (CIs), an increase in provisions implies higher expenses, which may potentially affect their individual profitability.

- Regulatory changes are expected to influence credit supply conditions and the characteristics of newly originated loans (López et al., 2014; Morais et al., 2020).

Key question:

What was the effect of the recent provisioning rules adopted in Colombia on consumer loan supply conditions?

Main takeaways

- The introduction of maturity-specific provisioning requirements did not lead to a systemic contraction in long-term consumer credit supply.

- At the aggregate level, we find no significant effects on loan volumes, interest rates, or collateral requirements (in terms of loan-to-value ratios) for long-maturity loans.

- Instead, the regulation increased provision coverage ratios, strengthening credit institutions' ability to absorb potential losses.

- However, smaller institutions tightened credit standards for loans with maturities above 108 months—reducing both disbursed capital and LTV ratios—as expected losses rose by 40%.

Contribution

- We evaluate the effects of the 2022 macroprudential policy measure, which updated the expected loss-based provisioning rules on the supply conditions for consumer new long-term loans.

- Our analysis examines the heterogeneity of institutional responses, focusing on how lenders with different market sizes adjusted to higher provisioning requirements at the 72– and 108–month thresholds.

- We applied matching methodologies to address common issues in causal inference methods, such as imbalance, inefficiency, model dependence, and bias. These methods improve upon widely used techniques, such as propensity score matching, applied in prior studies on Colombia.

Regulation framework: The expected loss before the regulatory change

Under the standardized provisioning methodology, known as the reference model for expected loss, CIs establish provisions based on borrowers' credit risk, distinguishing between loan portfolio segments.

Expected Loss (EL) = Probability of Default (PD) * Exposure at Default (EAD)
Loss Given Default (LGD) * Maturity Adjustment (MA)

- **PD** corresponds to the probability that a borrower will default within the next 12 months.
- **EAD** measures the total exposure at the time of default, including principal, interest, and other receivables.
- **LGD** indicates the proportion of exposure that is not recoverable after default.
- **Maturity Adjustment (MA)** accounts for loan term risk in expected loss calculations. It equals 1 for loans with a term shorter than 72 months; otherwise, it is calculated as remaining term/72.

PD LGD

Regulation framework: The expected loss after the regulatory change

- CIs must account for additional risk from higher borrower leverage at longer maturities **(effective from January 2023)**:
  - Excludes credit cards, revolving credit lines, and payroll loans to pensioners.
  - Additional provisioning:
    - 10% for loans with maturities >72 months (6 years).
    - 40% for loans with maturities >108 months (9 years).

- **Expected loss calculation for consumer loans:**

$$\text{Expected Loss} = \text{Probability of Default} * \text{Exposure at Default} * \text{Loss Given Default} * \text{Maturity Adjustment} * \mathbf{K}$$

where,

$$K = \begin{cases} 1 & if\ m \leq 72 \\ 1.1 & if\ 72 < m \leq 108 \\ 1.4 & if\ m > 108 \end{cases}$$

Data: New loans in the consumer portfolio

Data: Quarterly data from all financial institutions in Colombia, covering the full universe of loans.

Sample period: Four quarters before the regulatory change (2022) and eight quarters after it (2023–2024).

Focus: New loans issued within each reporting quarter.

Scope: Loan types affected by the regulation*, with maturities in the control group (under 72 months) and treatment groups (72 months and 108 months)**.

Modality of consumer Loans	Control Group	Treatment Group (72)	Treatment Group (108)
	Maturity between 0 and 72 months	Maturity between 72 and 108 months	Maturity higher to 108 months
Personal Loans	5.566.190 (91,3%)	819.160 (57,2%)	154.469 (26,0%)
Payroll-deducted Loans	371.480 (6,1%)	401.608 (28,0%)	437.335 (73,7%)
Vehicles	156.763 (2,6%)	211.801 (14,8%)	1584 (0,3%)
Total	6.094.433	1.432.569	593.388

* Credit cards and “other” credit modalities not classified as Personal Loans or Payroll-deducted Loans are excluded.
** Low-value loans are excluded from the analysis as their maturities are strictly under 72 months.

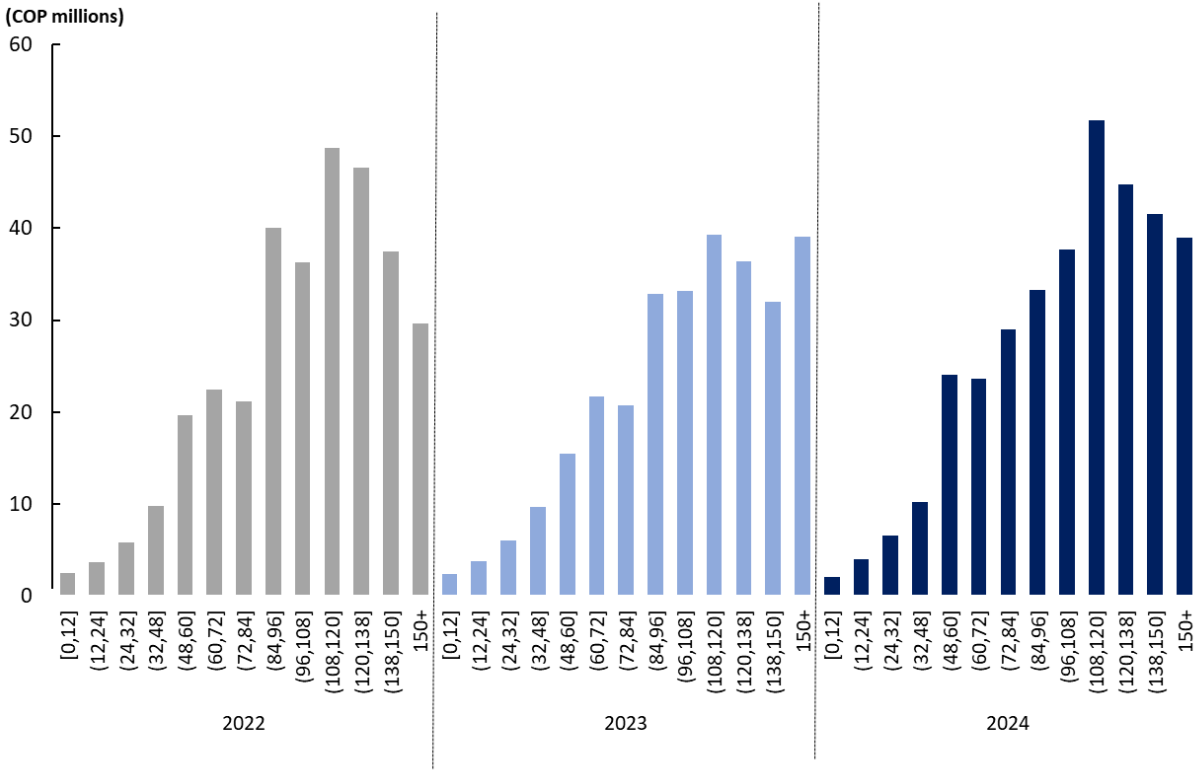
Source: Financial Superintendence of Colombia (SFC); authors´ calculations.

Data: Stylized facts

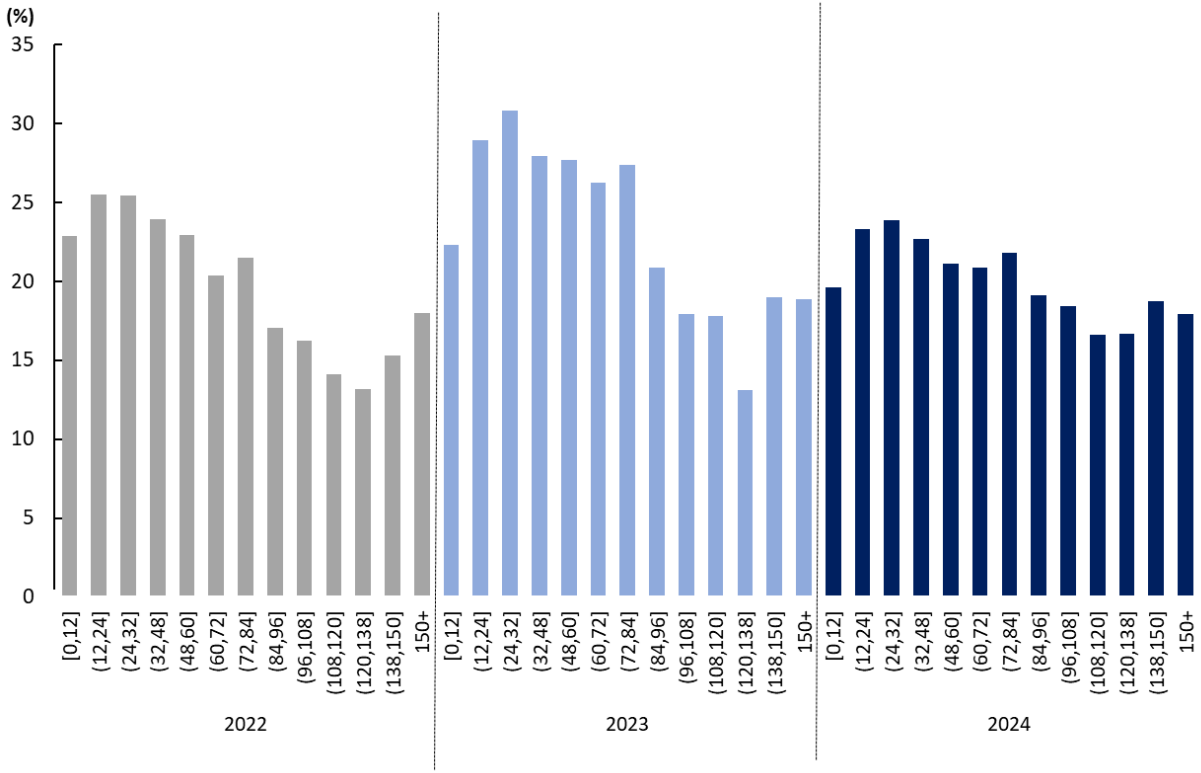
Some differences in credit characteristics are:

- Loan amounts tend to be higher for new credits with longer maturities.
- Interest rates tend to be lower for new credits with longer maturities.

Average loan amount by maturity



Average interest rate by maturity



Source: Financial Superintendence of Colombia (SFC); authors´ calculations.

Data: Imbalance assessment

- The Standardized Mean Difference (SMD) is used to evaluate covariate imbalance between treatment and control groups.
- The results indicate substantial imbalance, with most characteristics exceeding the 0.1 SMD threshold.

Balance of covariates and sample characteristics

Category	Variable	Standardized Mean Difference (SMD)	
		Control vs Treatment 72	Control vs Treatment 108
Time Variables	Reporting Quarter	0.203*	0.141*
Loan-Level Variables	Loan Sub-segment	0.849*	1.912*
	Collateral Type	0.378*	0.337*
	Credit Rating	0.067	0.302*
	Probability of Default	0.531*	0.396*
	Loss Given Default	0.763*	2.115*
	Collateral Value	0.326*	0.155*
	Loan Amount	0.675*	1.247*
	Interest Rate	0.005	1.067*
	Loan to value	0.352*	0.145*
	Coverage Indicator	0.017	0.34*
Debtor-Level Variables	Debtor Type	0.018	0.039
	Economic Sector	0.137*	0.391*
	Prior Credit Relationship	0.095	0.009
	Prior Delinquency	0.03	0.003
	Recurring Debtor	0.001	0.116*
Financial Institution-Level Variables	Financial Institution	0.992*	1.387*

Source: Financial Superintendence of Colombia (SFC). Authors´ calculations. Notes: * SMD > 0.1, indicating an unbalanced covariate. For the purpose of this table, when the LTV is undefined due to a zero-collateral value, it is recorded as zero.

Empirical framework: Exact matching (EM)

- EM ensures comparability across variables to isolate the policy's effect on consumer loans.
- EM matches treated and control units with identical covariates, discarding unmatched observations.
- Multiple EM specifications are implemented, varying covariates based on the outcome variable of interest.

Matching specifications by variable of interest

Category	Variable	Interest rate			Loan Amount & Coverage Ratio			LTV		
		EM1	EM2	EM3	EM1	EM2	EM3	EM1	EM2	EM3
Time Variables	Quarter Identifier	X	X	X	X	X	X	X	X	X
Loan-Level Variables	Loan Sub-segment	X	X	X	X	X	X	X	X	X
	Collateral Type	X	X	X	X	X	X			
	Credit Rating	X	X	X	X	X	X	X	X	X
	Probability of Default	X	X	X	X	X	X	X	X	X
	Loss Given Default	X	X	X	X	X	X	X	X	X
	Collateral Value Category		X	X		X	X			
	Loan Amount Category		X	X						
	Interest Rate Category					X	X		X	X
Debtor-Level Variables	Debtor Type	X	X	X	X	X	X	X	X	X
	Economic Sector	X	X	X	X	X	X	X	X	X
	Prior Credit Relationship			X			X			X
	Prior Delinquency			X			X			X
	Recurring Debtor			X			X			X
Financial Institution-Level Variables	Financial Institution	X	X	X	X	X	X	X	X	X
Observations	Control and Treatment 72	6,687,016	5,344,050	5,049,605	6,687,016	5,300,503	5,101,238	255,322	214,057	201,235
	Control and Treatment 108	3,801,224	2,288,194	2,040,704	3,801,224	2,342,041	2,121,412	14,643	2,682	2,064

Source: Financial Superintendence of Colombia (SFC). Authors´ calculations. Note: An "X" denotes the covariates included in each specification.

Empirical framework: Differences-in-differences (DiD)

- Using the matched dataset, we estimate the baseline specification with Weighted Least Squares (WLS).
- The estimation incorporates the matching weights, balancing the treatment and control units across all selected covariates.
- This approach leverages the matched subsamples while maintaining covariate balance, enabling a robust analysis of the causal effect of the regulatory change on credit conditions.

$$Y_{ift} = \alpha + \mu Treatment_i + \beta(Treatment_i * Post_t) + \sigma_t + \delta_f + \Gamma X_{ft} + e_{ift}$$

Where:

$$Treatment_i = \begin{cases} 1, & if \quad i\,maturity > 72 \; or \; 108 \; months \\ 0, & if \quad i\,maturity \leq 72 \; months \end{cases}$$

$$Post_t = \begin{cases} 1, & if \; year \geq 2023 \\ 0, & if \; year = 2022 \end{cases}$$

Y_{ift}: Outcome variable for **credit *i*** of **financial institution *f*** in **quarter *t***.
μ: Captures baseline differences between treatment and control groups.
$\boldsymbol{\beta}$: Captures effects of the new regulation.
σ_t: Time fixed effects.
δ_f: Financial institution fixed effects.
X_{ft}: Institutional control variables for financial institution *f* that changes each quarter.
Γ :Represents the vector of coefficients associated with the bank-level control variables.
e_{ift} : Error term.

DiD results: Effects on the provision coverage ratio

- As expected, **the regulation had a favorable impact on the Provision Coverage Ratio (Provisions/Capital) for new long-term credit**.
- Overall, the regulation effectively increased financial institutions' buffers against potential loan defaults.

Effects on the provision coverage ratio

	72 - Threshold			108 - Threshold		
	(1)	(2)	(3)	(4)	(5)	(6)
	Panel A. Difference-in-Differences Estimates					
μ	0.21438**	0.21629**	0.2164*	2.12686**	2.04887**	1.99117***
	(0.10135)	(0.10472)	(0.10744)	(0.75775)	(0.7305)	(0.70232)
β	0.20994***	0.17921***	0.16651***	0.90777**	0.83055**	0.86115**
	(0.03744)	(0.04456)	(0.04217)	(0.40209)	(0.38964)	(0.40262)
Time Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
FI-Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
FI-Characteristics	Yes	Yes	Yes	Yes	Yes	Yes
	Panel B. Matching Procedure					
EM1	X			X		
EM2		X			X	
EM3			X			X
Observations	6,687,016	5,300,503	5,101,238	3,801,224	2,342,041	2,121,412

Notes: ***, **, * denote whether coefficients are statistically significant at the 1%, 5%, and 10% levels, respectively. Standard errors in parentheses, clustered by entity. An "X" denotes the matched sample used for the estimation (Panel B). "FI" indicates Financial Institution. Source: Financial Superintendence of Colombia (SFC). Authors´ calculations

DiD results: Effects on interest rates

- The regulatory change did not affect interest rates, indicating that financial institutions did not adjust pricing to offset higher provisioning costs.
- The findings remain robust under an alternative specification that controls for the monetary policy stance.

Effects on interest rates

	72 - Threshold			108 - Threshold		
	(1)	(2)	(3)	(4)	(5)	(6)
	Panel A. Difference-in-Differences Estimates					
μ	1.08229	1.14848***	1.14936***	-1.86906	-1.25583	-1.27954
	(0.83445)	(0.37953)	(0.4106)	(1.1014)	(1.40203)	(1.43264)
β	-0.48678	-0.29459**	-0.30037*	0.96612	0.75842	0.77581
	(0.30482)	(0.14378)	(0.14902)	(0.71777)	(0.73786)	(0.7475)
Time Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
FI Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
FI Characteristics	Yes	Yes	Yes	Yes	Yes	Yes
	Panel B. Matching Procedure					
EM1	X			X		
EM2		X			X	
EM3			X			X
Observations	6,687,016	5,344,050	5,049,605	3,801,224	2,288,194	2,040,704

Notes: ***, **, * denote whether coefficients are statistically significant at the 1%, 5%, and 10% levels, respectively. Standard errors in parentheses, clustered by entity. An "X" denotes the matched sample used for the estimation (Panel B). "FI" indicates Financial Institution. Source: Financial Superintendence of Colombia (SFC). Authors´ calculations

DiD results: Effects on loan amounts

- The regulatory change did not affect credit supply at either threshold.

Effects on loan amounts (Log)

	72 - Threshold			108 - Threshold		
	(1)	(2)	(3)	(4)	(5)	(6)
	Panel A. Difference-in-Differences Estimates					
μ	0.48947**	0.48431***	0.49579***	1.13778***	1.06413***	1.04885***
	(0.2322)	(0.12389)	(0.1202)	(0.0863)	(0.11576)	(0.10313)
β	0.1352**	0.03963	0.01843	-0.10236	-0.11955*	-0.10373
	(0.05881)	(0.02763)	(0.02527)	(0.09626)	(0.05972)	(0.07232)
Time Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
FI Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
FI Characteristics	Yes	Yes	Yes	Yes	Yes	Yes
	Panel B. Matching Procedure					
EM1	X			X		
EM2		X			X	
EM3			X			X
Observations	6,687,016	5,300,503	5,101,238	3,801,224	2,342,041	2,121,412

Notes: ***, **, * denote whether coefficients are statistically significant at the 1%, 5%, and 10% levels, respectively. Standard errors in parentheses, clustered by entity. An "X" denotes the matched sample used for the estimation (Panel B). "FI" indicates Financial Institution. Source: Financial Superintendence of Colombia (SFC). Authors´ calculations

DiD results: Effects on Loan-to-Value

- No evidence that the regulatory change significantly impacted LTV ratios at either threshold.

Effects on Loan to Value (LTV)

	72 - Threshold			108 - Threshold		
	(1)	(2)	(3)	(4)	(5)	(6)
	Panel A. Difference-in-Differences Estimates					
μ	0.16279***	0.13328***	0.13379***	0.25503***	0.29132***	0.28754***
	(0.04974)	(0.03156)	(0.03353)	(0.01299)	(0.0481)	(0.06192)
β	-0.04943	-0.03567	-0.03857	-0.0706**	-0.11766	-0.11753
	(0.05168)	(0.03692)	(0.03872)	(0.0253)	(0.06687)	(0.07439)
Time Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
FI Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
FI Characteristics	Yes	Yes	Yes	Yes	Yes	Yes
	Panel B. Matching Procedure					
EM1	X			X		
EM2		X			X	
EM3			X			X
Observations	255,322	214,057	201,235	14,643	2,682	2,064

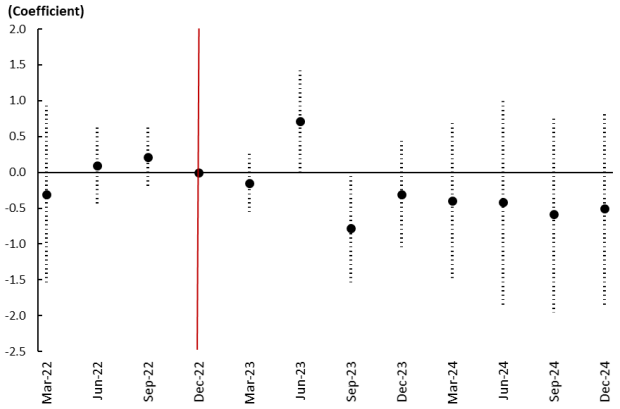
Notes: ***, **, * denote whether coefficients are statistically significant at the 1%, 5%, and 10% levels, respectively. Standard errors in parentheses, clustered by entity. An "X" denotes the matched sample used for the estimation (Panel B). "FI" indicates Financial Institution. Source: Financial Superintendence of Colombia (SFC). Authors´ calculations

DiD specification: Validation of parallel trends

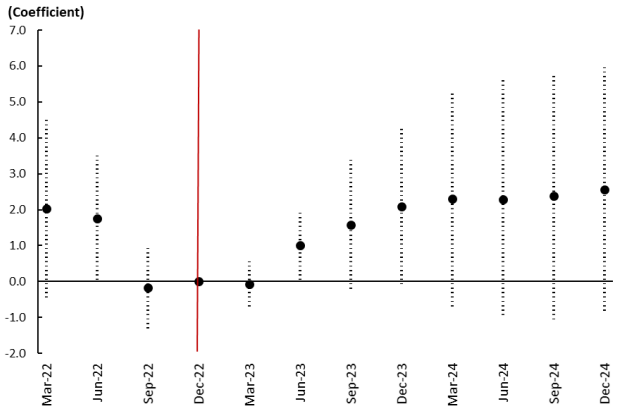
Pre-treatment estimates support the validity of the parallel-trends assumption, showing no significant deviations from the baseline. The analysis also confirms that the regulation had no significant impact on interest rate levels, loan amounts, or LTV ratios for new credits.

Interest rates

72 Months - Threshold

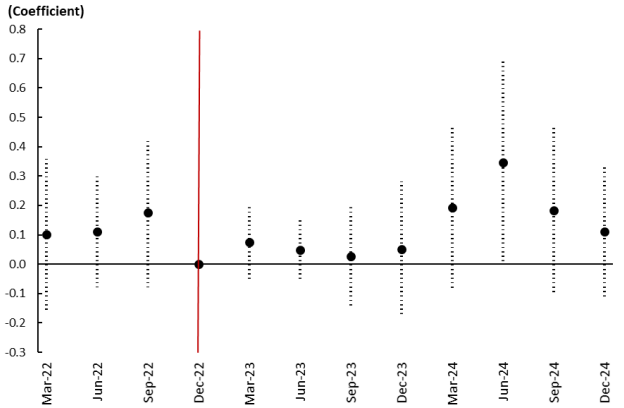


108 Months - Threshold

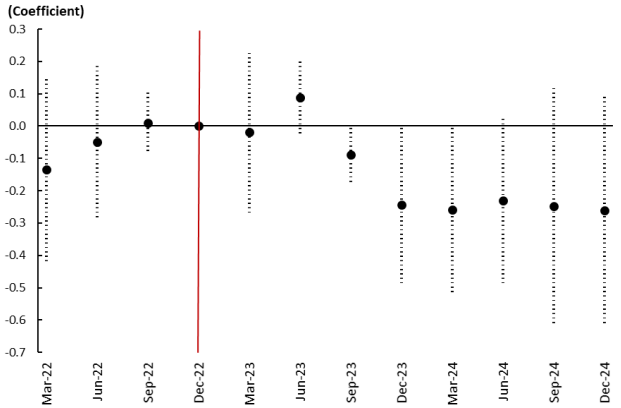


Loan amounts

72 Months - Threshold

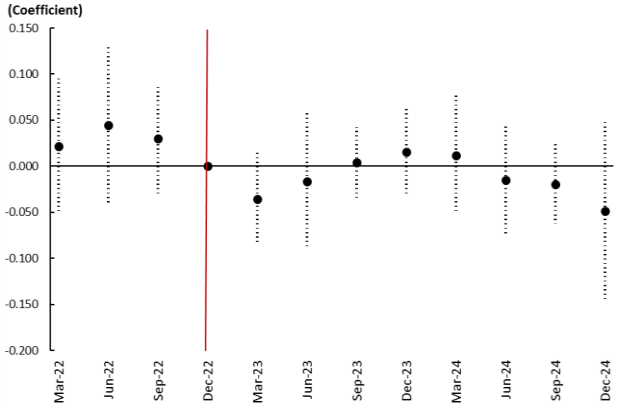


108 Months - Threshold

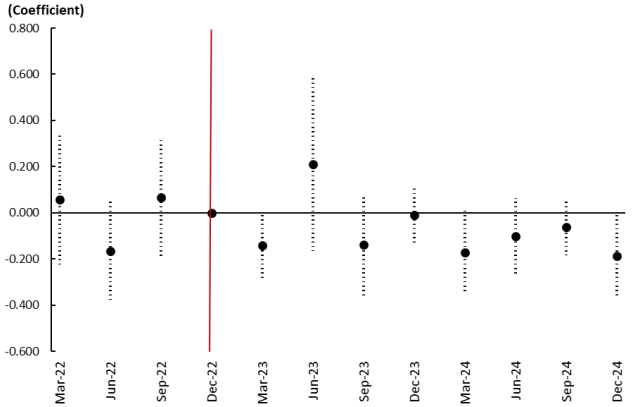


Loan-to-Value (LTV)

72 Months - Threshold



108 Months - Threshold



Source: Financial Superintendence of Colombia (SFC). Authors´ calculations. Notes: the figure plots the coefficients estimated with their 95% confidence intervals, computed using standard errors clustered at the entity level. The vertical red line denotes the reference period of the analysis.

DiD results by market size

We conduct an analysis based on each entity's share of the consumer credit market.

$$Y_{ift} = \alpha + \mu Treatment_i + \gamma\left(Treatment_i * \boldsymbol{Size_f}\right) + \beta(Treatment_i * Post_t) + \boldsymbol{\theta}\left(Treatment_i * Post_t * \boldsymbol{Size_f}\right) + \sigma_t + \delta_f + \Gamma X_{ft} + e_{ift} \quad (\mathbf{3})$$

Where:

$$Treatment_i = \begin{cases} 1, & if \ \ i\,maturity > 72 \ or \ 108 \ months \\ 0, & if \ \ i\,maturity \leq 72 \ months \end{cases} \qquad Post_t = \begin{cases} 1, & if \ year \geq 2023 \\ 0, & if \ year = 2022 \end{cases}$$

Y_{ift}: Outcome variable for **credit *i*** of **financial institution *f*** in **quarter *t***.
μ: Captures baseline differences between treatment and control groups.
γ: Captures the differential baseline gap between treatment and control loans, accounting for institution size.
$\boldsymbol{Size_f}$: A dummy variable equal to 1 for financial institutions with a market share of the total consumer loan portfolio exceeding 10%, and 0 otherwise.
$\boldsymbol{\beta}$: Identifies the Average Treatment Effect (ATE) of the regulation for smaller financial institutions (market share $< 10\%$)
$\boldsymbol{\theta}$: Captures the differential effect (marginal impact) of the regulation on large financial institutions compared to smaller ones.
$\boldsymbol{\beta + \theta}$: Represents the total effect of the regulation for institutions with high market share.
σ_t: Time fixed effects.
δ_f: Financial institution fixed effects.
X_{ft}: Institutional control variables for financial institution *f* that changes each quarter.
e_{ift} : Error term.

DiD results by market size: Effects on loan amounts

- **At 108 months, smaller institutions reduced new-loan disbursements by 21%*.** Larger institutions showed no significant effect. Results are robust across matching methods.

Effects on loan amounts (Log) by market share

	72 - Threshold			108 - Threshold		
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A. Difference-in-Differences Estimates						
μ	0.77369***	0.61961***	0.63588***	1.06668***	0.94439***	0.94806***
	(0.07169)	(0.02321)	(0.02511)	(0.07701)	(0.09696)	(0.09637)
γ	-0.73546**	-0.37555*	-0.39361*	0.15887	0.27171	0.23012
	(0.29913)	(0.19979)	(0.20913)	(0.18051)	(0.21091)	(0.18973)
β	0.01549	-0.02351	-0.04234	-0.23715***	-0.23454***	-0.23403***
	(0.03828)	(0.02108)	(0.03035)	(0.04748)	(0.04878)	(0.04931)
θ	0.20782***	0.13999*	0.13578*	0.27974**	0.23206**	0.26636**
	(0.06585)	(0.07276)	(0.07493)	(0.12263)	(0.09035)	(0.09925)
Time Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
FI Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
FI Characteristics	Yes	Yes	Yes	Yes	Yes	Yes
Panel B. Matching Procedure						
EM1	X			X		
EM2		X			X	
EM3			X			X
Observations	6,687,016	5,300,503	5,101,238	3,801,224	2,342,041	2,121,412
Panel C. Linear hypothesis test - p-value						
H_0: $\beta + \theta = 0$	0.001	0.139	0.303	0.742	0.973	0.720

* $\%\Delta y = \left(e^{\beta} - 1\right) \times 100$

Notes: ***, **, * denote whether coefficients are statistically significant at the 1%, 5%, and 10% levels, respectively. Standard errors in parentheses, clustered by entity. An "X" denotes the matched sample used for the estimation (Panel B). "FI" indicates Financial Institution. Source: Financial Superintendence of Colombia (SFC). Authors´ calculations

DiD results by market size: Effects on Loan-to-Value

- Smaller institutions tightened credit conditions for longer-term loans by reducing LTV ratios, consistent with their behavior regarding loan amounts.

Effects on Loan to Value by market share

	72 - Threshold			108 - Threshold		
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A. Difference-in-Differences Estimates						
μ	0.17942***	0.1409***	0.14152***	0.28628***	0.27285***	0.24672***
	(0.05507)	(0.03489)	(0.03691)	(0.03563)	(0.02141)	(0.02242)
γ	-0.0708	-0.03571	-0.03865	-0.03535	0.02453	0.05831
	(0.04566)	(0.02858)	(0.03016)	(0.0321)	(0.05889)	(0.0943)
β	-0.06617	-0.04624	-0.0497	-0.107*	-0.11602**	-0.08885***
	(0.0547)	(0.03932)	(0.04119)	(0.05379)	(0.03545)	(0.01573)
θ	0.0713*	0.05007*	0.05594*	0.05529	0.09221	0.05248
	(0.03529)	(0.02435)	(0.02654)	(0.05164)	(0.08859)	(0.10177)
Time Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
FI Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
FI Characteristics	Yes	Yes	Yes	Yes	Yes	Yes
Panel B. Matching Procedure						
EM1	X			X		
EM2		X			X	
EM3			X			X
Observations	255,322	214,057	201,235	14,643	2,682	2,064
Panel C. Linear hypothesis test - p-value						
H_0: $\beta + \theta = 0$	0.815	0.852	0.780	0.000	0.783	0.719

Notes: ***, **, * denote whether coefficients are statistically significant at the 1%, 5%, and 10% levels, respectively. Standard errors in parentheses, clustered by entity. An "X" denotes the matched sample used for the estimation (Panel B). "FI" indicates Financial Institution. Source: Financial Superintendence of Colombia (SFC). Authors´ calculations

Concluding remarks

Key findings:

- The 2022 maturity-specific provisioning rules reinforced the forward-looking buffers of financial institutions against potential losses from the materialization of credit risks.
- At the aggregate level, the regulation did not materially affect credit supply conditions, with no significant changes in interest rates, loan amounts, or collateral requirements for long-maturity loans.
- The regulation imposed asymmetric costs, as smaller lenders reduced disbursements for loans over 108 months and lowered LTV ratios due to narrower margins and limited market power.

Policy implications:

- Targeted provisions effectively increase buffers in riskier maturity segments without disrupting market functioning.
- Maturity-specific provisioning rules are less effective at moderating credit growth compared to system-wide adjustments or the implementation of countercyclical buffers.

Thank you!

Annex

DiD specification: Validation of plausibility of parallel trends

The final validation step assesses the plausibility of the **parallel trend assumption**, a key condition for the difference-in-differences strategy.

$$Y_{ift} = \alpha + \mu Treatment_i + \sum_{j=-3}^{-1} \beta_j Treatment_i * I[j = t - t_0] +$$

$$\sum_{j=1}^{8} \beta_j Treatment_i * I[j = t - t_0] + \sigma_t + \delta_f + \Gamma X_{ft} + e_{ift}$$

Where:

Y_{ift}: Outcome variable for **credit *i*** of **financial institution *f*** in **quarter *t*.**
μ: Captures baseline differences between treatment and control groups.
t_0: Indicates the quarter immediately preceding the introduction of changes in the calculation of provisions—that is, the fourth quarter of 2022.
$I[*]$: indicator variable that equals 1 if condition [*] holds.
β_j: Coefficients of interest that identify the dynamic treatment effects. **For j < 0, they test for pre-trends (anticipatory effects)**, and for j > 0 , they measure the post-treatment impact.
σ_t: Time fixed effects.
δ_f: Financial institution fixed effects.
X_{ft}: Institutional control variables for financial institution *f* that changes each quarter.
Γ :Represents the vector of coefficients associated with the bank-level control variables.
e_{ift} : Error term.

Return

DiD results by market size: Effects on interest rates

- The regulatory change did not affect the interest rates of new loans across institutions of different sizes.
- This result is consistent across alternative matching specifications.

Effects on interest rates by market share

	72 - Threshold			108 - Threshold		
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A. Difference-in-Differences Estimates						
μ	0.06661	0.88159***	0.85105***	-1.14168***	0.02481	0.02881
	(0.38471)	(0.16638)	(0.16093)	(0.27438)	(0.35408)	(0.34789)
γ	2.62823***	0.76576	0.85859	-1.6254	-2.8887	-2.93767
	(0.90642)	(0.78287)	(0.86272)	(2.33512)	(2.76025)	(2.84354)
β	-0.31614	-0.21505	-0.18528	0.46913	0.29272	0.29933
	(0.26633)	(0.14833)	(0.1351)	(0.30916)	(0.28841)	(0.28082)
θ	0.08216	-0.13733	-0.24219	1.13456	1.18314	1.19758
	(0.53369)	(0.69468)	(0.65935)	(1.62964)	(1.62619)	(1.66467)
Time Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
FI Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
FI Characteristics	Yes	Yes	Yes	Yes	Yes	Yes
Panel B. Matching Procedure						
EM1	X			X		
EM2		X			X	
EM3			X			X
Observations	6,687,016	5,344,050	5,049,605	3,801,224	2,288,194	2,040,704
Panel C. Linear hypothesis test - p-value						
H_0: $\beta + \theta = 0$	0.566	0.552	0.458	0.295	0.346	0.350

Notes: ***, **, * denote whether coefficients are statistically significant at the 1%, 5%, and 10% levels, respectively. Standard errors in parentheses, clustered by entity. An "X" denotes the matched sample used for the estimation (Panel B). "FI" indicates Financial Institution. Source: Financial Superintendence of Colombia (SFC). Authors´ calculations

Probability of default

For each debtor segment within the consumer loan portfolio, the probability of migrating from the current credit rating to a default rating within the next 12 months is estimated based on the overall credit risk cycle (cumulative phase or decumulative phase).

Cumulative phase matrix

Rating	General – Vehicles	General – Other Consumer Loans	Credit Cards	Financing Companies – Vehicles	Financing Companies – Other Loans
AA	0.97%	2.10%	1.58%	1.02%	3.54%
A	3.12%	3.88%	5.35%	2.88%	7.19%
BB	7.48%	12.68%	9.53%	12.34%	15.86%
B	15.76%	14.16%	14.17%	24.27%	31.18%
CC	31.01%	22.57%	17.06%	43.32%	41.01%
Default	100.0%	100.0%	100.0%	100.0%	100.0%

Decumulation phase matrix

Rating	General – Vehicles	General – Other Consumer Loans	Credit Cards	Financing Companies – Vehicles	Financing Companies – Other Loans
AA	2.75%	3.88%	3.36%	2.81%	5.33%
A	4.91%	5.67%	7.13%	4.66%	8.97%
BB	16.53%	21.72%	18.57%	21.38%	24.91%
B	24.80%	23.20%	23.21%	33.32%	40.22%
CC	44.84%	36.40%	30.89%	57.15%	54.84%
Default	100.0%	100.0%	100.0%	100.0%	100.0%

Loss given default

It depends on loan's collateral. For debtors classified in the default category, the LGD is assigned according to the number of days elapsed since entering such category.

Type of Collateral	Initial LGD	Days After Default	Updated LGD	Days After Default	Final LGD
Eligible Collateral					
Admissible financial collateral	0–12%	–	–	–	–
Commercial and residential real estate	40%	360	70%	720	100%
Real estate leasing assets	35%	360	70%	720	100%
Non–real estate leasing assets	45%	270	70%	540	100%
– Receivables (rights to collect)	45%	360	80%	720	100%
– Other eligible collateral	50%	270	70%	540	100%
Non-eligible collateral	60%	210	70%	420	100%
– Payroll deducted loans	45%	–	–	–	–
Without collateral	75%	30	85%	90	100%

Return