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Disinflation Faster Than Expected: Transitional Household Credit Risk in Argentina (2016–2026)

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Abstract

Rapid disinflation can increase household credit risk by raising the real burden of fixed-rate debt. Using a monthly, product-level panel for Argentina, this paper studies the effect on household credit risk of the disinflation that began after December 2023, when inflation fell from 25% to under 2% within a year. Because non-performing loan (NPL) ratios are highly persistent, responses are estimated with Local Projections on cumulative changes rather than levels. The response is hump-shaped, peaking around 16 months in unsecured, fixed-rate consumer credit, with the aggregate household NPL ratio rising from 2.8% to 12.1%. The findings are consistent with a Fisherian mechanism: ex-post real lending rates, which move with the gap between contracted nominal rates and realized inflation, shifted from deeply negative — as high and accelerating inflation had been eroding the real value of fixed-rate debt for several years, fostering a widespread habit of debt dilution among agents — to significantly positive, as disinflation turned out faster than expected.

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AI disclosure: Generative AI tools were used for programming assistance, workflow support, and language editing. All research design, analysis, and conclusions are solely the author's responsibility.

Contents

1 Introduction

The disinflation process initiated in Argentina in December 2023 represents one of the sharpest nominal adjustments observed in a mid-sized economy in recent decades. Monthly inflation declined from a peak of 25.0% in December 2023 to a trough of 1.7% in June 2025, a reduction of 23.3% percentage points (p.p.) over eighteen months. This paper studies a macro-financial adjustment associated with such rapid nominal stabilization that has received comparatively limited attention: the delayed adjustment in household loan performance among borrowers holding debt contracted at fixed or partially rigid nominal rates.

The mechanism is rooted in a Fisherian debt-revaluation channel (Fisher, 1933). When inflation declines faster than nominal interest rates adjust, the ex-post real interest rate increases, raising the real debt-service burden associated with previously originated loans. In Argentina, where most of consumer credit is contracted at fixed nominal rates at origination, this mechanism became quantitatively relevant during the transition toward a lower-inflation regime. As shown in Section 7.3, the ex-post real rate on personal loans shifted from approximately −1,200 p.p. annualized in December 2023 — when inflation substantially exceeded contracted nominal rates and rapidly reduced the real value of outstanding debt — to persistently positive values in the range of 30 to 70 p.p. during 2025–2026, as inflation declined while nominal lending rates adjusted gradually.

This paper makes several contributions to the empirical study of rapid disinflation episodes. It identifies the disinflation shock and provides evidence supporting its interpretation as a rapid nominal stabilization shock. It develops an empirical framework to estimate the dynamic response of highly persistent NPL series using cumulative changes rather than levels, while controlling for credit expansion dynamics. It documents heterogeneous credit-performance responses across loan products and provides evidence on the role of contract structure in shaping the transmission of a large nominal regime change.

1.1 Empirical Design and Contributions

1. **Cumulative-change specification.** Section 6.1 documents that all four NPL series exhibit high persistence (first-order autocorrelation between 0.978 and 0.987) and that augmented Dickey–Fuller tests fail to reject a unit root for any of them. A specification that regresses NPL_{t+h} on lagged levels of NPL would, in this context, be subject to the risk of spurious inference. The model is instead estimated in the Jordà (2005) cumulative-change form, $NPL_{t+h} - NPL_{t-1}$, which substantially mitigates this concern.

2. **A control for credit stock growth.** The lagged nominal growth rate of each seg-

ment's loan stock is included as a control, so that the estimated response to the disinflation shock is purged of the mechanical influence of credit-portfolio expansion on the NPL ratio. Conditioning on this control isolates the revaluation channel of interest from movements in the ratio driven by the pace of nominal credit growth itself.

3. **Exogeneity diagnostics.** Placebo regressions (Section 6.3) show that the disinflation shock is not predictable from lagged NPL dynamics in any segment or from lagged economic activity (all t-statistics below 1.1 in absolute value), consistent with an interpretation of the shock as reflecting an externally driven nominal stabilization process rather than endogenous credit-cycle dynamics.

4. **Product-level heterogeneity with an institutional basis.** The analysis distinguishes between household credit products according to their contractual structure, including unsecured fixed-rate lending (credit cards and personal loans) and inflation-indexed credit (UVA mortgages). The results document heterogeneous responses across products, highlighting the role of nominal contract design in shaping the transmission of a large inflation-regime change.

5. **A cohort-level revaluation indicator.** The paper constructs an expected-vs.-realized revaluation indicator that compares, for a hypothetical fixed-rate loan originated in a given month, the real debt erosion implied by expectations at origination against the erosion actually realized over the following twelve months. This indicator provides an individual-loan counterpart to the aggregate results and locates the origination window — the months surrounding the December 2023 regime change — in which the revaluation channel operated most strongly.

The paper is organized as follows. Section 2 describes the institutional background. Section 3 relates the paper to the literature. Section 4 sets out the conceptual framework and its testable implications. Section 5 describes the data. Section 6 presents the empirical strategy. Section 7 reports results. Section 8 discusses mechanisms and implications. Section 8.2 discusses limitations. Section 10 concludes.

2 Institutional Background

In the context of an economy that had accumulated severe macroeconomic imbalances over the preceding years, a new administration took office in December 2023 and implemented a broad-based fiscal and monetary stabilization program, accompanied by a sharp initial devaluation of the official exchange rate — which brought it into line with the pre-existing gap relative to parallel market quotations — and a crawling-peg regime whose rate of devaluation was progressively reduced throughout 2024. Monthly inflation, which had reached 25.0% in December 2023, declined steadily to below 3% by mid-2024 and remained within a range of 1.7%–2.6% throughout 2025 and early 2026 (with a temporary increase to 3.7% in March 2025, preceding the relaxation of foreign-exchange controls).

In April 2025 — the so-called "Phase 3" of the stabilization program — the government removed most of the capital controls (*cepo cambiario*) in place since 2019, replacing them with a managed floating-band regime (initially between ARS 1,000 and ARS 1,400 per dollar, adjusting 1% per month), alongside a new Extended Fund Facility agreement with the IMF for USD 20 billion.[1] This event provides additional institutional variation within the sample period. Together with the December 2023 fiscal-monetary adjustment, it constitutes a discrete and pre-announced policy change that helps distinguish the disinflation process from the endogenous dynamics of household credit performance.

A complementary feature of this period was the recovery of household credit intermediation from historically low levels. After reaching exceptionally depressed levels by the end of 2023, household lending resumed as macroeconomic conditions normalized and financial intermediation recovered. Importantly, this recovery took place during a transition between inflation regimes: although observed inflation declined rapidly, inflation expectations and nominal pricing conditions remained influenced by the high-inflation environment that preceded the stabilization process. Consequently, a significant share of newly originated and outstanding credit contracts incorporated nominal rates consistent with substantially higher expected inflation than subsequently realized. This coexistence of credit normalization, persistent nominal rigidities, and rapid disinflation provides the institutional setting for studying how changes in the inflation regime affected subsequent household credit performance.

A second institutional feature is the existence, since 2016, of a mortgage market denominated in UVA (*Unidad de Valor Adquisitivo*), an inflation-linked unit of account. In contrast to most consumer credit, which is contracted at a fixed nominal rate at origination, UVA mortgage principal is revalued with inflation. Therefore, a decline in inflation does not generate the same real revaluation of outstanding debt balances that operates through fixed-rate credit contracts.[2] This institutional asymmetry motivates treating mortgages as a conceptually distinct case within the household credit portfolio.

[1] See Banco Central de la República Argentina, Communication "A" 8226 (April 11, 2025) Starting in January 2026, the band limits began to adjust based on the latest available inflation print rather than at a fixed monthly rate.

[2] This does not imply that UVA loan payments are insensitive to disinflation: if wages do not track the adjustment index, a gap can emerge between payment dynamics and repayment capacity. This represents a distinct transmission channel from the Fisherian mechanism studied here and may explain the small but non-zero response observed for this segment.

A third relevant feature concerns the borrower base. Household bank credit in Argentina is extended predominantly to registered (formal-sector) employees, whose nominal wages are largely set through periodic collective-bargaining agreements (*paritarias*) and therefore adjust to inflation with a lag rather than continuously. This matters for the transmission studied here because the burden of a loan depends on the borrower's income as well as on the real value of the debt: under high inflation, lagged but repeated wage revisions raise nominal incomes even as fixed-rate debt is eroded in real terms, whereas as inflation falls, wage growth decelerates and this income cushion fades. The formal-employment character of the borrower base thus links the credit-quality dynamics of interest to the pace of both price and wage disinflation.

3 Related Literature

This paper connects four strands of the literature.

Debt deflation and the real burden of nominal debt. The idea that a change in the price level redistributes real wealth between creditors and debtors dates to Fisher (1933), whose debt-deflation mechanism links a falling price level to a rising real value of nominally denominated debt, forced deleveraging, and further contraction. The present paper studies a variant of this channel operating not through deflation but through disinflation: when the rate of inflation falls faster than nominal interest rates on outstanding fixed-rate contracts adjust, the ex-post real cost of servicing that debt rises, raising the real burden borne by borrowers even though the price level continues to increase. The object of interest is thus the same as in Fisher — the real value of nominal liabilities — but the trigger is a rapid change in the *rate* of inflation rather than in its level.

Macroeconomic determinants of non-performing loans. A large empirical literature relates bank asset quality to macroeconomic conditions. Louzis, Vouldis, and Metaxas (2012), Nkusu (2011), Klein (2013), and Beck, Jakubik, and Piloiu (2015) document that output growth, unemployment, interest rates, exchange rates, and inflation are systematic determinants of non-performing loan ratios across a range of countries and loan types. This paper contributes to that literature by isolating a specific and comparatively underexplored channel — the real revaluation of fixed-rate household debt during a rapid disinflation — and by exploiting monthly, product-level variation rather than the lower-frequency, aggregate data typically used in cross-country panels.

Household balance sheets and liquidity buffers. A complementary strand emphasizes the role of household liquidity in shaping the timing and magnitude of responses to financial and income shocks. Kaplan and Violante (2014) show that households differ substantially in their capacity to smooth consumption through liquid assets, implying that balance-sheet shocks may transmit into observed distress only with a delay, as available buffers are first drawn down. Agarwal, Liu, and Souleles (2007) and Ganong and Noel (2023) provide further evidence that households adjust consumption, repayment, and balance sheets gradually in response to changes in financial conditions. This literature rationalizes the delayed, hump-shaped response documented below: borrowers facing a higher real debt-service burden initially absorb it through liquidity before delinquency rises materially, consistent with the roughly sixteen-month lag estimated in this paper.

The transitional costs of disinflation. A separate literature studies the real costs incurred while inflation is brought down. The sacrifice-ratio tradition (e.g., Ball, 1994) documents that disinflations typically entail transitional output and employment losses even when the long-run effect of lower inflation is benign or favorable. The mechanism studied here is a household-credit analogue of this intertemporal pattern: a successful disinflation eventually raises real purchasing power once nominal wage growth stabilizes above low inflation, but during the transition the real burden of legacy nominal debt rises and the wage-indexation cushion fades, so the near-term cash-flow contraction dominates before the real-income gains arrive. The paper thus connects the macroeconomic literature on transitional disinflation costs to the microeconomics of household balance sheets, locating one channel — fixed-rate debt revaluation — through which the transitional cost is borne.

Local Projections. The dynamic responses are estimated using the Local Projections method of Jordà (2005), which recovers impulse responses from a sequence of horizon-specific regressions and is robust to misspecification of the long-run dynamics of a persistent dependent variable. Because non-performing loan ratios are near-integrated, the estimation is carried out on cumulative changes rather than levels, mitigating the spurious-regression concerns emphasized by Granger and Newbold (1974).

4 Conceptual Framework

This section states the mechanism formally at the level of a single fixed-rate contract and derives the testable implications that the empirical analysis examines. The aim is not a structural model of default but a transparent accounting of how an inflation surprise revalues nominal debt in real terms.

Consider a loan of unit real value originated at date t_0 at a fixed nominal annual rate i_{t_0}. Absent amortization, the nominal amount owed after one year is $1 + i_{t_0}$. Deflating by realized inflation π_{t_0} over that year, the realized real value of the obligation is

$$V_{t_0}^r = \frac{1 + i_{t_0}}{1 + \pi_{t_0}}. \tag{1}$$

At origination, both borrower and lender price the contract against *expected* inflation $\pi_{t_0}^e$, so the real burden anticipated at origination is $V_{t_0}^e = (1 + i_{t_0})/(1 + \pi_{t_0}^e)$. The unanticipated component of the real burden is therefore

$$V_{t_0}^r - V_{t_0}^e \;=\; (1 + i_{t_0}) \left[\frac{1}{1 + \pi_{t_0}} - \frac{1}{1 + \pi_{t_0}^e} \right], \tag{2}$$

which is positive if and only if $\pi_{t_0} < \pi_{t_0}^e$: whenever realized inflation falls short of what was expected when the debt was priced, the real burden exceeds what the borrower anticipated. A rapid, larger-than-expected disinflation is precisely such an event. Differentiating (1), the sensitivity of the real burden to an inflation surprise, $-\partial V^r/\partial \pi = (1 + i_{t_0})/(1 + \pi)^2$, is increasing in the contracted nominal rate i_{t_0}; loans originated at the high nominal rates prevailing under high expected inflation are the most exposed.

Three implications follow, each of which the empirical analysis tests directly. First, an unexpected disinflation raises household credit risk on fixed-rate debt, with a sign and timing governed by how quickly the real burden is absorbed through liquidity before it surfaces as delinquency (Section 7). Second, the effect should be increasing in the size of the inflation surprise relative to the expectations embedded in loan pricing — the object measured directly by the real-burden surprise used as a robustness shock (Section 6.3) and by the cohort-level indicator (Section 7.4). Third, the effect should be attenuated for contracts whose principal is indexed to inflation, since for those instruments the numerator of (1) moves with π and the revaluation in (2) is largely neutralized; this motivates the contrast between fixed-rate consumer credit and UVA-indexed mortgages that organizes the results.

A refinement concerns the denominator against which the real burden is assessed. What matters for repayment is the debt-service burden relative to income, not the real value of the debt in isolation. Bank borrowers in Argentina are predominantly registered (formal-sector) employees, whose nominal wages are largely reset through collective bargaining (*paritarias*) and therefore track inflation with a lag. Under high and rising inflation this works in the borrower's favor on both sides of the ledger at once: fixed-rate debt is eroded in real terms while nominal wages are repeatedly revised upward, so the debt-service-to-income ratio falls quickly. The same wage-indexation mechanism reverses as disinflation advances: nominal wage growth decelerates along with prices, so the income cushion that had been offsetting the debt burden weakens at precisely the moment when, for cohorts described above, the real value of fixed-rate debt stops falling and begins to rise. The deterioration in credit quality thus reflects the joint reversal of two forces — debt that is no longer being liquefied and income that is no longer being rapidly revised upward — rather than the debt-revaluation channel alone.

These two forces do not, however, act with the same timing, and their sequencing is central to the interpretation of the results. A successful, durable disinflation ultimately *raises* the real purchasing power of formal-sector households: once nominal wage growth stabilizes above a low and predictable inflation rate, real incomes recover and the real cost of servicing any given nominal obligation becomes easier to bear. But this favorable, level effect materializes only after the transition is complete. During the transition itself, the contractionary cash-flow effect dominates: the real value of fixed-rate debt rises just as the wage-indexation cushion fades, compressing the borrower's disposable cash flow before the eventual real-income gains have arrived. The framework therefore predicts a characteristic time profile — a transitional deterioration in credit quality while the cash-flow squeeze dominates, potentially followed by stabilization and eventual improvement as the real-income channel takes over — rather than a monotone relationship between disinflation and credit risk. The hump-shaped response documented below is the empirical counterpart of the first phase of this ordering; the later, recovery phase falls largely beyond the sample window, which ends with NPLs still rising, and is not tested here.

A final and, for the mechanism, decisive distinction is between the *level* of the ex-post real rate and the *surprise* component that drives (2). The revaluation that strains the borrower is $V^r_{t_0} - V^e_{t_0}$, which depends on the gap between realized and expected inflation, not on the level of the realized real rate as such. This does not imply that the level is immaterial: other things equal, household credit risk is lower the lower are real interest rates, so a lower real rate is always preferable from a credit-quality standpoint. The distinction is that the *expected* portion of the real rate is known at origination and can be reflected in the terms and affordability assessment of the loan, whereas the *surprise* portion cannot, because it revalues debt that has already been extended. An unanticipated disinflation therefore raises the real burden of contracts already on borrowers' balance sheets, after the loan has been made, and it is this component that generates the adverse balance-sheet pressure the framework isolates. The mechanism thus operates on the stock of legacy contracts, where the revaluation can be neither anticipated at origination nor repriced afterward, rather than on the flow of new lending, where a high real rate is known in advance and reflected in loan terms.

5 Data

5.1 Source and coverage

The dataset is a monthly panel of 124 observations (January 2016 to April 2026), assembled by the author from official sources. Household loan non-performing loan (NPL) ratios, nominal lending rates, and outstanding loan stock by product (mortgages, personal loans, and credit cards) are drawn from the Banco Central de la República Argentina (BCRA). Monthly consumer-price inflation (IPC), the monthly economic activity index (EMAE), and nominal wages are drawn from the Instituto Nacional de Estadística y Censos (INDEC). The 12-month-ahead inflation expectation is taken from the Universidad Torcuato Di Tella (UTDT) inflation expectations survey.[3]

5.2 Variable construction

From monthly inflation π_t, its compounded annualized equivalent is constructed as $\pi_t^{ann} = (1 + \pi_t)^{12} - 1$, and the ex-post real rate for segment j as $r_{j,t} = i_{j,t} - \pi_t^{ann}$. Two alternative measures of the disinflation shock are defined:

- **Baseline shock (first difference):** $\text{Shock}_t = -(\pi_t - \pi_{t-1})$, so that positive values denote disinflation.
- **Alternative shock (real-burden surprise):** using the 12-month-ahead inflation expectation formed at $t-12$, with monthly equivalent $\pi_{t-12}^{e,m} = (1+\pi_{t-12}^{exp})^{1/12} - 1$, define $\text{Shock}_t^{\text{RB}} = \pi_{t-12}^{e,m} - \pi_t$, which is positive when realized inflation falls short of what had been expected a year earlier.

The lagged nominal growth rate of each segment's loan stock, $\Delta \log(\text{stock}_{j,t-1})$, and an approximate real-wage growth measure, $\text{wage}_t^{real} = \text{wage}_t - \pi_t$, are also constructed.

5.3 Descriptive statistics

Table 2 compares sample moments before and after the beginning of the stabilization program (December 2023). All credit segments show an increase in average NPL ratios during the episode, although the magnitude of the adjustment differs substantially across products.

Between December 2023 and April 2026, the total household NPL ratio rose from 2.8% to 12.1% (a 9.3 p.p. increase, or 4.3×); credit cards, from 1.8% to 12.5% (+10.7 p.p., 6.9×);

[3] The BCRA-reported auto-loan (*prendario*) category mixes fixed-rate and inflation-indexed contracts and is therefore not used in the product-level analysis, which relies on a clean separation between fixed-rate consumer credit and inflation-indexed mortgages.

Table 1: Descriptive statistics, full sample (2016m1–2026m4, $n = 124$)

Variable	Mean	SD	Min	Max
Total household NPL (%)	3.74	1.86	1.7	12.1
Mortgage NPL (%)	0.78	0.41	0.2	1.5
Credit card NPL (%)	3.12	2.13	1.2	12.5
Personal loan NPL (%)	4.91	2.35	2.4	14.9
Monthly inflation (%)	4.04	3.51	1.3	25.0
EMAE, monthly change (%)	0.07	2.35	−15.9	10.6
Nominal wage, monthly change (%)	3.98	3.11	−0.2	20.0

Note: Monthly inflation has 5 missing observations (Jan.–May 2016). The EMAE minimum (−15.9%) corresponds to April 2020 (COVID-19 lockdown).

Table 2: Mean comparison, pre- vs. post-stabilization

	Pre (2016m1–2023m11)		Post (2023m12–2026m4)	
Variable	Mean	SD	Mean	SD
Total household NPL	3.33	0.78	5.09	3.26
Mortgage NPL	0.70	0.43	1.04	0.17
Credit card NPL	2.64	0.93	4.69	3.71
Personal loan NPL	4.38	1.26	6.64	3.86

personal loans, from 4.3% to 14.9% (+10.6 p.p., 3.5×); and mortgages, from 1.2% to 1.5% (+0.3 p.p., 1.3×).

Figure 1 shows the joint evolution of the unsecured NPL ratios (credit cards and personal loans) and monthly inflation over the full sample, with the disinflation episode shaded.

6 Empirical Strategy

6.1 Persistence properties of NPL ratios

Before specifying the dynamic model, the persistence properties of the dependent variable are assessed. Table 3 reports the first-order autocorrelation and augmented Dickey-Fuller statistics (two lags of the first difference, with a constant) for each NPL series and for monthly inflation.

These results indicate a highly persistent behavior across all NPL series. This pattern is consistent with the institutional nature of NPL ratios, which are stock variables that accumulate past credit deterioration and adjust gradually as borrowers transition into and out of delinquency.

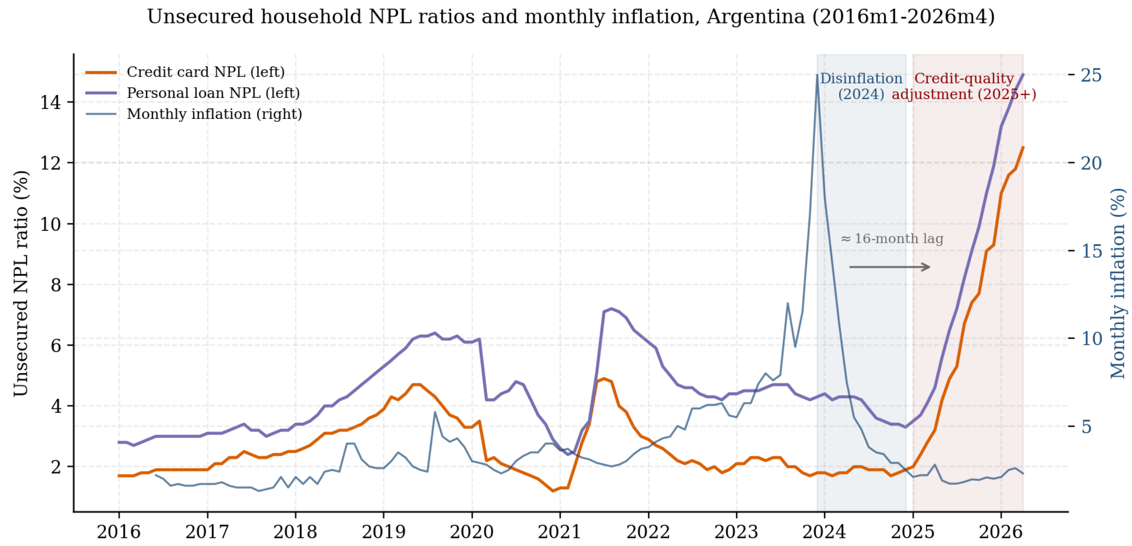

Figure 1: Unsecured household NPL ratios (credit cards and personal loans) and monthly inflation, Argentina (2016m1–2026m4).

Estimating the dynamic response through regressions of NPL_{t+h} on lagged levels of NPL would, in this context, be exposed to the classical spurious-regression problem associated with persistent processes (Granger and Newbold, 1974). To address this issue, the empirical specification follows Jordà's (2005) Local Projection framework in cumulative-change form, using $NPL_{t+h} - NPL_{t-1}$ as the dependent variable. This specification focuses on the accumulated adjustment in credit quality following the shock rather than on the level of a highly persistent stock variable. The validity of the approach relies on the stationarity of the identified shock, which is satisfied here because the baseline disinflation shock is defined as the first difference of monthly inflation.

6.2 Specification

For each portfolio segment j and horizon $h \in \{0, 1, \ldots, 24\}$, the following equation is estimated:

$$NPL^j_{t+h} - NPL^j_{t-1} = \alpha_h + \beta_h \cdot \text{Shock}_t + \gamma_{1,h}\, \Delta NPL^j_{t-1} + \gamma_{2,h}\, \Delta NPL^j_{t-2} + \delta_h \mathbf{X}^j_{t-1} + \varepsilon^j_{t+h} \quad (3)$$

where $\mathbf{X}^j_{t-1}$ includes, lagged one period: the monthly change in EMAE, the approximate real-wage growth rate, the nominal growth rate of the segment's loan stock, and — for segments with an observed lending rate (credit cards, personal loans) — the segment's ex-post real rate. The coefficient of interest, β_h, measures the cumulative response of the NPL ratio, in percentage points, at horizon h to a one-unit disinflation shock (a 1 p.p. monthly decline in

Table 3: Persistence and unit roots

Variable	AR(1) autocorrelation	ADF statistic ($\hat{\rho}$)
Total household NPL	0.987	−0.05
Mortgage NPL	0.978	−0.95
Credit card NPL	0.986	−0.02
Personal loan NPL	0.984	−0.38
Monthly inflation	–	−2.59

Note: Asymptotic MacKinnon critical values (constant, no trend): −3.43 (1%), −2.86 (5%), −2.57 (10%). No NPL series rejects the unit-root null at conventional levels. Monthly inflation rejects weakly at 10% but not at 5%, consistent with a highly persistent, though not strictly $I(1)$, process.

inflation). Standard errors are estimated with the Newey-West estimator using $h + 1$ lags, consistent with standard practice in the Local Projections literature to avoid understating variance at long horizons, where the projection error is autocorrelated by construction.

6.3 Identification and exogeneity diagnostics

Treating β_h as a causal response requires Shock_t to be orthogonal to unobserved determinants of future NPLs, conditional on the included controls. This is plausible in this episode because the 2024–2026 disinflation resulted from an announced, discrete fiscal-monetary stabilization program (Section 2), rather than an endogenous response to household credit-market conditions. To support this argument empirically, two placebo tests are conducted: (i) the contemporaneous shock is regressed on lagged NPL changes in each segment (lags 1 to 3), under the null that past credit deterioration does not predict the size of future disinflation shocks; and (ii) the shock is regressed on lagged EMAE growth.

The results show no evidence that the disinflation shock is predictable from the prior path of NPLs or economic activity, consistent with — though not conclusive proof of — its interpretation as a quasi-exogenous source of variation.

7 Results

7.1 Dynamic NPL response

Figure 2 presents the impulse responses estimated from equation (3), with 90% confidence bands. Panel A shows the two unsecured credit segments (credit cards and personal loans); Panel B shows the mortgage segment (collateralized and inflation-indexed). Both panels

Table 4: Exogeneity (placebo) tests: shock regressed on lagged NPL and activity

Lagged dependent variable	t (lag 1)	t (lag 2)	t (lag 3)
Δ Total household NPL	−0.01	0.36	0.33
Δ Credit card NPL	0.91	−0.07	0.09
Δ Personal loan NPL	−0.76	0.82	0.14
Δ Mortgage NPL	−1.09	−0.58	0.44
EMAE (monthly change)	−1.34	−0.49	–

Note: t-statistics with HAC errors (3 lags). $n = 118$. No coefficient is significant at 10% (critical value ≈ 1.645), consistent with the shock's exogeneity with respect to past credit and activity dynamics.

share the same vertical scale, so the near-zero magnitude of the mortgage response is directly comparable to, rather than rescaled relative to, the unsecured-credit response. The aggregate household NPL response, omitted from the figure to keep the product-level comparison uncluttered, is reported in Table 5 and Table 9.

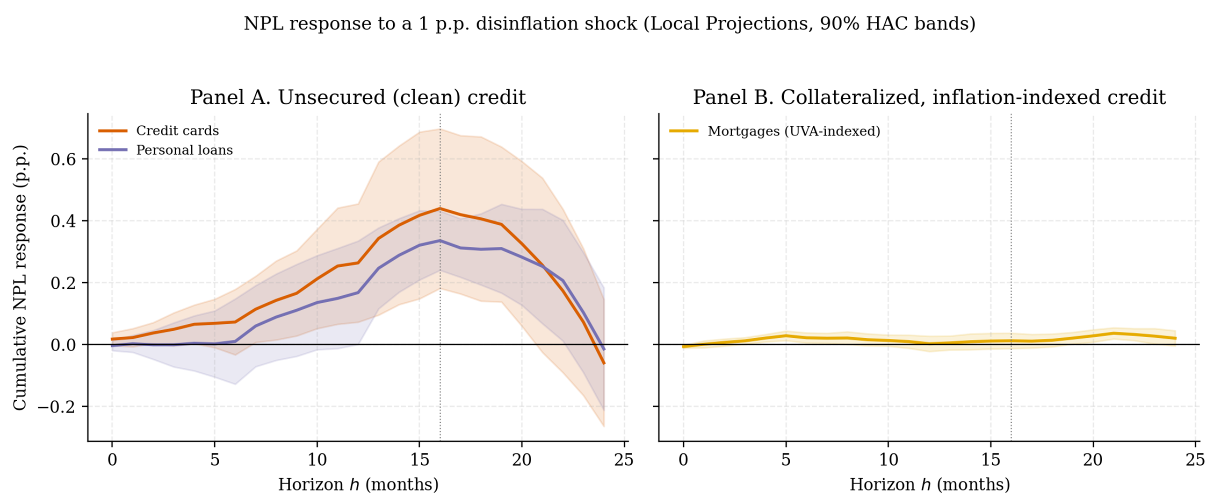

Figure 2: NPL response to a 1 p.p. disinflation shock. Local Projections, 90% confidence bands (HAC, Newey-West).

Table 5 reports coefficients at selected horizons; Table 9 in the Appendix reports the full sequence for $h = 0, \ldots, 24$.

Two results stand out. First, unsecured consumer credit (credit cards and personal loans) exhibits a hump-shaped response, significant at 1% from approximately $h = 13$–14, peaking at $h = 16$ (credit cards: $\beta = 0.439$, se $= 0.157$; personal loans: $\beta = 0.335$, se $= 0.058$), then declining and losing significance by $h = 22$–24. The total household NPL ratio peaks later, at $h = 20$ ($\beta = 0.372$, se $= 0.108$), reflecting the combination of the faster credit-card/personal-

Table 5: Cumulative NPL response to the disinflation shock (selected horizons)

	$h=0$	$h=4$	$h=8$	$h=12$	$h=16$	$h=20$	$h=24$
Total household NPL	−0.003	−0.008	−0.007	0.064	0.286***	0.372***	0.243
	(0.011)	(0.041)	(0.087)	(0.088)	(0.046)	(0.108)	(0.156)
Credit cards	0.017	0.065*	0.142*	0.263**	0.439***	0.325**	−0.059
	(0.013)	(0.038)	(0.077)	(0.116)	(0.157)	(0.162)	(0.124)
Personal loans	−0.004	0.004	0.088	0.167*	0.335***	0.282***	−0.014
	(0.010)	(0.054)	(0.085)	(0.101)	(0.058)	(0.094)	(0.120)
Mortgages (UVA)	−0.007**	0.021***	0.021*	0.002	0.012	0.028**	0.020
	(0.003)	(0.007)	(0.012)	(0.015)	(0.015)	(0.012)	(0.015)
n	118	114	110	106	102	98	94

Note: β_h coefficients from equation (3); HAC (Newey-West, $h+1$ lags) standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

loan dynamics with the slower, less precisely estimated mortgage response. Second, UVA mortgage NPLs are statistically significant at several horizons but with a magnitude 10 to 15 times smaller than credit cards or personal loans ($\beta_{21} = 0.036$ versus $\beta_{16} = 0.439$). The eventual decline of the impulse response describes the fading effect of a *single* shock; because the disinflation comprised a sequence of monthly shocks whose individual responses overlap, it does not imply that the observed NPL ratio declines over the sample, and indeed it continues to rise through the final observation.

Mortgage NPLs show a small but non-zero response, consistent with the indexed (UVA) nature of this instrument, which dampens, without eliminating, the Fisherian channel.

7.2 Robustness: a direct real-burden surprise

The baseline shock, $-(\pi_t - \pi_{t-1})$, is a reduced-form proxy: it captures the pace of disinflation but not the object that actually strains a fixed-rate borrower's balance sheet, namely the gap between realized inflation and the inflation that had been expected when the debt was priced. This subsection re-estimates equation (3) using a shock that measures this gap directly. Let $\pi^{e,m}_{t-12}$ denote the monthly-equivalent inflation implied by the 12-month-ahead expectation formed at $t-12$; the real-burden surprise is

$$\text{Shock}^{\text{RB}}_t = \pi^{e,m}_{t-12} - \pi_t, \tag{4}$$

which is positive when realized inflation falls short of what had been expected a year earlier, so that the real value of fixed-rate debt is higher than was priced in. This is the monthly, aggregate counterpart of the cohort-level indicator in Section 7.4, and it is measured using only information available at t.

Table 6: Robustness: real-burden surprise shock

	$h = 0$	$h = 4$	$h = 8$	$h = 12$	$h = 16$	$h = 20$	$h = 24$
Total household NPL	0.011*	0.076**	0.182***	0.294***	0.239***	0.073	−0.316***
Credit cards	0.013	0.102*	0.287**	0.527**	0.563***	0.336**	−0.222
Personal loans	0.005	0.084*	0.200**	0.355***	0.392***	0.231**	−0.105
Mortgages (UVA)	0.001	0.017***	0.023**	0.038***	0.052***	0.054***	0.036***

Note: β_h coefficients from equation (3) with $\text{Shock}_t^{\text{RB}}$ in place of the baseline shock; HAC (Newey-West, $h+1$ lags). Standard errors available in the replication material. Sample size ranges from $n = 112$ ($h = 0$) to $n = 88$ ($h = 24$). * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Two features stand out. First, the hump shape and its 16-month peak are preserved, and the response is estimated more sharply: the real-burden surprise raises the average R^2 of the horizon regressions relative to the baseline (from 0.33 to 0.42 for credit cards and from 0.43 to 0.46 for personal loans), and it lifts several mid-horizon coefficients from insignificance into significance. That a mechanism-based measure of the shock fits the data more closely than a raw change in inflation is consistent with the Fisherian real-revaluation channel being the operative mechanism, rather than the level or pace of disinflation as such. Second, this sharper fit comes with a caveat: because $\text{Shock}_t^{\text{RB}}$ embeds a slow-moving 12-month expectation, it is a marginally weaker instrument for the exogeneity argument of Section 6.3 — in the corresponding placebo regressions one lagged term becomes significant at the 5% level, whereas the baseline shock is orthogonal to all lagged terms. For this reason the baseline first-difference shock is retained as the identifying specification, and the real-burden surprise is reported as the mechanism-based robustness check; the consistency of the two reinforces the interpretation offered above.

7.3 The Fisherian mechanism in real interest rates

Figure 3 and Table 7 document the evolution of the ex-post real rate by segment. In December 2023, with monthly inflation of 25.0% (1,355% annualized by compounding) and nominal lending rates of roughly 60 to 140% per year, the ex-post real rate on the two consumer segments stood at roughly −1,216 to −1,237 p.p. annualized: the real value of debt was being eroded rapidly. By December 2024, with inflation already in single monthly digits, real rates on personal loans and credit cards had crossed into positive territory (36 and 54 p.p., respectively), stabilizing in a range of 30 to 70 p.p. through 2025–2026 — a sizable positive real rate sustained for more than a year. This shift, from rapid real erosion to sustained positive real revaluation, is the interest-rate counterpart of the mechanism documented in

NPLs. It is worth stressing, however, that the level of the real rate shown here is not the same object as the inflation *surprise* that drives the revaluation channel. The expected portion of a high real rate is known when a loan is made and can be reflected in its terms and affordability assessment; only the unanticipated component revalues debt already extended. Section 7.4 isolates that surprise component directly.

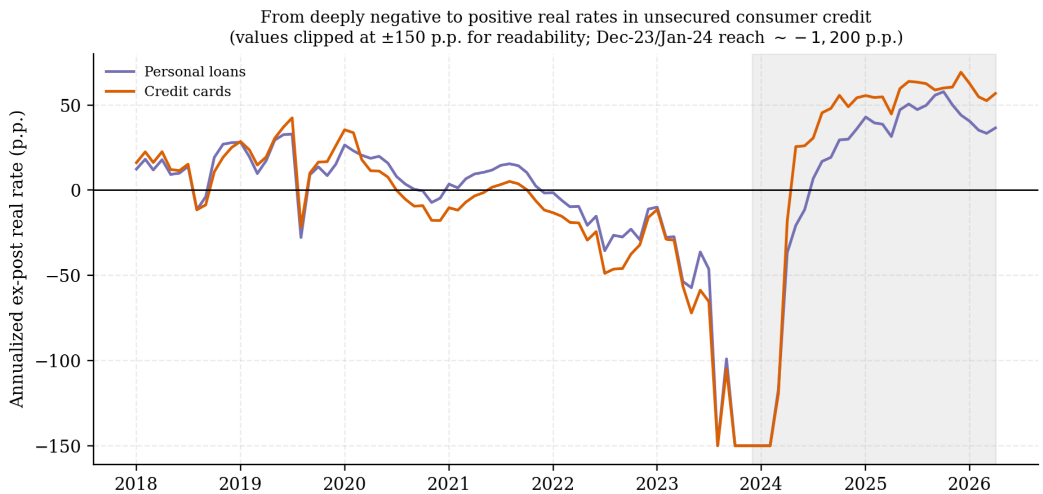

Figure 3: Annualized ex-post real rate by credit segment (values clipped at ±150 p.p. for readability).

Table 7: Annualized ex-post real rate, selected months (p.p.)

Date	Personal loans	Credit cards	Annualized inflation
Dec-2023	−1,216	−1,237	1,355
Jun-2024	−11	26	76
Dec-2024	36	54	34
Jun-2025	51	64	23
Dec-2025	44	69	27
Apr-2026	37	57	31

7.4 Expected vs. realized debt revaluation for a hypothetical loan cohort

Section 7.3 documents the ex-post real rate realized at each point in time, but a borrower deciding whether to take on debt does not observe this rate in advance; the relevant comparison is between the real debt burden a borrower could reasonably have anticipated at origination and the real debt burden that actually materialized. This subsection constructs such a comparison for a hypothetical fixed-rate loan (credit card or personal loan) originated in month t_0 and held for twelve months, using only information available at t_0 for the expected case. Because the survey expectation is a 12-month-ahead measure, the twelve-month horizon maps the expectation directly onto the holding period, without requiring any extrapolation beyond the surveyed horizon.

For a loan carrying the nominal annual rate i_{t_0} prevailing at origination, the nominal debt value after twelve months (absent amortization) is $(1 + i_{t_0})$. The *expected* real value of this debt at $t_0 + 12$ is obtained by discounting this nominal value with the 12-month-ahead expected inflation available at t_0:

$$V_{t_0}^{e} = \frac{1 + i_{t_0}}{1 + \pi_{t_0}^{exp}} \tag{5}$$

The *realized* real value replaces the expectation with actual cumulative inflation over the twelve months following t_0:

$$V_{t_0}^{r} = \frac{1 + i_{t_0}}{\prod_{k=1}^{12}(1 + \pi_{t_0+k})} \tag{6}$$

The indicator of interest is the gap $G_{t_0} = V_{t_0}^{r} - V_{t_0}^{e}$, expressed in percentage points of the original loan value. $G_{t_0} > 0$ indicates that the loan ended up carrying a heavier real burden than a borrower could reasonably have anticipated at origination; $G_{t_0} < 0$ indicates that the loan was eroded in real terms by more than anticipated. This exercise considers a hypothetical bullet (non-amortizing) loan and abstracts from amortization-schedule details; it is intended to isolate the revaluation channel, not to model actual loan cash flows.

Table 8 reports G_{t_0} for personal loans at representative origination dates. Figure 4 plots the realized-minus-expected real burden ($-G_{t_0}$) for every hypothetical personal-loan cohort up to April 2025, the last month with a full realized twelve-month window in the sample; credit cards display a qualitatively identical pattern.

Throughout 2022–2023, G_{t_0} is consistently negative and often sizable (down to roughly -56 p.p. in the underlying series), reflecting a regime in which realized inflation routinely exceeded the expectations embedded in loan pricing, so that fixed-rate debt was eroded in real terms faster than those expectations implied. This pattern reverses for cohorts originated from December 2023 onward, as the transition to a lower-inflation regime brought realized inflation below the still-elevated expectations prevailing at origination: G_{t_0} turns positive, peaking at roughly 35 p.p. for a cohort originated in March 2024. A borrower who took on debt during this window, forming expectations shaped by the persistently high inflation of the preceding years, carried a real debt burden at the twelve-month horizon somewhat heavier than those expectations implied. This cohort-level exercise provides a concrete, individual-loan counterpart to the aggregate NPL and real-rate results reported above, and locates

Table 8: Expected vs. realized 12-month debt revaluation, hypothetical personal-loan cohorts (p.p.)

Origination (t_0)	i_{t_0}	$\pi^{exp}_{t_0}$	Expected erosion	Realized erosion	Gap G_{t_0}
Jun-2022	60.3	50	−6.8	24.3	−31.1
Dec-2022	81.2	70	−6.6	43.6	−50.2
Jun-2023	104.6	100	−2.3	46.7	−49.0
Nov-2023	135.6	100	−17.8	9.8	−27.6
Dec-2023	139.6	150	4.2	−11.9	16.0
Mar-2024	125.5	100	−12.7	−47.5	34.8
Sep-2024	68.6	50	−12.4	−29.4	17.1

Note: "Erosion" is $100 \times (1 - V)$, so positive values denote a fall in the real value of debt. $G_{t_0} = V^r_{t_0} - V^e_{t_0}$ in percentage points; positive values indicate the loan carried a heavier real burden, at the twelve-month horizon, than implied by the expectations prevailing at origination. Credit cards display a qualitatively identical pattern and are omitted here for space.

the origination window — the months surrounding the December 2023 regime change — in which the revaluation channel operated most strongly. The effect is a mechanical consequence of the speed of the nominal transition acting on fixed-rate contracts written under prior expectations, and is distinct from, and additional to, the favorable real revaluation that the same transition delivered on the outstanding stock of previously eroded debt.

This comparison also clarifies which object drives the mechanism. The *level* of the ex-post real rate (Figure 3) and the expected–realized *gap* (Figure 4) are distinct: a high real rate can be either anticipated or not, and it is only the unanticipated part — the gap — that revalues debt beyond what borrowers and lenders had priced in. This does not diminish the level: other things equal, household credit risk is lower the lower are real rates, so a lower real rate is always preferable from a credit-quality standpoint. The relevant difference is that its expected component is known at origination and can be reflected in the terms and affordability assessment of the loan, whereas the surprise component cannot, because it revalues debt already extended. The cohort indicator shows that this surprise component, having turned sharply positive for loans originated around the December 2023 regime change, subsequently narrowed as expectations adjusted to the lower-inflation environment. The revaluation pressure documented here is thus tied to the phase in which realized inflation diverged most from prior expectations, and falls on the stock of legacy fixed-rate contracts rather than on new lending, where a high real rate is anticipated and reflected in loan terms.

8 Discussion

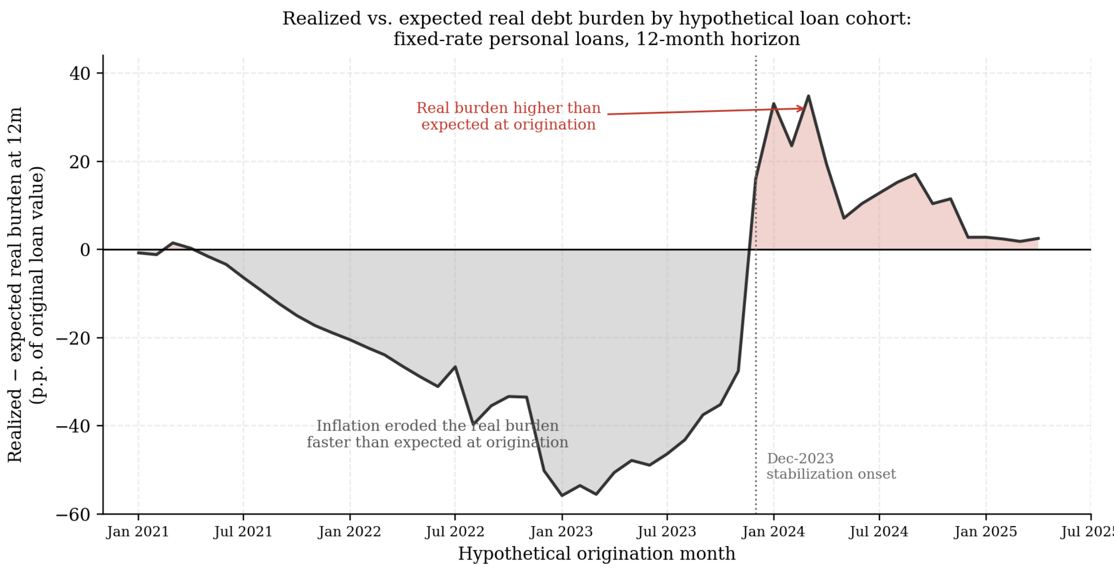

Figure 4: Realized minus expected 12-month real debt burden ($-G_{t_0}$, in p.p. of the original loan value) for a hypothetical fixed-rate personal loan originated in each month. Where the line is negative, realized inflation eroded the real debt burden faster than the expectations prevailing at origination implied (grey area); where it is positive, the realized real burden exceeded what those expectations implied (shaded area below the line). Cohorts are shown up to April 2025, the last month with a full realized twelve-month window in the sample; credit cards display a qualitatively identical pattern.

8.1 Interpretation and mechanisms

Taken together, the results are consistent with a Fisherian debt-revaluation mechanism operating on sticky nominal rates, which translates, with a lag of approximately 16 months, into a statistically and economically significant deterioration in unsecured consumer credit quality. This lag is plausibly attributable to the gradual exhaustion of household liquidity buffers — savings, additional credit lines, extraordinary income — ahead of formal default, in line with the consumption-smoothing literature.

The timing of the deterioration also reflects the income side of the borrower's balance sheet. Because bank borrowers in Argentina are largely registered employees whose nominal wages are reset through collective bargaining and thus track inflation with a lag, the high-inflation years delivered a double cushion: fixed-rate debt was eroded in real terms while nominal incomes were repeatedly revised upward, keeping debt-service-to-income ratios low. As disinflation advanced, both forces reversed — the real value of fixed-rate debt stopped falling while nominal wage growth decelerated — so that the income cushion weakened at the same time the debt burden rose. This joint reversal helps explain why credit quality deteriorated during the transition rather than before it, and why the effect is concentrated in the fixed-rate, unsecured segments most exposed to both channels.

Two features of the episode sharpen the interpretation. First, the deterioration is a transitional phenomenon rather than a standing cost of low inflation. A durable disinflation ultimately raises the real purchasing power of formal-sector households, but that favorable level effect arrives only after nominal wage growth settles above a low and stable inflation rate; during the transition the contractionary cash-flow effect — heavier real debt service meeting a fading wage cushion — dominates, and it is this ordering, not a permanent relationship between low inflation and credit risk, that the hump-shaped response captures. Second, the operative driver is the gap between expected and realized inflation rather than the level of the ex-post real rate. This distinction matters for how the risk can be managed. Credit risk is, other things equal, lower the lower are real interest rates, so the level is not immaterial; but the expected portion of the real rate is known when the loan is made and can be reflected in its terms and in the borrower's affordability assessment, whereas the surprise portion cannot, because it revalues debt that has already been extended. The revaluation channel documented here therefore falls on the stock of legacy fixed-rate contracts — where the change in real burden could be neither anticipated at origination nor repriced afterward — rather than on new lending, and this is why the deterioration is concentrated in cohorts that borrowed under expectations later invalidated by the speed of the disinflation.

Heterogeneity across products is informative but less categorical than a strict secured/unsecured dichotomy would suggest: UVA mortgage credit — indexed by design — shows a response an order of magnitude smaller than unsecured credit, consistent with the idea that indexation dampens, without eliminating, the real debt-revaluation channel.

8.2 Limitations

This study has several limitations. First, it is a single-country time-series analysis covering a single rapid-disinflation episode; while the placebo evidence in Section 6.3 supports exogeneity, there is no external instrument in the strict sense, nor experimental variation, so coefficients should be read as dynamic associations that survive placebo diagnostics rather than as causal estimates identified beyond dispute. Second, although the strong persistence of NPL series is addressed through a cumulative-change specification, inference in Local Projections with highly persistent regressors can remain biased in finite samples; recent work proposes bias corrections (e.g., Herbst and Johannsen, 2024) that are not implemented here for reasons of scope. Finally, with $n = 124$ monthly observations and horizons up to 24 months, the effective sample size at the longest horizons ($n \approx 94$–98) is limited, warranting caution in interpreting statistical significance in the tail of the impulse responses.

9 Policy and Risk-Management Implications

- **Monetary policy and macroprudential supervision.** Monetary authorities should monitor the ex-post real rate on consumer credit — not inflation or the nominal rate in isolation — as a leading indicator of financial stress in episodes of rapid disinflation, given the approximately 16-month transmission lag documented here.

- **Bank risk management.** The results suggest that forward-looking models that explicitly incorporate the gap between the contracted nominal rate and expected inflation — rather than current NPLs alone — could better anticipate impacts.

- **Portfolio segmentation.** The evidence supports differentiated countercyclical capital by segment: unsecured consumer credit shows the highest sensitivity to the identified channel, while UVA mortgages show substantially lower exposure to this specific channel — without implying that this segment is free of risk through other channels not analyzed here.

- **Contract structure: indexation and floating rates.** The gap in magnitude between fixed-rate and UVA-indexed credit indicates that contract structure shapes how a change in the inflation regime is transmitted to credit quality. Indexing a loan's principal to inflation largely neutralizes the real-revaluation channel studied here and can therefore buffer borrowers against a rapid disinflation. This is not a costless recommendation, however: in high-inflation environments borrowers are often reluctant to take on indexed debt precisely because it exposes them to an open-ended nominal balance that rises with inflation, so the instrument that protects them during a disinflation is the one they are least willing to hold beforehand. A floating (variable) nominal rate is a partial alternative — like indexation, it prevents the ex-post real rate from diverging sharply from realized inflation, and so dampens the disinflation channel — but it carries the mirror-image risk: if inflation and nominal rates rise while borrower incomes adjust more slowly, the real debt-service burden increases instead. No single contract form is unambiguously safer; each shifts the locus of risk to a different macroeconomic scenario, and the appropriate choice depends on which scenario is more likely and on how quickly borrower incomes track inflation.

10 Conclusion

The rapid disinflation that began in Argentina in December 2023 was accompanied by a substantial deterioration in household credit quality, concentrated in unsecured consumer credit and transmitted with a lag of approximately 16 months. Because market-wide inflation expectations remained well above realized inflation throughout the transition, the deterioration is best understood not as a failure of credit assessment at origination but as the mechanical consequence of realized inflation falling faster than the expectations embedded in nominal contracts. The underlying mechanism — an ex-post real rate that moved from strongly negative to persistently positive — is consistent with a Fisherian debt-revaluation channel acting on sticky nominal rates. Inflation-indexed mortgage credit is far less exposed to this channel, though not fully immune, because indexation moves the principal with inflation and so largely offsets the real revaluation that drives the effect on fixed-rate debt.

Two features frame how these results should be read. First, the effect operates during the transition rather than as a standing cost of low inflation: the deterioration documented here reflects the near-term contraction of borrowers' real cash flow — heavier real debt service meeting a wage cushion that fades as inflation falls. Whether and when it is followed by the offsetting gains in real purchasing power that a durable low-inflation regime is expected to bring is a question the present sample, which ends with NPLs still rising, cannot answer; it is left for future work as more data accrue. Second, what governs the deterioration is the gap between expected and realized inflation rather than the level of the ex-post real rate. Credit risk is lower the lower are real rates, so the level matters; but the expected portion of the real rate is known at origination and can be reflected in loan terms and in the affordability assessment, while the unanticipated component cannot, because it revalues debt already extended. The channel therefore operates on the stock of legacy fixed-rate contracts, where the change in real burden could be neither anticipated nor repriced away, which is why the deterioration is concentrated among borrowers whose contracts were written under inflation expectations that the speed of the disinflation subsequently invalidated.

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A Appendix

A.1 Full impulse response, $h = 0, \ldots, 24$

Table 9: Full β_h coefficients by segment (HAC standard errors in parentheses)

h	Total NPL	Credit cards	Personal loans	Mortgages
0	−0.003 (0.011)	0.017 (0.013)	−0.004 (0.010)	−0.007** (0.003)
1	−0.012 (0.014)	0.022 (0.018)	0.002 (0.017)	0.001 (0.007)
2	−0.008 (0.020)	0.037* (0.021)	−0.001 (0.028)	0.007 (0.007)
3	−0.009 (0.032)	0.049 (0.033)	−0.001 (0.043)	0.012* (0.007)
4	−0.008 (0.041)	0.065* (0.038)	0.004 (0.054)	0.021*** (0.007)
5	−0.018 (0.054)	0.068 (0.048)	0.002 (0.065)	0.028*** (0.009)
6	−0.028 (0.069)	0.072 (0.064)	0.010 (0.084)	0.022** (0.010)

h	Total NPL	Credit cards	Personal loans	Mortgages
7	−0.012 (0.077)	0.114* (0.065)	0.060 (0.080)	0.020** (0.010)
8	−0.007 (0.087)	0.142* (0.077)	0.088 (0.085)	0.021* (0.012)
9	0.000 (0.091)	0.165** (0.084)	0.110 (0.090)	0.015 (0.012)
10	0.024 (0.089)	0.212** (0.097)	0.135 (0.092)	0.013 (0.011)
11	0.048 (0.089)	0.253** (0.114)	0.149 (0.098)	0.009 (0.013)
12	0.064 (0.088)	0.263** (0.116)	0.167* (0.101)	0.002 (0.015)
13	0.138** (0.060)	0.342** (0.150)	0.246*** (0.079)	0.005 (0.014)
14	0.191*** (0.048)	0.385** (0.156)	0.288*** (0.072)	0.009 (0.016)
15	0.245*** (0.043)	0.417** (0.164)	0.320*** (0.068)	0.011 (0.015)
16	0.286*** (0.046)	0.439*** (0.157)	0.335*** (0.058)	0.012 (0.015)
17	0.308*** (0.059)	0.419*** (0.155)	0.312*** (0.057)	0.011 (0.013)
18	0.335*** (0.078)	0.406** (0.161)	0.307*** (0.070)	0.014 (0.013)
19	0.366*** (0.093)	0.388** (0.152)	0.310*** (0.087)	0.021* (0.012)
20	0.372*** (0.108)	0.325** (0.162)	0.282*** (0.094)	0.028** (0.012)
21	0.372*** (0.129)	0.256 (0.171)	0.252** (0.112)	0.036*** (0.011)
22	0.364** (0.148)	0.173 (0.160)	0.206* (0.118)	0.032*** (0.012)
23	0.327** (0.163)	0.072 (0.144)	0.103 (0.118)	0.027* (0.015)
24	0.243 (0.156)	−0.059 (0.124)	−0.014 (0.120)	0.020 (0.015)

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Sample size decreases from $n = 118$ ($h = 0$) to $n = 94$ ($h = 24$).