Monetary Policy Shocks and Household Consumption in Chile: Aggregate Transmission and Heterogeneity across Households

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Abstract

We study how monetary policy shocks affect household consumption in Chile, a small open economy with inflation targeting, inflation-indexed mortgage debt and high labor informality. We identify policy shocks following Romer and Romer (2004): at each monetary policy meeting of the Central Bank of Chile between 2001 and 2019 we purge the decided change in the policy rate of its systematic response to the private-sector forecasts of inflation and activity reported in the Economic Expectations Survey. Local projections on national accounts show that a 100 basis point contractionary shock lowers real household consumption by 2.5% after two years and 3.6% after three years, with durable goods falling four times as much as non-durables and services. Using the *Encuesta de Protección Social* household panel, we find that the consumption of households in the bottom quintile of labor income is more sensitive to monetary policy than that of households in the top quintile: per percentage point of cumulated shock, the consumption growth of the richest fifth differs from that of the poorest fifth by 0.7 percentage points, in the direction of a milder contraction. We find no evidence of a mortgage cash-flow channel. Because the household panel offers only four wave-to-wave changes, we cannot separate these differential responses from differential exposure to the labor-market cycle that accompanies policy.

JEL codes: E21, E52, D12, D31.

Keywords: monetary policy shocks; household consumption; heterogeneity; local projections; Chile.

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1 Introduction

A growing literature shows that the transmission of monetary policy to consumption depends on who holds debt, who holds liquid assets and whose income moves with the business cycle (Kaplan, Moll, and Violante, 2018; Auclert, 2019; Cloyne, Ferreira, and Surico, 2020; Holm, Paul, and Tischbirek, 2021). Most of this evidence comes from the United States and Northern Europe, where administrative data on household balance sheets are available. Much less is known about emerging economies, where credit markets are shallower, a large fraction of workers is informal and the transmission mechanism itself is less well measured (Hong, 2023).

This paper provides new evidence for Chile, an economy that is informative for an international audience for three reasons. First, Chile has run an inflation-targeting regime with a nominal policy rate since 2001, and its central bank publishes the date and statement of every monetary policy meeting, which allows us to build a meeting-level measure of policy shocks for more than two decades. Second, Chilean household debt is dominated by mortgages denominated in *Unidades de Fomento* (UF), a unit of account indexed to past inflation, with fixed real rates. The cash-flow channel that drives the consumption response of indebted households in countries with variable-rate mortgages (Cloyne, Ferreira, and Surico, 2020; Holm, Paul, and Tischbirek, 2021) should therefore be muted, while consumer credit is widespread. Third, the Central Bank of Chile moved its policy rate over an unusually wide range, from 0.5% in 2020–21 to 11.25% in 2022–23.

We make two contributions, organized by a two-agent New Keynesian model that delivers testable predictions for the aggregate and distributional effects of monetary policy (Section 2). The first is a measure of monetary policy shocks for Chile built following Romer and Romer (2004). At each meeting, the change in the policy rate is regressed on the rate before the meeting, on survey forecasts of inflation, monthly activity and quarterly GDP, on their revisions since the previous meeting and on the unemployment rate. The residual is orthogonal to the systematic response of the central bank to the information available to

market participants; the Economic Expectations Survey plays the role of the Greenbook forecasts. This measure is a strong driver of the policy rate, whereas the high-frequency interest-rate surprises used by Beltrán and Coble (2024) are only weakly related to policy-rate innovations in monthly data.

The second contribution is evidence on consumption. Local projections (Jordà, 2005) on quarterly national accounts show that a 100 basis point contractionary shock reduces real household consumption with a lag of about one year; the effect reaches -2.5% after eight quarters and -3.6% after twelve. Durables fall by about 12% after three years, four times as much as non-durables and services. We then use the *Encuesta de Protección Social* (EPS), a nationally representative panel with five waves between 2004 and 2020, to ask whether consumption responds differently across the income distribution and across balance-sheet positions. Because every household in a given wave faces the same aggregate shock, we identify only differential responses and absorb the common component with wave-pair fixed effects. The consumption of households in the top quintile of labor income per capita is significantly less sensitive to monetary policy than that of the bottom quintile, with a monotone pattern across quintiles; the result holds with shocks estimated on the pre-2020 sample, with survey weights and when controlling for quintile-specific exposure to activity growth. Households paying a mortgage do not experience larger consumption declines after tightening, consistent with the fixed real rates of UF mortgages.

These findings are in line with the view that indirect, income-driven effects dominate the transmission of monetary policy to low-income households (Kaplan, Moll, and Violante, 2018; Holm, Paul, and Tischbirek, 2021). We are explicit about the limits of the household evidence: with four wave-to-wave changes, the cumulated monetary shock is almost perfectly correlated with the change in unemployment between waves, and the differential response by income cannot be distinguished from differential exposure to the labor-market cycle that accompanies monetary policy.

Related literature. Our paper relates to three strands. The first studies the role of household heterogeneity in monetary transmission, theoretically in heterogeneous-agent New Keynesian models (Kaplan, Moll, and Violante, 2018; Bilbiie, 2020; Auclert, Rognlie, and Straub, 2024) and empirically with micro data (Coibion et al., 2017; Cloyne, Ferreira, and Surico, 2020; Holm, Paul, and Tischbirek, 2021; Amberg et al., 2022). The second is the identification of monetary policy shocks, either from central bank forecasts (Romer and Romer, 2004; Cloyne and Hürtgen, 2016) or from high-frequency market reactions and their information content (Gertler and Karadi, 2015; Nakamura and Steinsson, 2018; Jarociński and Karadi, 2020). The third is the literature on monetary policy in Chile (Parrado, 2001; Pescatori, 2018; Aruoba et al., 2021; Beltrán and Coble, 2024), which has focused on aggregate outcomes; we add a meeting-level Romer–Romer measure based on survey expectations and household-level evidence.

2 A two-agent framework

We organize the empirical analysis around a two-agent New Keynesian (TANK) economy (Campbell and Mankiw, 1989; Galí, López-Salido, and Vallés, 2007; Bilbiie, 2008; Debortoli and Galí, 2017; Bilbiie, 2020). The model is deliberately simple: it delivers closed-form predictions for the aggregate response of consumption, for the gap between the responses of different households and for the role of mortgage debt, which we take to the data in Sections 4 and 5.

2.1 Households

A fraction $1-\lambda$ of households are *savers* (S): they trade a one-period nominal bond, own the firms and smooth consumption over time. The remaining fraction λ are *hand-to-mouth* households (H), who have no access to asset markets and consume their current income. Log-linearizing around a steady state with zero inflation and equal consumption across types,

the saver's Euler equation is

$$c_t^S = \mathbb{E}_t c_{t+1}^S - \frac{1}{\sigma}\left(i_t - \mathbb{E}_t \pi_{t+1} - r_t^n\right), \tag{1}$$

where σ is the inverse of the elasticity of intertemporal substitution, i_t the policy rate, π_t inflation and r_t^n the natural rate. Hand-to-mouth consumption equals their income, which we let move with aggregate income y_t with elasticity χ (Bilbiie, 2020):

$$c_t^H = \chi\, y_t. \tag{2}$$

The parameter χ summarizes how exposed the income of constrained households is to the business cycle. With $\chi = 1$ incomes move proportionally; $\chi > 1$ means that the income of hand-to-mouth households is more cyclical than average, as when wages and employment of low-income workers respond more than profits, a feature that is plausible in an economy with high labor informality and short job tenures.

2.2 Aggregate demand and the consumption gap

Goods-market clearing, $y_t = \lambda c_t^H + (1-\lambda) c_t^S$, together with (2) implies $c_t^S = \frac{1-\lambda\chi}{1-\lambda}\, y_t$. Substituting into (1) gives the aggregate IS curve

$$y_t = \mathbb{E}_t y_{t+1} - \frac{1}{\sigma}\,\frac{1-\lambda}{1-\lambda\chi}\left(i_t - \mathbb{E}_t \pi_{t+1} - r_t^n\right), \tag{3}$$

which is closed with a New Keynesian Phillips curve $\pi_t = \beta\, \mathbb{E}_t \pi_{t+1} + \kappa\, y_t$ and a policy rule $i_t = \phi_\pi \pi_t + \varepsilon_t^m$, where ε_t^m is the monetary policy shock. We assume $\lambda\chi < 1$, so that the IS curve keeps its usual slope (Bilbiie, 2008).

The model yields three predictions.

Prediction 1 (aggregate consumption). A contractionary shock ($\varepsilon_t^m > 0$) lowers output and aggregate consumption. In the IS curve (3), the elasticity of aggregate demand to the real rate is scaled by the amplification factor $\frac{1-\lambda}{1-\lambda\chi}$, which exceeds one if and only if

$\chi > 1$: the indirect, income-driven effects on constrained households magnify the direct intertemporal-substitution effect on savers (Kaplan, Moll, and Violante, 2018; Broer et al., 2020).

Prediction 2 (consumption gap). Combining the two consumption rules,

$$c_t^H - c_t^S = \frac{\chi - 1}{1 - \lambda}\, y_t. \tag{4}$$

If $\chi > 1$, the consumption of hand-to-mouth households falls by more than that of savers after a monetary tightening. Equation (4) is the theoretical counterpart of our household regressions: the differential response between groups is proportional to the common aggregate movement triggered by the shock, which is absorbed by time fixed effects in the data, and its sign is informative about χ.

Prediction 3 (mortgage debt). Consider households that repay a mortgage with debt-service ratio ω on a rate r_t^B, so that $c_t^B = \chi\, y_t - \omega\,(r_t^B - \bar{r}^B)$. When mortgage rates are variable and move with the policy rate, a tightening reduces the disposable income of borrowers beyond the aggregate effect, and their consumption falls by more (Cloyne, Ferreira, and Surico, 2020; Holm, Paul, and Tischbirek, 2021). In Chile, mortgages are denominated in UF at fixed real rates, so $r_t^B = \bar{r}^B$ for existing borrowers and the cash-flow term vanishes: the model predicts no additional decline for mortgage holders.

3 Identifying monetary policy shocks in Chile

3.1 A Romer–Romer measure based on survey expectations

The Central Bank of Chile sets the *Tasa de Política Monetaria* (TPM) at scheduled monetary policy meetings: monthly until 2017 and eight times per year since 2018, plus an extraordinary meeting on 16 March 2020. We collect the date of each meeting from the official statements,

275 meetings between January 2001 and September 2026. For each meeting m we estimate

$$\Delta i_m = \alpha + \rho\, i_m^{\text{pre}} + \sum_k \beta_k F_m(x_k) + \sum_k \gamma_k \left[F_m(x_k) - F_{m-1}(x_k)\right] + \phi\, u_{m-2} + \varepsilon_m, \tag{5}$$

where Δi_m is the change in the policy rate decided at the meeting, i_m^{pre} is the rate in force before the meeting, $F_m(x_k)$ are the median forecasts from the Economic Expectations Survey available before the meeting —inflation 11 and 23 months ahead, the monthly activity index (IMACEC) for the previous month and GDP growth in the current quarter— and u_{m-2} is the latest published unemployment rate. The survey of month t is used when the meeting takes place on or after day 10 of the month, its usual publication date, and the previous survey otherwise. The residual $\hat{\varepsilon}_m$ is our monetary policy shock; monthly and quarterly series are obtained by summing the shocks of the meetings held in each period.

Table 1 reports the estimates. Over 2001–2019 (210 meetings with complete forecasts), the regression explains 45% of the variation in policy-rate changes. The central bank raises the rate by 0.20 percentage points for each point of expected inflation 11 months ahead and by 0.09 points for each point of expected activity growth, and cuts it when unemployment is high. The standard deviation of the shock is 0.25 percentage points, against 0.33 for the raw change in the policy rate. The largest shocks are the cuts of February and March 2009, about 1.7 points larger than implied by the forecasts. Our baseline uses the 2001–2019 coefficients; the full-sample shock is used for robustness.

3.2 High-frequency surprises

An alternative strategy uses the change in short-term market rates in a narrow window around each announcement. Beltrán and Coble (2024) use the daily change in the 30–89 day bank lending rate on meeting days as an external instrument for policy shocks, and the same change on employment release days as an instrument for information shocks, following Nunes, Ozdagli, and Tang (2023). We replicated both instruments. The information instrument

Table 1: Systematic response of the policy rate to survey forecasts (Romer–Romer first stage)

	2001–2019	2001–2026
Policy rate before the meeting	-0.116^{***}	-0.092^{***}
	(0.023)	(0.014)
Expected inflation, 11 months	0.199^{***}	0.302^{***}
	(0.058)	(0.057)
Expected inflation, 23 months	0.398	0.258
	(0.314)	(0.244)
Expected IMACEC growth (nowcast)	0.092^{***}	0.036
	(0.030)	(0.027)
Expected GDP growth, current quarter	-0.007	0.005
	(0.026)	(0.031)
Revision: expected inflation, 11 months	-0.068	0.001
	(0.158)	(0.122)
Revision: expected inflation, 23 months	-0.271	-0.169
	(0.501)	(0.342)
Revision: IMACEC nowcast	-0.028^{**}	-0.038^{**}
	(0.013)	(0.017)
Revision: GDP growth, current quarter	0.121^{*}	0.022
	(0.067)	(0.030)
Unemployment rate $(t-2)$	-0.034^{**}	0.000
	(0.016)	(0.010)
Meetings	210	265
R^2	0.45	0.48

Notes: OLS estimates of equation (5); the dependent variable is the change in the monetary policy rate decided at each meeting (percentage points). Heteroskedasticity-robust standard errors in parentheses. ***, **, *: significant at 1, 5 and 10%. Forecasts from the Central Bank of Chile's Economic Expectations Survey.

matches their series closely, but the policy instrument is essentially uncorrelated with policy-rate innovations in a monthly VAR (first-stage F statistic below one, as in their paper), is negatively correlated with changes in the policy rate and contains one-day quote spikes that reverse the following day. We therefore use the Romer–Romer measure as our baseline and the high-frequency instrument only as a robustness check.

4 Aggregate transmission to household consumption

We estimate local projections (Jordà, 2005)

$$y_{t+h} - y_{t-1} = a_h + b_h\, S_t + \sum_{l=1}^{L} \left(c_{h,l}\, \Delta y_{t-l} + d_{h,l}\, S_{t-l}\right) + e_{t+h}, \qquad h = 0, \ldots, H, \tag{6}$$

where y_t is 100 times the log of real household consumption (national accounts, chained volumes, seasonally adjusted), S_t is the Romer–Romer shock in quarter t and $L = 4$. The coefficient b_h is the percentage response at horizon h to a 100 basis point shock. Standard errors are Newey–West (Newey and West, 1987) with $h + 1$ lags. The baseline sample is 2001Q3–2019Q4, which avoids the effective lower bound and the pension-fund withdrawals of 2020–21.

Figure 1 shows the results. Household consumption does not react on impact and starts to decline after four quarters; the response is -2.5% (90% confidence band: -3.5 to -1.6) after eight quarters and -3.6% (-4.8 to -2.3) after twelve. Durables fall by 8.8% and 12.7% at the same horizons, non-durables by 2.3% and 2.9%, and services by 1.4% and 2.0%. GDP falls by 1.4% and 2.5%. Extending the sample to 2026 while excluding observations from 2020–21 yields similar responses (-2.1% and -3.2% for total consumption); including the pandemic years attenuates them.

Figure 2 reports monthly responses. The policy rate rises by about 60 basis points on impact and keeps rising for six months, so that shocks are followed by further tightening; this persistence explains part of the size of the consumption responses per unit of shock. Activity falls with a lag of about one year and unemployment increases from the second year onwards. Consumer prices do not fall within the first two years. This "price puzzle" is common in Romer–Romer applications with short samples (Romer and Romer, 2004; Coibion, 2012; Ramey, 2016); in a small open economy it can also reflect the exchange rate and commodity-price movements to which the central bank responds and that our survey-based

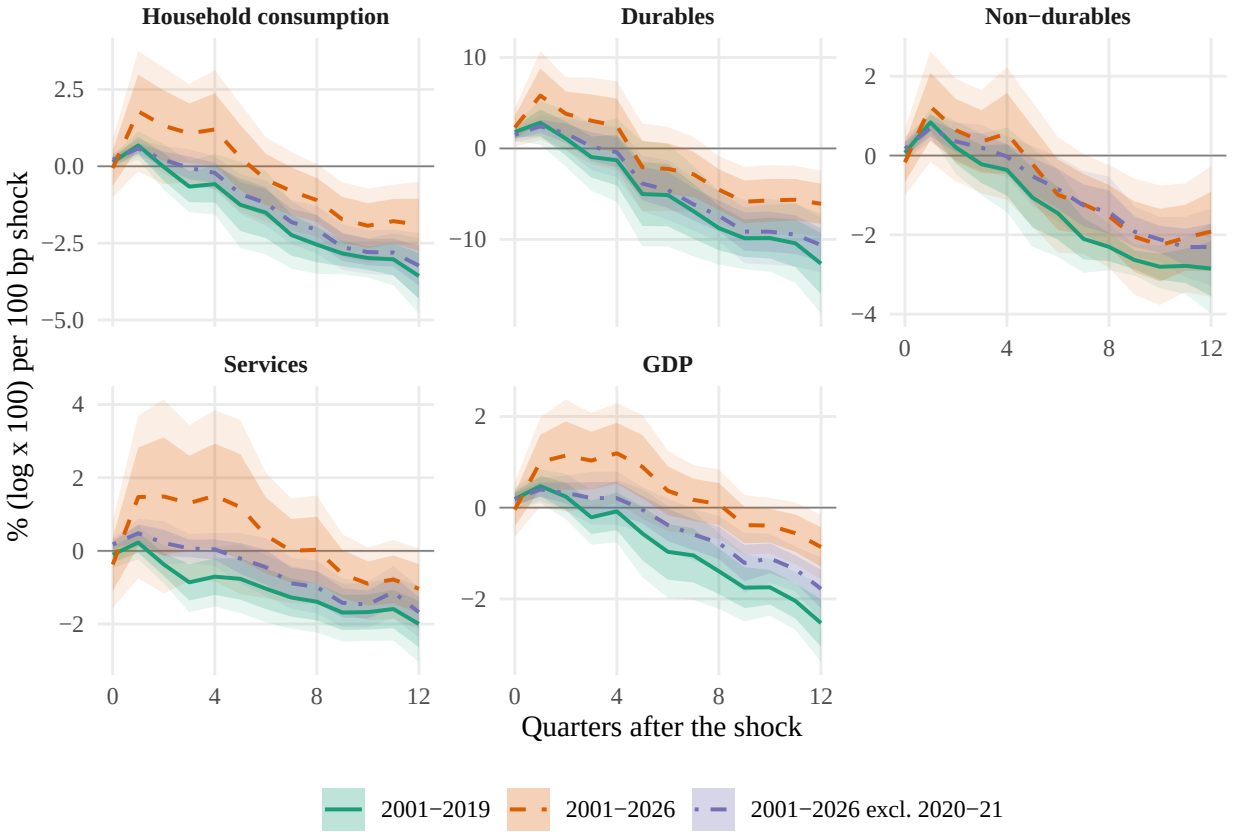

Figure 1: Response of household consumption and GDP to a 100 basis point Romer–Romer shock
Notes: Local projections, equation (6). Quarterly national accounts, chained volumes, seasonally adjusted (Central Bank of Chile). Shaded areas: 68% and 90% Newey–West confidence bands. "2001–2026 excl. 2020–21" drops observations whose period t or $t+h$ falls in 2020–21.

information set captures only partially.

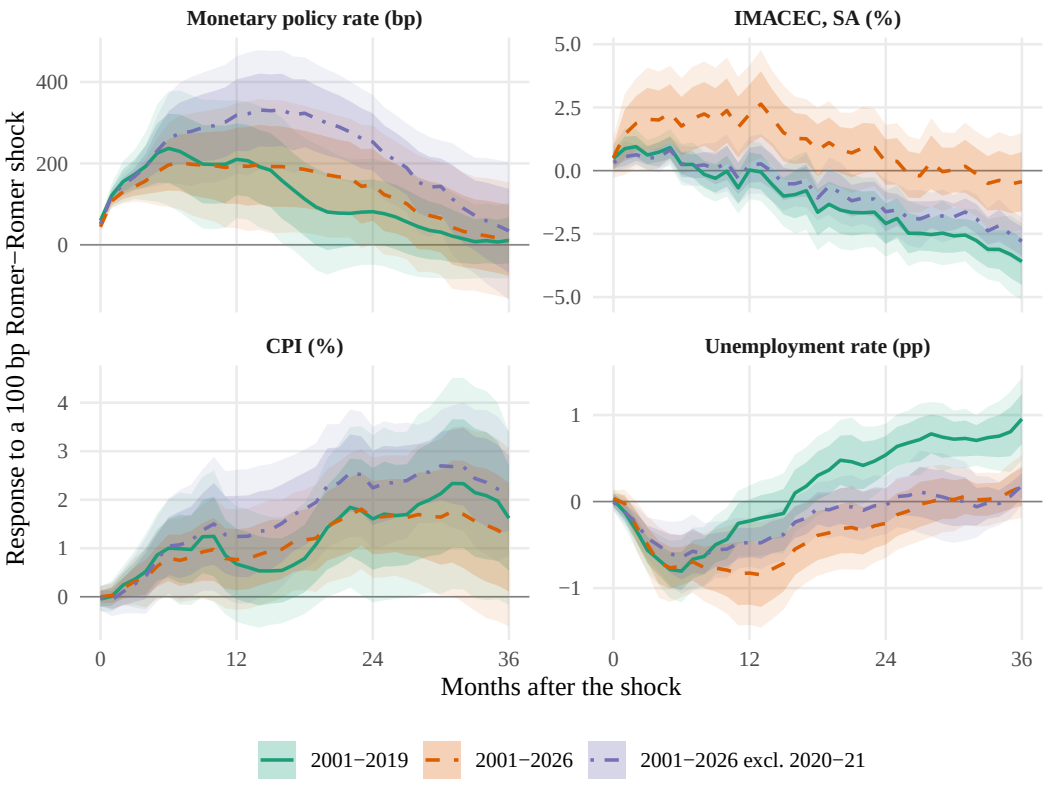

Figure 2: Monthly responses to a 100 basis point Romer–Romer shock
Notes: Local projections with 12 lags of the dependent variable and of the shock. IMACEC seasonally adjusted (Central Bank of Chile); unemployment rate seasonally adjusted with STL (Cleveland et al., 1990). Shaded areas: 68% and 90% Newey–West confidence bands.

5 Heterogeneity across households

5.1 Data: the Encuesta de Protección Social

The EPS is a longitudinal survey of the Chilean population aged 18 and over, administered by the Undersecretariat of Social Security. We use the waves of 2004, 2006, 2009, 2015 (fieldwork April–July 2016) and 2020 (face-to-face fieldwork December 2019–March 2020). The 2012 wave is excluded because the Undersecretariat does not recommend it for statistical inference. In every wave the respondent reports the monthly expenditure of the household on food, clothing, utilities, transport and domestic service. We measure consumption as the sum of these five items, deflated by the average consumer price index during the fieldwork period. Household labor income is the sum of the main-job income of the members listed in the household roster and the income of the respondent's current job from the labor-history

Table 2: Household sample, Encuesta de Protección Social

	2004	2006	2009	2015	2020
Households	16,727	16,443	14,463	16,906	7,800
Expenditure, median (2018 CLP)	277,492	287,656	300,929	345,161	434,219
Labor income p.c., median (2018 CLP)	98,664	100,999	91,712	138,064	126,832
Paying a mortgage (%)	11.2	10.1	8.8	8.3	7.6
Holds consumer debt (%)	46.3	39.6	38.1	33.2	32.8
Holds liquid savings (%)	13.0	14.8	8.4	8.0	14.0
Respondent age (mean)	45.9	47.6	49.9	43.4	49.8
Household size (mean)	4.1	4.1	3.9	3.6	3.3
		2004–06	2006–09	2009–16	2016–20
Cumulated Romer–Romer shock (pp)		3.26	−5.37	2.53	0.23
Change in unemployment rate (pp)		−2.1	4.1	−3.8	0.8
Growth of IMACEC (%)		14.7	2.2	25.7	7.7
Household pairs (estimation)		13,546	11,944	7,653	5,628

Notes: Unweighted statistics. Expenditure is the sum of food, clothing, utilities, transport and domestic service. Shocks, unemployment and activity are measured between the midpoints of the fieldwork periods of consecutive waves. The 2020 wave includes the face-to-face sample only.

module; we rank households by labor income per capita within each wave. The respondent also reports whether the household is currently paying a mortgage, the outstanding balance of consumer debt (credit cards, credit lines, department-store credit, bank and non-bank consumer loans, car loans and loans from family allowance funds) and the holding of liquid financial savings. Table 2 summarizes the sample.

5.2 Empirical design

Let $\Delta c_{i,w}$ be the change in log real consumption of household i between consecutive waves $w-1$ and w, and S_w the Romer–Romer shock cumulated between the fieldwork midpoints of the two waves. We estimate

$$\Delta c_{i,w} = \delta_w + \mu_Q + \sum_{q=2}^{5} \beta_q \, S_w \times \mathbf{1}[Q_{i,w-1} = q] + \theta' Z_{i,w-1} \times S_w + \lambda' Z_{i,w-1} + \gamma' X_{i,w-1} + e_{i,w}, \quad (7)$$

where $Q_{i,w-1}$ is the income quintile and $Z_{i,w-1}$ the balance-sheet indicators in the previous wave, $X_{i,w-1}$ includes age, age squared, sex and household size, μ_Q are quintile fixed effects

and δ_w are wave-pair fixed effects. We trim the first and last percentile of $\Delta c_{i,w}$ within each wave pair. With only four wave pairs, the level effect of the shock cannot be separated from any other aggregate development between waves; the fixed effects absorb it, and the aggregate response is measured in Section 4. The coefficients β_q and θ are identified from the interaction of a common shock with predetermined household characteristics, as in Cloyne, Ferreira, and Surico (2020) and Holm, Paul, and Tischbirek (2021), and correspond to the consumption gap of equation (4). A positive β_q means that, after a contractionary shock, consumption growth in quintile q is higher, that is, the contraction is milder, than in the bottom quintile. Standard errors are clustered by household.

5.3 Results

Table 3 and Figure 3 report the estimates. In the baseline specification, the coefficients increase with income: they are small for the second quintile and reach 0.69 percentage points per percentage point of cumulated shock for the top quintile ($p = 0.007$). Over the 2006–09 easing episode, when the cumulated shock was -5.4 points, this implies that consumption of the bottom quintile grew about 3.7 percentage points more than that of the top quintile; conversely, the tightening of 2004–06 compressed the consumption of the poorest households relative to the richest. Adding balance-sheet exposure barely changes the income gradient. Households paying a mortgage do not experience larger consumption declines after tightening —the interaction is positive— and neither consumer debt nor liquid savings changes the response. In Chile, mortgages carry fixed real rates in UF, so monetary tightening does not raise the payments of existing borrowers; the absence of a negative mortgage interaction is consistent with this institutional feature, and the positive estimate is likely to reflect the higher wealth of mortgagors.

Mapping to the model. The estimates line up with the predictions of Section 2. The negative gradient between the bottom and the top quintile is consistent with Prediction 2

Table 3: Differential consumption responses to monetary policy shocks

	(1) Income	(2) Income and balance sheet
Shock × income quintile 2	0.08	0.07
	(0.24)	(0.24)
Shock × income quintile 3	0.36	0.32
	(0.24)	(0.24)
Shock × income quintile 4	0.30	0.23
	(0.24)	(0.25)
Shock × income quintile 5	0.69***	0.57**
	(0.25)	(0.26)
Shock × paying a mortgage		0.50**
		(0.24)
Shock × consumer debt		0.07
		(0.15)
Shock × liquid savings		−0.11
		(0.21)
Wave-pair and quintile fixed effects	Yes	Yes
Observations	38,771	38,771

Notes: Estimates of equation (7), multiplied by 100: percentage-point difference in consumption growth relative to the bottom income quintile (or relative to households without the balance-sheet characteristic) per percentage point of cumulated Romer–Romer shock. Controls: age, age squared, sex, household size and the level of each balance-sheet indicator. Standard errors clustered by household in parentheses. ***, **, *: significant at 1, 5 and 10%.

with $\chi > 1$, and the absence of a negative mortgage interaction is consistent with Prediction 3. A back-of-the-envelope calculation gives a sense of magnitudes. Associating the bottom quintile with hand-to-mouth households and the top quintile with savers, equation (4) implies $\beta_5 \approx -\frac{\chi-1}{1-\lambda}\frac{\Delta y}{S}$. Using the response of GDP to a one percentage point shock after twelve quarters from Section 4 ($\Delta y/S \approx -2.53$) and the baseline $\beta_5 = 0.69$, we obtain $\frac{\chi-1}{1-\lambda} \approx 0.27$. For hand-to-mouth shares between 0.2 and 0.4, a range that includes the estimates of Kaplan, Violante, and Weidner (2014) for advanced economies, this implies χ between 1.16 and 1.22 and an amplification factor $\frac{1-\lambda}{1-\lambda\chi}$ between 1.06 and 1.12. The calculation is only indicative: quintiles are an imperfect proxy for the two types and, as discussed below, the household coefficients also capture exposure to the labor-market cycle.

Robustness. Table 4 reports alternative specifications. The income gradient is larger when the shock is constructed with the 2001–2019 coefficients (1.65 for the top quintile), when the

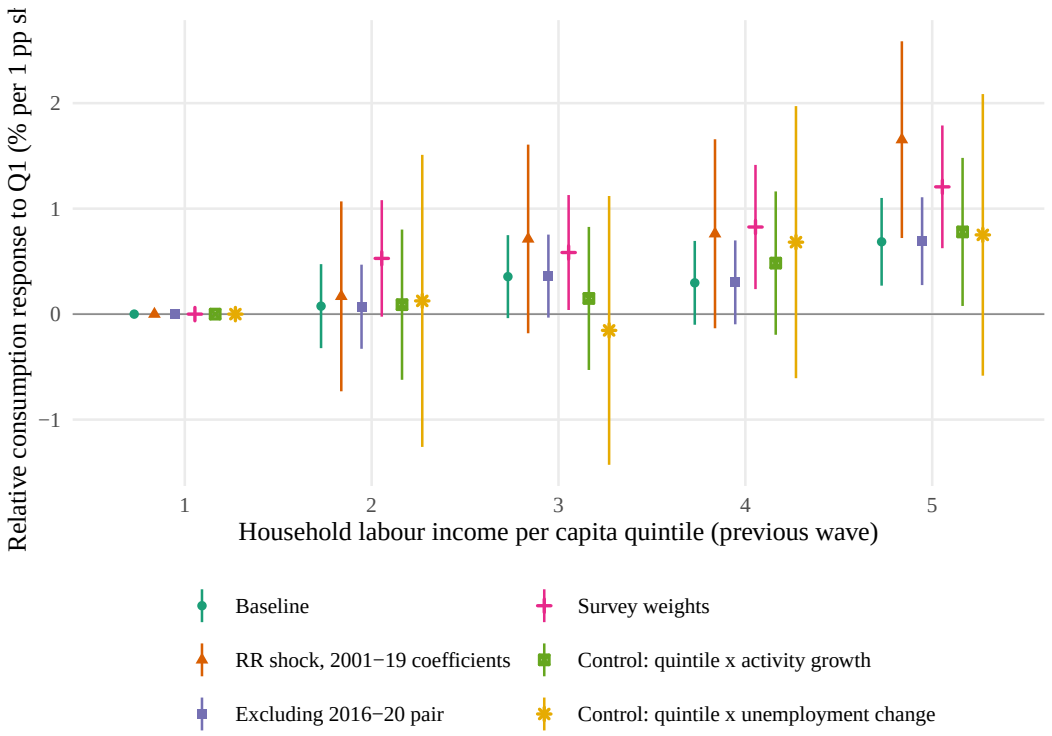

Figure 3: Consumption response by income quintile relative to the bottom quintile
Notes: Coefficients β_q of equation (7) with 90% confidence intervals (standard errors clustered by household), in percent per percentage point of cumulated Romer–Romer shock.

regressions use survey weights (1.21) and when we allow the response to vary with the distance between waves (0.77); it is unchanged when the 2016–20 pair is dropped. Food expenditure shows a similar but imprecise gradient. With the high-frequency policy instrument of Beltrán and Coble (2024) the gradient has the opposite sign, which is consistent with the negative correlation between that instrument and changes in the policy rate documented in Section 3. A placebo with the cumulated information instrument yields no significant differences.

The main caveat concerns the business cycle. Controlling for quintile-specific responses to activity growth between waves leaves the top-quintile coefficient at 0.78 ($p = 0.07$), but controlling for quintile-specific responses to the change in unemployment makes all coefficients imprecise. Across the four wave pairs, the cumulated shock is strongly correlated with the change in unemployment (-0.94) and with activity growth (0.80): the Central Bank of Chile tightened during expansions and eased in the 2008–09 recession, and the shock, although purged of the systematic response at each meeting, cumulates over periods in which

Table 4: Robustness of the income gradient

	Q2	Q3	Q4	Q5
Baseline	0.08	0.36	0.30	0.69***
	(0.24)	(0.24)	(0.24)	(0.25)
Shock with 2001–2019 coefficients	0.17	0.71	0.76	1.65***
	(0.55)	(0.54)	(0.54)	(0.57)
Survey weights	0.53	0.58*	0.83**	1.21***
	(0.34)	(0.33)	(0.36)	(0.35)
Excluding 2016–20 pair	0.07	0.36	0.30	0.69***
	(0.24)	(0.24)	(0.24)	(0.25)
Food expenditure only	−0.28	0.00	−0.08	0.36
	(0.29)	(0.29)	(0.29)	(0.30)
Control: quintile × wave distance	0.08	0.35	0.35	0.77***
	(0.25)	(0.25)	(0.25)	(0.26)
Control: quintile × activity growth	0.09	0.15	0.48	0.78*
	(0.43)	(0.41)	(0.41)	(0.43)
Control: quintile × unemployment change	0.13	−0.15	0.68	0.75
	(0.84)	(0.77)	(0.78)	(0.81)
High-frequency policy instrument	−0.42	−1.78	−1.82	−3.98***
	(1.32)	(1.31)	(1.31)	(1.37)
Placebo: information instrument	0.19	0.46	0.78	1.12
	(0.92)	(0.89)	(0.89)	(0.92)

Notes: Coefficients β_q of equation (7) multiplied by 100, relative to the bottom quintile. Each row is a separate regression with wave-pair and quintile fixed effects and the controls of Table 3, column (1). High-frequency instruments are cumulated daily changes in the 30–89 day bank lending rate on meeting days (policy) and employment release days (information), in percentage points. Standard errors clustered by household in parentheses.

labor-market conditions changed substantially. The household evidence is therefore best read as showing that the consumption of low-income households is more exposed to the joint movement of monetary policy and the labor market, a pattern consistent with an income channel of transmission (Kaplan, Moll, and Violante, 2018; Holm, Paul, and Tischbirek, 2021), rather than as a clean estimate of the partial effect of policy.

6 Conclusions

We construct a Romer–Romer measure of monetary policy shocks for Chile based on survey expectations and use it to test the predictions of a two-agent New Keynesian model for the

response of household consumption. At the aggregate level, a 100 basis point contractionary shock lowers real household consumption by 2.5% after two years and by 3.6% after three years, driven disproportionately by durables. At the household level, the consumption of low-income households moves more with monetary policy than that of high-income households, while mortgage holders —whose debt carries fixed real rates— do not show larger declines after tightening. Through the lens of the model, these patterns point to a hand-to-mouth income elasticity slightly above one and a modest amplification of monetary policy through household heterogeneity. The household evidence is limited by the small number of survey waves, which makes it impossible to separate monetary shocks from the labor-market cycle that accompanies them. Longer household panels or administrative data on consumption and income at higher frequency would allow a sharper test of the income channel in emerging economies, and are a natural avenue for future work.

References

Amberg, N., T. Jansson, M. Klein, and A. R. Picco (2022). "Five facts about the distributional income effects of monetary policy shocks". In: *American Economic Review: Insights* 4.3, pp. 289–304.

Aruoba, S. B., A. Fernández, D. Guzmán, E. Pastén, and F. Saffie (2021). *Monetary policy surprises in Chile: Measurement & real effects*. Working Paper 921. Central Bank of Chile.

Auclert, A. (2019). "Monetary policy and the redistribution channel". In: *American Economic Review* 109.6, pp. 2333–2367.

Auclert, A., M. Rognlie, and L. Straub (2024). "The intertemporal keynesian cross". In: *Journal of Political Economy* 132.12, pp. 4068–4121.

Beltrán, F. and D. Coble (2024). "Monetary policy surprises on the banking sector: The role of the information and pure monetary shocks". In: *Latin American Journal of Central Banking* 5.3, p. 100127.

Bilbiie, F. O. (2008). "Limited asset markets participation, monetary policy and (inverted) aggregate demand logic". In: *Journal of Economic Theory* 140.1, pp. 162–196.

Bilbiie, F. O. (2020). "The new Keynesian cross". In: *Journal of Monetary Economics* 114, pp. 90–108.

Broer, T., N.-J. Harbo Hansen, P. Krusell, and E. Öberg (2020). "The New Keynesian transmission mechanism: A heterogeneous-agent perspective". In: *Review of Economic Studies* 87.1, pp. 77–101.

Campbell, J. Y. and N. G. Mankiw (1989). "Consumption, income, and interest rates: Reinterpreting the time series evidence". In: *NBER Macroeconomics Annual* 4, pp. 185–216.

Cleveland, R. B., W. S. Cleveland, J. E. McRae, and I. Terpenning (1990). "STL: A seasonal-trend decomposition procedure based on loess". In: *Journal of Official Statistics* 6.1, pp. 3–73.

Cloyne, J., C. Ferreira, and P. Surico (2020). "Monetary policy when households have debt: new evidence on the transmission mechanism". In: *The Review of Economic Studies* 87.1, pp. 102–129.

Cloyne, J. and P. Hürtgen (2016). "The macroeconomic effects of monetary policy: a new measure for the United Kingdom". In: *American Economic Journal: Macroeconomics* 8.4, pp. 75–102.

Coibion, O. (2012). "Are the effects of monetary policy shocks big or small?" In: *American Economic Journal: Macroeconomics* 4.2, pp. 1–32.

Coibion, O., Y. Gorodnichenko, L. Kueng, and J. Silvia (2017). "Innocent bystanders? Monetary policy and inequality". In: *Journal of Monetary Economics* 88, pp. 70–89.

Debortoli, D. and J. Galí (2017). *Monetary policy with heterogeneous agents: Insights from TANK models*. Working Paper. CREI, Universitat Pompeu Fabra.

Galí, J., J. D. López-Salido, and J. Vallés (2007). "Understanding the effects of government spending on consumption". In: *Journal of the European Economic Association* 5.1, pp. 227–270.

Gertler, M. and P. Karadi (2015). "Monetary policy surprises, credit costs, and economic activity". In: *American Economic Journal: Macroeconomics* 7.1, pp. 44–76.

Holm, M. B., P. Paul, and A. Tischbirek (2021). "The transmission of monetary policy under the microscope". In: *Journal of Political Economy* 129.10, pp. 2861–2904.

Hong, S. (2023). "MPCs in an emerging economy: Evidence from Peru". In: *Journal of International Economics* 140, p. 103712.

Jarociński, M. and P. Karadi (2020). "Deconstructing monetary policy surprises: The role of information shocks". In: *American Economic Journal: Macroeconomics* 12.2, pp. 1–43.

Jordà, Ò. (2005). "Estimation and inference of impulse responses by local projections". In: *American Economic Review* 95.1, pp. 161–182.

Kaplan, G., B. Moll, and G. L. Violante (2018). "Monetary policy according to HANK". In: *American Economic Review* 108.3, pp. 697–743.

Kaplan, G., G. L. Violante, and J. Weidner (2014). *The wealthy hand-to-mouth*. Tech. rep. National Bureau of Economic Research.

Nakamura, E. and J. Steinsson (2018). "High-frequency identification of monetary non-neutrality: The information effect". In: *Quarterly Journal of Economics* 133.3, pp. 1283–1330.

Newey, W. K. and K. D. West (1987). "A simple, positive semi-definite, heteroskedasticity and autocorrelation consistent covariance matrix". In: *Econometrica* 55.3, pp. 703–708.

Nunes, R., A. K. Ozdagli, and J. Tang (2023). *Interest rate surprises: A tale of two shocks*. Working Paper 4524624. SSRN.

Parrado, E. (2001). "Shocks externos y transmisión de la política monetaria en Chile". In: *Economía chilena, vol. 4, no. 3*.

Pescatori, M. A. (2018). *Central bank communication and monetary policy surprises in Chile*. International Monetary Fund.

Ramey, V. A. (2016). "Macroeconomic shocks and their propagation". In: *Handbook of Macroeconomics*. Vol. 2. Elsevier, pp. 71–162.

Romer, C. and D. Romer (2004). "A new measure of monetary shocks: Derivation and implications". In: *American Economic Review* 94.4, pp. 1055–1084.