

Does monetary policy still affect consumption? Time-varying transmission of credit and interest rates in Vietnam

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Abstract

Purpose – This study assesses whether monetary policy still affects household consumption in Vietnam; it also assesses the relative contribution of credit and interest-rate shocks (in reduced form) and quantifies how the volatility of consumption's own shocks evolves over time.

Design/methodology/approach – The study estimates a Bayesian time-varying parameter vector autoregression with stochastic volatility (TVP-VAR-SV) using monthly data from 2013M4 to 2025M12 with four endogenous variables. Dynamic effects are analysed through impulse response functions (IRF), forecast error variance decomposition (FEVD), and the stochastic volatility (SV) of the consumption shock, together with robustness checks. The dataset comprises 153 monthly observations (2013M4–2025M12); retail sales and credit are drawn from FiinPro-X, the refinancing rate from the State Bank of Vietnam, and the CPI from the IMF's IFS.

Findings – The transmission of monetary policy to consumption is weak: consumption responses to both credit and interest-rate shocks are largely statistically insignificant, and neither channel dominates persistently. The most robust finding is that the magnitude of consumption shocks varies markedly over time, with a high-volatility cluster persisting throughout 2020–2023, peaking in September 2022 at roughly eight to eleven times the normal-period level. These findings are consistent across alternative specifications.

Originality/value – This study is the first to assess the time-varying response of Vietnamese household consumption to monetary shocks using monthly retail-sales data. It traces how the relative importance of the credit and interest-rate channels shifts across different states of the economy; through the stochastic-volatility component, it separately quantifies the volatility of consumption's own shocks, distinct from changes in the transmission mechanism; and it extends the TVP-VAR-SV framework – so far applied in Vietnam mainly to financial variables – to the transmission of monetary policy to consumption.

Keywords Monetary policy transmission, Household consumption, TVP-VAR-SV, Stochastic volatility, Credit channel, Vietnam.

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1. Introduction

On the expenditure side of GDP, final household consumption is the largest component of aggregate demand in Vietnam, accounting for the largest share of GDP at over 70% (General Statistics Office, 2024). Given this share, how strongly household consumption responds to monetary conditions is central to the effectiveness of stabilisation policy: if consumption responds weakly or erratically to policy shocks, the room to steer aggregate demand through the household channel is narrowed.

However, final consumption is observed only at quarterly frequency and with a substantial publication lag, whereas monetary policy is conducted almost in real time; this gap makes quarterly data ill-suited to capturing consumption dynamics around policy turning points in a timely way. Total retail sales of goods and consumer services, published monthly, provide a higher-frequency and more timely window. This study uses real retail sales – deflated by the CPI and expressed as year-on-year growth – as a proxy for household consumption, following the use of high-frequency indicators in the literature on nowcasting GDP components (Baffigi et al., 2004; Aastveit et al., 2024). This proxy mainly reflects spending on goods and part of services, and does not cover the whole of final household consumption; nevertheless, its frequency and timeliness make it well suited to the goal of tracing the consumption response over time.

The Vietnamese economy is strongly bank-dominated, and the State Bank of Vietnam operates mainly through quantity-based instruments, most notably the credit-growth target. Under these conditions, theory predicts that transmission through the price (interest-rate) channel may be weak and unstable, while the quantity (credit) dimension is more prominent (Mishra & Montiel, 2013); however, the relative strength of the two channels is an open empirical question and may shift across states of the economy. The sample period, from 2013M4 to 2025M12, contains several events that shook markets: the COVID-19 shock of 2020–2021, a period in which lending-channel transmission was found to be stronger (Loi & Dang, 2023), together with the high-interest-rate cycle and banking-liquidity stress of 2022–2023. A fixed-coefficient framework imposed over the whole period risks averaging over and masking precisely these shifts. Notably, where state dependence has been documented for Vietnam, it is usually captured by discrete crisis dummies (Loi & Dang, 2023) rather than continuously time-varying parameters, so it does not reflect the gradual shifting of the relationship between channels, nor does it separate changes in the transmission mechanism from changes in shock size. This study addresses these issues with a Bayesian time-varying parameter vector autoregression with stochastic volatility (TVP-VAR-SV) (Primiceri, 2005; Nakajima, 2011). In Vietnam, this framework has so far been applied mainly to financial variables such as investor sentiment, the exchange rate, and geopolitical risk (Le, 2025; Cao et al., 2025), not to the transmission of monetary policy to consumption.

Three gaps follow: (i) existing evidence, including recent assessments (IMF, 2024; OECD, 2025), focuses mainly on output, inflation, or the exchange rate, and rarely places monthly household consumption at the centre as the response variable; (ii) state dependence is usually described with discrete dummies rather than continuously varying coefficients; and (iii) the evolution of the volatility of consumption shocks themselves, distinct from changes in the transmission mechanism, has not been quantified for Vietnam.

Correspondingly, the study makes three contributions: (i) to the authors' knowledge, this is the first assessment of the time-varying response of household consumption to monetary shocks in Vietnam using a monthly retail-sales proxy; (ii) it traces the relative role of the credit and interest-rate channels with continuously varying parameters rather than discrete dummies; and (iii) through the stochastic-volatility component, it quantifies how the volatility of consumption shocks themselves evolves over time.

The remainder of the paper is organised as follows. Section 2 presents the theoretical framework and literature review; Section 3 describes the data and method; Section 4 discusses the results and robustness checks; and Section 5 concludes and draws policy implications.

2. Theoretical framework and literature review

2.1 Theoretical framework

The study's central theoretical framework is the distinction between the price margin and the quantity margin of monetary transmission, grounded in the money and credit view of Bermanke and Blinder (1988) and Bermanke and Gertler (1995) and in the level-dependence argument of Mishra and Montiel (2013): in bank-dominated, financially shallow economies the price channel tends to be weak and unstable while the quantity channel is more prominent, and the relative strength of the two evolves with the state of the economy, which is what motivates a time-varying specification.

For clarity, the key concepts are defined as follows. Monetary policy transmission is the process by which changes in the central bank's policy instruments affect financial and real variables, here household consumption. Household consumption denotes final consumption spending by households, proxied in this study by real retail sales. The credit (bank-lending) channel is the transmission route operating through the quantity of bank loanable funds rather than through the interest rate, whereas the interest-rate (price) channel operates through the cost of borrowing. The TVP-VAR-SV model is a vector autoregression whose coefficients and shock variances are allowed to change gradually over time. Stochastic volatility (SV) refers to the time-varying standard deviation of the model's shocks, which captures changes in shock size separately from changes in the transmission mechanism.

The analysis rests on the distinction between the price margin and the quantity margin of monetary transmission. Through the interest-rate channel, a contractionary policy shock raises market interest rates, increases the user cost of capital, and leads households to postpone interest-sensitive consumption, especially of durable goods (Mishkin, 1995; Taylor, 1995). Through the credit channel (the bank-lending channel), the same shock contracts the supply of loanable funds, forcing credit-constrained households to cut spending even when they are willing to borrow at the prevailing interest rate (Bernanke & Blinder, 1988; Bernanke & Gertler, 1995). Theory also recognises a wealth channel that transmits through asset prices to consumption decisions (Lettau, Ludvigson, & Steindel, 2002), although this channel is usually weak in developing economies with shallow capital markets and low household participation in financial assets. This channel is therefore deliberately excluded from the baseline system to preserve degrees of freedom, and is flagged as a direction for future research (Section 5).

An important theoretical implication is that the strength of transmission is neither constant over time nor uniform across economies. Mishra and Montiel (2013) argue that in low-income economies with underdeveloped financial infrastructure, transmission through the price channel is often weak and unstable, while the role of quantity factors is more prominent. In a bank-dominated economy with quantity-oriented instruments, the quantity margin is therefore expected to dominate the price margin; and the relative strength of the two channels may shift across states – for example, weakening during periods of bank balance-sheet restructuring and operating more strongly during expansions. This state dependence calls for a time-varying empirical framework rather than a fixed-coefficient one.

2.2 Review of empirical studies

2.2.1 Monetary policy transmission in Vietnam. Accumulated evidence shows that transmission in Vietnam exists but is limited in strength and unstable. Foundational studies using the SVAR framework document that monetary shocks affect output and the economy's sensitivity to external shocks (Bhattacharya, 2014; Anwar et al., 2018); among them, Vo and Nguyen (2017) find that monetary policy operates mainly through the interest-rate channel but not clearly through the exchange-rate or asset-price channels, while Nguyen (2022) shows that output and price responses to an interest-rate shock appear with a substantial lag. Earlier VAR/SVAR analyses also centred on output, money, interest rates, and the exchange rate (Le Viet et al., 2009; Bui et al., 2015), while the strand on the determinants of inflation emphasised the roles of interest rates and money supply (Nguyen et al., 2012; Nguyen et al., 2019). Recent assessments reinforce the view of limited effectiveness: the IMF (2024) argues that the interest-rate channel affects financial variables but that transmission to inflation and real activity remains weak, and stresses the need to modernise the policy framework; the OECD (2025) recommends a gradual shift from a quantity-based framework to a more price-based approach, given that operating through credit-growth targets remains a salient feature; and AMRO (2024) places Vietnam's monetary policy framework in regional comparative perspective. Even so, most of these studies target output, inflation, or the exchange rate, and rarely place household consumption at the centre as the response variable. Taken together, this evidence is not fully consistent: some studies find the interest-rate channel operative (Vo & Nguyen, 2017), others find the lending channel dominant and stronger in crises (Loi & Dang, 2023), and recent assessments judge transmission to the real sector to be weak overall (IMF, 2024; OECD, 2025). These conflicting findings, obtained largely from fixed-coefficient models over different sub-periods, are precisely what a framework allowing the transmission mechanism to vary over time is designed to reconcile.

2.2.2 The credit and bank-lending channel in Vietnam. A rich strand confirms the role of the bank-lending channel in Vietnam and its heterogeneity. Vo and Nguyen (2014) document that the

relationship between monetary policy and bank credit risk changes between the periods before and after the global financial crisis; Dang and Dang (2021) show that the degree of bank business diversification alters the strength of transmission; Nguyen and Dinh (2022) emphasise the role of bank capital for the lending channel; and Nguyen and Dang (2024) show that monetary easing affects risk appetite and the quality of loan portfolios. In particular, Loi and Dang (2023) find that lending-channel transmission is stronger during adverse periods such as the COVID-19 pandemic and the financial crisis, although this state-dependent effect is captured with discrete interaction dummies rather than with continuously time-varying parameters. Closest to the present approach, Dinh, Nguyen, and Tran (2024) use Bayesian methods to confirm the existence of the lending channel and to show that the level of financial development moderates its strength.

2.2.3 Retail sales and consumption nowcasting. The use of retail sales and high-frequency data as a proxy for household consumption has been developed strongly in the nowcasting literature. Building on bridge models for forecasting GDP components (Baffigi et al., 2004) and the comparison between MIDAS and mixed-frequency VAR models (Kuzin, Marcellino, & Schumacher, 2009), the most recent studies improve accuracy with transaction data and machine learning: Aastveit et al. (2024) use card-transaction data to nowcast household consumption with a clear advantage during periods of high uncertainty; Kamolthip (2021) combines an LSTM network with mixed-frequency data; and Hauzenberger et al. (2024) apply Gaussian processes to a similar problem. However, these applications have hardly been implemented for the Vietnamese consumption margin at monthly frequency.

Retail sales is an appropriate proxy for household consumption because it captures spending on goods and part of services, the cyclical and interest- and credit-sensitive components most relevant to monetary transmission, at monthly frequency, whereas official household final consumption in the national accounts is available only annually and with a publication lag. As supporting evidence, over 2014–2024 the annual growth of real retail sales is positively and significantly correlated with the annual growth of real household final consumption in the national accounts (Pearson $r = 0.70$, $p = 0.016$, $n = 11$; Spearman's $\rho = 0.84$), with both series capturing the sharp slowdown of 2020–2021 and the rebound in 2022. This close link is expected because the General Statistics Office uses retail sales as one of the inputs in estimating private consumption, so the overlap reinforces rather than undermines the validity of retail as a timely high-frequency proxy. The proxy nonetheless excludes part of services spending and the informal sector, a limitation noted in Section 5.

2.2.4 The TVP-VAR model with stochastic volatility. Methodologically, the time-varying parameter vector autoregression (TVP-VAR) allows the continuous evolution of relationships among variables to be captured, and adding stochastic volatility (SV) is necessary to separate changes in the transmission mechanism from changes in shock size (Primiceri, 2005; Nakajima, 2011; Del Negro & Primiceri, 2015). The framework has continued to be extended and widely applied recently – to exchange-rate pass-through into prices (Rodríguez et al., 2024), forecasting government bond yields (Fischer et al., 2023), monetary shocks in production networks (Simionescu, Schneider, & Gavurova, 2024), together with improvements in shrinkage priors (Renzetti, 2023). In Vietnam, the TVP-VAR-SV framework has so far been applied mainly to financial variables such as investor sentiment and the exchange rate (Le, 2025) or geopolitical risk and the stock market (Cao et al., 2025), but not to the transmission of monetary policy to consumption.

2.3 Research gaps and questions

Bringing these strands together highlights three gaps, corresponding to the three research questions the paper seeks to answer:

(i) Although monetary transmission in Vietnam has been widely studied, existing work – including recent studies (IMF, 2024; OECD, 2025) – focuses mainly on output, inflation, or bank risk, and has not taken monthly household consumption as the central response variable; this scarcity constitutes a gap.

RQ1: Does monetary policy (through the interest-rate and credit channels) still affect household consumption (proxied by retail sales) in Vietnam, and how does the magnitude of that effect evolve over time?

(ii) Where the state dependence of transmission is documented, it is usually described with discrete crisis dummies (Loi et al., 2023) rather than continuously varying coefficients, so it does not reflect the shifting relationship between the price and quantity channels.

RQ2: Between the interest-rate (price) channel and the credit (quantity) channel, which dominates in transmission to consumption, and how does the relative importance of the two channels shift across different states of the economy (the period of banking stress and the COVID-19 shock)?

(iii) The time variation in the volatility of consumption shocks themselves, distinct from changes in the transmission mechanism, has not been quantified for Vietnam, even though it is essential information for risk management and the design of counter-cyclical policy.

RQ3: How does the volatility of household-consumption shocks in Vietnam evolve over time?

These questions correspond to three hypotheses derived from the theory in Section 2.1. H1: the transmission of monetary policy to household consumption is weak, with consumption responses to both the credit and the interest-rate shock small and largely statistically insignificant. H2: the quantity (credit) channel is relatively more important than the price (interest-rate) channel, but this relative importance is not stable and shifts across states of the economy. H3: the volatility of consumption shocks varies over time, rising during periods of macroeconomic stress such as the COVID-19 pandemic.

3. Data and methodology

3.1 Data

3.1.1 *Data sources and variables.* The study uses monthly data for four endogenous variables, collected from official sources. Total retail sales of goods and consumer services (RETAIL) and total outstanding credit to the economy (CREDIT) are drawn from the FiinPro-X database; the State Bank of Vietnam’s refinancing rate (RATE) is collected from the published decisions of the State Bank; and inflation (INFL) is computed as the year-on-year log difference of the CPI (collected from the IMF’s IFS).

Inflation (INFL) is included in the system as a control variable: it helps to distinguish changes in the nominal interest rate from the real interest-rate conditions that households face, and it absorbs the common price component so that the shock attributed to consumption reflects quantity movements rather than price movements. The position of INFL in the identification ordering (after the monetary variables and before consumption) is presented in Section 3.2.3.

3.1.2 *Sample and data processing.* Although RATE, CPI, and RETAIL are all available from 2010, the monthly outstanding-credit series from FiinPro-X is continuous only from 2012M4; therefore, to ensure consistency and to avoid interpolating a core variable during a highly volatile period, the level sample is restricted to begin in 2012M4. Nominal retail sales are deflated by the CPI to obtain real retail sales, so as to reflect the volume of consumption rather than price movements. The quantity variables (real retail sales, credit) and the price level are converted to year-on-year (YoY) growth via the log difference multiplied by 100; taking YoY differences also controls for the strong seasonality of Vietnamese retail sales (the Tet effect). The refinancing rate is kept in level form. Because the YoY transformation consumes the first 12 observations, the final estimation sample is 2013M4–2025M12, comprising 153 continuous monthly observations. The YoY transformation

Table 1. Variable definitions and data sources

Variable	Definition	Computation	Source	Rationale for inclusion
gRETAIL	Total retail sales of goods & consumer services	Nominal ÷ CPI × 100 (real), then YoY log-growth × 100 (%)	FiinPro-X	Response variable: high-frequency proxy for household consumption
gCREDIT	Total outstanding credit to the economy	YoY growth (%)	FiinPro-X	Quantity margin (bank-lending channel)
RATE	Refinancing rate	Level (% per year)	SBV	Price margin and policy instrument (interest-rate channel)
INFL	Consumer price index → inflation	YoY growth (%)	IMF/IFS	Control for the price component (real vs nominal conditions)

Source: Compiled by the authors

is retained because it is the most effective control for the strong Tet seasonality of Vietnamese retail sales; its cost is a moving-average structure that can amplify base effects, so that part of the measured volatility is mechanical. Two features limit this concern: the volatility cluster identified in Section 4.3 extends to 2022M9, well beyond the mechanical base-effect window of the 2021 lockdown, and the overall pattern is preserved under a month-on-month specification (Section 5).

3.1.3 Descriptive statistics. Table 2 reports descriptive statistics for the variables over the estimation sample; the results of the stationarity tests are presented in the method section (Section 3.2.2).

Table 2. Descriptive statistics (2013M4–2025M12, N = 153)

Variable	Mean	SD	Min	Max
Real retail-sales growth (%)	5.32	10.34	-42.13	47.34
Credit growth (%)	13.75	2.68	8.58	18.64
Refinancing rate (%)	5.57	1.07	4.00	8.00
Inflation (%)	3.12	1.47	-0.98	7.23

Source: Authors' calculations

The descriptive statistics accurately reflect the characteristics of the period: real retail-sales growth is highly dispersed (SD 10.34), with extremes ranging from -42.13% (2020M4, the peak of COVID-19 lockdowns) to +47.34% (the subsequent rebound), while inflation remains moderate (mean 3.12%). Credit growth has low dispersion and moves within a narrow band (8.58%–18.64%), reflecting the conduct of policy through annual credit-growth targets.

3.2 Methodology

3.2.1 The model used. The central question of the study – whether monetary policy still affects consumption and how the magnitude of that effect changes over time – is essentially a question about the changing transmission mechanism. A classical vector autoregression (VAR) in the sense of Sims (1980), with coefficients fixed over the whole sample, cannot answer this question because it implicitly assumes an invariant transmission mechanism across all periods. The study therefore uses the time-varying parameter VAR with stochastic volatility (TVP-VAR-SV) of Primiceri (2005) and Nakajima (2011), which allows both the coefficients and the shock magnitudes to evolve month by month. The stochastic-volatility component is essential rather than optional: without it, the large 2020–2023 shocks would be absorbed into the coefficients and misread as a change in the transmission mechanism (Primiceri, 2005; Nakajima, 2011). The framework is also preferred over discrete regime-switching or crisis dummies because it lets the mechanism shift gradually and continuously, which better matches the smooth restructuring of a bank-dominated economy than abrupt regime breaks.

This flexibility comes with a very large number of parameters: with a four-variable system, one lag, and 153 months, the model contains thousands of states to be estimated, far exceeding the number of observations. The model is therefore estimated by Bayesian methods, in which random-walk priors act as shrinkage and regularisation, turning a problem that is infeasible under classical estimation into an identified one (Nakajima, 2011). The Bayesian approach also suits the features of the Vietnamese data, which include a non-stationary policy variable (the interest rate) and a moderate sample size, where Bayesian shrinkage stabilises the estimates better than least squares. Although 153 monthly observations is a moderate sample, it is comparable to established monthly TVP-VAR-SV applications (for example, Nakajima, 2011), and the random-walk shrinkage priors are designed precisely to make estimation feasible and stable at this observation-to-parameter ratio.

Let y_t be the vector of four endogenous variables. The TVP-VAR-SV model takes the form:

$$y_t = c_t + B_{1,t} y_{t-1} + A_t^{-1} \sum_i \varepsilon_i, \quad \varepsilon_t \sim N(0, I_4) \quad (1)$$

where c_t is a time-varying constant; $B_{1,t}$ is the matrix of autoregressive coefficients; A_t is a lower-triangular matrix containing contemporaneous relationships; and $\sum_i = \text{diag}(\sigma_{1,t}, \sigma_{2,t}, \sigma_{3,t}, \sigma_{4,t})$ contains the stochastic standard deviations. Collecting the coefficients into β_t , the free elements of A_t into α_t and the log variances into $h_t = \log \sigma_{i,t}^2$, all parameters evolve as random walks:

$$\beta_t = \beta_{t-1} + v_t, \quad \alpha_t = \alpha_{t-1} + c_t, \quad h_t = h_{t-1} + \eta_t. \quad (2)$$

Allowing β_i , a_i (the transmission mechanism) and h_i (the shock magnitude) to vary simultaneously makes it possible to separate these two sources of change, which a fixed-coefficient model cannot do (Nakajima, 2011).

3.2.2 Preliminary tests on the baseline model. Before estimating the time-varying version, the study carries out standard tests on a baseline (fixed-coefficient) VAR to establish stationarity, lag length, and stability.

(a) Stationarity

Table 3 reports three stationarity tests. Real retail-sales growth and inflation are confirmed stationary. Credit growth exhibits high persistence and lies in a grey zone: the ADF and PP tests do not reject a unit root, but the KPSS test does not reject stationarity. The refinancing rate in level form is non-stationary, with all three tests in agreement (ADF and PP do not reject a unit root, KPSS rejects stationarity).

Table 3. Stationarity tests (2013M4–2025M12, N = 153)

Variable	ADF (p)	PP (p)	KPSS (lag 4)	Conclusion
Real retail-sales growth	0.002	0.001	0.141	Stationary, I(0)
Credit growth	0.161	0.217	0.223	Persistent, grey zone (near I(1))
Refinancing rate	0.487	0.223	2.44***	Non-stationary, I(1)
Inflation	0.003	0.015	0.169	Stationary, I(0)

Note: ADF and PP report p-values (H_0 : unit root). KPSS reports the test statistic (H_0 : stationary around a level); 10%/5%/1% critical values = 0.347/0.463/0.739; *** rejects H_0 at 1%; bandwidth = 4.

Source: Authors' calculations

Following common practice in the TVP-VAR literature on monetary policy, the interest rate is kept in level form despite being non-stationary, in order to preserve information on the long-run relationship and on the meaning of the policy-rate level; differencing the policy variable would lose this information (Sims, 1980; Primiceri, 2005; Nakajima, 2011). The differenced RATE specification is described in the robustness-check method section.

(b) Lag selection

The four information criteria give mixed results (Table 4): SBIC and HQIC both select one lag, while AIC and FPE select four lags. Because AIC and FPE tend to over-select lags (Lütkepohl, 2005), and because of additional evidence presented below, the study adopts one lag as the baseline, consistent with the two consistent criteria and with the parameter-parsimony requirement specific to the TVP-VAR-SV framework.

Table 4. Lag selection for the baseline VAR

Lag	LL	LR	FPE	AIC	HQIC	SBIC
1	-694.54	1323.3	0.196	9.722	9.887*	10.128*
2	-670.18	48.72	0.175	9.608	9.905	10.340
3	-654.07	32.22	0.175	9.606	10.036	10.664
4	-634.58	38.97*	0.167*	9.559*	10.121	10.942

Note: * minimum value by criterion.

Source: Authors' calculations

Additional evidence supports the low lag choice: the LM test shows that residual autocorrelation is concentrated at seasonal lag 12 and remains strongly significant ($p \approx 0.000$) across all three specifications VAR(1), VAR(2), and VAR(4) (Table 5). The fact that increasing the number of lags does not remove the autocorrelation at lag 12 indicates that this phenomenon arises from the moving-average structure created by the year-on-year (YoY, i.e. 12-month seasonal differencing) transformation, and does not reflect genuine autoregressive dynamics. The preference of AIC and FPE for lag(4) is therefore essentially an over-reaction to this moving-average structure, and does not constitute a reason to increase the lag length.

(c) Stability

The baseline VAR (lag(1)) satisfies the stability condition: all roots lie inside the unit circle, with the largest modulus equal to 0.94. The residual autocorrelation problem noted above is mitigated in the TVP-VAR-SV framework thanks to the flexibility of the time-varying parameters and the stochastic-volatility component.

Table 5. LM test for residual autocorrelation at seasonal lag 12

VAR specification	LM at lag 12 (Prob > chi2)
VAR(1)	0.000
VAR(2)	0.000
VAR(4)	0.000

Source: Authors' calculations

3.2.3 Shock identification. The study uses impulse response functions to track how consumption responds after each shock. Because shocks in practice often occur simultaneously, the study applies a Cholesky decomposition to separate them into distinct shocks, based on an assumption about the order of contemporaneous effects: the interest rate acts first, followed by credit, inflation, and finally consumption, reflecting the fact that households adjust spending more slowly than monetary and price variables. Under this scheme, the variables are ordered to reflect a causal sequence: a variable placed earlier can affect a later variable within the same month, but is not affected in return contemporaneously (Sims, 1980; Lütkepohl, 2005). The reasoning is: the policy instrument (the interest rate) is set first; next comes the quantity of credit supplied by the banking system; the price level is sticky and therefore responds slowly; and consumption is placed last because it is the most flexible and endogenous variable, responding within the month to all the remaining shocks. Because recursive identification is an important assumption that can affect the results, robustness to alternative orderings is examined in Section 3.2.5.

It should be noted that the model measures credit by total outstanding credit actually realised, not by the quota (room) allocated by the State Bank. Because realised outstanding credit is the outcome of the credit ceiling meeting loan demand (the ceiling binds in periods of strong demand but may not bind in periods of weak demand), the orthogonalised credit shock here reflects the quantity margin in general, encompassing both the part driven by room management and the part driven by cyclical credit demand. Accordingly, the results in Section 4.2 are interpreted as the relative contribution of the quantity margin, with the caveat that realised outstanding credit is not a pure measure of the room instrument.

3.2.4 Bayesian estimation. The model is estimated by a Markov chain Monte Carlo (MCMC) algorithm with a Gibbs sampler, following the procedure of Nakajima (2011). Priors for the initial states are set reasonably diffuse, and priors for the covariances of the evolving shocks ($\Sigma\beta$, $\Sigma\alpha$, $\Sigma\eta$) follow standard inverse-Wishart/inverse-Gamma forms (Primiceri, 2005; Nakajima, 2011). The sampler is run for a sufficiently large number of iterations after discarding the burn-in period; convergence is assessed through the Geweke diagnostic and the inefficiency factors. Unlike the point estimates of classical methods, the Bayesian approach yields the full posterior distribution of each parameter at each point in time, thereby directly quantifying uncertainty and propagating it to the impulse responses and the variance decompositions.

From the posterior draws, the study computes: (i) the time-varying impulse responses of consumption to the interest-rate shock and the credit shock; (ii) the trajectory of the stochastic volatility of the shocks; and (iii) a comparison of the relative strength of the price and quantity channels across periods.

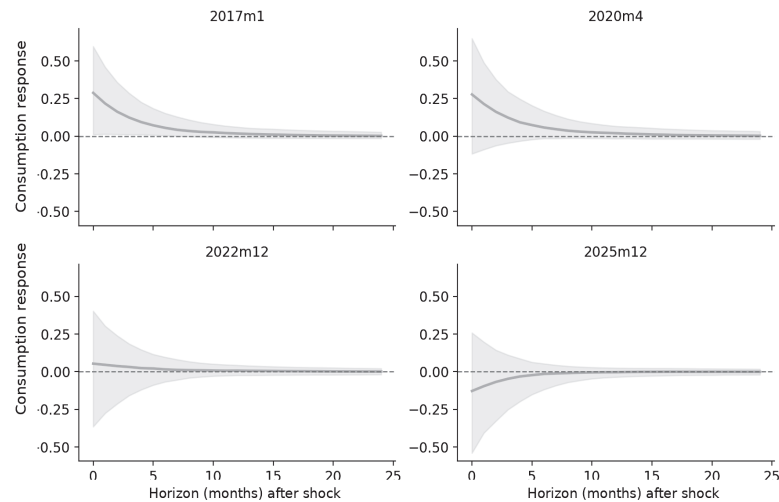
3.2.5 Robustness-check method. To ensure reliability, the study carries out three core robustness checks: (i) a differenced interest-rate specification (ΔRATE) in place of the level form, to address the non-stationarity of the interest-rate variable; (ii) using lag $p = 2$ instead of $p = 1$; and (iii) swapping the Cholesky ordering. The results are regarded as robust if the core findings on sign, the relative magnitude across channels, and the pattern of time variation in volatility are displayed consistently across these checks.

4. Results and discussion

This section presents the estimation results of the TVP-VAR-SV model on the 2013M4–2025M12 sample. Because the first forty observations are used as a training sample to calibrate the priors, the time-varying quantities are reported for the period 2016M9–2025M12 (112 months). All credible intervals are 68% Bayesian credible intervals (the 16th–84th percentiles of the posterior distribution). The choice of the 16th–84th percentile band follows Primiceri (2005), the foundational study of the TVP-VAR-SV class; under normality, this band corresponds to roughly ± 1 standard deviation ($\sim 68\%$). Using the 68% band (narrower than the common 95% band) makes the conclusions about the insignificance of transmission in Sections 4.1 and 4.2 more conservative: if the 68% band already covers zero, the wider 95% band covers it all the more. This calibration window is a standard feature of TVP-VAR-SV estimation (Primiceri, 2005; Nakajima, 2011); importantly, the main object of interest, the 2020–2023 volatility episode, lies entirely within the estimated period.

4.1 The response of consumption to monetary shocks over time

Figures 1 and 2 present the time-varying impulse responses of real retail-sales growth to the credit shock and the interest-rate shock, measured at four representative dates (2017M1, 2020M4, 2022M12, 2025M12). On both margins, the consumption response is modest in magnitude and the 68% credible interval covers zero in most horizons and dates. The response to the credit shock tends to be slightly positive in the first few months and then dies out, while the response to the interest-rate shock is almost never systematically distinguishable from zero. One notable exception is the normal period (for example, 2017M1), where the consumption response to the credit shock is statistically significant in the 68% band for the first few months before fading, suggesting that the credit channel operates more clearly during stable periods. The shape of the response is relatively stable in normal periods but becomes less precise (the credible interval widens) during 2020–2022.



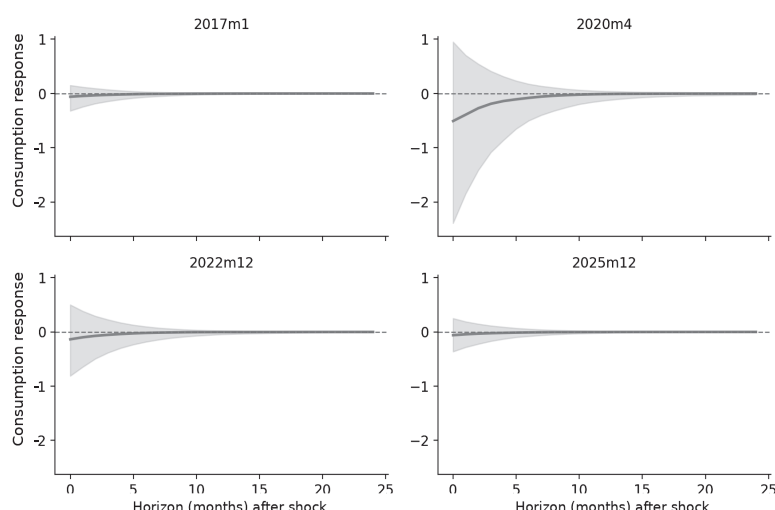
Source(s): Authors' calculations

Figure 1. Time-varying impulse response of consumption to the credit shock, with 68% credible interval

This finding answers the first research question: monetary policy still transmits to household consumption, but the effect is weak and largely insignificant at conventional confidence levels – a result consistent with the view that transmission to the real sector in Vietnam remains limited (IMF, 2024; OECD, 2025).

4.2 The relative role of the credit and interest-rate channels

Table 6 and Figure 3 present the forecast error variance decomposition (FEVD) of consumption at the 12-month horizon – the share of consumption volatility explained by the credit shock and the interest-rate shock across dates, with credible intervals.



Source(s): Authors' calculations

Figure 2. Time-varying impulse response of consumption to the interest-rate shock, with 68% credible interval

Table 6. FEVD of consumption at the 12-month horizon (% , median and 68% credible interval)

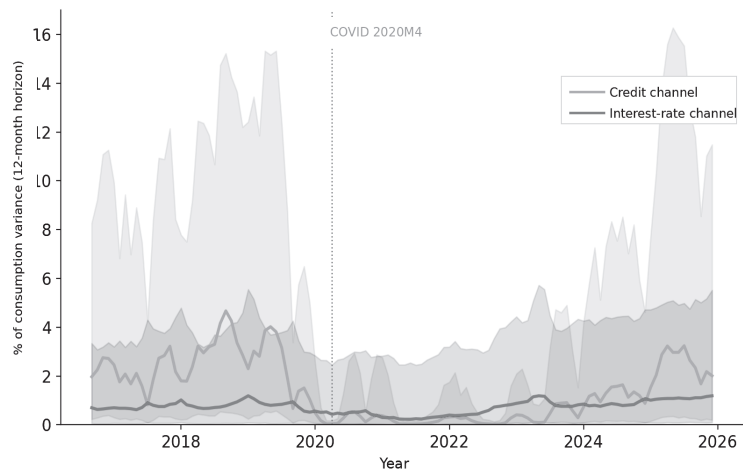
Date	Credit channel	Interest-rate channel
2017M1	2.5 [0.3; 9.9]	0.7 [0.1; 3.2]
2019M1	2.3 [0.2; 12.4]	1.2 [0.1; 5.5]
2020M4	0.0 [0.0; 0.2]	0.4 [0.0; 2.5]
2021M6	0.0 [0.0; 0.2]	0.2 [0.0; 2.5]
2023M1	0.4 [0.1; 2.1]	0.9 [0.1; 4.4]
2025M12	2.0 [0.2; 11.5]	1.2 [0.1; 5.5]

Source: Authors' calculations

Table 6 shows that: (i) both channels explain only a small share of consumption volatility (medians mostly below 3%), indicating that most consumption volatility comes from its own idiosyncratic shocks rather than from monetary conditions; (ii) although the credit channel has a higher median than the interest-rate channel in normal periods (2017–2019 and 2024–2025), the credible intervals of the two channels overlap widely at every date, and the relative ranking even reverses during 2020–2023 (Figure 3). Therefore, it cannot be concluded that one channel dominates the other in a statistically meaningful way. The small explained share is itself a substantive finding rather than a deficiency of the model: it shows that household consumption in Vietnam is driven predominantly by its own idiosyncratic shocks rather than by monetary conditions, which is precisely what motivates the analysis of the size and time variation of those own shocks in Section 4.3.

This is a cautious answer to the second research question: the data do not support a persistent dominance of the quantity channel over the price channel within consumption. This result tempers the initial theoretical expectation: in a bank-dominated economy, the advantage of the credit channel, although present at the median, is not strong enough to cross the threshold of statistical uncertainty at the margin of household consumption. This may reflect the fact that Vietnamese household consumption is governed more by income and by the informal sector than by formal credit, as well as the fact that credit-ceiling management affects the allocation of credit more than aggregate consumption demand.

As noted in Section 3.2.3, the contribution attributed to the credit channel here is based on realised outstanding credit, which mixes the part driven by room management with the part driven by cyclical credit demand; the figure is therefore interpreted as the relative contribution of the quantity margin in general, not as a pure measure of the strength of the room instrument.



Source(s): Authors' calculations

Figure 3. Forecast error variance decomposition of consumption by the credit and interest-rate channels (12-month horizon), with 68% credible interval.

4.3 The time variation in the volatility of consumption shocks

In contrast to the modest signal from the transmission mechanism, the stochastic-volatility component reveals a clear and statistically significant pattern of time variation (Figure 4, Table 7).

Table 7. Standard deviation of the consumption shock over time (median and 68% credible interval)

Date	SD of consumption shock
2017M1	1.96 [1.36; 2.84]
2019M1	1.98 [1.30; 3.25]
2020M4	17.19 [12.03; 24.21]
2021M6	13.41 [9.21; 20.53]
2022M9 (peak)	21.81 [14.67; 32.99]
2023M1	3.96 [2.41; 6.49]
2025M12	1.88 [1.26; 2.98]

Source: Authors' calculations

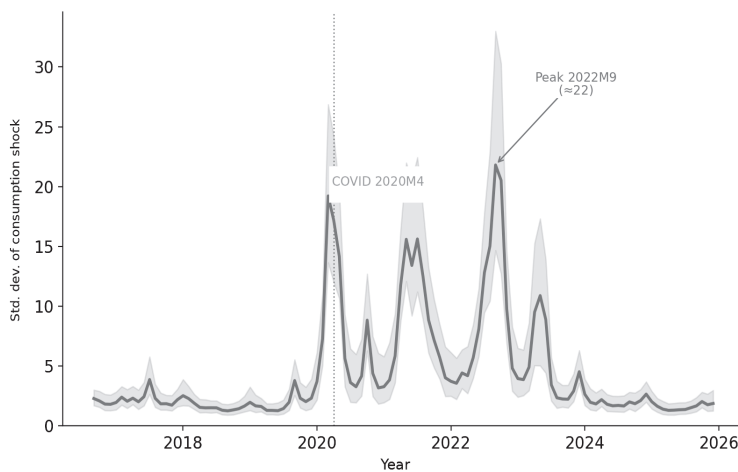
In normal periods (2017–2019 and 2024–2025), the standard deviation of the consumption shock fluctuates stably around 2, with a narrow credible interval. Moving into 2020–2023, volatility surges into a multi-peaked cluster: the first peak coincides with the COVID-19 pandemic (2020M4, median 17.2), followed by peaks in 2021 and the highest peak in 2022M9 (median 21.8). The credible intervals of these peaks are entirely separated from those of the normal period, confirming that the rise in volatility is genuine rather than estimation noise – the shock magnitude at the peaks is about 8–11 times the baseline level.

Although the study reports the 16th–84th percentile band (68% credible interval), the conclusion about the rise in uncertainty during 2020–2023 does not depend on this choice. Extending to the 95% band (2.5th–97.5th percentiles), the interval of the 2022M9 peak, [9.63; 48.99], is still entirely separated from the interval of the normal period, [0.83; 4.84] (Figure 5). Moreover, because the stochastic standard deviation is always positive, the relevant criterion here is not whether the credible interval contains zero, but the degree of separation between peak and baseline: the posterior probability that the standard deviation of the consumption shock at the peak exceeds the baseline level reaches 100% (1,000/1,000 MCMC draws), with a peak-to-baseline ratio in the baseline specification of median 11.95 (95% credible interval: 5.35–27.76). The conclusion about the amplification of consumption-shock volatility is therefore robust to both the choice of credible band and the statistical criterion.

This is a definitive answer to the third research question and the most robust finding of the

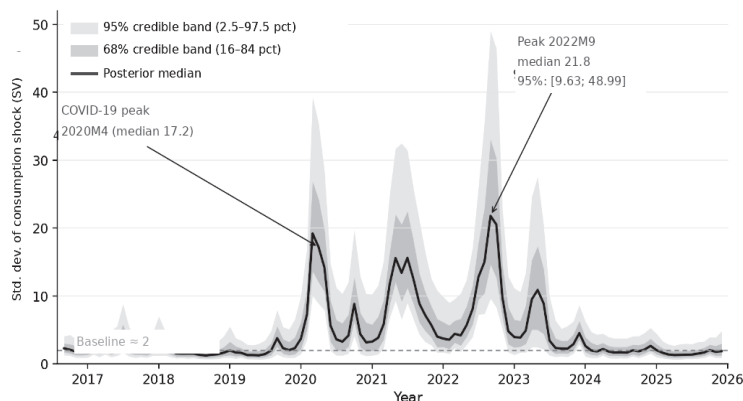
study. It should be noted that part of the high volatility in 2022 reflects a base effect: the strict lockdown in the second half of 2021 caused retail sales to fall sharply, amplifying the year-on-year growth in 2022. Nevertheless, even accounting for this factor, the overall picture still shows a high-volatility cluster lasting throughout the pandemic period before returning clearly and meaningfully to the baseline.

One question is whether this finding merely reproduces what is seen directly from the raw data, when real retail sales fell 42% in 2020M4. The answer is no, for three reasons: (i) the volatility cluster is not a single peak coinciding with the acute lockdown but extends into several peaks up to 2022M9 – that is, after the lockdowns had ended – showing that the uncertainty of the consumption shock remained high throughout the post-pandemic period; (ii) the methodological value lies in the fact that the stochastic-volatility component separates changes in shock size from changes in the transmission mechanism; if a fixed variance were imposed, the model would be forced to absorb this volatility cluster into the coefficients and would mistakenly attribute a large shock to a shift in mechanism; and (iii) unlike reading the raw range from Table 2, the SV component quantifies volatility together with a full posterior distribution and credible interval, allowing the separation between peak and baseline to be tested statistically rather than by visual inspection.



Source(s): Authors' calculations

Figure 4. Standard deviation (volatility) of the consumption shock over time, with 68% credible interval.



Source(s): Authors' calculations

Figure 5. Standard deviation (volatility) of the consumption shock over time, with both the 68% (16th–84th percentile) and 95% (2.5th–97.5th percentile) credible intervals.

4.4 Discussion

The three results above present a coherent picture. The transmission of monetary policy to household consumption in Vietnam is weak and unstable: both the price and quantity channels explain only a small share of consumption volatility, and neither channel dominates persistently. Instead, the salient feature of the data is that the magnitude of consumption shocks varies markedly over time, with a high-volatility cluster during 2020–2023.

These patterns are consistent with theory and with prior evidence. The weakness of both channels accords with the prediction of Mishra and Montiel (2013) that in bank-dominated, financially shallow economies the price channel is weak while quantity factors dominate; the dominance of consumption's own shocks is consistent with household spending being governed more by current income and the informal sector than by formal credit or market interest rates. The high-volatility cluster of 2020–2023 aligns with evidence that lending-channel transmission and consumption dynamics are amplified during crises (Loi & Dang, 2023), and with the IMF (2024) and OECD (2025) assessments that real-sector transmission in Vietnam remains limited.

This result has three implications. Empirically, it reinforces and complements the view of the IMF (2024) and the OECD (2025) that transmission to the real sector in Vietnam remains limited, and shows that this is especially true at the consumption margin. Methodologically, the result illustrates the importance of the stochastic-volatility component: if an invariant variance were imposed, the model would be forced to absorb the enormous 2020–2023 volatility cluster into the coefficients, leading to a misinterpretation of a change in shock size as a change in the transmission mechanism (Nakajima, 2011). In policy terms, the marked variation in shock volatility implies that risk assessments and the design of counter-cyclical policy need to account for the time heterogeneity of consumption volatility; models that assume constant volatility will underestimate tail risk during crisis periods.

4.5 Robustness checks

To assess the reliability of the findings, the study carries out three core robustness checks and compares them with the baseline: (i) replacing the level interest rate with its difference (Δ RATE) to address the non-stationarity of the interest-rate variable; (ii) using lag $p = 2$ instead of $p = 1$; and (iii) swapping the Cholesky ordering, placing credit before the interest rate.

Table 8. Robustness-check results (compared with the baseline specification)

Specification	FEVD credit	FEVD rate	SV baseline	SV peak	Ratio
Baseline (level, $p=1$)	0.83	0.14	2.27	26.48	11.66
(i) Δ RATE	1.69	0.52	2.46	21.84	8.87
(ii) Lag $p=2$	1.70	0.21	2.51	17.99	7.18
(iii) Reversed Cholesky	1.65	0.16	2.44	18.53	7.60

Note: FEVD = median % of consumption variance explained by each channel (12-month horizon). SV baseline = average standard deviation of the consumption shock over the first and last 12 months of the sample; SV peak = maximum value (root of the posterior mean variance); Ratio = peak/baseline.

Source: Authors' calculations

The three core conclusions are preserved across all three checks: (i) transmission remains weak: the median FEVD of both channels is small (below 2% for the credit channel and below 0.6% for the interest-rate channel) in all cases; (ii) neither channel dominates persistently: although the credit channel consistently has a slightly higher median than the interest-rate channel, the difference is small and lies within a wide band of uncertainty; and (iii) the volatility of the consumption shock still surges during the pandemic period, with a peak-to-baseline ratio ranging from about seven to twelve. Thus, the basic findings (on sign, the relative magnitude across channels, and the pattern of time variation in volatility) are consistent across alternative specifications, indicating that the results are robust.

5. Conclusion and implications

This study assesses whether monetary policy still affects household consumption in Vietnam and how that effect evolves over time, using a Bayesian TVP-VAR-SV model on monthly data for 2013–2025 with real retail sales as a proxy for consumption. The three main findings,

corresponding to the three research questions, are: (i) transmission of monetary policy to household consumption is weak: the consumption response to both the credit shock and the interest-rate shock is modest in magnitude and largely insignificant, and both channels together explain only a small share of consumption volatility; (ii) neither channel dominates persistently: although the credit channel plays a slightly larger role than the interest-rate channel at the median in stable periods, this difference lies within the band of uncertainty and the ranking between the two channels is unstable over time; (iii) the most robust finding, the magnitude of the consumption shock varies markedly over time, with a high-volatility cluster lasting throughout 2020–2023, peaking at about eight to eleven times the baseline level. These findings are consistent across multiple alternative specifications.

These results carry several implications. For policy conduct, the limited effectiveness of transmission to consumption shows that monetary instruments – whether through price or quantity – are not strong levers for household consumption demand in the short run in Vietnam; this is consistent with the recommendations of the IMF (2024) and the OECD (2025) on the need to modernise the policy framework and strengthen the transmission mechanism. For risk management, the marked variation in the volatility of consumption shocks implies that risk-assessment and forecasting frameworks need to account for the time heterogeneity of volatility; assuming constant volatility would underestimate risk during crisis periods. Methodologically, the result confirms the value of jointly modelling time-varying parameters and stochastic volatility: separating changes in the transmission mechanism from changes in shock size helps to avoid misattributing a large shock, such as the COVID-19 pandemic, to a shift in mechanism. For the State Bank of Vietnam specifically, three implications follow. First, because consumption demand is not strongly steerable by monetary instruments in the short run, the central bank should not rely on monetary policy alone to stabilise household demand, but coordinate with fiscal measures and targeted transfers, especially during high-volatility episodes. Second, the weakness of the price channel reinforces the case for gradually modernising the operating framework toward a more interest-rate-based system so that transmission becomes more predictable. Third, because shock volatility is strongly time-varying, risk buffers and contingency planning should be state-dependent rather than calibrated to average conditions.

As for contributions, to the authors' knowledge this is the first assessment of the time-varying response of household consumption to monetary shocks in Vietnam using a monthly retail-sales proxy; the study also separately quantifies the relative role of the two transmission channels and the trajectory of consumption-shock volatility over time.

The study has several limitations: (i) because the first forty observations are used as a training sample to calibrate the priors, the time-varying estimates cover only the period from 2016 onward, and so do not capture the volatility of the banking-stress period of the early 2010s; (ii) the use of year-on-year (YoY) growth creates a moving-average structure and amplifies the base effect, so that part of the measured volatility is technical in nature; nevertheless, the overall pattern remains robust when a month-on-month growth specification is used; (iii) real retail sales is only a proxy for household consumption and does not fully cover services spending and the informal sector; and (iv) the study focuses on a single country, and because Vietnam's economy is rather idiosyncratic and shaped by its institutions, generalising the conclusions to the regional level or more broadly requires great caution.

These limitations suggest directions for future research. The variable set could be expanded to include the wealth channel and the expectations channel; higher-frequency data such as card transactions could be used to refine the consumption proxy; or sign-restriction identification could be applied in place of the Cholesky decomposition to test the robustness of the conclusions to the identification assumption. Cross-country comparisons within the region would also help to determine whether the pattern of weak transmission accompanied by high time-varying volatility is a common feature of developing, bank-dominated economies.

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