



VIETNAM

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RETHINKING TRANSMISSION OF MONETARY POLICY IN VIETNAM¹

Vietnam has a broad monetary policy toolkit, ranging from policy interest rates to open market operations to credit growth limits on banks and administrative tools. While it can help in addressing different goals, having multiple tools comes at the cost of making the policymaking process more complex and reducing the efficiency of monetary policy. This paper overviews the different tools employed by the State Bank of Vietnam (SBV) and empirically analyzes the monetary policy transmission mechanism, comparing the effects from different SBV rate shocks. The estimation results suggest that the policy rates are able to affect other financial variables (like lending/deposit rates or the amount of credit in the economy). In contrast, the transmission to inflation or industrial production is found to be generally weak, with only the combined repo/SBV bill rates generating a statistically significant effect. These findings stress the importance of modernizing SBV's monetary policy framework to strengthen its transmission mechanism and better achieve its goals.

A. Monetary Policy Tools in Vietnam

1. The State Bank of Vietnam (SBV) has a large number of instruments to conduct monetary policy (table 1).² SBV has stepped up its transition from a de facto stabilized currency to a modern monetary policy framework since 2016. SBV keeps in its toolkit several policy rates and other policy tools to achieve its inflation target, which are not always coordinated.³

- The refinancing and discount rates are the main policy rates; however, these facilities are seldom used (for simplicity, throughout the chapter these two rates are jointly referred to as the policy rates). In addition, the SBV often conducts open market operations (OMOs), which includes buying government securities under repurchase agreements (at a given "repo" rate) and issuing SBV's bills (at an "SBV bill" rate) from/to banks, respectively—these two rates combined are what we call "OMO rates". The OMOs are intended to adjust liquidity in the system and influence the interbank interest rates which are a key reference for market players.
- SBV also operates in the FX market, by setting the official ER value (and upper and lower bounds) and by engaging in FX interventions, either in the spot or forward markets.
- Moreover, there are other distinctive tools in Vietnam, e.g., caps on banks' lending and deposit interest rates and ceiling on the annual amount of credit growth, both for the system as whole and for each individual bank. SBV also sets the reserve requirements.

¹ Prepared by Federico Díez, Faizaan Kijat, and Ryoichi Okuma.

² While this note focuses on the tools related to the monetary policy which target price stability, the SBV has the other tools to make the financial stability, and these could also contribute to price stability indirectly.

³ SBV's objective is stated as "currency value stability which is denoted by the inflation rate" in the 2010 SBV's law, when the annual inflation target was introduced. The target is proposed by the Government to the National Assembly to be decided.

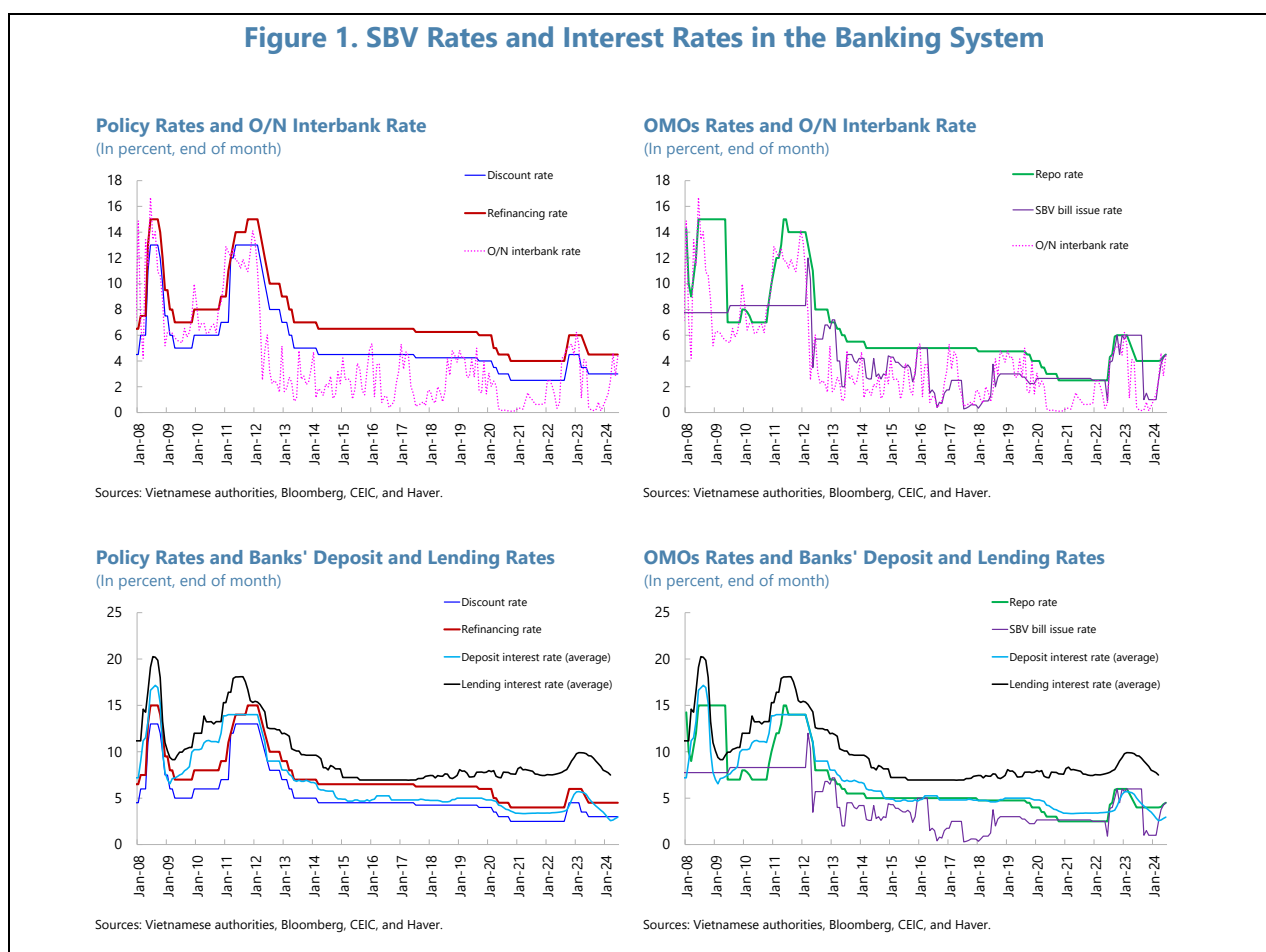
Table 1. Vietnam: Monetary Policy Tools in Vietnam

Controlling Policy Rates		
Tools	Definition	Actual Usage
Refinancing Rate	This is the rate by which the SBV loans to banks against collateral (either valuable paper and/or credit dossiers) for up to 12 months.	Used rarely except for special loans for weak banks and policy lending purposes.
Discount Rate	This is the rate which the SBV applies for its discount facility. In this facility, banks can sell valuable paper to the SBV.	Has not been used in many years.
Overnight Electronic Clearing Rate	This rate refers to an arrangement in which the SBV offers a credit institution an overnight loan secured by financial instruments.	Not used often; usually foreign banks that do not clear their overdraft at end of day.
Reserve Requirement Ratio	The SBV requires commercial banks to reserve 3% and 8% of their short-term VND's deposits and foreign currencies' deposits, respectively.	Not changed often; the latest decision has been since 2011.
Open Market Operations (OMOs)		
Tools	Definition	Actual Usage
Repo	The SBV buys government securities with repurchase agreement (repo) with interest rate (repo rate). Used mainly to inject liquidity in the system, especially for temporary illiquid banks.	Had been often used in 2022Q4-2023Q2.
SBV Bills	The SBV issues and sells its bills with interest rate (bill rate). Used mainly to withdraw liquidity in the system.	Have been sometimes used since 2022Q4.
Caps and Ceiling on Banks' Activities		
Tools	Definition	Actual Usage
Caps on Deposit Interest Rate	Interest rate cap on deposits in VND for organizations and individuals applicable to demand deposits, deposits with terms of less than 1 month, deposits with terms from 1 month to less than 6 months at credit institutions and foreign bank branches.	Applies to all banks.
Caps on Lending Interest Rate	Interest rate caps on short-term loans in VND provided by credit institutions and foreign bank branches to with the aim to supply credit in 5 area, including rural agricultural development, having export business plans, SMEs, supporting industry firms, and businesses having high technology application.	Applies to all banks.
Credit Growth Ceilings	The SBV sets the ceilings on annual growth rates of credit for the system and bank-by-bank.	The SBV often decides the ceilings at the beginning of the year.
Exchange Rate Arrangement		
Tools	Definition	Actual Usage
Reference Rate/Band, FX Interventions	The SBV announces its daily reference exchange rates for the main currencies and sets the daily trading range. If the market rate volatiles against it, the SBV could intervene in the market.	The SBV widened the range from $\pm 3\%$ to $\pm 5\%$ in October 2022.

B. Recent Dynamics of Key Variables

2. **There are significant differences in volatility across rates (Figure 1).** The policy rates (discount and refinancing) increased significantly during the high-inflation episodes that took place in 2008-12. Since then, they remained stable, with cuts during the pandemic (although not as sizable as other countries) and a short-lived increase in late-2022 that was undone in early 2023. Instead, OMO rates, particularly the rate on SBV bills, present a much more volatile pattern (across issuances), closer to the O/N interbank rate—which displays substantial volatility, partly due to the lack of a deposit facility and a corridor at the SBV. In practice, the O/N rate is bounded by the refinancing rate and the zero-lower bound, and the SBV's OMOs inject (subtract) liquidity from the market to influence the O/N rate. Banks' average lending and deposit interest rates move roughly in line with policy rates, with some lags.⁴

Figure 1. SBV Rates and Interest Rates in the Banking System

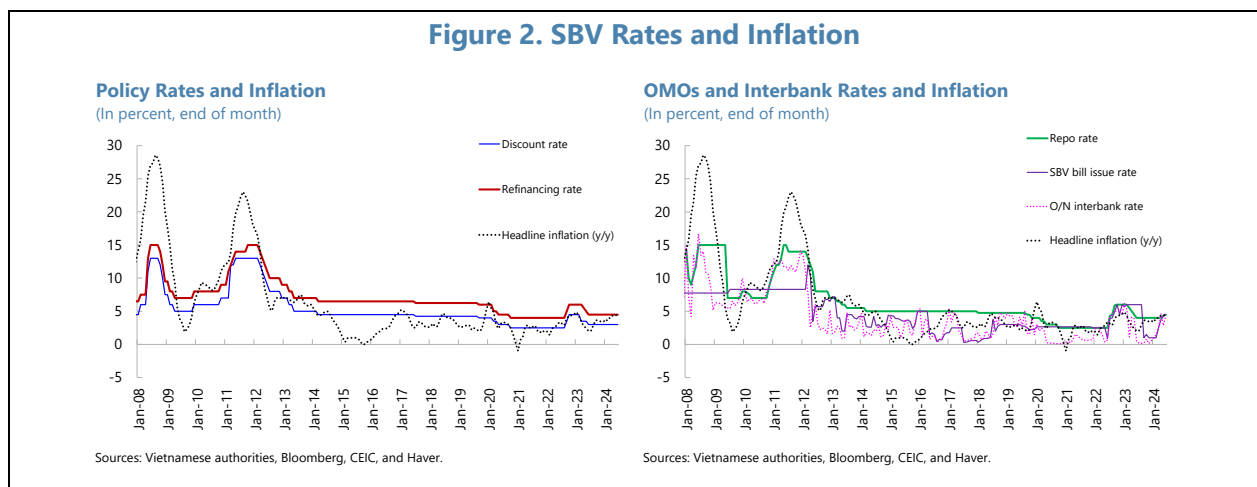


3. **Rates were hiked during the high-inflation episodes, but since then policy rates have been somewhat disconnected.** Since 2013, inflation has remained moderate, and in line with the

⁴ The average lending and deposit interest rates here are the average interest rates among all kinds, terms, and banks.

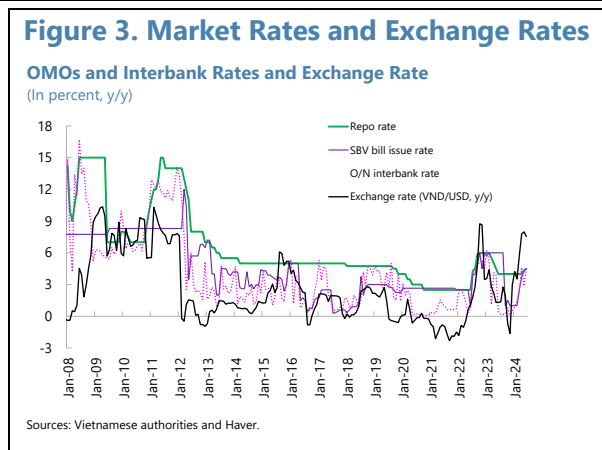
(annual average) inflation target at 4 percent (4-4.5, most recently). Notwithstanding, inflation has still shown volatility while the refinancing and discount rates remaining mostly unchanged—instead, it was the OMO (and O/N) rates that co-moved closer to inflation, something assessed later.

Figure 2. SBV Rates and Inflation



4. Market liquidity, along OMO rates movements, correlate with exchange rate fluctuations (Figure 3). SBV also aims for well-functioning FX market and a stable exchange rate (ER). While the SBV does not target an ER level, when there were sizable (depreciation) fluctuations in the FX market, interbank liquidity is generally decreased leading to an increase in the O/N rate, with OMO rates validating these hikes.

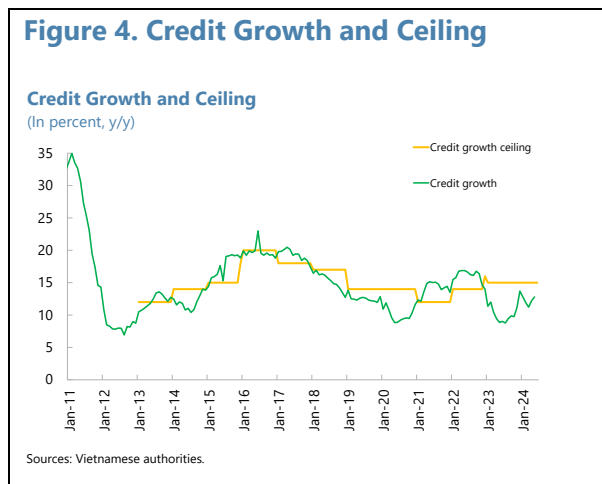
Figure 3. Market Rates and Exchange Rates



5. SBV also sets credit growth ceilings to keep annual credit growth at around 10-20 percent (Figure 4). SBV sets the annual ceiling of credit growth rate, usually at the beginning of the year, for the aggregate level in the banking system and allocates quotas to each bank. When credit growth is weaker than the ceiling due to economic slowdown, the ceiling is often seen as a target to incentivize higher credit into the economy, and on aggregate, credit growth has ex post followed closely it.

6. The multiplicity of policy rates, whose movement is not necessarily coordinated, coexisting with several other tools, makes it difficult to assess the monetary stance and the effectiveness of each individual tool. This paper

Figure 4. Credit Growth and Ceiling



attempts to quantify the effectiveness of the monetary policy transmission. Next, we conduct an empirical analysis to assess the transmission of each monetary policy rate through the financial system in Vietnam. Given the intricacies of SBV's monetary toolkit, the analysis is conducted not only for the rates strictly defined as policy rates (refinancing and discount) but also on other rates that play a role in the monetary policymaking (repo, SBV notes, overnight).

C. Empirical Estimates: Transmission of Each Monetary Policy Rate

7. The paper uses a 2-step procedure to estimate the impact of each policy rate. We follow Brandao-Marques et al. (2020), Holm et al. (2021), and Eklou (2023), who estimated the transmission of monetary policy in emerging markets and developed countries. The first step consists in identifying the monetary policy shocks based on the methodology by Romer and Romer (2004). The second step is to estimate impulse response functions of the variables of interest (other interest rates, credit growth, inflation, industrial production) to first-stage monetary shocks, using local projections as in Jordà (2005).

8. We first identify monetary policy shocks for each SBV rate considered. Following Romer and Romer (2004), we identify the shock by estimating the following equation using monthly data:

$$\begin{aligned} \Delta i_m = & \beta_0 + \beta_1 i_{m-1} + \sum_{k=0}^1 \beta_k^\pi \pi_{m,k} + \sum_{k=0}^1 \beta_k^{\Delta\pi} \Delta\pi_{m,k} \\ & + \sum_{k=0}^1 \beta_k^y y_{m,k} + \sum_{k=0}^1 \beta_k^{\Delta y} \Delta y_{m,k} + \beta_2 E_{m-1} + \eta_m^{MP}, \end{aligned} \quad (1)$$

where Δi_m is the change in the policy rate in month m , and i_{m-1} is the level of each rate in the previous month. It includes the forecasts for CPI $\pi_{m,k}$ and real GDP growth $\pi_{m,k}$ for the current year (year $k = 0$) and the next year (year $k = 1$), and the change in forecasts, i.e., $\Delta\pi_{m,k}$ and $\Delta y_{m,k}$. E_{m-1} is the level of the VND/USD exchange market rate at end of the previous month. We estimate this regression for each of the five policy-related rates, labeled as i_m , that is, refinancing rate, discount rate, repo rate, bill's rate, and the O/N interbank rate. The residual η_m^{MP} is the monetary policy shock for each rate.⁵ The sample period is from January 2008 to December 2023, for which have data.⁶

9. The regression results show that the coefficients for growth and inflation forecasts are mostly positive and statistically significant (Table 2). These results are similar to those found in the literature and show that policy rates reacted to a booming (or slowing) economy—SBV tightened (loosened) the policy stance as needed. Moreover, the negative coefficients on the lagged policy rates point towards their mean reversion. It is worth noting that next year's forecasts and their changes tend to have large (inflation and growth) coefficients than current year's, especially in the

⁵ The O/N interbank rate itself is not set by the SBV but given its importance as a reference rate in the market and that it seems anchored around the OMO rates set by the SBV, it is used in the paper as one of the rates considered in the regressions. Further, since the O/N interbank rate is too volatile, for its use in the regressions it is smoothed by moving-average filter with 2 months of its lagged values.

⁶ The data sources are Vietnamese authorities, Bloomberg, CEIC, Haver, and Consensus Forecasts.

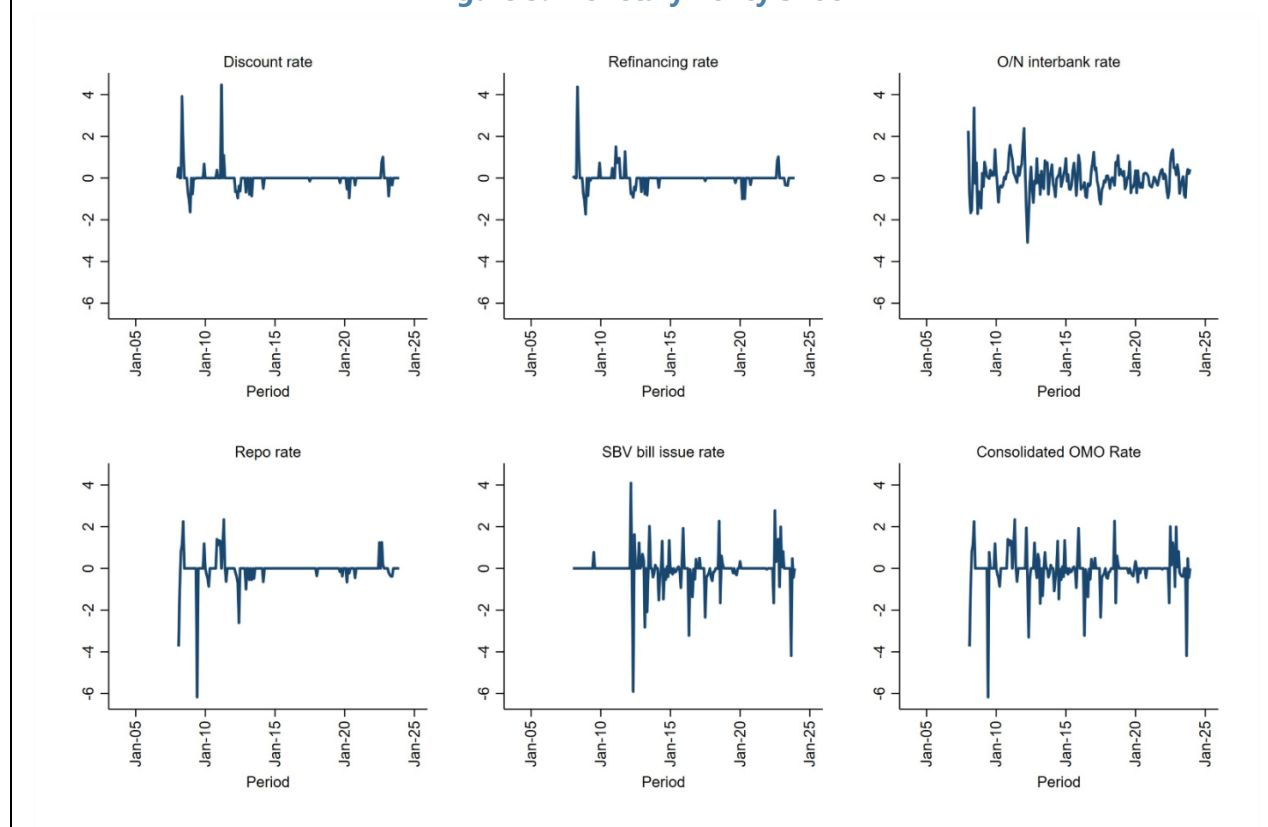
case of the refinancing and discount rates, suggesting the presence of a forward-looking component in SBV's decision making.

Table 2. Vietnam: Determinants Of Changes in The Policy, OMO, and Interbank Rates

VARIABLES	(1) Discount rate	(2) Refinancing rate	(3) Repo rate	(4) SBV bill issue rate	(5) O/N Interbank rate
Policy Rate (Lagged)	-0.104*** (0.040)	-0.075** (0.035)	-0.160*** (0.032)	-0.159*** (0.042)	-0.084*** (0.032)
Inflation forecast this year	0.019 (0.029)	0.017 (0.025)	0.083** (0.037)	0.022 (0.040)	0.007 (0.036)
Inflation forecast next year	0.079 (0.063)	0.043 (0.058)	0.037 (0.073)	0.025 (0.092)	0.002 (0.072)
Change in Inflation forecast this year	0.010 (0.042)	0.035 (0.038)	-0.064 (0.056)	0.040 (0.066)	0.107** (0.053)
Change in Inflation forecast next year	0.343*** (0.122)	0.309*** (0.110)	0.083 (0.160)	-0.283 (0.191)	0.162 (0.154)
Growth forecast this year	0.104*** (0.036)	0.098*** (0.033)	0.104** (0.047)	0.030 (0.058)	0.145*** (0.048)
Growth forecast next year	0.264*** (0.087)	0.219*** (0.079)	0.086 (0.117)	0.041 (0.138)	0.146 (0.111)
Change in Growth forecast this year	-0.021 (0.074)	0.005 (0.067)	-0.171* (0.095)	0.047 (0.115)	0.034 (0.093)
Change in Growth forecast next year	0.461* (0.262)	0.588** (0.237)	-0.539 (0.337)	0.217 (0.414)	0.299 (0.333)
VND/USD in market (000s) (Lag 1)	0.013 (0.043)	-0.012 (0.038)	0.006 (0.050)	-0.090 (0.060)	-0.095** (0.047)
Constant	-2.613* (1.374)	-1.556 (1.196)	-1.072 (1.716)	1.892 (2.012)	0.503 (1.603)
Observations	192	192	191	192	192
R-squared	0.237	0.256	0.182	0.098	0.171
Standard errors in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

10. The estimation finds significantly more monetary policy shocks to the OMO rates than to the actual policy rates, as these have changed only sporadically (Figure 5). As the repos are mainly used to inject liquidity and the issuance of SBV bills is mainly to withdraw liquidity, we combined the two to estimate the “consolidated OMOs rate”. Positive, i.e., tightening, shocks are estimated for all the rates—in late 2022 when there were strong depreciation pressures (vis-à-vis the USD) given market expectations that US policy rate could be higher for longer. On the other hand, negative, i.e., easing, shocks are estimated to have been more prevalent in 2023 when economic activity slowed.

Figure 5. Monetary Policy Shock



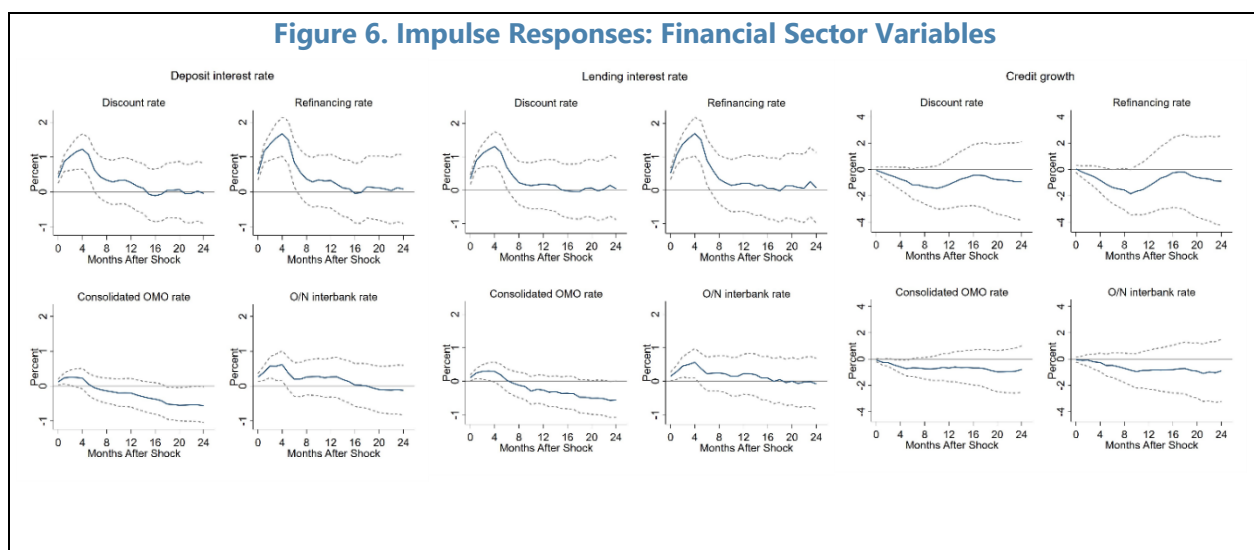
11. Next, we estimate the shocks' impact on the financial sector and the economy at large. Following Jordà (2005), we run local projections using monthly data. Specifically, we estimate:

$$Y_{m+h} - Y_{m-1} = \theta_0^h + \theta_1^h \eta_m^{MP} + \sum_{j=1}^J \theta_j^h X_{m-j} + \xi_{m+h}, \quad (2)$$

where Y_m is either a financial variable (credit growth or banks' lending or deposit interest rates) or macroeconomic variable (CPI inflation or output or (log of) the index of industrial production, IIP). X_{m-j} denotes a set of control variables including 3 months of lagged values of the monetary policy shock and, in the case of inflation and IIP, 1-3 months of lagged values of VIX and global fuel price index.⁷ h is the horizon of cumulative response of the dependent variable and up to 24, and ξ_{m+h} is the error term. η_m^{MP} is the shock identified by the equation (1). Our main objects of interest are the coefficients θ_1^h , that measure the percentage point response at horizon h to each shock. The sample period for the financial sector variables regressions spans from January 2008 to December 2023. For the macroeconomic variables, the estimating period is restricted to start in January 2013 to avoid introducing excessive noise in the regressions due to the high-inflation episodes.

⁷ The lag selection was based on the Akaike and Bayesian information criteria and the precedent work referred in the text. As Vietnam imports a lot of fuel and its industrial production depends largely on external demand, we insert a proxy of external demand's uncertainty of VIX and global fuel price index in the equation (2).

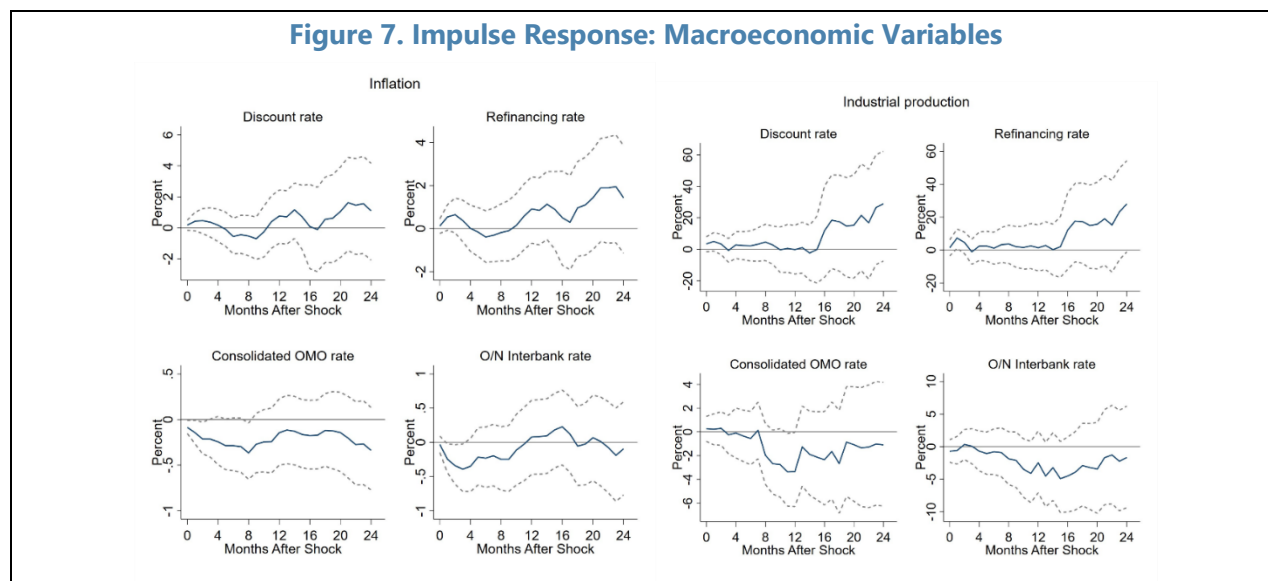
12. All monetary policy rate shocks are found to impact the financial sector variables with the expected signs. In Figure 6, the solid lines plot the cumulative impulse response, θ_1^h , following a 100 basis points tightening shock, and the dashed lines shows the 90 percentile confidence bands. The impulse responses have the expected signs and are similar among the different policy shocks. Both the lending and deposit interest rates increase after a tightening shock and peak at 3 or 4 months later at around 1 percent in the case of the policy rates (which is in line albeit somewhat smaller than the estimates in Holm et al. (2021)). Similarly, credit growth falls after the tightening shock, with the trough at about 8 months later. These show that the interest rate channel and credit channel of monetary policy work in Vietnam.



13. However, the OMO and interbank rates shocks have a modest effect on inflation, and to a lesser extent on output, while the policy rates do not have a significant impact on macroeconomic variables. In Figure 7, as before, the solid lines plot the cumulative impulse response, θ_1^h , following a 100 basis points tightening shock, and the dashed lines shows the 90 percentile confidence bands. The results show a very limited, and not statistically significant, impact of changes in the discount rate and refinancing rate on both inflation and industry production. Instead, shocks to the OMO rate, and the O/N rate to a smaller degree, has an impact on inflation, that contracts almost -0.5 percentage points at its peak 8 months after the shock (4 months in the case of O/N). In turn, an OMO shock generates a decline in industrial production that peaks at around -3 percentage points after 12 months, although this effect is generally statistically insignificant for the other rates considered. Once again, these effects are somewhat smaller than those found in the literature, suggesting that the monetary policy transmission channel is relatively weak.⁸

⁸ Our cumulative impacts, at the peak, from a 100 basis points tightening shock were relatively weaker than the results in Holm et al. (2021), which estimated over -1 and -4 percentage points impact on inflation and on industrial production respectively in Norway, and in Eklou (2023), which found over -2 percentage points on both in Malaysia. On the other hand, ours have relatively larger coefficients than the results in Brandao-Marques et al. (2020) for 40 emerging markets and developing economies, but in their paper the results tended to have greater statistical significance.

Figure 7. Impulse Response: Macroeconomic Variables



D. Conclusions

14. The results presented in this chapter indicate that the monetary policy’s interest rate channel affects main financial variables, but there are other factors in the transmission that curtail its effectiveness. In particular, the lack of coordination between different SBV rates (e.g., refinancing/discout vs repo/bills), and other tools at times (see next chapter), makes it hard to communicate the monetary stance, thereby weaken monetary policy transmission. Consequently, the analysis finds that changes in SBV rates affect other rates relating banks to the public as well as credit growth—but these are mostly unable to produce statistically significant effects on other macroeconomic variables like inflation or industrial production. However, it is important to bear in mind that SBV has other tools to affect the economy (FX interventions, administrative tools, etc.), beyond the interest rates considered in the paper.

15. The findings presented in this paper highlight the importance of having a clear and transparent monetary policy framework. IMF staff advice has stressed the benefits of modernizing the monetary toolkit (see current and previous Article IV staff reports) and having an integrated framework with all tools working in a coordinated fashion. Most central banks usually have one main policy rate employed to achieve one main objective (with other rates set consistently with the main rate) and conduct open market operations to make the policy rate effective throughout the economy. Achieving this, along with a clear communication strategy that it is easy to understand would supply the SBV with a stronger monetary policy framework and greater ability to weather future eventual shocks.

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AN APPLICATION OF THE INTEGRATED POLICY FRAMEWORK TO VIETNAM¹

The IMF's Integrated Policy Framework (IPF) offers guidance on the appropriate mix of policies when external shocks pose policy dilemmas. Shocks in Vietnam are amplified by shallow foreign exchange (FX) markets and, to a lesser degree, fragile inflation expectations in the context of its ongoing transition to a modern monetary policy framework anchored on inflation. This paper applies the IPF to Vietnam's economy, delineating policy trade-offs and options based on initial conditions, frictions identified in the data, and model-based scenario analyses. The 2022 disruptions in financial markets serve as a case study that illustrates the trade-offs of intervening in FX markets when hit by different shocks. In limited cases, when shocks are large and non-fundamental, FX intervention can moderate premia in shallow FX markets, allowing monetary policy to be less tight. Enhanced macroprudential and fiscal tools can promote financial stability and growth objectives in an integrated manner.

A. The Integrated Policy Framework and Its Role for Vietnam

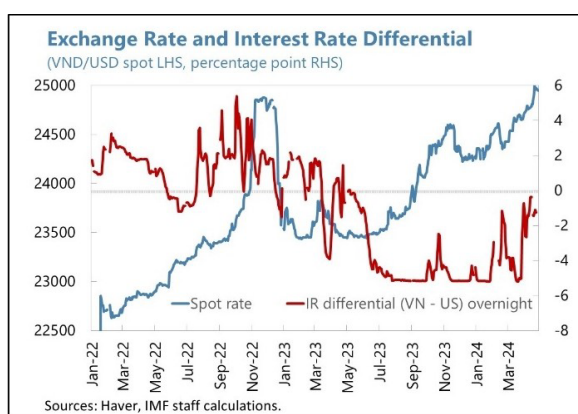
1. **Capital outflow shocks that lead to rapid exchange rate depreciation can pose significant trade-offs for emerging market policy makers.** Foreign exchange intervention (FXI) can stabilize the value of the currency when shocks are amplified by existing financial market frictions. But frequent use of FXI can be costly as it may: require significant reserve buffers; prevent FX markets from deepening; complicate the communication and effectiveness of monetary policy; and incentivize moral hazard and speculation. Importantly, FXI is not always warranted if exchange rate swings reflect fundamental macroeconomic imbalances to be addressed with other policy tools.
2. **The IPF illustrates how the appropriate policy mix varies subject to specific frictions and shocks.** The IPF provides a unified framework to jointly determine the optimal combination of monetary policy, FXI, capital flow management measures (CFMs), macroprudential policy measures (MPMs), and fiscal policy (Basu et al. 2020; Adrian et al. 2021). In the IPF, FXI is warranted only when a country exhibits at least one of three well-identified frictions: shallow FX markets, large private sector currency mismatches, or poorly anchored inflation expectations. Further, FXI is justified when shocks are large, temporary, and non-fundamental, and should not substitute for warranted macroeconomic adjustment absent sizable frictions.²
3. **The IPF provides a useful lens to think about policy responses in Vietnam, as it transitions to a monetary policy framework anchored on inflation.** In 2016, the State Bank of Vietnam (SBV) stepped up its transition from a de facto stabilized currency to a modern monetary policy framework centered on inflation targeting and exchange rate flexibility. While SBV has

¹ Prepared by Federico Diez, Faizaan Kisat, Jesper Linde, Roland Meeks, and Tatjana Schulze. Paulo Medas also contributed to this paper. We would like to thank the State Bank of Vietnam and the interdepartmental IPF working group for their constructive comments.

² See IMF FXI Guidance Note No. 2023/061 on "Principles for the Use of Foreign Exchange Intervention".

gradually allowed more exchange rate flexibility, recent shocks including Covid-19 and higher-for-longer global interest rates have complicated the transition. The IPF can be useful in two ways. First, it can guide the appropriate policy mix once Vietnam has transitioned to a full-fledged inflation targeting regime. Second, it offers a framework to weigh the benefits of FXI in the presence of specific frictions and shocks against the costs of frequent FXI in limiting the effectiveness of monetary policy in anchoring inflation, perpetuating existing frictions, and delaying the transition.

4. Vietnam’s multiple policy objectives lead to complex trade-offs as experienced in recent years. The confluence of US monetary tightening and non-fundamental shocks that lead to short-term capital outflows poses a recurring downside risk to Vietnam’s outlook. In 2022 and more recently in 2024, the Vietnamese dong faced headwinds from high US interest rates (negative interest rate differential) and broad US dollar strength, which led to bouts of volatility in shallow FX markets. Possible high, non-linear pass-through of exchange rate depreciations to inflation pose concerns. These developments complicate SBV’s balancing act between easing monetary policy to (i) stimulate domestic demand while following its (ii) price stability and (iii) FX stability objectives, limiting short-term exchange rate volatility to within its five percent band, and (iv) containing weaknesses in the financial and real estate sectors. As a response, SBV resumed FX sales to ease pressures in both 2022 and in 2024.



5. This paper applies the IPF to analyze policy options for Vietnam by:

- *Identifying frictions that are present in Vietnam and can create a case for FXI.* In particular, pervasive FX market shallowness, that may reflect or be exacerbated by frequent FXI, stands out as a key friction.
- *Quantitatively illustrating policy trade-offs in the presence of frictions with scenario analysis.* A version of the quantitative IPF model (Adrian et al., 2021; Chen et al., 2023) is estimated for Vietnam to analyze two shocks: a (*fundamental*) US monetary tightening and a (*non-fundamental*) market sentiment shock. The analysis illustrates the effectiveness of monetary policy tightening when FX markets are deep, and the trade-off created when FX markets are shallow, building a case for FXI. It also discusses the less quantifiable frictions and costs of FXI that limit its effectiveness in practice.
- *Drawing on insights from the October 2022 episode.* Amid sharp monetary tightening in the US, the SBV intervened in FX markets through Q1-Q3 of 2022 while loosening monetary policy. By October 2022, when financial vulnerabilities had become pronounced, around 20 percent of reserves had been used. This left limited reserve buffers to intervene when a bank failure and turbulence in the real estate market damaged market confidence, contributing to a capital outflow shock. The episode illustrates the difficult intertemporal trade-off of using FXI to

withstand fundamental pressures, or preserving buffers to stabilize the currency in the face of non-fundamental shocks when monetary policy alone is not sufficient.

6. The remainder of this chapter is structured as follows. Section II addresses a first pillar of the IPF's guidance on FXI: It presents country characteristics and empirically investigates the three key IPF frictions in Vietnam. Section III analyzes policy trade-offs and options in a model-based downside scenario. Section IV presents the October 2022 episode and discusses lessons from the episode. Section V discusses limitations and concludes.

B. Vietnam's IPF-Relevant Country Characteristics

7. Vietnam's policy space and solid fundamentals offer room for maneuver to withstand capital outflow shocks amid some pockets of vulnerabilities. Strong external competitiveness, low debt levels, and ample fiscal policy space in recent years have contributed to Vietnam's solid fundamentals. These strengths combined with Vietnam's attractiveness to FDI investors have helped to boost an exceptional growth performance. Yet, some characteristics pose vulnerabilities. These include high corporate leverage, banks' exposure to a fragile real estate sector, and a growing corporate bond market with an underdeveloped governance framework and investor protection. Given Vietnam's export-led economy, heightened external volatility also poses important challenges.

8. Existing MPMs and CFMs, as well as segmented FX markets, reduce vulnerabilities to external shocks. Vietnam has some borrower- and lender-based MPMs in place aimed at mitigating financial stability risks from currency depreciation—although it has yet to develop a broader macroprudential policy framework to reduce systemic risks.³ In addition, some CFMs limit the outflow of US dollars by residents and non-residents, albeit to a limited extent.⁴ FX markets are segmented: non-resident investors can trade the currency only in the offshore market. This partly shields the dong from shocks to global risk appetite. But domestic investors and firms can still react to changes in global and domestic conditions, which can impact the exchange rate. For example, periods of domestic policy uncertainty or financial sector weaknesses can lead to non-fundamental pressure and heightened FX volatility.

9. Vietnam has been transitioning from using FXI to support the exchange rate as the nominal anchor to a new monetary policy framework centered on inflation. In the past, the exchange rate had served as a nominal anchor within an effectively stabilized exchange rate regime, motivating frequent use of FXI by the SBV (Hien, 2018). Since 2016, the SBV has stepped up its efforts to move towards an inflation targeting regime with greater exchange rate flexibility. The SBV targets inflation, but the legacy role of the exchange rate as the main nominal anchor, in particular

³ FX-related MPMs in Vietnam include reserve requirements on banks' FX deposits (onshore and offshore), a limit on net open FX positions, FX liquidity requirements, limits on FX loans to households, and a capital requirement for currency risk (effective from July 2024).

⁴ Relevant outflow CFMs in Vietnam include limits on resident organizations' transfers and movements of USD to accounts abroad and restrictions on the purchase of FX for outward remittances. However, there are no CFMs targeted at the FDI sector that would limit the, at times, large capital outflows resulting from exporters repatriating their profits or cash operations abroad.

its impact on market sentiment, poses frictions in the transition. Frequent FXI can also hinder FX market deepening and limit the clarity and effectiveness of monetary policy in anchoring inflation.

10. Monetary policy transmission has been weak. The SBV's price- and quantity-based policy toolkit includes a panoply of liquidity facilities, bank-specific credit ceilings, and other administrative measures, which weakens the transmission of conventional monetary policy (SIP Chapter 1). Open market operations, and to a lesser extent FXI, have been used to address FX pressures—that could fuel inflation—resulting from large fluctuations in Dong liquidity in the interbank market. The SBV's focus on its price and exchange rate stability objectives has helped to contain inflationary pressures but weaknesses remain in the policy signal (given multiple instruments) and central bank communication strategy.

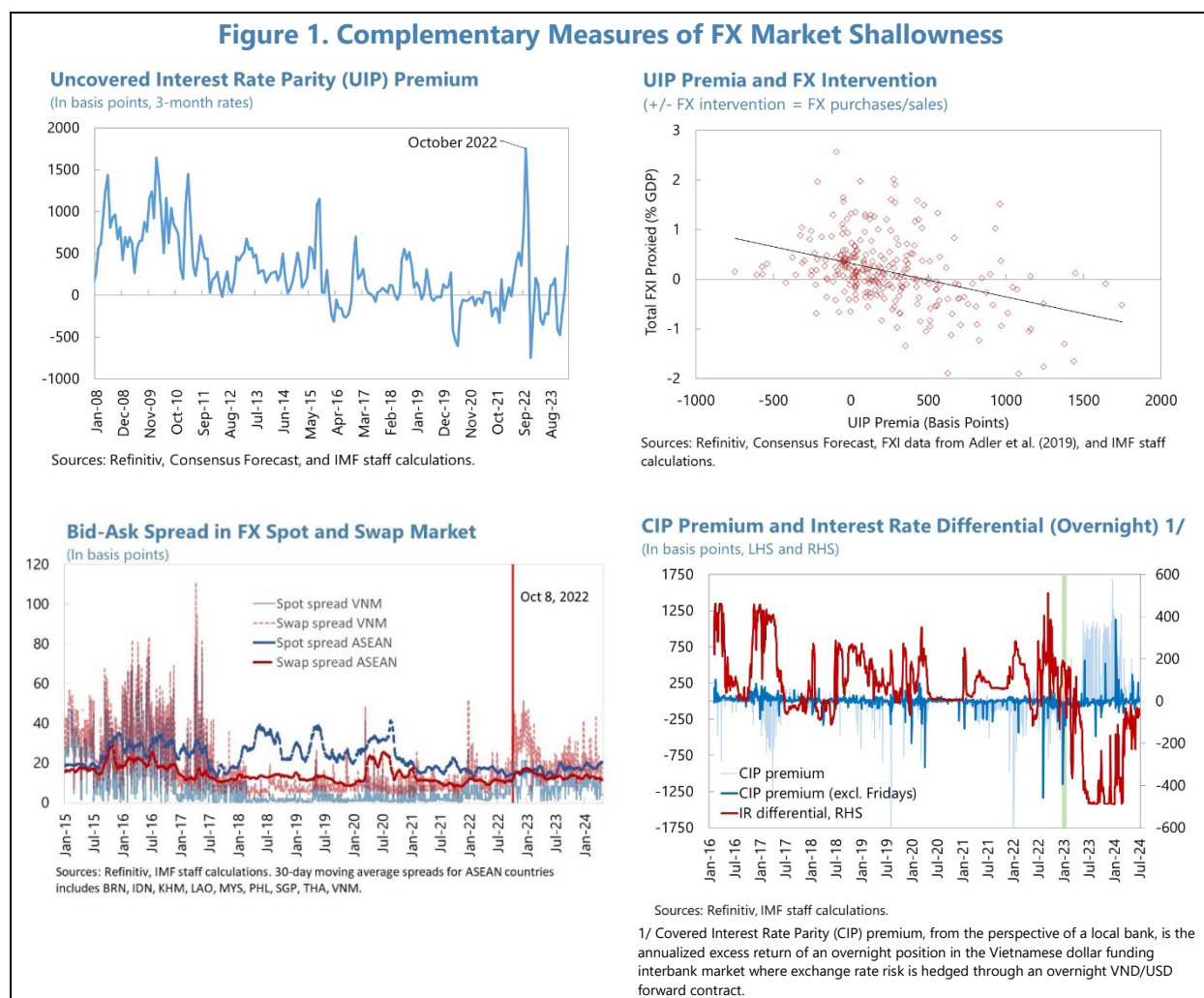
11. The IPF models propose three relevant frictions that can significantly amplify destabilizing shocks to exchange rates. The optimal policy mix depends on the depth of FX markets, private sector currency mismatches, and the anchoring of inflation expectations. Each of the three frictions individually presents a “use case” for FXI under IMF guidance. Notably, the frictions can be mutually reinforcing when they amplify exchange rate swings.

- *Use case A. Limited depth and liquidity of FX markets:* When currency markets are shallow and illiquid, financial intermediaries may face difficulties in intermediating trades, creating inefficient currency risk premia that can spill over to other market segments. This can amplify exchange rate movements and make it prohibitively costly, e.g., for firms to hedge trade-related currency risk. Targeted FXI should close those premia.
- *Use case B. FX mismatches on private sector balance sheets:* Mismatches in the currency composition of assets and liabilities, as well as cash flows, can tighten private borrowers' borrowing constraints and increase default risk when the local currency depreciates. FXI can counter financial stability risks.
- *Use case C. Inflation expectations at risk of de-anchoring:* Strong pass-through of exchange rate swings to inflation can stem from dominant currency pricing—when import prices invoiced in US dollars pass through to consumer prices. When monetary policy lacks credibility, this can shake up inflation expectations. At the same time, limited competitiveness gains obtain when exports priced in dollars are insensitive to exchange rate swings. FXI can help to preserve price stability.

12. Vietnam's FX markets are structurally shallow with limited buffer to absorb large shocks. The spot market exhibits periods of illiquidity when banks with USD surplus are not able or willing to meet USD demand, amplified when firms refrain from depositing their FX proceeds with banks. Hedging currency risk through the forward market can be very costly, especially when expectations of Dong depreciation persist. This shows up in persistently positive and volatile uncovered interest rate parity (UIP) premia and occasional spikes in covered interest rate parity (CIP)

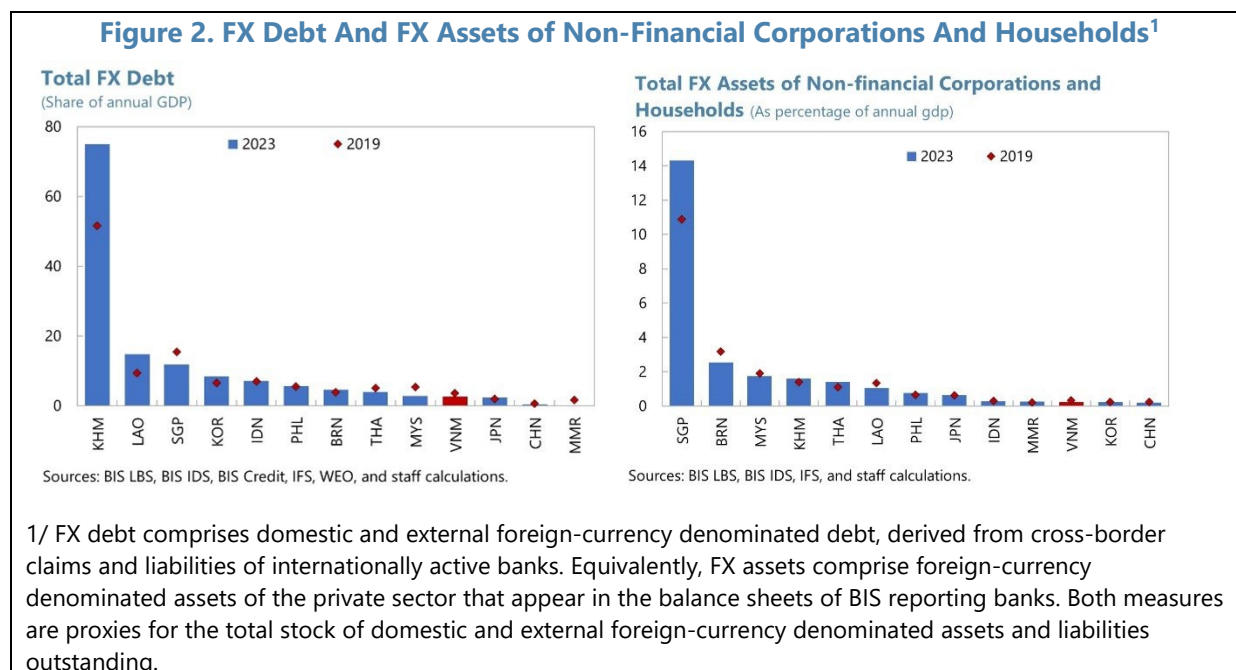
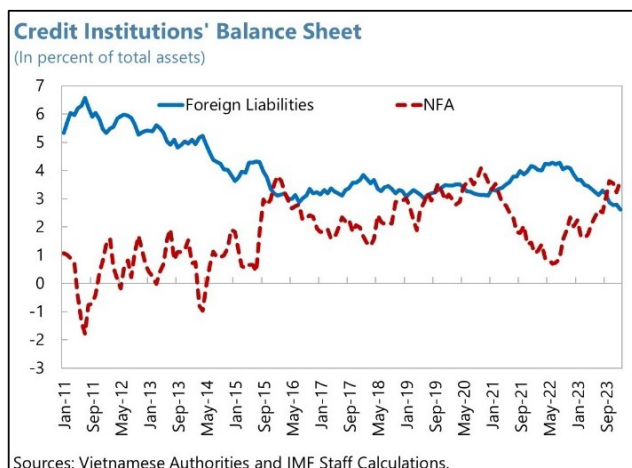
premia—one barometer of costly arbitrage frictions (Figure 1).⁵ Thus, market participants can expect to earn positive excess returns on local currency trades, compensating them for the risk of holding Dong-denominated debt. Other indicators suggest signs of limited FX market depth too. Bid-ask spreads in the FX swap market are persistently above the average of other peers and those in the spot market spiked above their peers' during large shocks like the Covid-19 outbreak and the October 2022 financial distress episode.

13. Interventions by the SBV in the past may understate the degree of FX market shallowness. While intervention data is not officially published, using proxies of FXI from Adler et al. (2023) indicates frequent SBV intervention in FX markets. Changes in UIP and CIP premia as well as bid-ask spreads as a sign of market shallowness need to be interpreted with caution, as intervention—or even the announcement of future intervention—may have significantly reduced observed premia before they could have widened.



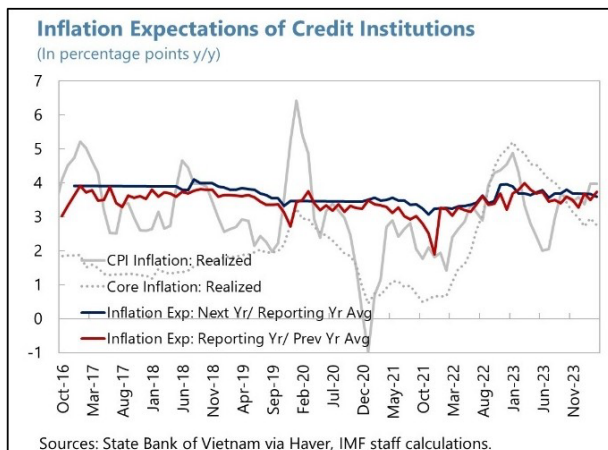
⁵ CIP premia arise when an otherwise risk-free currency trade (because hedged) incurs a cost for bearing currency risk. Similar to UIP premia, large spikes in CIP premia can indicate inefficient currency movements due to temporarily or structurally illiquid FX markets.

14. FX mismatches do not appear pronounced among banks and are limited among non-financial firms. Proxying FX mismatches of assets and liabilities in the aggregate banking sector suggests low and declining risk of mismatches over the past decade. FX mismatches of non-financial corporations confirm this picture. However, aggregate data may mask FX mismatches at the granular level and those that do not only occur in balance sheet *stocks* but also in cash *flows*. For example, firms may find it difficult to meet payment obligations on imports in USD with equivalent receipts on exports. Smaller firms that require imported inputs, and in particular those operating in the non-tradable sector, are not able to hedge their currency exposure through derivatives contracts or through natural hedges of imports and exports. Notwithstanding, the overall exposure of Vietnam's private sector seems contained relative to peer countries (Figure 2).

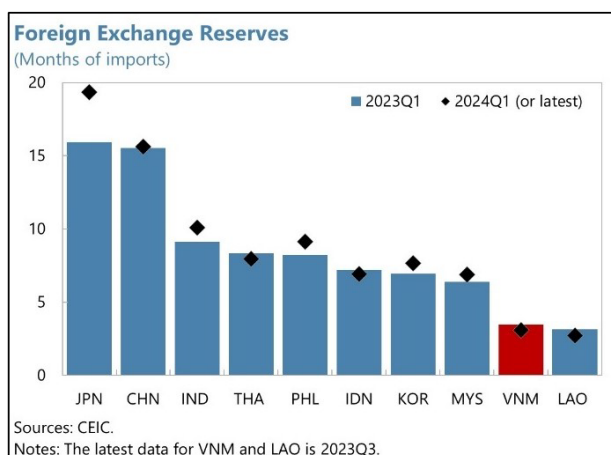


15. Inflation expectations in Vietnam appear anchored, but this may still be tied to SBV's ability to prevent large volatility in the exchange rate. SBV has generally kept inflation below its targeted inflation ceiling ranging around 4-4.5 percent over the past decade, partly benefiting from low global inflation until 2021. Inflation expectations have been closely anchored around headline inflation with few periods of deviations, but volatility in inflation has risen more recently. Pass-through estimates of exchange rate shocks to inflation in Vietnam and other ASEAN countries are

low at around 0.3 percentage points 12 months after a 10 percent change in the exchange rate. But they rise to 1.7 percentage points when considering only depreciations (2023 AIV Staff Report Annex IV). Pass-through may hence be *non-linear* such that inflation may rise proportionally by more than the depreciation following particularly large shocks. High pass-through could increase the risk of a de-anchoring of inflation expectations—one key concern of SBV that partly motivated past use of FXI. In the event, SBV’s ability to maintain inflation expectations anchored could be limited by weaknesses in the monetary policy framework and expectations of frequent use of FXI. Given the exchange rate’s legacy as a nominal anchor in the recent past, inflation expectations may be partially tied to the credibility of the SBV in preventing large fluctuations in the exchange rate.



16. While the evidence suggests a role for FXI in Vietnam, its use is mainly desirable in limited situations when there are dislocations in FX markets. FXI is costly as noted above, and preserving FX buffers should be prioritized. FXI should be used, ideally within a clear operational framework, when shocks are large and temporary such as capital outflow shocks that risk sudden stops. Instead, *sustained* FX depreciation pressures, for example stemming from strong fundamentals of key trading partners, should not be resisted.⁶ FXI should only lean against large *changes* in premia but not against persistently positive premia that reflect a structural problem with FX market depth. The positive correlation between proxies for FXI and UIP premia in Vietnam (Figure 1) suggests that FXI has at times been used in such a way. But the correlation is far from perfect. FXI (proxied) was used also in instances when UIP premia were small, underpinning the difficulty of transitioning away from the exchange rate serving as nominal anchor.



⁶ Identifying the drivers of exchange rates in real time in the data is notoriously challenging. Various indicators should be consulted to assess currency movements.

C. Policy Trade-Offs Under Scenario-Based Analysis

17. Beyond frictions, policy decisions need to consider the fundamental and non-fundamental origin of shocks.⁷ When FX markets are shallow and large changes in premia emerge, FXI should strive to address only the non-fundamental component of those changes in premia. Exchange rate flexibility and interest rate policy should address the fundamental component. The reason is that part of the premia can reflect market expectations about the movement of the exchange rate *as justified by a country's macroeconomic fundamentals relative to other countries*. Deviations from fundamental levels warrant an adjustment in the exchange rate that brings the economy back to medium-term fundamentals. But where changes in premia reflect changes in markets' risk assessment of investing in the currency that is disconnected from fundamentals, causing FX liquidity problems, interest rate policy alone may not be sufficiently effective, as discussed next. In practice, it may be difficult to distinguish in real time which part of the shock is fundamental and which is not (even a fundamental shock can potentially lead to, or exacerbate, non-fundamental disruptions in markets).

18. Model-based scenario analysis allows to zoom in on policy options under a combined fundamental and non-fundamental shock and the key friction in Vietnam – shallow FX markets. The estimated QIPF model for Vietnam is used to simulate macroeconomic trajectories in response to adverse shocks under different policy rules, considering the baseline estimate of FX market shallowness and an alternative parameterization with considerably more liquid and well-functioning FX markets. Several downside risks to Vietnam's outlook can be considered in the model. One risk is a combination of US monetary tightening (fundamental shock) and short-term capital outflows driven by investor risk appetite (non-fundamental shock). Estimating the model with macroeconomic and financial data using Bayesian methods sheds light on the empirical relevance of different transmission channels of the two shocks.⁸

19. For a given downside scenario, the analysis considers three different combinations of policy options and degrees of FX market shallowness:

- *Shallow FX markets and interest rate policy only:* The SBV does not use FXI, for example because reserve buffers are limited. Instead, it responds to FX depreciation by raising the policy

⁷ The IMF FXI Guidance Note (2023) details Fund guidance on the use of FXI in response to fundamental vs. non-fundamental shocks as well as temporary versus permanent shocks.

⁸ The linearized DSGE model accounts for a non-linear financial accelerator that amplifies the transmission of capital outflow shocks through intermediary balance sheets and FX markets to the real economy. FX transactions are intermediated by financiers who are subject to an agency friction. This key inefficiency gives rise to an FX market shallowness wedge in the UIP condition and creates a role for policy to offset under certain conditions. The estimation in this paper abstracts from private sector currency mismatches to keep tractability while noting that risks from FX mismatches remain generally low in Vietnam. Even so, we will see that spillovers to wages and import prices from a weaker exchange rate implies that the central bank faces a tradeoff between stabilizing output and contain the pass through to consumer prices.

(refinancing) rate.⁹ In its setting of the policy rate, the central bank follows a Taylor rule that responds to deviations of core CPI inflation from target, and hence captures the effect of the depreciation on inflation.

- *Shallow FX markets, interest rate policy, and FXI:* In addition to the interest rate rule, the SBV follows an endogenous FXI rule, which systematically links FXI to changes in the real exchange rate, previous FXI, and the level of reserves. The sale of reserves following a depreciation moderates FX volatility by narrowing the UIP premium.
- *Deep FX markets and interest rate policy only:* In the medium term, when FX markets are deeper and have a well-established inflation targeting regime, using interest rate policy as the only line of defense and letting the exchange rate adjust flexibly.

20. Model estimations confirm the presence of FX market shallowness and past reliance on FXI seen in the data. The linearized DSGE model is estimated on quarterly Vietnamese data for the period Q1:2000 to Q2:2023 using Bayesian methods. Looking at the model equation describing the FXI reaction function—or rule—of the central bank, the estimated FXI response coefficient is suggestive of some past reliance on FXI while the FX market depth parameter suggests market shallowness that is more severe compared to other EMs. The high FXI response coefficient of 0.89, where FXI is scaled by annualized GDP, is consistent with the high correlation between FXI and exchange rates and notably twice as large as the EM average.¹⁰ Importantly, the estimated FXI rule captures the SBV’s historical responses to exchange rate movements rather than to only large spikes in UIP premia as

recommended by the IPF. From a welfare perspective, economic outcomes in the model simulations therefore do not reflect responses under an optimal policy rule, leaving room for improvement.

Parameter	Prior			Posterior	
	type	mean	std	mean	std
FX market friction	Γ beta	0.05	0.0125	0.097	0.02
FXI sensitivity to Δ ER	γ_{Δ} beta	0.5	0.075	0.89	0.00
Implied $\% \Delta$ FXI to $\% \Delta$ ER		-1.0		-7.8	
LML – Laplace Approximation				-3107.19	
LML – Modified Harmonic Mean				-3111.40	

21. FXI helps to alleviate the inflation-output trade-off of monetary policy under shallow markets, allowing monetary policy to be less tight. The analysis shows that monetary policy alone may not be sufficient to stabilize shallow FX markets when non-fundamental shocks hit—FXI, although costly in terms of reserves, can help. Figure 3 presents economic outcomes and policy responses to a combined US monetary policy tightening of 100 basis points (annualized) and a

⁹ As an alternative to the refinancing rate, the overnight interbank market rate could be considered in the model estimation. While the interbank rate better captures liquidity conditions, it also frequently reflects FX pressures that spill over to interbank market liquidity as well as quantity-based intervention through OMOs by SBV.

¹⁰ For comparison with peer countries, the parameters on the FX market friction and the FXI response coefficient are 0.03 and 0.45, respectively, estimated by Chen et al. (2023) using the QIPF model for a sample of 12 EMs.

capital outflow shock of two standard deviations based on historical estimates of capital flow volatility in Vietnam.¹¹

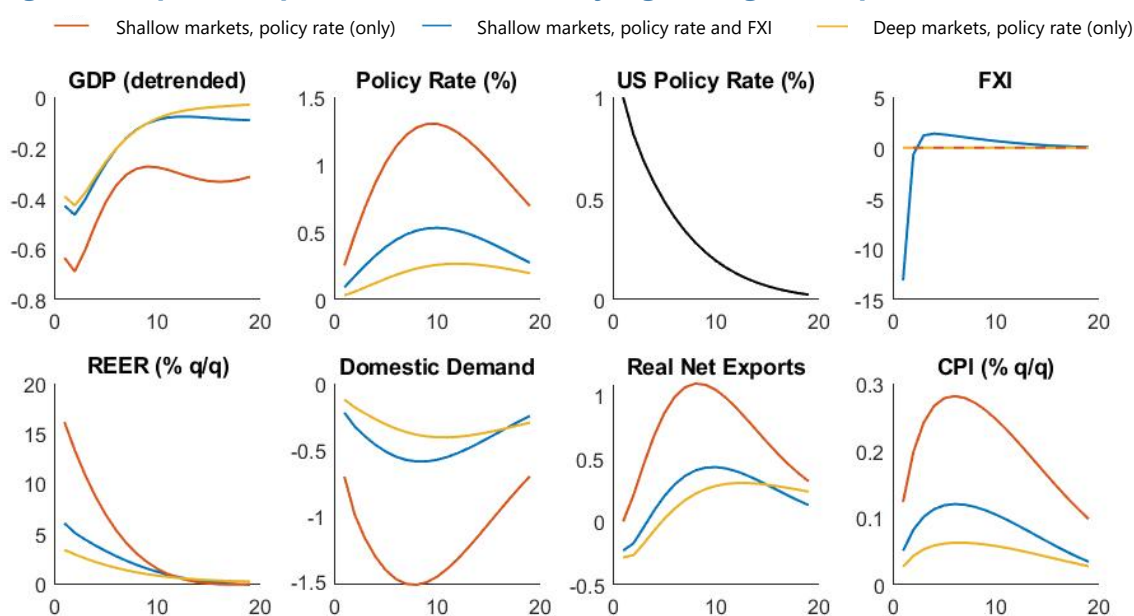
- *Shallow markets and monetary policy only:* The two shocks trigger a large initial depreciation of the currency. The depreciation passes through to consumer prices which rise by 1.2 percentage points (annualized) in the first 12 months above baseline. A large monetary tightening of up to 130 basis points in the first 2 years is required to stabilize the exchange rate. The tightening brings down inflation, closes the interest differential to the US, and reduce the output gap after an initial contraction by 0.6 percent of GDP. Tighter financial conditions in turn push up yields and depress domestic demand, which weighs on the recovery in output and net exports.
- *Shallow FX markets, monetary policy, and FXI:* Following the shocks, immediate FXI of more than 3.3 percent of annual GDP in the first quarter on impact of the shock limits the depreciation.¹² FXI reduces the policy rate hike needed to stabilize annual inflation, reducing the required monetary tightening at its peak from 130 to 50 basis points. Annual inflation stabilizes at a level that is 0.7 percentage point lower relative to the case of no FXI as the currency is stabilized more swiftly. The contraction in domestic demand is very mild while the muted depreciation results in a relatively lower boost to the trade balance. The effect on the output gap is therefore more contained. The FXI rule moderates the inflation-output trade-off while ensuring that reserve depletion is followed by gradual reserve accumulation.

22. Deepening FX markets in the medium-term and transitioning to inflation targeting as the only nominal anchor significantly moderates the inflation-output trade-off.

- *Deep markets and interest rate policy only:* Under deep FX markets, a combined US interest rate tightening and risk-off shock has a much milder effect on the real exchange rate. This is because under deep markets, UIP premia are very small and amplification on the exchange rate is limited. Consequently, exchange rate pass-through to inflation is more limited than under the shallow markets cases. The central bank needs to tighten the policy rate significantly less, only by 25 basis points, to bring inflation back to target. While there is still financial amplification in the economy, the overall effect of the depreciation is contained.

¹¹ The scenario analysis considers the vulnerability of the financial system in Vietnam under deep and shallow markets for a given dollar size of capital outflows. In practice, the size of outflows following a non-fundamental shock is generally not the same across countries with deep versus shallow markets due to various factors, including amplification of outflow shocks in FX markets and capital controls.

¹² As a reference point, gross international reserves fell by USD 22.7 bn, or 5.5 percent of 2022 GDP, from end-2021 to end-2022 after sustained FX intervention throughout Q1-Q3 2022.

Figure 3. Impulse Responses to a US Monetary Tightening and Capital Outflow Shock¹

Sources: IMF staff estimates.

1/ Quarterly impulse responses are scaled to a combined US federal funds rate tightening of 100 basis points (annualized) and a capital outflow shock of two standard deviations based on historical estimates of capital flow volatility in Vietnam. Axes are denoted in percent of annualized GDP unless stated otherwise.

23. Beyond the modeled exercise, weak policy rate transmission and past inflation

scarring further complicate policy trade-offs. Model-based analysis can illustrate the trade-offs when FX market shallowness is the only friction. In addition, SBV's decisions are complicated by the weak policy rate transmission to the real economy (SIP Chapter 1). Factoring this in may imply an even larger and longer policy rate tightening required to stabilize inflation in the event of a large depreciation. Moreover, scarring from past high-inflation episodes renders inflation expectations fragile. Expectations may be anchored in normal times but may become un-anchored during particularly large depreciations. Inflation scarring can also increase incentives for precautionary savings, for example anecdotally by hoarding gold, which weighs on domestic consumption and complicates the objective of monetary policy. Weak transmission and non-linear pass-through of currency depreciation to inflation expectations therefore tilt the policy mix towards the use of FXI.

24. Using outsized FXI outside of limited use cases however poses an intertemporal trade-off.

FXI is no free lunch – it comes with considerable costs, not captured in the quantification exercise. With reserves of about 3.3 percent of annual GDP in the first quarter required to limit the rise in annualized inflation to 0.5 percentage points, reserve buffers need to be ample for FXI to be credible to withstand a non-fundamental shock. It requires interest rate policy to act as the first line of defense outside these limited risk-off episodes. Absent sufficient reserves, FXI loses its insurance property. Moreover, the stabilizing nature of FXI makes its use particularly appealing in the short term (red and blue line in Figure 3). But too frequent use of FXI can hinder policy makers from reaping the medium-term benefits of deeper FX markets (yellow line). In particular, too frequent FXI

can reduce its effectiveness as it limits market participants' willingness to intermediate trades, thus entrenching market shallowness and the anchoring role of exchange rates for inflation expectations.

25. Additional targeted policies can complement interest rate policy in alleviating tensions with other central bank objectives and reduce the need for FXI:¹³

- *MPMs can address financial stability concerns.* Improving the macroprudential framework would mitigate the risk of financial market stress as part of a wider prudential upgrading that encompasses prudential monitoring, enhanced resolution frameworks, and contingent planning of central bank liquidity facilities. Additional (strengthening of) lender-based MPMs such as FX hedging requirements for banks, capital requirements for FX risk, and FX-risk based stress testing could be considered in a well-sequenced manner.¹⁴ This would alleviate pressure on the exchange rate stemming from the interbank and FX markets, thus reducing the need to resort to combining interest rate adjustment with FXIs. Should a policy rate tightening impact banking sector stability, targeted liquidity lifelines to vulnerable banks could be used to preserve financial stability. Further, additional MPMs could be considered to limit excessive private sector borrowing and mitigate the risk of currency mismatches, as well as strengthen bank balance sheets through counter-cyclical capital buffers and liquidity buffer requirements.
- *Fiscal policy could help address domestic demand imbalances.* For example, if domestic demand is deficient and monetary policy has no room to loosen, fiscal policy could provide support through targeted spending stimulus and investment.¹⁵ Moreover, over the medium term, public investment targeted at the domestic sector would support stronger growth potential while helping address external imbalances.
- *CFMs on outflows should be tightened only during imminent crisis situations.* Tightening of CFMs should be considered only if there is acute risk of a sudden stop, signs of which can be indicated inter alia by a rapid fall in international reserves (see the Institutional View on the Liberalization and Management of Capital Flows, IV 2012 and 2022).

D. The 2022 Financial Disruption

26. The October 2022 financial distress episode provides a concrete example of an uncertain environment faced with multiple shocks of unknown duration. Having exited the pandemic lockdown in Q4:2021, Vietnam was facing a period of strong catch-up growth in 2022. Expansionary financial conditions supported the post-pandemic recovery while inflationary pressures were building, albeit from low levels, along with the global high inflation environment of

¹³ There are several avenues for future model-based scenario analysis that could incorporate additional policy instruments (CFMs, MPMs) subject to Vietnam's structural impediments (weak monetary transmission, non-linear exchange rate pass-through) into the broader IPF policy mix.

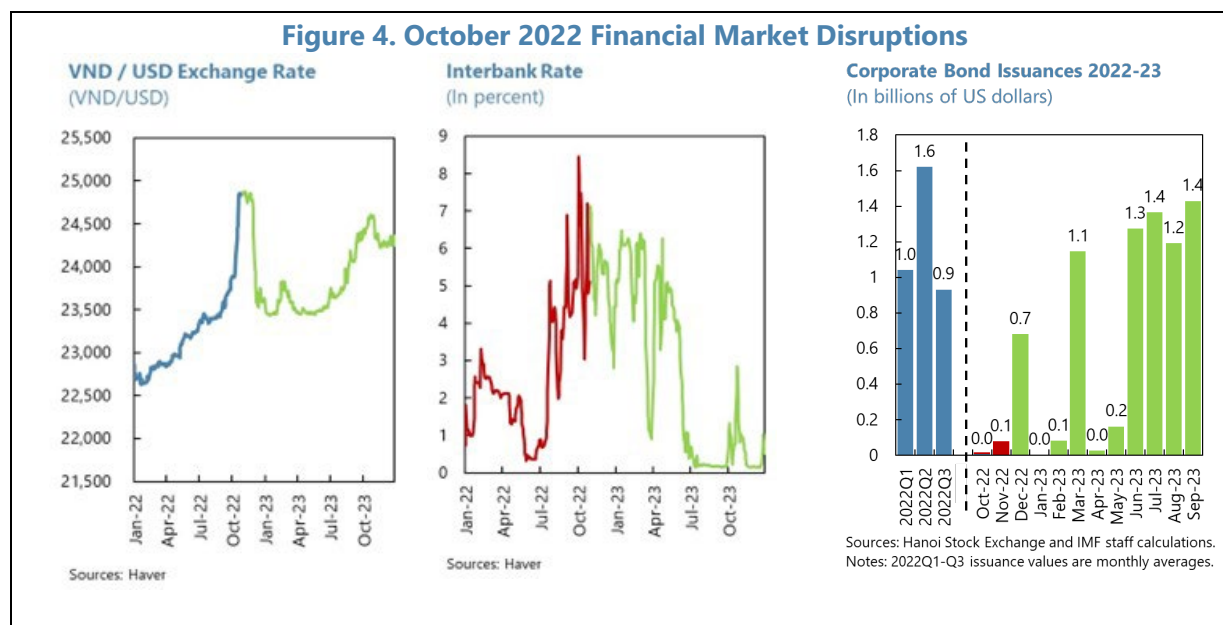
¹⁴ See IMF Guidance Note on Macroprudential Policies (2014), Alam et al. (2019), and IMF (2022) Financial Sector Stability Review (FSSR).

¹⁵ In practice, effective countercyclical fiscal policy is constrained given the process to approve and implement changes to the budget.

2022. At this juncture, US monetary tightening added to fundamental pressures. Amid a sharply narrowing interest rate differential vis-à-vis the US in the overnight interbank market in the first half of 2022 and FX pressures, SBV repeatedly intervened in the FX market during Q1-Q3, drawing down its reserve buffers by 20 percent. In addition, several financial sector imbalances had built up by Q3:2022. Low interest rates had added to risks in a booming corporate bond and equity market. Rising troubled loans, particularly in the real estate sector, posed increasing risks to the financial sector amid a highly uncertain outlook.



27. October 2022 saw a large FX depreciation following a bank run on the Saigon Joint Stock Commercial Bank (SCB), a liquidity squeeze in the interbank market, and a freeze of the corporate bond market. Against this backdrop, the interbank rate fluctuated by more than 500 basis points within days. The linkages to the real estate sector prompted a freeze of the corporate bond market (Figure 4) and shook investor confidence, which contributed to capital outflows. UIP and CIP premia recorded large swings in the same month and bid-ask spreads in FX spot and swap markets spiked (Figure 1). The Dong depreciated by 5 percent within a month.



28. The SBV responded by injecting liquidity in the interbank market and raising policy rates. It provided direct credit to banks, including large liquidity support to SCB, and hiked the refinancing rate and discount rate by an additional 100 basis points after an initial hike of 100 basis points in late September. These swift actions helped to quell the panic, although the interbank rate

remained volatile in subsequent months (Figure 4). Meanwhile, the SBV refrained from using FXI in October 2022, with reserves having fallen below 3 months of imports by the time the distress struck.

29. The 2022 episode showcases the difficulty of policy decisions when the nature and duration of shocks are unclear and there are shallow FX markets. There was significant uncertainty around the nature of the shocks and the state of the business cycle in a fast-changing post-Covid environment. Monetary policy had to balance the recovery and rising inflation. Inflation pressures from multiple sides—rising global inflation, rapid catch-up growth, and, to a lesser extent, exchange rate pass-through—made it difficult to assess whether the economy was growing too fast. Sustained exchange rate depreciation stemmed partly from external fundamentals. The data did not yet show signs of FX market dysfunction in H1: 2022 when the SBV started FXI (Figure 1). Yet, market sentiment may have already been faltering amid signs of deteriorating asset quality, especially in real estate and corporate bonds as well as in some large corporates and banks, possibly creating some latent non-fundamental pressures too.

30. While the rapidly changing environment made it particularly difficult to make decisions in real time, an *ex-post* analysis can provide lessons for future shocks. The large size and impact of the shock—GDP growth y/y fell from 13.9 percent in Q3 of 2022 to a historical low of 3.4 percent in Q1 of 2023—rendered policy trade-offs particularly difficult. Notwithstanding, some insights can be drawn, in particular:

- Given the rising inflationary risks, an earlier interest rate tightening in the first half of 2022 could have helped address depreciation pressures and imported inflation. A combination of gradually rising interest rates in the interbank market and, to a sparing extent, FXI could have helped to calm market expectations of accelerated depreciation and reduced the fall in FX reserves. This could have helped to avoid a sharp rise in domestic rates later in Q4:2022 given concerns with highly leveraged firms (especially in the real estate sector) and effects on the financial system.
- The early use of FXI (falling reserve buffers) limited the ability to respond by the time the non-fundamental shock (financial distress, loss of market confidence) intensified. This illustrates the difficult intertemporal trade-off of using FXI when the duration and size of shocks are uncertain and there were concerns about some of the banks and corporates' balance sheets. Doing less FXI early on, assisted by other policies, could have helped safeguard part of the buffers initially.

Notwithstanding the *ex-post* insights from the 2022 episode, some larger use of FXI, albeit temporary, could be required on a case-by-case basis, in particular if FX market liquidity were to dry up or inflation expectations to become unanchored (as mentioned in Section 2).

31. The 2022 episode also stresses the need for developing tools geared to achieve timely reactions to shocks and *ex-ante* policies that reduce vulnerabilities and the need for FXI. For example, while there were measures taken to limit banks' exposures to the real estate sector, they were not sufficient, and risks in the corporate bond market were also not addressed. Macroprudential tools can prevent excessive leverage and mitigate the risks of balance sheet mismatches, thereby limiting the build-up of systemic risk in the banking and corporate sectors. Counter-cyclical capital buffers can strengthen financial institutions' ability to withstand shocks. Such

tools would allow more flexibility in the use of monetary policy. Further, persistent liquidity shortages of individual banks can be met through targeted Emergency Liquidity Assistance (ELA). Fiscal policy can also be made more flexible and able to support the response to the crisis through well-developed automatic stabilizers (e.g., safety nets) and policies for large shocks.¹⁶

E. Conclusions

32. Shallow FX markets suggest that there is a potential role for limited FXI in Vietnam under specific conditions, and a need to retain reserves when such conditions are not met.

Vietnam's FX markets are structurally shallow, and liquidity is prone to dry up quickly, raising expectations of SBV intervention. Model-based scenario analysis suggests that non-fundamental shocks can cause large changes in UIP premia that justify the use of FXI, allowing monetary policy to be less contractionary to stabilize inflation. Vietnam's October 2022 financial distress episode provides a case in point. It highlights that shallow FX markets may still require some degree of FXI at times to restore market functioning; as well as efforts to promote deeper FX markets over time. Importantly, being able to draw on reserve buffers in such events requires careful reserve management, during times of fundamental pressures, when the data does not show signs of heightened frictions yet.

33. A modern monetary policy framework anchored on inflation and exchange rate flexibility would facilitate a more integrated and effective response to shocks. Absent sizeable frictions, flexible exchange rates and interest rate policy should be the first line of defense against adverse capital outflow shocks. Macroprudential and fiscal policies can offer additional support. FXI could step in amid sizable frictions and large non-fundamental shocks. But weak policy rate transmission demands first and foremost the development of a medium-term monetary policy framework centered on inflation as the nominal anchor and a clear communication strategy (see previous chapter).

34. Policy decisions need to be cognizant of several caveats, notably the less quantifiable costs of FXI. FXI incurs large costs that can be difficult to quantify in a model-based analysis. Moreover, there is a disconnect between the frequency at which policy makers take decisions (daily/intra-day) and the frequency of measurement of data (daily/monthly) and model estimation (quarterly). Decisions would need to be taken on the basis of both metrics of the key IPF frictions presented in this paper as well as (more granular) country-specific data that help gauging whether changes in premia, private sector balance sheet mismatches, and volatility in inflation expectations are large enough to warrant FXI.

35. Building institutional capacity can help with crisis mitigation and crisis response.

Analyzing frictions and risks in real time and remaining agile in a fast-changing environment requires institutional frameworks and sound diagnostic tools. Risk management, for example

¹⁶ See "The State as Financier of Last Resort" IMF Staff Discussion Note 2022/3.

through an independent committee, can identify tail risks and develop contingency planning. Macroprudential reporting frameworks and data infrastructure can support the systematic and timely collection, processing, and monitoring of data. This includes collecting granular data on private sector currency mismatches; systematically compiling data on currency trades through electronic platforms; developing surveys of household and firm inflation expectations; and collecting granular monthly banking sector statistics. It will also be important to develop analytical tools to identify the drivers of currency movements when the shock occurs.

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VIETNAM'S GOVERNMENT BOND MARKET - STATE OF THE MARKET AND OPTIONS FOR MARKET DEVELOPMENT¹

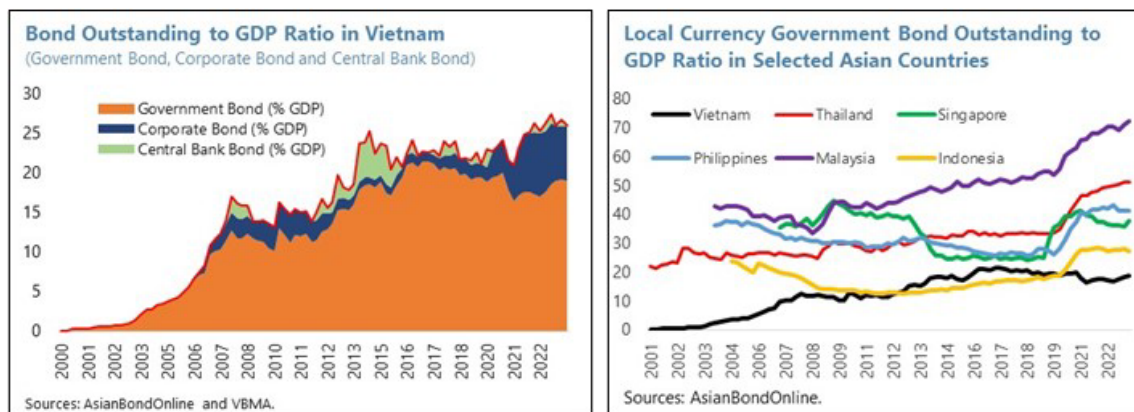
The Vietnamese government bond (VGB) market is relatively small and illiquid compared to peer countries in Southeast Asia. Average bond maturities are long, yields are low, and the investor base is concentrated in banks and the Vietnam Social Security (VSS) fund. These features of the market and limited market development in recent years are largely the result of price-insensitive demand from VSS. While this keeps yields low in the short term, it has costs as it can: undermine the sustainability of future pensions; raise the cost of capital for the private sector; reduce flexibility in using fiscal policy; and impede the development of financial markets and the power of monetary policy transmission. The bond market could be developed through a more market-driven determination of yields. This would require additional gradual broadening of VSS's investment mandate. Issuing bonds across the entire maturity spectrum and developing currency and interest rate hedging markets would help attract a more diversified set of investors. Further reforms including repo market development and debt management operations to consolidate outstanding bonds would support market development. Improving fiscal reporting and economic statistics is also critical.

A. State of the Market

Market Size, Trading Volumes, And Liquidity

1. The size of the government bond market has been stable relative to GDP since 2016.²

The ratio of government bonds to GDP has declined slightly after peaking at about 22 percent of GDP in 2016. Compared to Asian peer countries, the Vietnamese government bond market is small. Unlike peers, Vietnam did not see an increase in the size of the market during the pandemic.

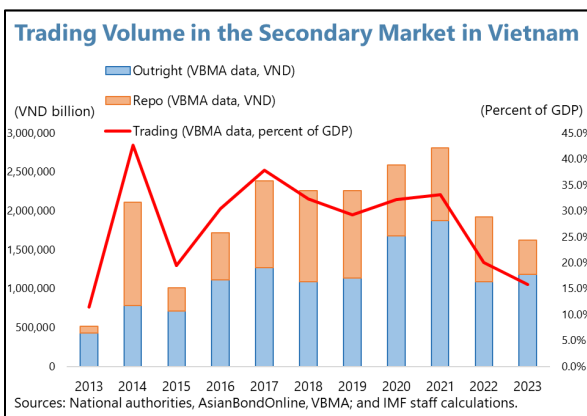


¹ Prepared by Jochen M. Schmittmann and Shogo Takahashi with inputs from Nga Ha Kim, Van Anh Nguyen, and Weining Xin.

² Data is obtained from the Vietnam Bond Market Association (VBMA) via AsianBondOnline by the Asian Development Bank (ADB). The data include obligations of the central government, local governments, the central bank, and state-owned entities. Some bonds are not included in the dataset, in particular direct placements of government bonds with Vietnam Social Security (VSS). Data from MoF includes direct placements with VSS. The analysis and conclusions in this note are not affected by the choice of the dataset.

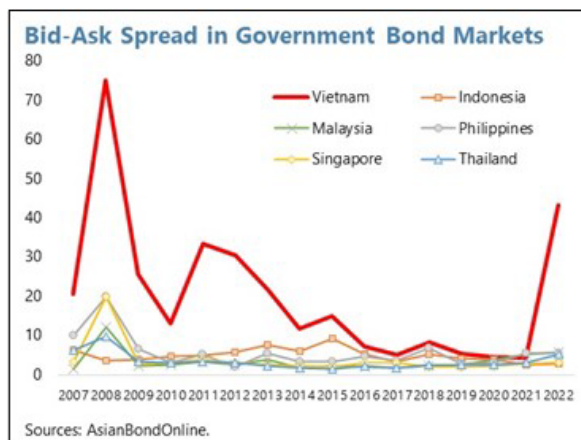
2. Sovereign bond trading volumes have stagnated in recent years. Annual trading volume in the government bond secondary market surged until 2017 but remained range-bound

subsequently. Trading volumes increased from around 10 percent of GDP in the early 2010s to more than 30 percent of GDP at end-2017. After 2017, however, total annual trading has trended around VND 2,000 trillion or around 25 to 30 percent of GDP. There was a sharp drop in 2022, possibly due to the turbulence in financial markets, including in Vietnam's corporate bond market. On the composition of trading, until 2016, trading volume growth was driven by outright transactions and by repo transactions between 2016 and 2018.



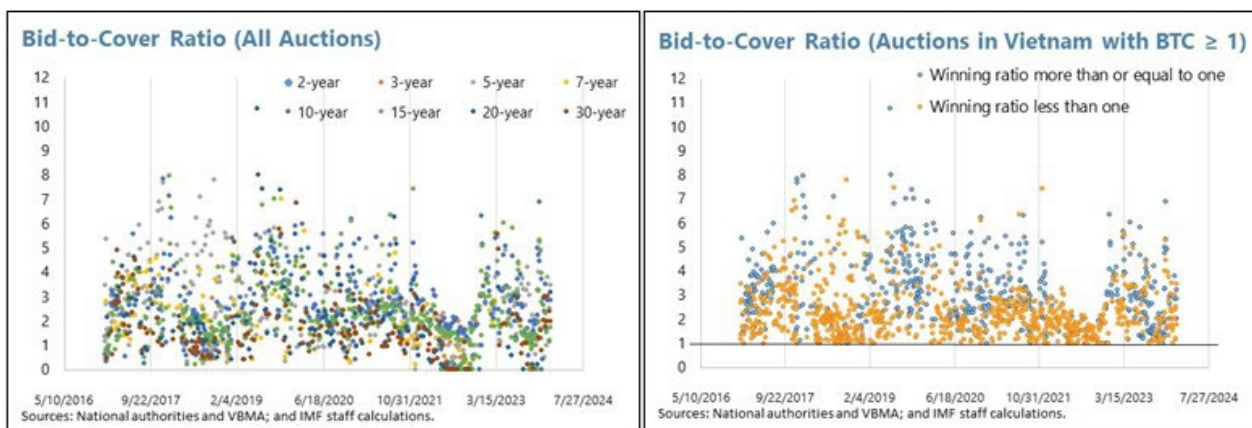
3. Measures of market liquidity suggest low liquidity compared to regional peer markets.

The turnover ratio (trading over the stock of bonds) trended close to 0.4 until the beginning of 2022 and declined to around 0.2 thereafter. The bid-ask spread, another indicator of market liquidity, has improved significantly over time, but deteriorated in 2022. Bid-ask spreads in Vietnam, traditionally higher than in Asian peer countries, shrank to around the same level as other Asian countries by 2021 but increased significantly to 43 basis points in 2022, likely related to the corporate bond market dislocations that year.



Primary Auctions

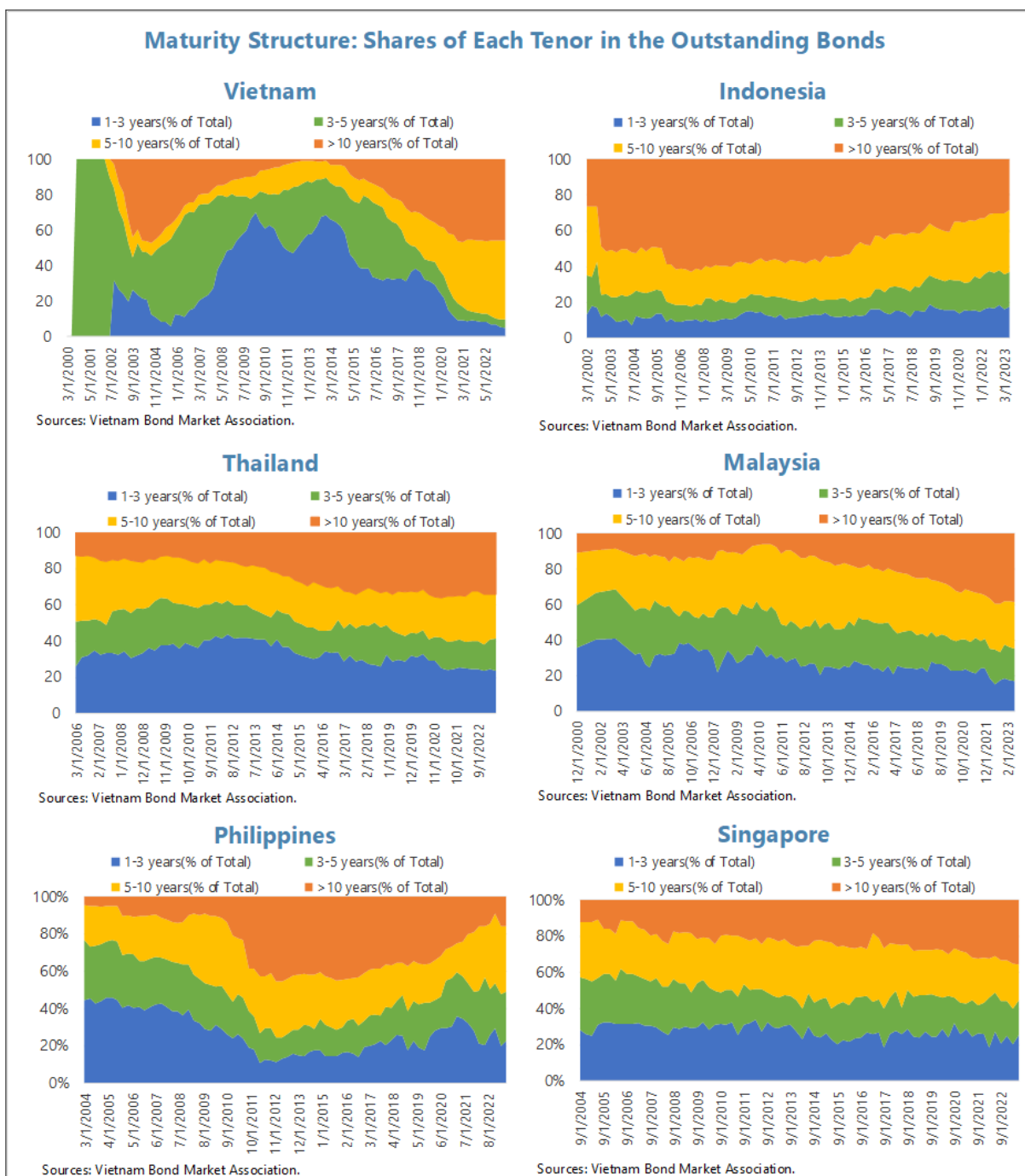
4. Government bond auctions tend to see high bid-to-cover ratios, but the ratio of filled bids is low, suggesting an implicit cut off yield level. Issuances through auctions, the most common placement method, increased until the mid-2010s and stagnated subsequently.³ The average bid-to-cover ratio (BTC) is around 2 since Jan 2013, and the share of auctions that recorded $BTC > 1$ is around 80%, with variation across tenors. However, many auctions with BTC ratios greater than or equal to one record a lower winning amount than the offering amount. For auctions with $BTC \geq 1$, 60 percent of the auctions record a winning to offering ratio of less than one. This appears to be due to pricing – the authorities seem to cap yields at auctions and reject some bids with high yields, in order to keep borrowing costs low.



Maturity Structure

5. The Vietnamese authorities have shifted the maturity structure toward medium-to long-term securities in the recent decade. The trend started in the mid-2010s, and after 2019 most government bond issuance has been of maturities in the 5-10 years and 10+ years range. Vietnam State Treasury (VST) stopped the issuance of T-bills in 2017. Accordingly, the maturity structure of the debt stock has shifted to longer-term maturity bonds. This contrasts with Asian peer-countries, where the maturity structure of government bonds has been relatively stable and balanced. The shift in the maturity structure was motivated by policy considerations—the authorities' 5-year National Financial Plan & Public Debt Borrowing and Repayment Plan stipulates a target of average government bond issuing maturity of 9-11 years.

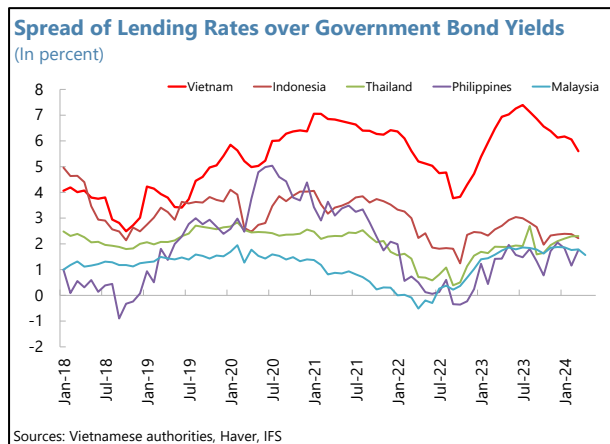
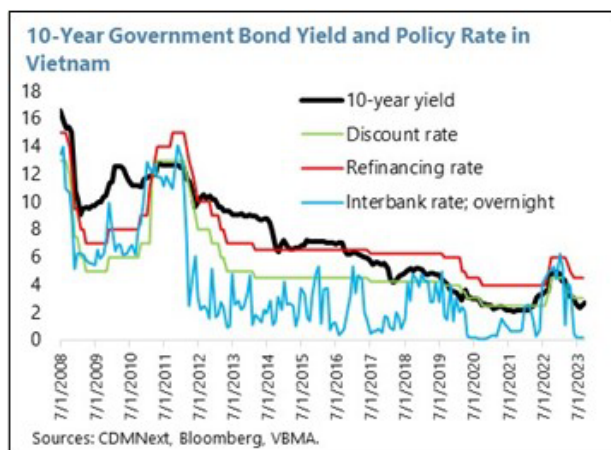
³ Government bonds are issued through (i) auctions, (ii) underwriting and (iii) retail placements. VST states that it has only issued bonds via auctions through HNX since 2020. VBMA provides results of auctions conducted by Vietnam State Treasury, Vietnam Bank for Social Policies, The Vietnam Development Bank, NHCSXH and KBNN. Only primary dealers (14 currently) can participate in the auctions.



Bond Yields

6. Government bond yields are low relative to the policy rate, private sector lending rates, and peer countries. Over the last decade market yields have trended downward except for a temporary increase in mid-2022. While low government bond yields help in the short-term with public debt dynamics, there are several important costs including to the pension system (see paragraph 13). In addition, the recent low yields in the sovereign bond market make bonds

unattractive for foreign investors and domestic asset managers. At the same time, average lending rates to the private sector are high in Vietnam compared to peers, especially in comparison to VGB yields. Real interest rates on government bonds have been declining since 2015 in Vietnam and have been on the low side compared to Asian peer countries.

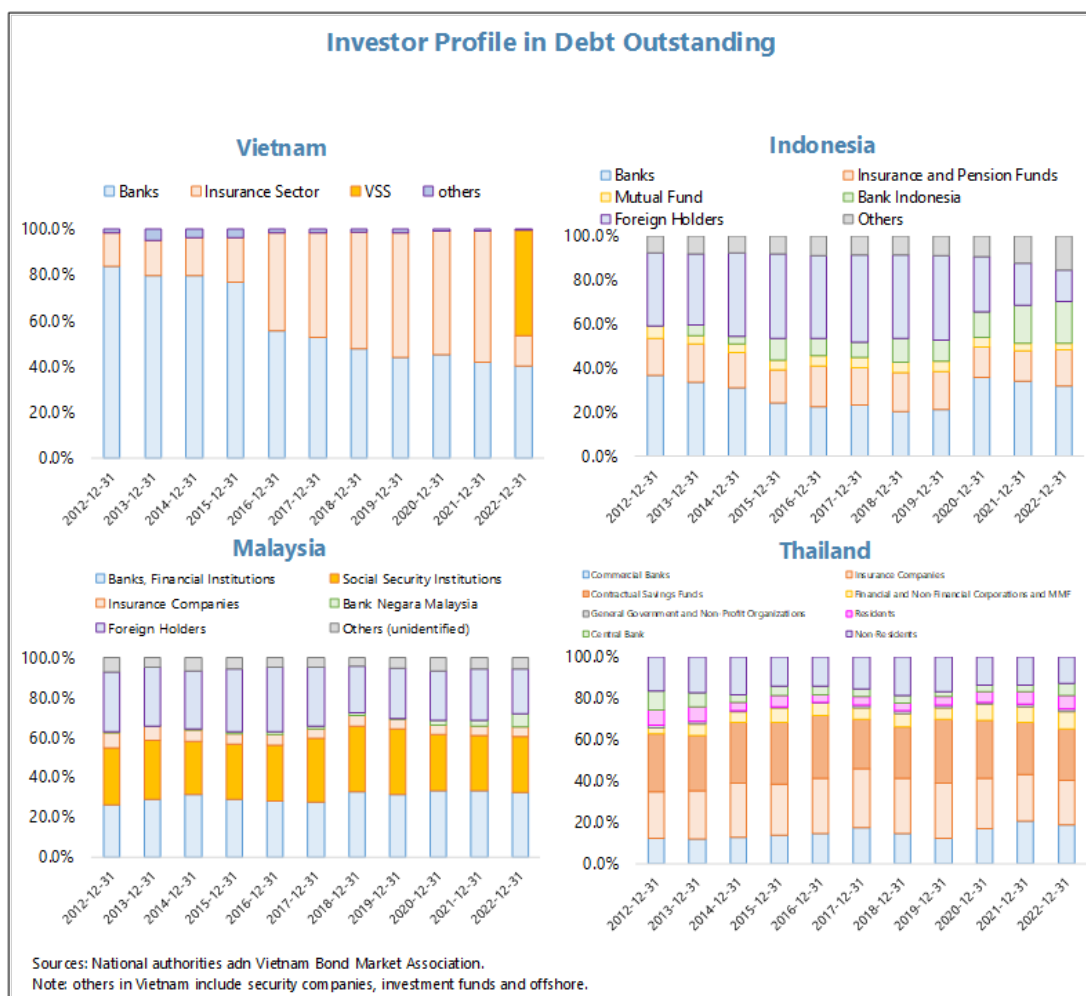


Investor Base

7. A longer maturity profile and low yields were achieved in large part due to a very concentrated investors base—relying on VSS and banks. The investor base in Vietnam has shifted from banks to insurers, and in particular VSS has a dominant presence in the market. Banks account for about 40 percent of the market, down from 80 percent prior to 2016. Insurers share of the market rose from 20 percent in 2012 to 60 percent, of which most is held by VSS (about 42 percent of outstanding government debt as of 2022). On a flow basis, VSS appears to purchase 30-60 percent of the total sovereign bond issuance (VND 100-130 trillion/year).⁴ There is almost no

⁴ The investment by VSS is implemented in line with the Law on Social Insurance and the Government's Decree, No. 30/2016/ND-CP, and restricted to a few asset classes. The investment portfolio mainly focuses on Vietnamese government bonds and bank deposits. See: Viet Nam Social Security (2018).

participation by foreign investors or mutual funds in the Vietnamese government bond market. Accordingly, the diversity of the investor base is limited compared to Asian-peer countries.

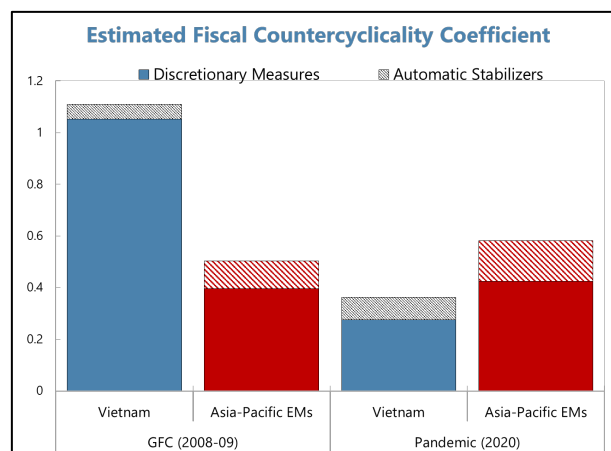


B. Causes of Stagnating Market Size and Trading, The Concentrated Investor Base and Low Yields

8. Low government bond yields are the result of captive, price-insensitive demand—a form of financial repression. Banks need to hold some government securities for liquidity management purposes and to meet regulatory requirements. The largest single holder and biggest purchaser of government bonds is VSS. VSS's strict investment policies limit its investments to government securities and deposits.⁵ Investment in corporate bonds and equity are not permitted. As a result, VSS's demand for bonds is largely price insensitive.

⁵ A relaxation of VSS's investment policy is currently under discussion.

9. In addition to captive VGB demand, supply has been limited due to relatively small fiscal deficits. Fiscal deficits have been moderate including during the COVID pandemic. Public and publicly guaranteed debt has declined to about 34 percent of GDP. On the other hand, fiscal policy has been less countercyclical in Vietnam in recent years, including during the pandemic, than in other Asian emerging markets. This suggests that there could be benefits from using fiscal policy more actively to manage cyclical shocks while maintaining the strong fiscal position. Having a more developed bond market and being able to attract more investors can help. Evidence from bond auctions that shows a relatively low number of bids being filled is consistent with an implicit policy to cap yields and reject bids at yields deemed too high.



10. Low bond yields and VSS's dominant role in the market lead to a concentrated investor base and low secondary market trading. Yields in the Vietnamese government bond market are unattractive for foreign investors and most asset managers. In addition to low yields, the concentration of issuance at longer maturities also reduces investor base diversification as investors with shorter maturity preferences are kept out of the market. The large market share of VSS, which holds the government bonds until maturities, reduces liquidity in the secondary market.

C. Benefits from Developing the Sovereign Bond Market

11. Further development of the local currency government bond market would bring important benefits. These include direct benefits for fiscal policy to manage future fiscal spending needs and respond to shocks, while lowering borrowing costs sustainably. In addition, there are important ancillary benefits from a well-developed sovereign debt market for the development and functioning of financial markets and the effectiveness of monetary policy.

Direct fiscal benefits:

12. A mature domestic government bond market offers a deep source of funding for the government. While Vietnam is in a strong fiscal position, there could be a need for greater financing in the future, including to respond to shocks and to invest in policy priorities. A well-developed, deep domestic government bond market would provide the funding and allow for a better balance between domestic and foreign investors and appropriate currency composition. The

government would have greater space for countercyclical fiscal policy, to smooth consumption and investment in response to shocks, and to fund development priorities including expanding social safety nets, investing in public infrastructure, and addressing the climate agenda.

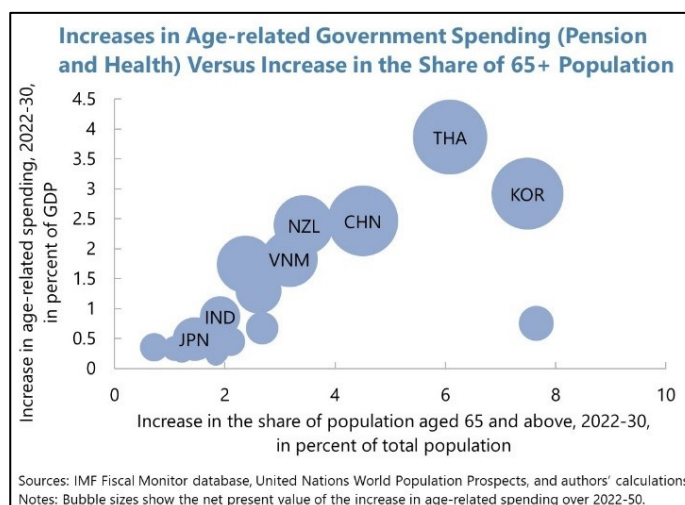
13. While borrowing costs are currently low, this is not sustainable and implies larger fiscal costs in the future. Although the MoF has enjoyed relatively low borrowing cost due to the

captive demand from VSS, relying on the social security fund is not sustainable given projections of a shortfall in social security funding in the medium term. Lower returns on VSS savings will require higher government support to VSS or higher plan participant contributions. In this sense, the current low borrowing costs are not representing the full cost of funds which are partially absorbed by VSS. A developed market with a deep and diversified set of investors and market-based pricing would allow for better management of future debt and maintain borrowing costs more manageable.

Benefits for financial market development and monetary policy:

14. A well-developed government bond market can contribute to strengthening the monetary policy transmission. The central bank controls short-term rates but relies on market forces for the transmission across the yield spectrum. With government bonds serving as the risk-free benchmark for other interest rates in the economy, efficient government bond pricing supports monetary transmission. In addition, a government bond yield curve in a well-developed market contains important information for policymakers on market expectations of future monetary policy and economic conditions.

15. An efficient and well-functioning government bond market underpins operations in the entire financial market. Development of a domestic government bond market fosters greater competition and development of financial infrastructure, products, and services in the private market capital markets. Sovereign bonds are widely used as high-quality liquid assets and government bond yields are proxies for the nominal risk-free rate. Their prices serve as benchmarks for the pricing of various financial contracts and hedging instruments, contributing to the efficient resource allocation in the economy. Capital market participants rely on the government yield curve to assess the cost of funds on different time horizons. For this, the bond market can be a useful long-term asset and risk management tool. The role of government bonds as a safe and liquid asset



has important system-wide benefits, for example, by allowing investors to buy and sell the securities with low costs when liquidation is needed.⁶

16. A more market-based determination of yields could help reduce distortions that contribute to high private sector borrowing costs. The spread between private sector lending rates and government bond yields is very large in Vietnam, significantly above levels in other large ASEAN countries. While high private sector lending rates reflect various factors and distortions (including credit targets and interest rate caps), captive demand for government bonds at low rates likely also contributes to raising private sector borrowing costs.

D. Policies to Develop the Government Bond Market

17. The further development of the sovereign bond market will require a more market-based determination of yields. At current levels, government bonds are largely unattractive for asset managers and foreign investors as reflected in the concentrated investor base. Low bond yields compared to peer countries, private sector lending rates, and the monetary policy rate likely reflect captive and price-insensitive demand by VSS. VSS's investment policy requires it to mostly purchase government bonds which depresses yields and crowds out other investors when bond supply is limited. The low investment return that VSS obtains from its government bond portfolio imposes a cost on the social security system. VSS should gradually broaden its investment mandate beyond government bonds with strong risk management safeguards in line with international best practice. VSS should also be enabled to manage its government bond portfolio more actively and engage in secondary market trading. This shift should be accompanied by capacity building efforts to strengthen VSS's investment and risk management capabilities.

18. The investor base should be broadened and strengthened. A diverse investor base with different time horizons, risk appetites, and trading motives ensures stable demand for government bonds, in turn allowing the government to execute its funding strategy under varying market conditions. The development of a diversified investor base is linked to capital market development more broadly. Important aspects are the deepening of the institutional investor base including pension funds, insurance companies, and asset managers. In addition to more market-based yields, further developing foreign exchange and interest rate hedging instruments would support participation in the VGB bond market by various investors.

19. Issuance across the maturity spectrum would help establish a more robust yield curve and improve secondary market liquidity. Issuance is concentrated at 10+ year maturities. Long duration bonds are typically absorbed by buy-and-hold investors such as VSS and insurers. While the lengthening of maturities is in principle positive, a more balanced maturity profile of issuance would appeal to a more diversified set of investors (IMF, 2001). For this purpose, communication

⁶ As an example, in the Vietnamese context, the Deposit Insurance of Vietnam (DIV) holds significant amount of sovereign debt. Better market liquidity could allow the DIV to liquidate their assets with lower liquidation costs in an emergency and contribute to a well-functioned deposit insurance.

opportunities with primary dealers and investors plays a crucial role in building issuance profiles which reflect demands of investors and ensure smooth issuance.

20. Debt management policies should consolidate outstanding bonds to achieve larger benchmark sizes. VST has made good progress in reducing fragmentation of outstanding bonds, but here remains a large number of outstanding bonds often with maturities close to each other. Further efforts to consolidate issuances into benchmark bonds would enhance market liquidity and price formation. Buyback programs, exchange offers, and switch auctions could be used to standardize instruments.

21. The government could consider the establishment of a primary dealer (PD) system with market making obligations. The authorities have established the legal framework for a PD system (decree 95 and associated circulars) but PDs (currently there are 12) do not have a market making obligation which could help with market development. As best practice, the authorities need to monitor PD performance against their obligations and replace underperforming PDs. The successful implementation of market making is also conditional on market development including achievement of delivery-versus payment settlement of bond trades, the development of repo markets, and/or the availability of government securities lending services. The development of interest and government bond futures would be helpful for market makers to reduce the inventory of bonds they need to hold for market making and to facilitate risk management. That said, a PD system is not a necessary condition for a well-functioning bond market.

22. Repo market development is important to enhance secondary market functioning and liquidity. It is also needed for market making by PDs. In Vietnam, the repo market is not developed due to uncertainties about the legal robustness of repo transactions. In addition, repo transaction fees on HNX are high. High excess liquidity in the interbank market is likely also reducing the need for banks to manage liquidity and trade government securities in the money markets.

23. While moving forward with reforms in the sovereign bond market, the government should also ensure that pre-requisite conditions for the reforms are satisfied.⁷ The IMF/WB framework discusses “enabling conditions” for local currency bond market development, including:

- *Sound and stable macroeconomic conditions:* macroeconomic stabilization, such as stable growth, inflation, interest, and exchange rates, is important to reduce uncertainty in the market, enhance market demand and anchor investors’ confidence.
- *Sufficient financing needs of the government while maintaining sound fiscal and debt positions:* the government’s *funding* needs form the basis of debt issuance, but a high fiscal deficit can feed into an unsustainable debt trajectory, and fiscal risks stemming from contingent liabilities can add to debt-related vulnerabilities, resulting in eroding market confidence.

⁷ For more details on this framework, see IMF (2021) guidance note.

- *Financial sector soundness*: liquid and well-capitalized financial sector plays an important role as both investor and intermediary in the government debt market. The soundness is assessed typically by its capital adequacy, asset quality, earnings, and liquidity positions. Any risks of financial sector instability would hamper the capacity of the banking sector to play its role effectively.
- *Debt management capacity and operating procedures*: the debt management entity should have clear mandate, trained staff, a supporting organizational structure, and the necessary resources to implement a market-based approach to public debt management.

24. Strengthening fiscal and debt reporting is another critical element for a well-

developed sovereign debt market. Improved and timely economic statistics, especially related to fiscal and debt data, and frequent disclosures on projections and medium-term fiscal plans are essential to allow investors to efficiently price government bonds and reduce risk premia. Ensuring these conditions would also make potential investors more confident and contribute to a more diversified investor base.

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