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The Effectiveness of Foreign Exchange Intervention: Empirical Evidence from Vietnam*

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Abstract

This study uses monthly data from January 2009 to December 2020 to examine the effectiveness of foreign currency intervention and its influence on monetary policy in Vietnam using a Hierarchical Bayesian VAR model. The findings suggest that foreign exchange intervention has little influence on the exchange rate level or exports, but it can significantly minimize exchange rate volatility. As a result, we can demonstrate that the claim that Vietnam is a currency manipulator is false. As well, the forecast error variance decomposition results reveal that interest rate differentials mainly determine the exchange rate level instead of foreign exchange intervention. Moreover, the findings suggest that foreign exchange intervention is not effectively sterilized in Vietnam. Inflation is caused by an increase in international reserves, which leads to an expansion of the money supply and a decrease in interest rates. Although the impact of foreign exchange intervention grows in tandem with the growth of international reserves, if the sterilizing capacity does not improve, rising foreign exchange intervention will instead result in inflation. Finally, we use a rolling window approach to examine the time-varying effect of foreign exchange intervention.

Keywords: Foreign Exchange Intervention, Exchange Rate, Exchange Rate Volatility, Hierarchical Bayesian VAR Model

JEL Classification Code: C11, E52, F31

1. Introduction

In December 2020, the U.S. Department of the Treasury (after this referred to as “USDT”) accused Vietnam’s financial sector of using foreign exchange intervention (hereinafter referred to as “FXI”) to prevent the appreciation of the Vietnamese dong (after this referred to as “VND”)

to gain an unfair trade advantage, and thus designated Vietnam to be a “currency manipulator.” The context started when the U.S. trade deficit with Vietnam reached \$69.2 billion in 2020, second only to China and Mexico. At the same time, the size of Vietnam’s international reserves increased by \$16.6 billion, representing 6% of Vietnam’s GDP in 2020. The massive trade surplus and the increasing size of international reserves both far exceeded the USDT’s criteria for identifying a “currency manipulator.”

Although the USDT has since canceled Vietnam’s “currency manipulator” designation, they still include it on the watch list of the currency manipulator. As well, they pay close attention to Vietnam’s exchange rate policy, which forces Vietnam to take some effective measures to obtain the USDT’s approval. However, these measures put intense appreciation pressure on the VND, which is to the detriment of Vietnam’s international trade. As well, the recent acceleration of the “China+1” strategy of multinational companies due to the Sino-U.S. trade war has led to continuous foreign direct investment entering Vietnam, which would benefit economic growth. Foreign direct investment boosts Vietnam’s economic growth (Nguyen et al., 2021). In this context, the intense

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appreciation pressure on the VND may also have a certain degree of negative impact on the attraction of foreign direct investment (Lee, 2015). In short, the accusation of a “currency manipulator” may have a lasting negative impact on Vietnam’s economy.

Accusations against the USDT, the State Bank of Vietnam (hereinafter referred to as “SBV”) explained that the accumulation of international reserves was only to control inflation and keep the macroeconomic stabilization, not keep the exchange rate depreciation. As Silva Junior (2021) points out, the accumulation of international reserves can prevent net capital outflows and external debt repayment. Moreover, holding international reserves helps monetary authorities control inflation in times of financial crisis. However, on the other hand, mercantilist motives may also motivate the central bank to keep the exchange rate depreciation by increasing international reserves, thereby increasing international trade competitiveness and ultimately promoting exports (Aizenman & Lee, 2007; Steiner, 2017b).

Thus, the key to judging the accusation’s validity that Vietnam manipulates the exchange rate through FXI is to confirm whether the increase in Vietnam’s international reserves directly leads to a depreciation of the exchange rate. In other words, to confirm whether Vietnam’s FXI effectively affects the exchange rate. Unfortunately, although many studies investigate the effectiveness of FXI, there is a lack of consensus in the existing literature due to the heterogeneity problems in country characteristics, sample periods, and research methods (Arango-Lozano et al., 2020). Therefore, it is not easy to extend the previous conclusions to the case of Vietnam, and it is necessary and worthy to study the effectiveness of FXI in Vietnam.

In addition, the accumulation of international reserves brings benefits, such as reducing the shock on the domestic economy during the economic crises, but it also requires costs. The costs are reflected in that the accumulation of international reserves can weaken the effectiveness of monetary policy in emerging economies (Riedel, 2018; Su et al., 2017). In more detail, FXI can lead to inflation in the domestic economy if the SBV fails to thoroughly sterilize the impact of the increase in international reserves on the money supply (Hoang et al., 2020; Nguyen et al., 2019; Pham & Riedel, 2012). Therefore, considering the possible economic costs associated with the accumulation of international reserves, another contribution of our study is the additional consideration of the impact of FXI on Vietnam’s monetary policy.

Finally, because of the endogeneity problems between FXI and other macro variables, overly dense parameters need to be estimated if using a Vector autoregression (VAR) model. The dense parameterization of VAR models may lead to unstable inference and prediction

(Koop & Korobilis, 2010). A hierarchical Bayesian VAR model, introduced by Giannone et al. (2015), effectively ameliorates this drawback and performs well in the accuracy of the impulse response functions estimations. Thus, our study contributes to the existing researches by using a hierarchical Bayesian VAR model to analyze monthly data from 2009 to 2020 after the financial crisis and observe the time-varying effects of FXI in Vietnam.

2. Literature Review

In view of the studies on the effectiveness of FXI, we find that the frequency of FXI is higher in emerging market countries than in developed countries (Sikarwar, 2020). Thus, the literature on the effectiveness of FXI in emerging market countries is rich. Some of them have concluded that FXI is effective. For instance, Leon and Williams (2012) concluded that FXI in small open economies has a short-term impact on exchange rate movements based on the case of Dominica. They also reveal that FXI by the authorities is partly related to the “fear of floating,” especially the strong appreciation affecting the country’s competitiveness.

Similarly, Lee and Kim (2020) indicated that a negative shock in international reserves leads to an appreciation of the Korean won while reducing volatility and capital inflows through an empirical study of VAR models using monthly data. They also confirm that Korea’s exchange rate policy is designed to hold the stability of the foreign exchange market rather than keep the currency depreciation. Broto (2013) used a GARCH model to study the effectiveness of FXI in four inflation-targeting countries, namely Chile, Colombia, Mexico, and Peru, respectively. The results show that regardless of the size, initial or one-off interventions signal to the market will help stabilize its exchange rate volatility.

Then, Daude et al. (2016) investigated the effectiveness of FXI in 18 emerging market economies by using an error correction model. They find that after controlling for deviations from equilibrium and short-term changes in financial variables, FXI, on average, effectively moves the real exchange rate in the direction desired by the central bank. Fratzscher et al. (2019) and Adler et al. (2019) tested the effectiveness of FXI using data from 33 and 52 economies, respectively. Although they used different methods, they both verified that FXI instruments are widely used and are practical policy tools.

Furthermore, some studies also argued that the impact of FXI on the exchange rate level is limited, but it can help stabilize the exchange rate volatility. For example, Catalán-Herrera (2016) analyzed the impact of FXI on exchange rate levels and daily returns variance in Guatemala with a GARCH model. The finding illustrates that FXI can dampen exchange rate volatility, although it did not affect exchange rate levels during the

sample period. Wang and Zhao (2021) used a VAR analysis of 26 economies, revealing that FXI could effectively mitigate nominal exchange rate volatility but has a limited impact on the real exchange rate.

Even some studies doubt the effectiveness of FXI and believe that it increases exchange rate volatility. Trivedi and Srinivasan (2016) tested the relationship between FXI and exchange rate direction or volatility by applying monthly and daily data from India. The results reflect that FXI can affect the movements of the exchange rate but not be in the direction desired by the central bank. Meanwhile, FXI has a minor effect on exchange rate volatility. Loiseau-Aslanidi (2011) used the GARCH-M model to analyze the daily data from Georgia during the periods 1996 to 2007. The conclusion is that frequent FXI, while reducing the tendency of the Georgian currency to depreciate, also increases the exchange rate volatility and reduces the central bank's credibility. Tuna (2011) and Tümtürk (2019) both verify the effectiveness of FXI by using daily data from Turkey. The results show that FXI is ineffective, and the Turkish central bank has an incorrect signaling effect on the exchange rate level and instead tends to increase the exchange rate volatility.

In short, we find a lack of consensus on the effectiveness of FXI in the light of previous studies. As well, we notice that there are few studies on the case of Vietnam, and the conclusions based on other studies' findings do not also apply to Vietnam. Thus, research on Vietnam is necessary and worthwhile. Moreover, except for itself effectiveness of FXI, its impact on monetary policy has also been a hot topic for many scholars.

An increase in international reserves implies an increase not only in the central bank's assets but also in liabilities. The increase in the monetary base would lead to an expansion of the monetary aggregates through the action of the money multiplier (Su et al., 2017), which eventually leads to inflation (Steiner, 2017b). Ponomarenko (2019) used VAR models to confirm the impact of increased foreign reserves on the money stock in 19 emerging market countries, finding that foreign reserves create more broad money through external transactions. If not thoroughly sterilized, the money created leads to a decline in inter-bank interest rates. Meanwhile, the money creation on this basis is further expanded by credit expansion. Then, Steiner (2017b) also interpreted that if the monetary expansion generated by FXI is not thoroughly sterilized and exceeds the growth of money demand, it may eventually lead to inflation. Adler et al. (2021) also pointed out that central banks in emerging market economies with dual goals of inflation-targeting and exchange rate stability make a higher propensity for FXI to lead to inflationary overshooting.

Finally, regarding the link between FXI and money supply and inflation in Vietnam, Trinh and Nhan (2018) used quarterly data from 2000–2014 to examine the

impact of foreign reserves accumulation on money supply in Vietnam. They concluded that the high mobility of capital and the wrong size and timing led to FXI not being thoroughly sterilized, thereby becoming one source of high inflation in Vietnam. Later, Hoang et al. (2020) reconstructed the central bank loss function taking into account the dollarized economy context. They reveal that between 2004Q1 and 2018Q4, the effectiveness of hedging increased but to a limited extent, eventually resulting in that FXI still significantly increasing the money supply. In addition, Nguyen et al. (2019) also considered the impact of FXI on inflation in Vietnam by applying the ARDL and ECM model while considering the money supply. They confirm that the accumulation of foreign reserves affects inflation both in the short and long run due to the ineffective sterilization policies of the SBV during the period of implementing FXI.

In general, our study's method and data scope are different from previous studies mentioned before. In more detail, we use monthly data to refine the analysis of the impact of FXI. Meanwhile, a hierarchical Bayesian VAR model can better analyze the dynamic effects of FXI on exchange rates and monetary policy.

3. Model and Data

3.1. Data

The empirical analysis section only uses Vietnam's monthly data from January 2009 to December 2020. The reason for time range selection is due to the SBV announcing to credit institutions to stop buying USD in the spot market from December 31, 2020, after officially recognizing it as a currency manipulator by the USDT in 2020. As a result, it is difficult to correctly observe the effect of FXI in Vietnam after December 2020, so we would not include this period data sample in our study.

A common approach to analyze the effectiveness of FXI is the vector autoregressive (VAR) model (Kim, 2003; Lee & Kim, 2020; Pinar Ardic & Selçuk, 2006). The VAR model allows for the use of multiple variables and treats all of them as endogenous variables. Thus, in addition to the endogenous variables that we are most interested in (FXI, exchange rate level, and exchange rate volatility), our study also includes M2, interest rate differential between Vietnam and the U.S., CPI, FDI, exports, and IIP variables, which have been widely used in previous studies (Adler et al., 2019; Lee & Kim, 2020).

The set of endogenous variables used in our study is defined in Equation (1).

$$Y_t = [\text{INRE } M_2 \text{ RATE ER EVOL CPI FDI IIP}] \quad (1)$$

INRE stands for FXI measured with monthly changes in Vietnam's international reserves, which is similar to Adler

and Mora (2011) and Adler et al. (2019). M2 represents the broad money supply; RATE denotes the interest rate differential. We use the difference between the deposit interest rate by banks in Vietnam and the U.S. federal benchmark rate as a proxy variable. The deposit interest rate by banks in Vietnam is drawn from the IMF. The U.S. federal benchmark rate is drawn from FRED. The reason for the measurement of interest rate differential with the U.S. is that we focus on the bilateral exchange rate between the VND and the USD (Adler et al., 2019).

ER is the exchange rate, measured with the VND price per USD unit at the end of the month. The lower number means the appreciation of the VND. EVOL is exchange rate volatility, calculated similarly as Berganza and Broto (2012) and Vo (2018). It is measured with the monthly standard deviation of the daily natural logarithm differences in the exchange rate. Exchange rate data is collected from Investing.com. In addition, CPI is a proxy for the percentage increase in the Consumer Price Index on a month-over-month basis. EX stands for Exports; IIP is the Index of Industrial Production, based on 2005 (100 in 2005), data is from Vietnam National Bureau of Statistics. FDI stands for foreign direct investment, collected from the Vietnam Ministry of Planning and Investment.

Due to the presence of unit roots, we use post-logarithmic first-order differenced data for FXI, exchange rate, M2, FDI, exports, and IIP. Meanwhile, first-order differenced data for interest rate differentials are used. We do not differentiate the exchange rate volatility and CPI. The ADF unit root test confirms that all data have no unit root. Moreover, all series are standardized by scaling their respective standard deviations.

Considering that the purpose of our study is to explore the impact of FXI on the exchange rate and monetary policy, we put the FXI variables first in Cholesky decomposition. Next is the monetary policy block, which includes M2 and interest rate differential. Then comes the exchange rate, exchange rate volatility, CPI, FDI, exports, and IIP. Note that the order of variables is arranged with reference to the previous studies on the transmission channels between FXI, exchange rate, and monetary policy in Vietnam (Anwar & Nguyen, 2018; Pham, 2019; Steiner, 2017b; Thuy & Thuy, 2019; Vo et al., 2020). Not only that, in the robustness assessment section, we determined that the order of the variables does not affect the conclusions of our study once again.

3.2. Model

The general VAR(p) model uses the following model.

$$Y_t = a_0 + \sum_{j=1}^p A_j Y_{t-j} + \varepsilon_t \quad (2)$$

where:

Y_t denotes an $M \times 1$ vector containing M time series variables.

ε_t is an $M \times 1$ vector composed of error terms.

a_0 is an $M \times 1$ vector composed of intercept terms.

A_j is an $M \times M$ coefficient matrix.

The dense parameterization of the VAR model leads to instability of out-of-sample prediction and structural inference. Bayesian methods can effectively mitigate the curse of dimensionality through information conjugate prior (Koop & Korobilis, 2010). However, the number and importance of subjective choices in the prior setting question the robustness of the analysis results. Giannone et al. (2015) improve the general Bayesian VAR by introducing the hierarchical modeling approach. It prevents illogical prior hyperparameter choices not supported by the data. The model specification and estimation details can be seen at Giannone et al. (2015) and Kuschnig and Vashold (2021).

Then, we will use the Minnesota prior (Litterman, 1980), which assumes that each variable follows a random walk process with drift and has been shown to perform well in multivariate macroeconomic studies (Bańbura et al., 2010). The parameters are set as recommended in Giannone et al. (2015), Kuschnig and Vashold (2021), and Dhannur and John (2021). The analysis is performed using the R program “BVAR” package (Kuschnig & Vashold, 2021). During estimating this model, we set the lag order p to 4. The total number of iterations in the MCMC step is set to 30,000 and discarded initial iterations to 10,000. Observing the trace and density plots reported in Figure 1, we can see a good convergence of the key hyperparameters λ .

4. Empirical Results

4.1. Impulse Response Analysis

In this part, we analyze the impulse response analysis results to verify the effectiveness of FXI in Vietnam. If the changes in international reserves can significantly affect the exchange rate level, zero should not be included in the confidence interval. Moreover, we can also observe the relationships between FXI and other macroeconomic variables. Note that the lightly shaded area represents the 90th percentile of the impulse response, and the dark shaded area represents the 68th percentile of the impulse response.

4.1.1. Effectiveness of FXI

Figure 2(a), Figure 2(b) show the effect of FXI (INRE) on the exchange rate (ER) and exchange rate volatility

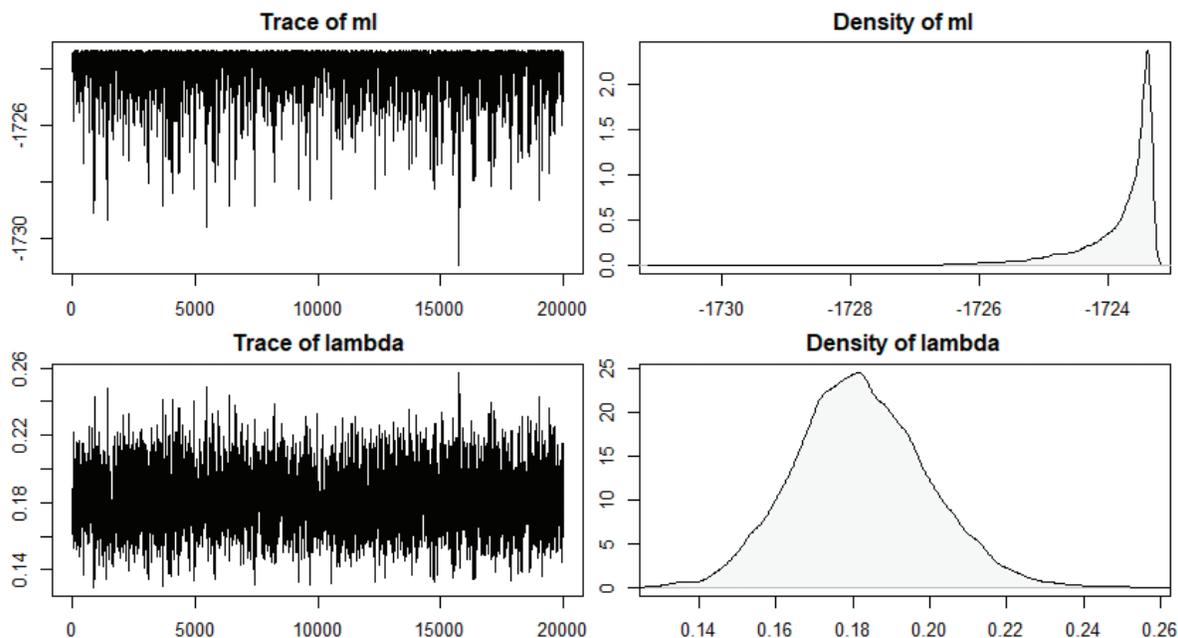


Figure 1: Trace and Density Plots of the Hierarchically Treated Hyperparameters λ and the ML

(EVOL). Firstly, according to Figure 2(a), the exchange rate level moves instead in the direction of appreciation after a positive shock in FXI (buying foreign currency). However, it does not have a significant level. Meanwhile, Figure 2(d) reflects the effect of FXI on exports. Although FXI positively shocks exports, it does not significantly and continuously affect exports. The results indicate that the accusation that SBV maintains a low exchange rate evaluation through FXI to get unfair trade competitiveness is not valid. Second, Figure 2(b) reveals that FXI can significantly reduce the exchange rate volatility, indicating that keeping the exchange rate movements stable can indeed be achieved through implementing FXI.

Moreover, the results in Figure 2(c) report that when the VND depreciates, the SBV tends to sell international reserves to slow down the upward movement of the VND. Likewise, when the VND appreciates, the SBV buys international reserves to slow down the downward movement of the VND. The “lead against wind” intervention behavior of the SBV may be one reason for the ineffectiveness of FXI in Vietnam. In more detail, when the foreign exchange market moves sharply in one direction, it is difficult for the central bank’s “lead against wind” intervention behavior to reverse the trend (Moffett & Stonehill, 2014). In addition to the above reasons, it may also be that the objective of FXI is not to control for the exchange rate level of VND but simply to accumulate international reserves, so it will

not affect the exchange rate level in Vietnam (Frömmel & Midiliç, 2021).

4.1.2. The Impact of FXI on Vietnam’s Monetary Policy

Vietnam, as a small and highly open economy (Xuan, 2021), under the constraints of the rule of the trilemma, it is difficult to keep exchange rate stability and the effectiveness of monetary policy while relaxing capital inflow restrictions. FXI is an effective tool to relax the trilemma constraints, allowing exchange rate stability, monetary independence, and capital mobility can be achieved simultaneously in the short-run (Steiner, 2017a). Nevertheless, to accomplish this objective, the changes in international reserves need to be thoroughly sterilized (Steiner, 2017a). We suppose that the increase in international reserves is not thoroughly sterilized. It will directly increase the money supply, thereby decreasing interest rates and eventually raising prices (Steiner, 2017b).

As shown in Figure 3, the accusation that the SBV cannot thoroughly sterilize FXI, as mentioned in the literature review, is confirmed. FXI significantly increases M2 and brings down interest rates, finally leading to a significant increase in CPI. The result is similar to Nguyen et al. (2019) and Hoang et al. (2020). It suggests that FXI does hinder the independence of monetary policy in Vietnam due to the poor sterilization effectiveness of the measures implemented by SBV (Pham & Riedel, 2012; Tran et al., 2021). Thus, we

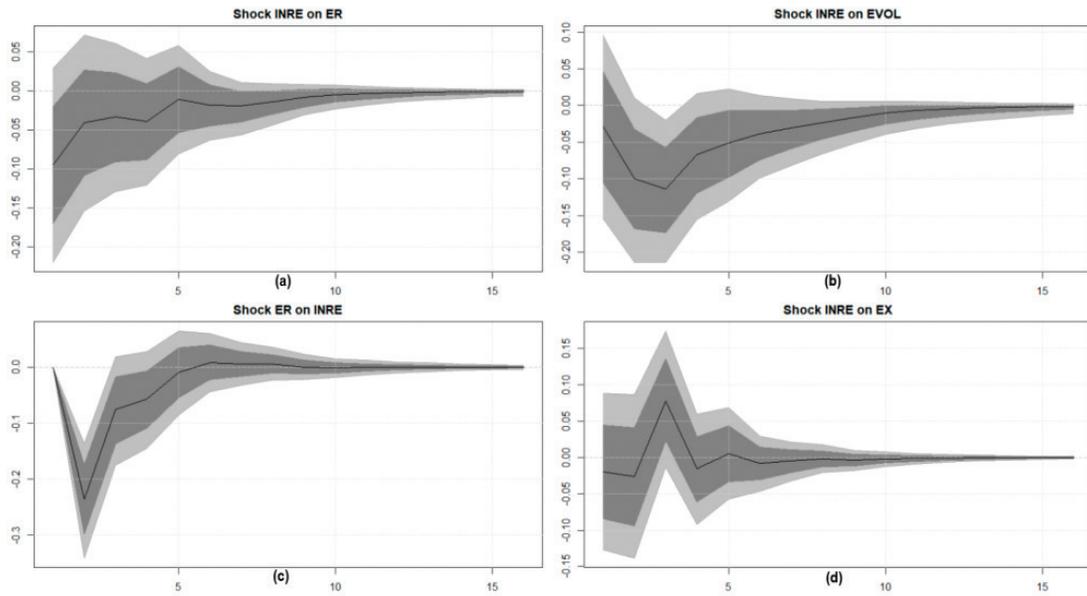


Figure 2: Effectiveness of FXI

- (a) Response from exchange rate (ER) to shock international reserve (INRE)
- (b) Response from exchange rate volatility (EVOL) to shock international reserve (INRE)
- (c) Response from international reserve (INRE) to shock exchange rate (ER)
- (d) Response from exports (EX) to shock international reserve (INRE)

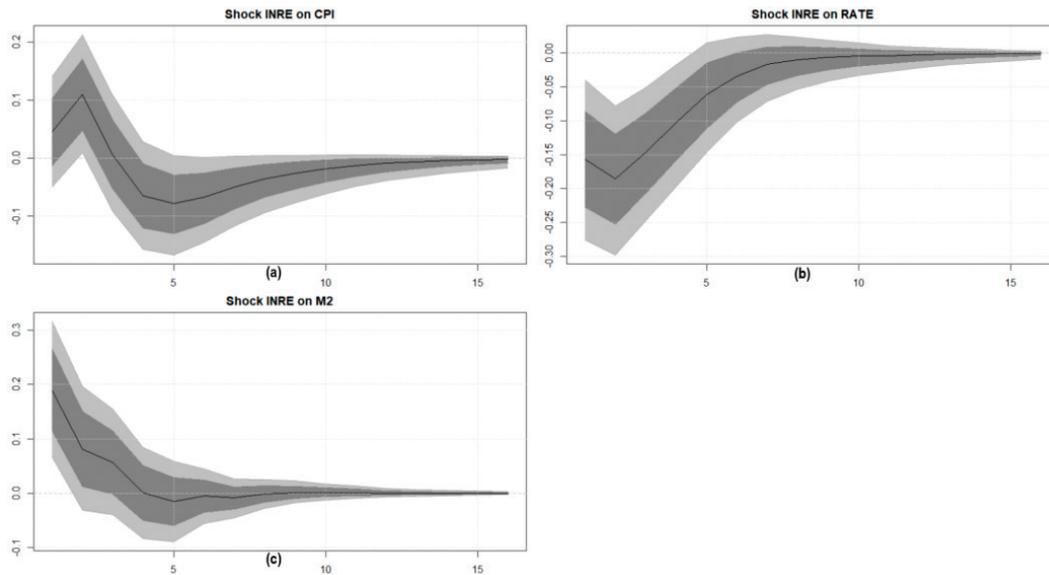


Figure 3: The Impact of FXI on Vietnam's Monetary Policy

- (a) Response from broad money supply (M2) to shock international reserve (INRE)
- (b) Response from interest rate differential (RATE) to shock international reserve (INRE)
- (c) Response from consumer price index (CPI) to shock international reserve (INRE)

can conclude that FXI, as a frequently used policy tool in emerging market economies, needs to be carefully considered because it will be accompanied by economic cost when implementing FXI.

4.2. Variance Decomposition Analysis

In this specification, we observe the degree of influence of each variable on the exchange rate through the forecast error variance decomposition results. Table 1 represents the degree of influence of all variables on the exchange rate in periods 3, 6, and 12. The results reported in Table 1 illustrate that the interest rate differential between the U.S. and Vietnam is the most critical factor in addition to the exchange rate itself. Since the interest rate differential between the two countries is an indicator of arbitrage opportunities, it confirms that the market factor determines the bilateral exchange rate between Vietnam and the U.S. (Lee & Kim, 2020). Furthermore, the impact of FXI is significantly weaker than the interest rate differential, which is less than 5%. The result once again illustrates that FXI in Vietnam is not an essential factor in determining the exchange rate level.

4.3. Rolling Window Results

To examine whether there is a time-varying impact of FXI in terms of its effectiveness and its impact on prices, we use rolling window regressions to track FXI's time-varying impact. Based on the impulse response plots reported above, we find that the impact of FXI on exchange rate volatility and CPI peaks within three months, so here we report the first three months' impulse response results. Precisely, we estimate the data for the first window (January 2009 to October 2014), recording the mean and confidence intervals of the impulse responses of exchange rate volatility to FXI shocks after 1, 2, and 3 months. The impulse response of CPI is likewise recorded. The window is then shifted (removing the oldest data point and adding a new one), after which it is estimated and re-recorded. The number of windows is 74. The results are shown in Figure 4 and Figure 5. The dotted lines are 16th and 84th percentile bands, implying a one-standard-deviation confidence interval.

From the results in Figures 4 and 5, it is clear that Vietnam's FXI is becoming more effective in controlling exchange rate volatility over time. However, at the same time, its impact on the CPI is also becoming more significant. In other words, with the increase of Vietnam's international reserves, Vietnam's ability to control exchange rate volatility is becoming more robust while the consequent economic cost has also increased.

4.4. Robustness Assessment

Due to the space limitations, readers interested in the results can request them from the authors.

1) Change in the Order of Variables

The order of the variables in a VAR model may affect the empirical results. Meanwhile, considering that changes in non-policy variables can trigger policy variables (Bernanke & Mihov, 1998). Therefore, we put the order of the first CPI, FDI, export, and IIP variables. So, the new variable order is as follows. The results show that the change in the order of variables does not change our results.

$$Y_t = [\text{INRE CPI FDI EX IIP } M_2 \text{RATE ER EVOL}] \quad (3)$$

2) Substitution of Key Variables

We follow Levy-Yeyati et al. (2013)'s suggestion of using the change in the ratio of international reserves to M2 as a "strict" intervention proxy. The results prove that our results are robust.

3) Alternative Window Size

We change the window size to 80 and find no significant change in our results.

5. Conclusion

In our study, we analyzed monthly data from January 2009 to December 2020 in Vietnam by using a hierarchical Bayesian VAR model to assess the effectiveness of FXI in Vietnam and its impact on Vietnam's monetary policy. The results of the analysis are summarized as follows.

Table 1: FEVD Results of Exchange Rate

Horizon	INRE	M2	RATE	ER	EVOL	CPI	FDI	EX	IIP
Exchange Rate									
3	0.023	0.024	0.040	0.867	0.008	0.008	0.019	0.009	0.003
6	0.028	0.029	0.054	0.824	0.011	0.014	0.022	0.013	0.005
12	0.030	0.030	0.055	0.819	0.011	0.014	0.023	0.014	0.005

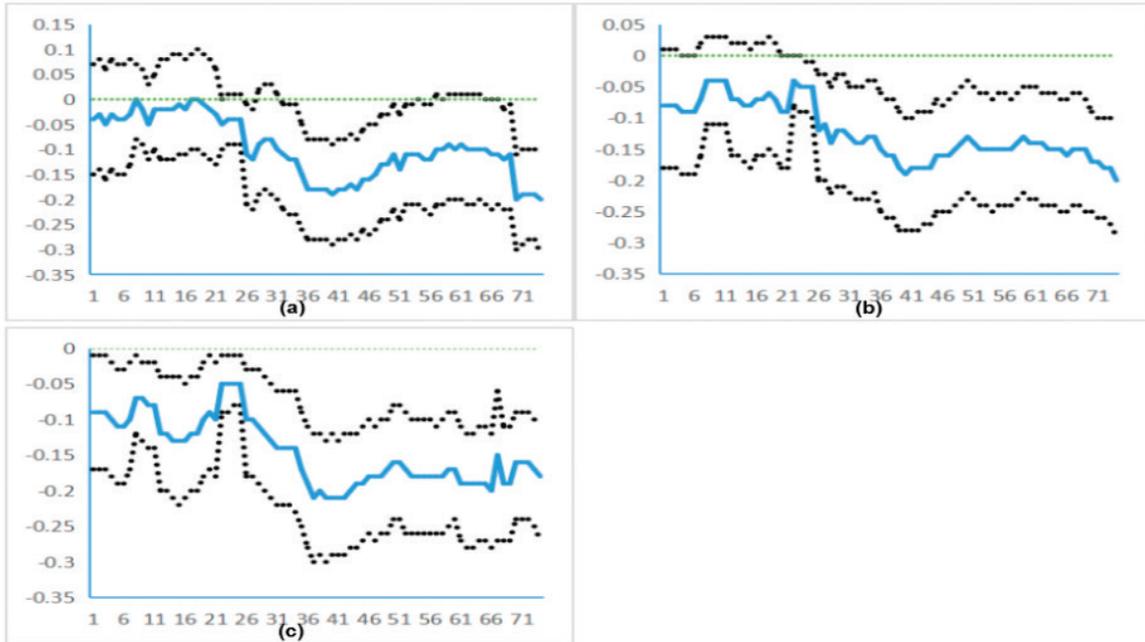


Figure 4: Response of Exchange Rate Volatility to FXI Shocks

- (a) Response after 1 month
- (b) Response after 2 months
- (c) Response after 3 months

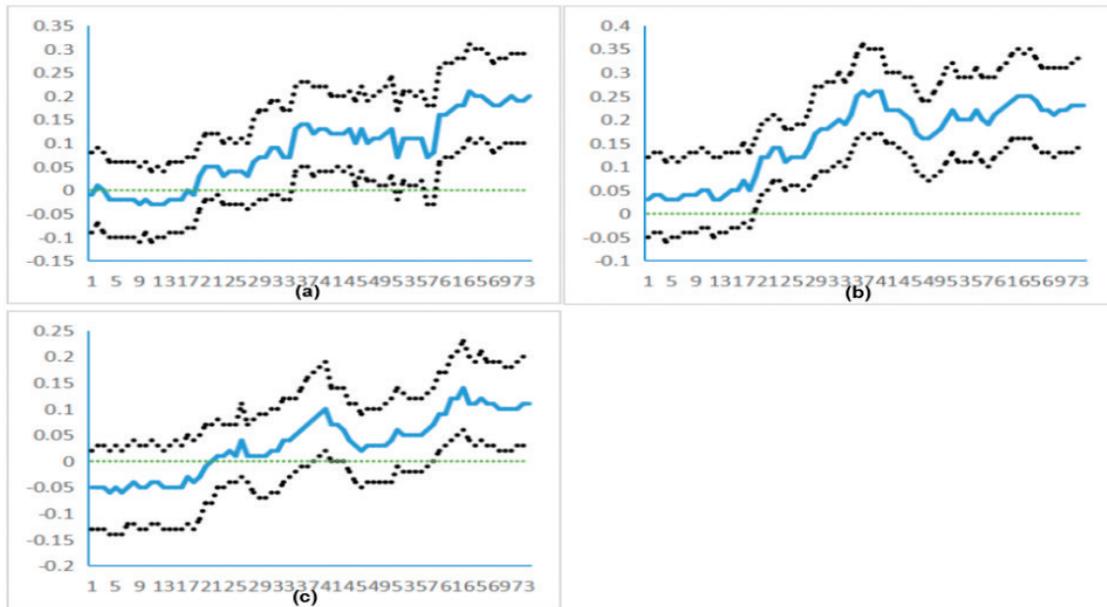


Figure 5: Response of CPI to FXI Shocks

- (a) Response after 1 month
- (b) Response after 2 months
- (c) Response after 3 months

First, Vietnam's FXI does not significantly affect the exchange rate level but effectively reduces the volatility of the exchange rate. Our results reveal that we cannot provide empirical evidence that Vietnam is a "currency manipulator" country. However, it is worth recognizing that Vietnam's FXI has successfully stabilized the exchange rate. Second, the most critical factor affecting the exchange rate level is the interest rate differential between the U.S. and Vietnam. Moreover, although FXI positively affects exports, it is short-term and unsustainable. The multiple aspects results combine to prove that Vietnam's FXI cannot keep the VND at a low depreciation level, thereby enhancing its international trade competitiveness and achieving the purpose of exports promotion. Finally, Vietnam's failure to thoroughly sterilize the increase in international reserves led to an increase in the money supply, which led to inflation in the domestic economy. In other words, although FXI can effectively control exchange rate volatility, it can seriously affect the independence of Vietnam's monetary policy as it is not thoroughly sterilized (Tran et al., 2021).

In summary, we suggest that the SBV needs to fully consider the economic costs of FXI while accumulating international reserves based on precautionary motives. Furthermore, the FXI tool should be coordinated with monetary policy, and if there is a conflict between FXI and inflation targeting, SBV will be in trouble (Wang & Zhao, 2021). For instance, the SBV cannot thoroughly sterilize the FXI, thereby facing inflationary pressure in Vietnam, so the FXI will make the SBV's policy objective of price stability fail (Adler et al., 2021). Thus, the SBV should use FXI carefully.

The limitation of our study is summarized as below. Our study focuses only on the impact of FXI on the nominal exchange rate and does not consider its impact on the real exchange rate. Therefore, in future research, we will determine the effectiveness of FXI on the real exchange rate in Vietnam and evaluate the effect of FXI in Vietnam more comprehensively.

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