“Impact of the US unconventional monetary policy in times of crises on Vietnam”

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IMPACT OF THE US UNCONVENTIONAL MONETARY POLICY IN TIMES OF CRISES ON VIETNAM

Abstract

The study investigates the effects of the US unconventional monetary policy on the Vietnamese economy, focusing on the output and price index. Besides, the differences in the response of these indicators to the shock related to non-traditional tools implemented by the US in the Global Financial Crisis and during the pandemic crisis are also explored. By applying the Structural Vector Autoregressive model on the monthly dataset from January 2007 to April 2022, the results show that an expansionary monetary policy of the US by unconventional measures leads to a rise in the output and price index of Vietnam. In addition, risk-taking channels and portfolio rebalancing channels are important in the transmission of the US monetary policy to Vietnam, they cause booms in asset prices via the surge of capital flows. Moreover, another important finding is that the impact of US UMP on the Vietnamese economy during the Global Financial Crisis was generally two times higher than during the epidemic crisis.

Keywords unconventional monetary policy, SVAR, spillover, real economy, crises

JEL Classification E31, E44, E52, G01

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INTRODUCTION

Under normal economic conditions, monetary policy is implemented by altering short-term interest rates by Central Banks to attain their economic goals. However, given recent financial and debt crises, and the pandemic's devastating effects on the global economy, conventional monetary policy instruments have not had the desired impact on financial stability. To get around the zero lower bounds on short-term interest rates, the US, and other advanced economies (AEs) have also implemented new measures, which are called unconventional monetary policy (UMP). The implementation of a huge number of non-standard monetary policies during the global financial crisis (GFC) has resulted in significant changes in financial conditions and the real economy in both AEs and the rest of the world, especially when it comes to emerging economy markets (EMEs) and developing countries. For instance, a range of large-scale asset purchase programs in AEs have lowered the bond yield, raised real GDP and stock price, and increased the CPI. It also encouraged an increase in capital flows to EMEs, resulting in a rise in real output growth and positive response from financial markets such as the growth of real equity return, etc. The instability in global finance has not stopped since the 2008 financial crisis. The outbreak of the global pandemic crisis since COVID-19 started at the end of 2019 has brought a major shock to economies around the world. Asian economies are affected by the GFC and the non-traditional monetary policy of AEs, especially the United States in different ways (Punzi & Chantapacdepong, 2019). Developing coun-

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tries are also deeply affected by economic uncertainty, especially when it comes to sudden monetary policy adjustments from AEs. New US monetary policy operations are always an important signal for the developing countries' Central Banks to adjust their monetary policy implementation, especially in the GFC and during the pandemic crisis. Consequently, different conducts of such policy have raised a big concern about whether it has international spillover effects on real economies in developing countries and whether there are differences in the response of the real economy of these countries to the shock of the US UMP in the GFC and during an epidemic caused by COVID-19.

1. LITERATURE REVIEW

There are many empirical studies investigated the response of the economy to the shock of UMP came from AEs, especially focusing on EMEs (Anaya et al., 2017; Apostolou & Beirne, 2019; Bowman et al., 2015; Chen et al., 2016; Chen et al., 2017; Dahlhaus & Vasishtha, 2014; Fratzscher et al., 2016; Gupta & Marfatia, 2018; Kenourgios et al., 2019; Kiendrebeogo, 2016; Tillmann, 2016) or group of developing countries in some regions (Fic, 2013; Kiendrebeogo, 2016). They mainly concentrated on the real economy and financial market in these countries, and these findings emphasize that the expansion of AEs' UMP had a significant impact on EMEs, led to an increase in portfolio flows accompanied by the increase in real output and a range of movement in financial variables, such as the increase in the stock market or the appreciation of local exchange rate. Some studies explored the change in return of real estate (Gupta & Marfatia, 2018); other studies proposed the significant effects of one of the typical instruments of UMP in AEs such as QE on capital flows (Alper et al., 2020; Kiendrebeogo, 2016; Tillmann, 2016), the results emphasized that these policies in AEs boost capital flows to EMEs and developing countries. The implementation of UMP led to a significant increase in portfolio flows and cross-border credit flows in these countries. The other consideration in analyzing the effect of UMP in a more specific scope is focused on the Asia and Pacific region, however, a number of studies are quietly limited, they paid less attention to this area, although Asia is one of the markets that play a key role for the international investors and the industrialized countries. Most of them are in a working paper (Ganelli & Tawk, 2019; Punzi & Chantapacdepong, 2019; Rafiq, 2015), or only discussed in several developed countries in Asia such as Singapore, South Korea, Hongkong, etc. (Chen et al., 2016; Sugimoto & Matsuki, 2019). Although there are a small number of studies in this area, empirical results also demonstrated that countries in Asia and the Pacific region have strong responses to the shock of UMP in AEs, especially the US, when it comes to economic activities and financial variables. The expansion on a large scale of UMP in AEs led to pushing capital inflows to this area, resulting in an increase in the stock market and the appreciation of local currencies; secondly, it also had a positive effect on the real output of these countries. However, some studies seem to be different, finding evidence of this effect to a rather small extent. More specifically, some studies examine the impact of unconventional monetary policy on Asian countries. For example, Rafiq (2015) explored the effect of the US's QE on a group of countries in Asia. He found that this spillover effect was likely to be small, the cause of this different result may come from the group of countries belonging to the frontier economies in Asia.

Lee and Choi (2010) also focused on the analysis of the Asia region. They evaluated the impact of QE originating from the US on return and volatility in selected Asian stock markets. They discovered that the QE policies of the United States have had a major impact on the correlations between the United States and several Asian nations, with a considerable progressive reduction in correlations during the most recent QE. Besides, they also found that greater stock market liquidity significantly enhances financial spillovers. Tran and Pham (2020) track the monthly reactions of Asian emerging market equities prices, long-term interest rates, and currency rates to US UMP. The first finding is that UMP shocks from the United States relate to an increase in equities prices, a decrease in interest rates, and an appreciation of the currency in Asian emerging economies. In contrast, traditional monetary policy shocks from the United States appear to have a negative impact on these recipient nations. These empirical findings

showed that policymakers in Asian developing nations should be wary about the spillover effects of US UMP if it is implemented.

Moreover, the crisis-related factor also plays an important role in the study of non-conventional monetary policy. Because the starting point of the implementation of these policies is the crisis. However, most of the studies presented seemed to raise concerns about the Global Financial Crisis (GFC) but forgot that a pandemic crisis caused by COVID-19 is currently existing. Indeed, they paid little attention to examining the different effects of US UMP on other countries during two different crises: the GFC period and the pandemic crisis, even though COVID-19 is one of the crucial factors changing the monetary policy in AEs, and it is the biggest threat to the global economy. Few studies mentioned a little about two crises. The study by Cortes et al. (2022) only proposed that the outcomes of the COVID-19 interventions suggest a positive spillover of Fed policy for AEs and EMEs groups. The policy announcements made by the Fed during COVID-19 had pronounced effects on the short-term maturities of EMEs. Besides, when focusing on the equity markets of individual nations, the study also discovered particular spillovers for catastrophe risk that are primarily concentrated in Asia (e.g., South Korea, Taiwan, and Malaysia). Another study examined the effects of UMP in the midst of the COVID-19 outbreak-related global financial turmoil (Rebucci et al., 2022). They found the important results that when compared to previous interventions made during the Great Recession, the effect of QE announcements during the pandemic crisis on the EMEs was significantly greater although they only focused the analysis on government bond yields and exchange rates. In summary, some studies showed that EMEs are more sensitive to large-scale interventions (the COVID-19 QE announcements) whether they are domestic or international in nature.

The analysis of monetary policy for researchers and policymakers has been supported by the vector autoregression approach platform introduced by Sims (1980). VAR models are the most widely used approach for studying the consequences of traditional monetary policy. As a result, the international impact of UMP on other countries is usually analyzed by applying VAR models (Anaya et al., 2017; Bowman et al., 2015; Sugimoto & Matsuki, 2019). However, the greatest flaw in VAR is that it does not distinguish between independent and dependent structural shocks when assessing how variables respond to independent structural shocks. Therefore, Bernanke et al. (2004) suggested using a structural VAR model to address the issue because the impulse response function and variance decomposition for the studied variables might not be correct in the VAR model. And the fact that there are a number of studies using SVAR to investigate the international spillover effects of UMP to the rest of the world (Bowman et al., 2015; Carrera & Ramírez-Rondán, 2020; Peersman & Smets, 2001; Saiki & Frost, 2014; Yildirim & Ivrendi, 2021; Zabala & Prats, 2020). Moreover, some studies used event studies in their research (Ambler & Rumler, 2019; Haitsma et al., 2016; Lutz, 2015; Ricci, 2015; Rosa, 2011, 2012). This method allows the analysis of the effect of official announcements or speeches by the government related to non-standard monetary policy on the variables concerned. However, although it is significantly useful in applying the event study method, evidence showed that it also has several limitations. Variables expressing non-standard monetary policy like QE or forward guidance are likely to be endogenous and they cannot easily be modeled as dummy variables (Meinusch & Tillmann, 2016). Besides, the effect of UMP shock on other variables cannot be observed through the impulse response functions. Finally, because event research often uses high-frequency data (daily, intra-daily), it is suitable for financial market indicators such as interest rates, the yield curve, or asset prices. Therefore, the SVAR model is still the most suitable model when investigating the impact of UMP on the macroeconomics of developing countries.

The purpose of the study is to investigate the international spillover effects of the US unconventional monetary policy (US UMP) on the real economy in Vietnam, which is a small, open, and frontier market in Asia. More specifically, the study examines the response of the output and price index of Vietnam to US UMP shocks. Besides, this study also investigates whether there exist likely differences in the effects of US UMP on Vietnam during the global financial crisis and during the pandem-

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ic crisis. A structural VAR model will be used to study the reactions of the Vietnamese real economy to US UMP shocks based on the literature.

2. METHODOLOGY

This study employs the SVAR model to analyze the international spillover effects of US UMP shocks on the real economy of Vietnam based on the approach of (Carrera & Ramírez-Rondán, 2020; Yildirim & Ivrendi, 2021) with relied on the pioneering research of Cushman and Zha (1997), which introduced the small-open economy assumption to the model.

The benchmark SVAR model has the following representation:

$$Y_t = A(L)Y_{t-1} + B(L)Z_t + \mu_t. \quad (1)$$

where Y_t is a (n x 1) vector of n endogenous variables at time t; *A(L)* is a (n x n) matrix of lag polynomials that captures the dynamics of the endogenous variables; *B(L)* is a (n x j) matrix of lag polynomials that captures the contemporaneous effects of the exogenous variables on the endogenous variables; Z_t is a (j x 1) vector of exogenous variables at time t; μ_t is a (n x 1) vector of structural error terms.

The selection and order of variables for the model are bases on the international transmission mechanism of US UMP and research of Yildirim and Ivrendi (2021), in which risk-taking channel and portfolio rebalancing channel serve as the fundamental guiding principle for selecting international transmission channels variables. More specifically, the VIX index is represented risk aversion and captures the US UMP risk-taking channel (Punzi & Chantapacdepong, 2019). The US monetary policy increases market participants' willingness to take risks, encouraging portfolio transfers to other countries and raising the prices of foreign assets as well as the value of home currencies relative to the US dollar. In addition, Rey (2016) suggested that the U.S. Federal Reserve's monetary policies are transmitted to the financial conditions of EMEs through foreign capital flows. Besides the risk-taking channel, the portfolio rebalancing channel is also a major key in the international transmission of the US UMP to other countries. According to this channel, US UMP encourages investors to take on more risk and restructure their portfolios. This shift in investors' risk-taking habits causes capital to flow into other countries and thus spreads US UMP measures to those nations' financial markets.

To examine the effects of US UMP, this study uses an eight-variable SVAR model, with an indicator of US UMP and variables relating to domestic factors. It can be distinguished into two groups as follows:

- Group 1: The indicator of US UMP and international transmission channels to Vietnam.
- Group 2: Domestic variable. In this group, five variables from the Vietnamese economy will be displayed, including an index of equity prices, a measure of market interest rate, an exchange rate, and a measure of real economy such as the output and inflation.

The following describes the vector of endogenous variables:

$$Y_t = (UMP_t, VIX_t, CF_t, SP_t, IRR_t, FOREX_t, GDP_t, CPI_t). \quad (2)$$

In which UMP (a proxy for the unconventional monetary policy of the US), VIX (VIX index), CF (capital inflow to Vietnam), SP (stock price), IRR (interest rate), FOREX (exchange rate), GDP (gross domestic product), CPI (price index). Based on the Cholesky decomposition, this paper proposes a short-term recursive restriction on contemporaneous structural parameters, allowing suitable economic structures to be generated. Specifically, a recursive restriction assumes that one shock affects the system at time *t*, followed by another shock at time $t + 1$, and so on. It notes that the recursive matrix needs the endogenous variables to be ordered in the estimate Y_t. Accordingly, the assumption in our model is that the US UMP has significant effects on macro-financial conditions in Vietnam while the impact of domestic economic conditions on global conditions is negligible.

Table 1 contains further information on the variables used in the SVAR framework.

Table 1. Description of variables and data sources

Variables	Notation	Definition	Source
Unconventional monetary policy of the US	CBB	Total assets of Central Banks in the US (% change)	Fred – Economic data
Option-implied volatility index	VIX	Percentage change in VIX index	CBOE
Capital inflow	CF	The logarithm of foreign portfolio investment inflows to Vietnam	IMF-BOP
Vietnamese stock index	SP	Stock market return of Vietnam (% change in VN-Index)	HCMC Stock Exchange
Vietnamese market interest rate	IRR	Percentage change in market lending rate (%)	IMF-IFS
Vietnamese Exchange rate	FOREX	Change in nominal Vietnam Dong exchange rate against the US dollar as a percentage (%)	IMF-IFS
Vietnamese output	GDP	Vietnam's real GDP growth rate, as a percentage change (%)	IMF-IFS
Vietnamese inflation	CPI	Change in the consumer price index as a percentage (%)	IMF-IFS

This study uses monthly data to investigate the international spillover effects of US UMP on the Vietnamese economy, focusing on its real economy. The data span from January 2007 to April 2022, and all data are collected from reliable sources.

3. RESULTS

The paper will present the main results of the study from the SVAR model. A robustness test will then be performed to further strengthen the study results.

3.1. Empirical analysis from the SVAR model

Table 2 displays the outcomes of the ADF test for unit root. The results show that test statistics exceed the critical values, therefore the tests suggest all the variables, including CBB, VIX, CF, SP, IRR, FOREX, GDP, and CPI, are stationary at their levels. Thus, all variables used to estimate the SVAR model are in level.

Table 2. Unit root test results

Variables		Level	Conclusion
CBB		–9.12	Stationary at 0
VIX		–4.82	Stationary at 0
CF		–3.18	Stationary at 0
SP		–11.8	Stationary at 0
IRR		–6.40	Stationary at 0
FOREX		–11.0	Stationary at 0
GDP		–3.43	Stationary at 0
CPI		–5.89	Stationary at 0
Critical values	1%	–3.46	
	5%	–2.87	
	10%	–2.57	

The paper selects lag-length models based on the LR, FPE, and AIC criteria. The standard information test suggests adopting an 8-lag length for models. The estimated results of the stability proposed that the lags are completely suitable for the model.

Using a 12-month restriction horizon, the responses of Vietnamese output and price index to US UMP shocks are presented in Figure 1. As shown in this figure, a shock to the total asset of the Fed balance sheet increases Vietnam's output and price index significantly although only the response of GDP is significant for the ninth month. More specifically, an increase in CBB leads to a positive and statistically significant rise in GDP in the ninth month after the shock, reaching its peak after around ten months at an increase of 4.2 pp. The reaction of CPI to a shock of US UMP is also close to GDP's response when a positive shock to US UMP leads to a stable upward effect on CPI of Vietnam in the short run, peaks at a 0.3 pp increase, and remains for around one year, however, this response is not statistically significant.

The VIX index also has a significant impact on the GDP and CPI of Vietnam (Figure 2). The results show a negative response of GDP and CPI to a shock of VIX. An increase in the VIX index reflects rising risk aversion, that is, decrease risk appetite, and increases uncertainty in the financial markets. This resulted in a rapid go down of GDP after shock, reaching its peak after five months at a decrease of 3.1 pp. The response of CPI is similarly negative, peaking at a 0.26 pp decrease. The effect on CPI variables becomes significant from the beginning of the second month until the third month.

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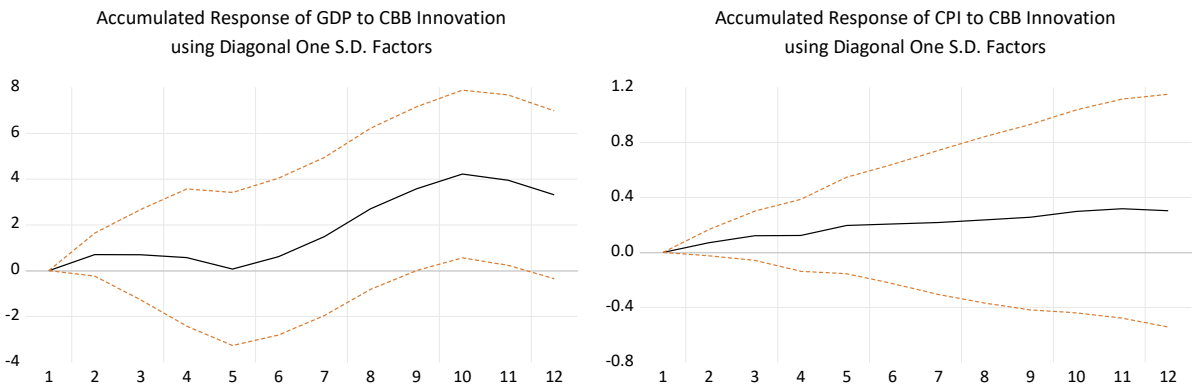

Figure 1. Responses of GDP and CPI to the US UMP shock: 2007M1-2022M4

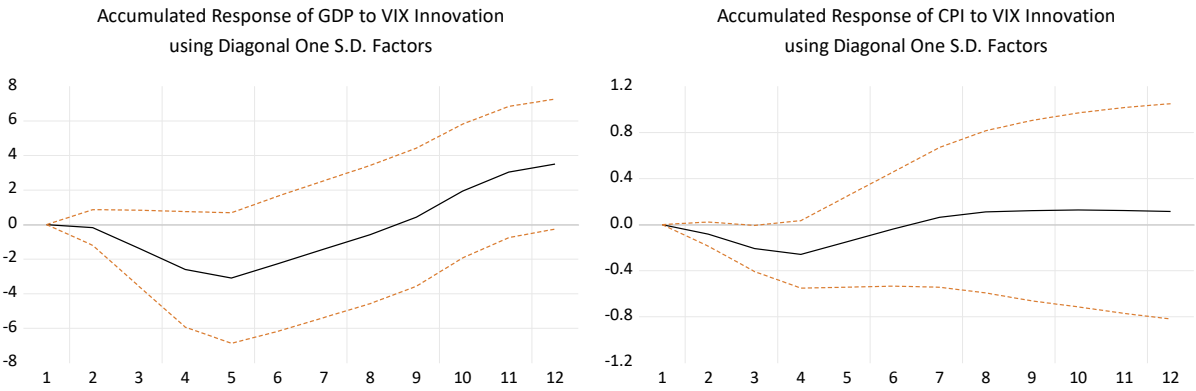

Figure 2. Responses of GDP and CPI to the VIX shock: 2007M1-2022M4

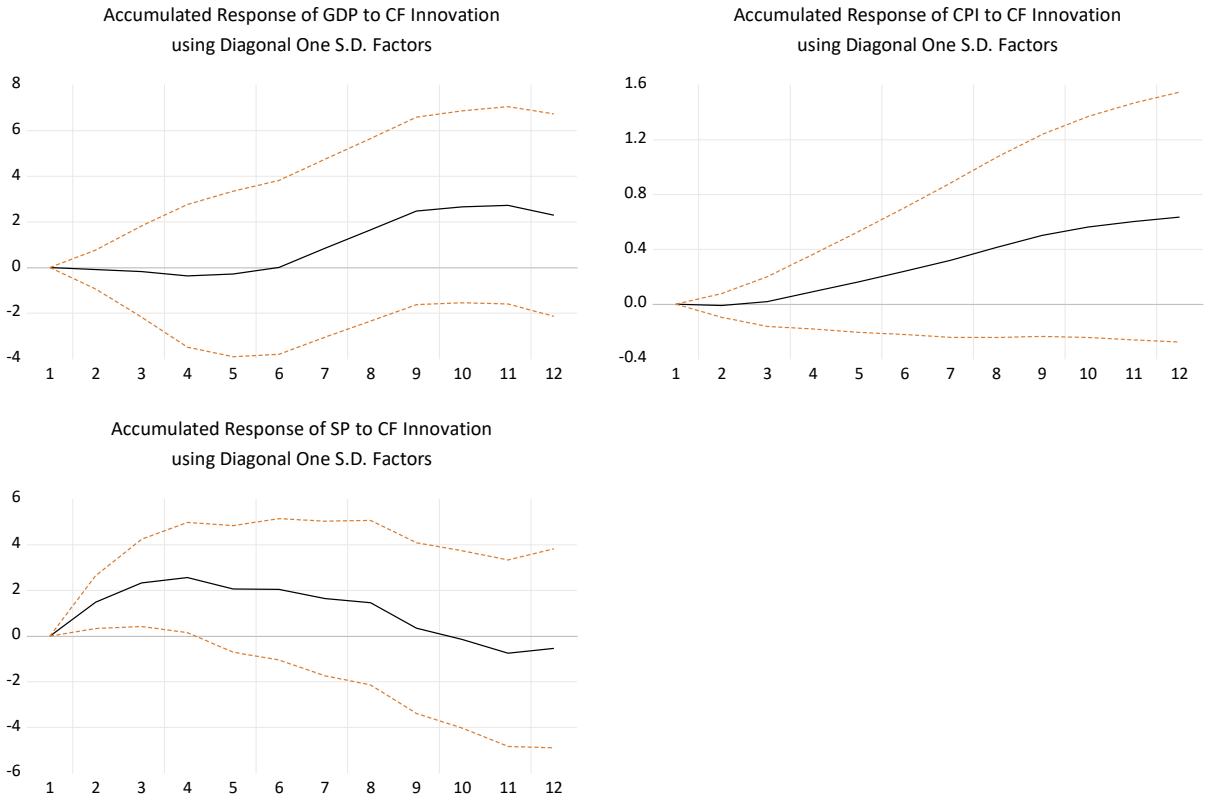

Figure 3. Responses of GDP, CPI, and SP to the CF shock: 2007M1-2022M4

Although the responses of GDP and CPI to CF shock are not statistically significant, foreign portfolio flow is also having a relatively similar impact on the GDP and CPI of Vietnam to CBB shock (Figure 3). However, the surge in inflows leads to a significant increase in equity returns in Vietnam. The immediate response of stock prices in Vietnam is significantly positive for a period of four months, reaching its peak after four months at a rise of 2.6 pp.

To compare the response of GDP and CPI, as well as the level of impact on these variables to the US UMP shock in different crisis periods, the study divides the sample into two periods: the GFC period (January 2008 to December 2014) and the pandemic crisis period (December 2019 to April 2022). Which, the exogenous variable is the number of monthly new confirmed cases of COVID-19 used in the phase of the pandemic crisis in order to clarify the impacts of the epidemic.

Figure 4 presents the impact of US UMP shock on GDP in two different periods. The result shows that the response of GDP to the US UMP shock was stronger in the GFC than during the COVID-19 period. The magnitude of GDP increase for US expansionary monetary policy is larger over time, reaching 18.23 pp one year after the shock. Meanwhile, during the COVID-19 pandemic, the response of GDP to the Fed's balance sheet expansion shock is nearly half lower than during the GFC period, at 7.04 pp one year after the shock occurred.

Similarly, the effect of US UMP on CPI in Figure 5 also shows a difference between the two periods, but the response starts to differ markedly from the fourth month onwards. Specifically, during the GFC period, CPI gradually increased to the US UMP shock, from 0.18 pp in April to 1.44 pp in December. Meanwhile, during the epidemic crisis, CPI only increased slightly to the third month after the shock, at 0.17 pp, then the response gradually decreased and stayed close to zero in December.

3.2. Robustness test

To check the robustness of the models, Wu and Xia's shadow short rate for the US is collected to replace the total assets of FED's balance sheet in proxy for US UMP. Wu and Xia's Shadow Short

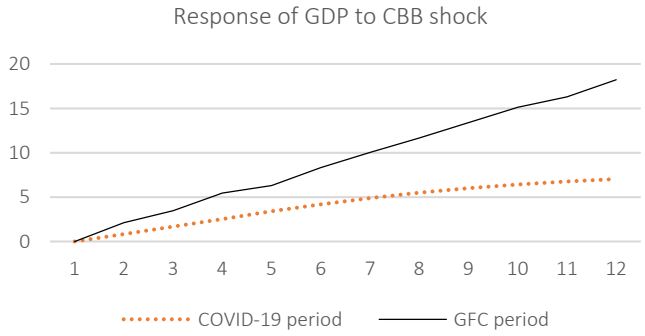

Figure 4. The response of GDP to US UMP shock in the period of GFC (2008M1-2014M12) and during the pandemic crisis (2019M12-2022M4)

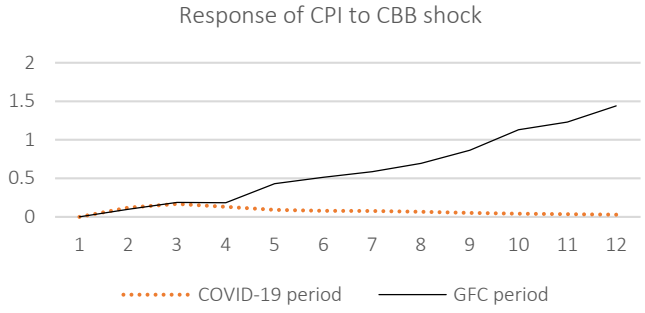

Figure 5. The response of CPI to US UMP shock in the period of GFC (2008M1-2014M12) and during the pandemic crisis (2019M12-2022M4)

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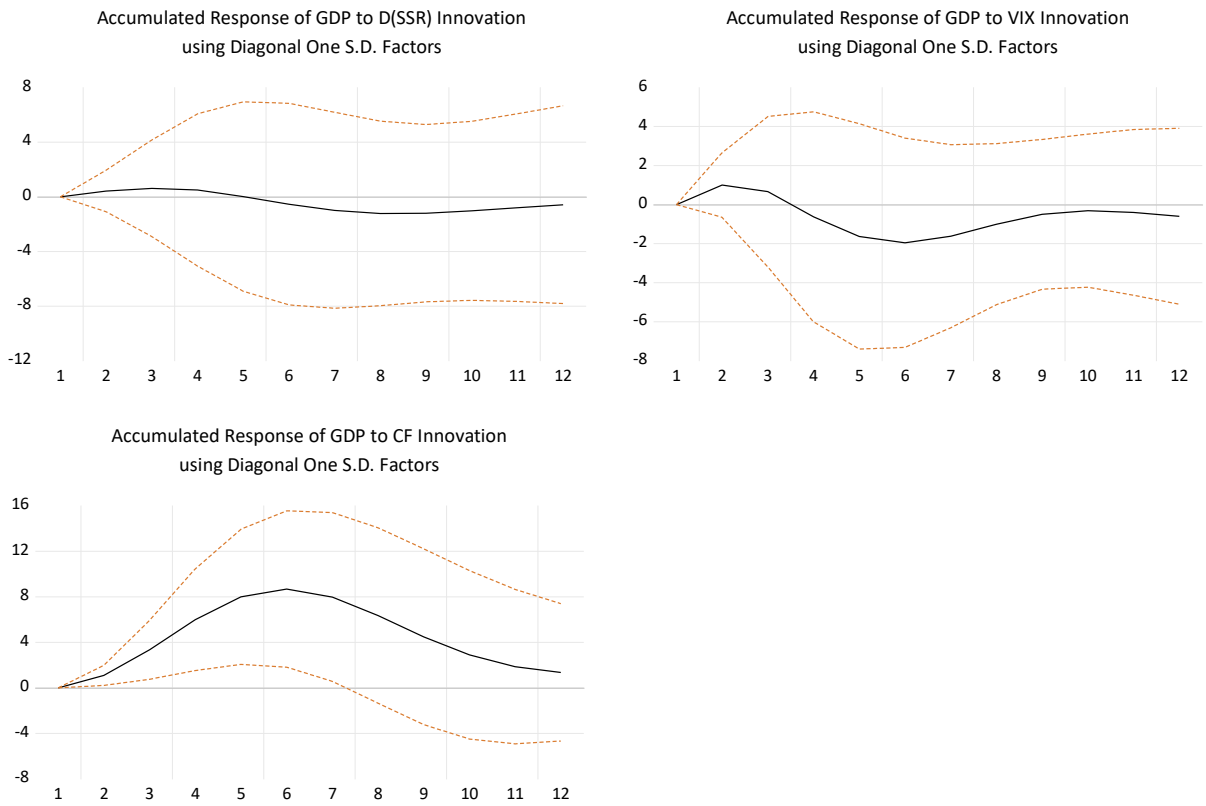

Figure 6. The responses of GDP to the SSR, VIX and CF shocks: 2007M1-2022M4

Rate (SSR) is an estimate of the short-term interest rate that is not observable in the market. It is derived from the model that combines information from the interest rate term structure and macroeconomic variables. The SSR introduced by Wu and Xia (2016) is based on a so-called shadow-rate model that describes the relationship between the observable yields on longer-term bonds and the unobservable short-term rate that the Central Bank would like to set if the zero lower bounds were not a restriction (i.e., the lowest possible interest rate). When the policy rate is at or close to the zero lower limits, the SSR can be used to examine how monetary policy affects the overall state of the economy. The SSR, according to Wu and Xia (2016), provides a more accurate reflection of the stance of monetary policy compared to the real policy rate, which might not adequately account for the impacts of unconventional monetary policy measures like quantitative easing. Thus, SSR is one of the most effective measures besides the total assets of the Fed's balance sheet to investigate the impacts of US UMP on other countries. It can be understood that an expansionary monetary policy of the Fed via unconventional instruments will be shown by a decrease in SSR, and vice versa, so the explanation for the results using the SSR variable will be explained in reverse compared to that of the using the variable CBB.

Although the response of GDP to the shock of SSR and VIX is not statistically significant (Figure 6), it still reflects the negative impact of SSR and VIX on GDP. Specifically, when there is an increase in shock caused by SSR and VIX, GDP will decrease. Capital inflows have positive effects on the output of Vietnam. GDP is raised after the CF shock, peaks at an 8.7 pp increase after around six months, then it gradually decreases and tends to turn to baseline after one year.

Figure 7 shows the impulse response of the price index to different shocks. The study finds a negative response of the CPI variable to a shock to shadow short rate and risk aversion, and a positive response of CPI to capital inflows shock. These results support more evidence of the research results when using the variable CBB proxy for the unconventional monetary policy of the US.

To summarize, both results in which US UMP is proxied by total assets of the Fed's balance sheet

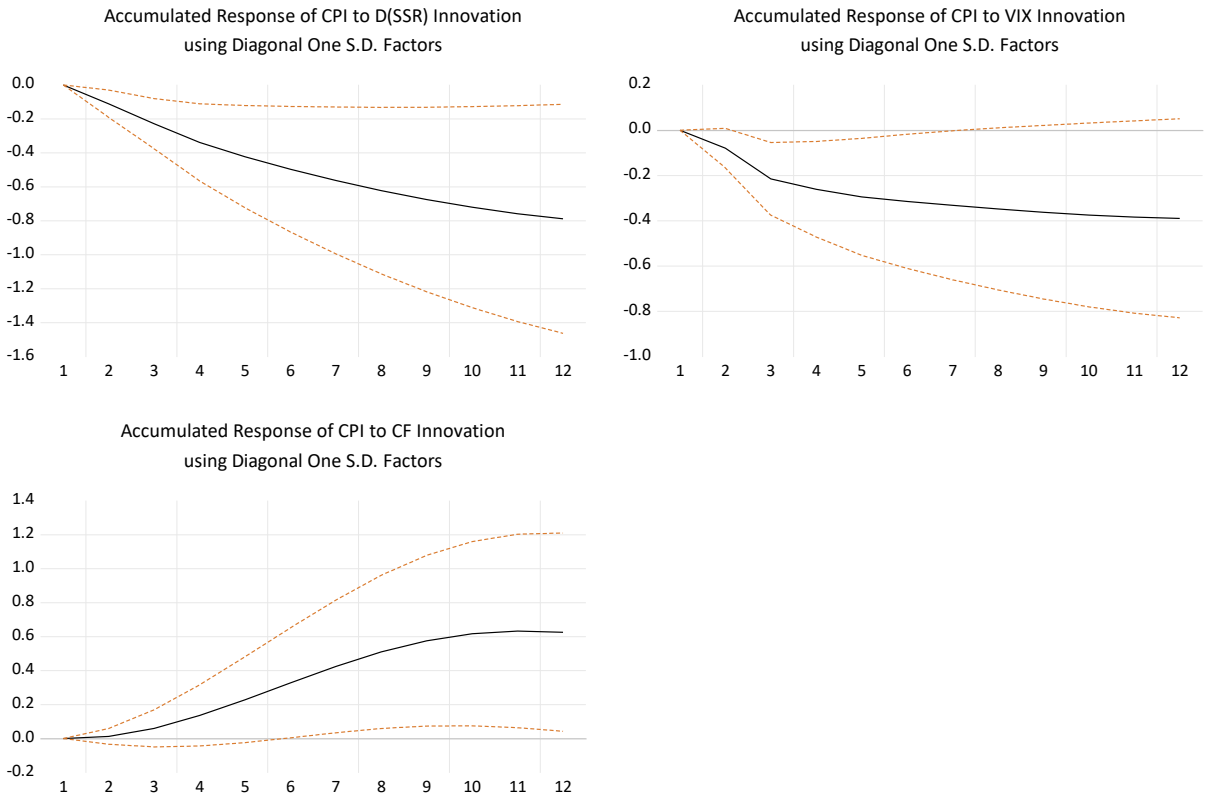

Figure 7. The responses of CPI to the SSR, VIX and CF shocks: 2007M1-2022M4

and shadow short rate suggest that easing monetary conditions in the US indeed lead to an upward effect on output and price index in Vietnam. They support the dominance of risk-taking channels and portfolio rebalancing channels of the international spillover effects of unconventional monetary policy from the US on a small, open country and a frontier market.

4. DISCUSSION

The SVAR impulse response results for the impact of US UMP shock on Vietnamese output and price index reveal a positive relationship between these variables, although it is not statistically significant in CPI response. The results are consistent with those of Anaya et al. (2017) and Punzi and Chantapacdepong (2019). This implies that in the short run, the implementation of UMP in the United States can lead to an increase in investment flows into emerging markets such as Vietnam, as investors search for higher returns. This increase in investment, especially portfolio investment on the stock market can also contribute to an increase in GDP in Vietnam. The results are also supported by the response of stock prices to a shock of capital flows. This suggests that the expansion of unconventional monetary policy in the US led to a surge in capital flows to Vietnam, resulting in a temporary upward effect on the SP variable. These results suggest the importance of capital flows as a channel for the transmission of US monetary shocks (Rey, 2016). In addition, the findings also demonstrate that GDP and CPI react negatively to a VIX shock. These results are consistent with the literature on risk-taking channels Yildirim and Ivrendi (2021) and the changes in risk aversion to output and price index (Tillmann, 2017). This emphasizes the importance of risk-taking channels in the international transmission of the US UMP to Vietnam.

Finally, another important finding is that the shock brought on by the FED's balance sheet expansion during the global financial crisis typically had a more negative effect on the Vietnamese economy than it did during the pandemic crisis. It can be explained as follows. Firstly, the GFC was a more severe and prolonged crisis than the COVID-19 crisis. Moreover, the GFC led to a significant contraction in global economic activity,

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with many countries experiencing a recession. As a result, the impact of the US monetary policy on other countries during the global financial crisis may have been greater due to the severity and duration of the crisis. Secondly, the financial crisis was primarily a financial crisis that originated in the US housing market and spread to the global financial system, whereas the COVID-19 crisis was a health crisis that led to a sharp drop-in economic activity due to lockdowns and other restrictions. The nature of the crises may have affected the transmission of US monetary policy to other countries, with the financial crisis leading to more widespread financial stress and spillovers than the COVID-19 crisis. Finally, the response of other countries to the global financial crisis and the COVID-19 crisis may have differed, affecting the transmission of US monetary policy. During the financial crisis, many countries implemented expansionary monetary and fiscal policies to mitigate the impact of the crisis, which may have amplified the transmission of US monetary policy. During the COVID-19 crisis, many countries also implemented expansionary policies, but the response was more varied and less coordinated than during the financial crisis. Although the results of this study are inconsistent with recent findings for EMEs by Cortes et al. (2022) and Rebucci et al. (2022), it contributes more empirical evidence when it comes to an open, small economy and a frontier market. It also has relative significance with the reality of the situation in Vietnam and the world during the pandemic crisis caused by COVID-19. The robustness test shows strong evidence of the international spillover effects of US UMP.

CONCLUSION

This paper applies the SVAR model to examine the international spillover effects of US UMP on the Vietnamese output and price index between January 2007 and April 2022. The study also compares the differences in the response of these variables to US UMP in the GFC period and during the pandemic crisis caused by COVID-19. The results indicate that the unconventional measures of the US lead to an increase in Vietnam's output and price index. In addition, Vietnam's GDP and CPI are also significantly affected by risk aversion and capital flows. This shows the significance of the risk-taking channels and portfolio rebalancing channels in the international transmission of US UMP in Vietnam. Finally, the impact of the shock caused by the expansion of the FED's balance sheet on the Vietnamese economy was generally two times higher than during the epidemic crisis. The robustness check makes these above results stronger. By using Wu and Xia's shadow short rate for the US, which is proxied for US UMP, the results of the response of GDP and CPI to the UMP shock are consistent with the findings, which are estimated by using the total assets of the Fed's balance sheet. These findings imply the importance of closely monitoring and responding to global economic developments when making domestic policy decisions. As a result, the study recommends that the advantages of an expansive monetary policy must be carefully weighed against the possible hazards of inflation and exchange rate instability in Vietnam, while also working to promote long-term economic growth and stability.

AUTHOR CONTRIBUTIONS

Conceptualization: Nam Sy Ngo.
Data curation: Nam Sy Ngo.
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