CENTRAL BANK CREDIBILITY AND THE SUSTAINABILITY OF EXCHANGE RATE REGIMES IN VIETNAM

Mai Thu Hien[1]

Abstract

This paper deals with the central bank credibility to sustain exchange rate regimes in inflation control. We find that the central bank credibility relates to the ability the central bank to build a credible monetary policy to control inflation under the fixed and flexible exchange rate regime. We develop a simple theoretical model to explain how the central bank credibility can ensure price stability under the fixed and flexible exchange rate regime. The conclusion is that while adopting a more flexible exchange rate regime, the State Bank of Vietnam can build its credibility to control inflation by combining the flexible exchange rate regime with the inflation targeting.

Keywords: Central bank credibility, fixed exchange rate regime, flexible exchange rate regime, monetary targeting, inflation targeting, Vietnam.

Date of receipt: *22th Oct. 2018;* **Date of revision:** *30th Apr. 2019;* **Date of approval:** *30th Apr. 2019*

1. Introduction

In the past years, the State Bank of Vietnam (SBV) used two nominal anchors to control inflation, i.e. the money supply (M2) and the exchange rate. Nevertheless, these two anchors have not shown enough strength and credibility to control inflation. Given the difficult economic circumstance, Vietnam failed to reach the targeted M2 and credit growth rates from 2008 to 2013. The situation was improved in 2014 and 2015. The M2 growth rate was managed as targeted. As for the exchange rate anchor, which was implemented by adopting de facto fixed exchange rate regime, the stabilizing exchange rate was not a strong and reliable anchor to control inflation. This fact was demonstrated by foreign currency speculation and imbalances of the supply of and demand for foreign currency in the foreign exchange markets. As a result, the SBV had to regularly intervene to adjust the exchange rates in the interbank foreign exchange market.

To cope with difficulties in controling inflation under the fixed exchange rate regime, at the beginning of 2016, the SBV launched a new exchange rate regime between the Vietnamese dong and the U.S. dollar, under which the SBV announces daily the central exchange rate with reference to the average interbank exchange rate, exchange rates between the Vietnamese dong and eight countries' currencies (i.e. the U.S. dollar, the Euro, the Chinese yuan, the Japanese yen,

[1] Foreign Trade University, Vietnam, Email: hien.mai@ftu.edu.vn

the Singapore dollar, the Korean won, the Taiwan dollar and the Thai bath) that Vietnam has close trade and investment relationships, and macroeconomic balances. This exchange rate mechanism allows the exchange rate between the Vietnamese dong and the U.S. dollar move more flexibly in accordance with the supply of and demand for the U.S. dollar in the Vietnam foreign exchange market and the international foreign exchange market as well as in compatibility with the SBV's monetary policy targets. By adopting a more flexible exchange rate regime, the exchange rate between the Vietnamese dong and the U.S. dollar is likely not a nominal anchor to control inflation any more. It raises a question that how the SBV controls inflation under the flexible exchange rate regime. This paper answers the question by relating the central bank credibility to the sustainability of exchange rate regimes in fighing inflation. The central bank credibility is understood as the ability of the central bank to use monetary instruments to control inflation at announced levels. The policy credibility is the one in which the central bank commit to achieve price stability. In this paper, the central bank credibility and the policy credibility are the same. Both refer to the ability of the central bank to control inflation.

This paper comprises of five sections. The first section is an introduction. The second section is the literature review about the behaviour of the central bank to conduct monetaty policy to control inflation with focus on its credibility. The third section introduces a model of the central bank credibility. The fouth section presents some evaluations of the central bank credibility under the flexible and fixed exchange rate regime in Vietnam. The last section is the conclusion.

2. Literature review

It is widely accepted that persistent inflation is a monetary phenomenon. Fighting high inflation is always a hard task of the central bank. Thus, it is necessay to understand the behaviour of the central bank to conduct monetaty policy to control inflation. The first part in this section is a review of literature for the importance of credibility to control inflation. The second part focuses on what the central bank does if they cannot build a credible monetary policy to fight inflation.

Monetary policy objectives include stabilizing price, currency, interest rate and finance, promoting output growth, achieving full employment, smoothing business circle, etc. Some of these objectives may be inconsistent with each other, for example output growth and price stability. Nevertheless, it is widely consented that price stability is an overriding goal of the monetary policy. Maintaining low inflation (or price stability) creates a more favourable climate for doing business and economic growth. If individuals and businesses believe that prices will be stabilized year after year, they can make better long-term plans and set their wages and prices based on the expectation that inflation rate will be equal the announced inflation by the central bank, hence, contributing to stabilize the inflation rate. In addition, nominal and real interest rates will be lower (stable), which in turn encourage investment. In contrast, high inflation has many costs. High inflation can badly affect the effectiveness of investment and export competitiveness, thereby reducing output growth through the increase in domestic production costs and real exchange rate appreciation. The public will protect itself by

setting wages and prices on the expectation that inflation will be higher than the announced inflation rate, which contributes to push up prices, wages, and interest rates. This phenomenon is called a vicious circle of rising inflation. High inflation will nagatively affect the quality of living because the increase in incomes does not keep pace with the rise in price levels. Doing business, spending, and saving plans become more difficult because of less predictable prices in the future. Many sellers will exploit high inflation to speculate, which aggravates the high inflation situation. Given benefits of low inflation and costs of high inflation, many central banks such as the European Central Bank, the Bank of Japan, the Bank of England, the Bank of Thailand, and the Bank of Korea take price stability as a primary objective of their monetary policy. The question is that how the monetary policy should be conducted to achieve price stability objective.

A monetary policy targeting at price stability or low inflation will be successful if it is credible. According to Cukierman (1986), credibility is defined as "the extent to which the public believes that a shift in policy has taken place when, indeed, such a shift has actually occurred". A policy is credible only if it is "consistent, at each stage, with the public's information about the objectives and constraints facing the central bank". In the same way, Bordo and Siklos (2015) define credibility as a commitment to follow well-articulated and transparent rules and policy goals. The policy credibility is essential because the ability of the central bank to achieve his future objectives depends on the inflationary expectations of the public. These inflationary expectations depend, in turn, on the public's evaluation of the credibility of the central bank. That means the public believes that the central bank will carry out all necessary measures to achieve this announced objective. To the extent that the monetary policy is credible, the public will not react too strongly to fluctuating trends of prices and set its wages and prices based on the expectation that inflation rate will be equal to what was announced by the central bank, thereby contributing to stabilize inflation.

In fact, it is not right that the monetary policy is always credible. "The public will not believe an announced policy if it knows the policy is incompatible with the current objectives of policymakers" (Cukierman, 1986). Thus, the central bank may lose the credibility because the public believes that the central bank is unlikely to achieve all of its announced objectives because they are perceived to be incompatible. The multiple incompatible objectives arise from a loss of central bank independence. That means the central bank is under pressure from the government to implement the government's objective, which might be inconsistent with the objective of the central bank. For example, budget financing or output growth objective is conflicting with price stability. In such a case, price stability objective will not be achieved. This is called the time-inconsistency problem.

Kydland and Prescott (1977), Barro and Gordon (1983), Rogoff (1985) and the followers analyzed the time-inconsistency problem. Kydland and Prescott (1977) define the policy is consistent if, for each time period, it maximizes an agreed-upon social objective, taking as given previous decision, and that future policy decisions are similarly selected. Inconsistency arises when the best

plan currently made for some future periods is no longer optimal when that period actually starts. More concretely, the time-inconsistency problem arises because there are incentives for the central bank to pursue a discretionary policy to achieve short-run objectives, such as higher growth and employment, even though it can lead to higher inflation in the long run. Khan (2003) refers the time-inconsistency to "the difference between the optimal policies that a central bank would announce it would carry out and the policies that the central bank would carry out after the public had made decisions based on its expectations". Although the central bank announces that it will target a specific rate of inflation and the public sets contract of wage based on this announcement, the central bank can renege on its promise by pursuing a policy that brings about higher growth and employment in the short run (i.e. expansionary monetary policy) but causes higher inflation rate. Nonetheless, the public realizes that situation and protects itself by setting their wages and prices based on the expectation that inflation rate will be higher than the announced inflation rate (when prices and wages are flexible). This action contributes to push up prices and wages, hence, limiting the desired output gains. Nevertheless, it is important to know that the central bank can avoid the time-inconsistency problem by simply recognizing the issue of forward-looking expectation in the wage- and price-setting process. If that happens, the central bank can decide not to play that game. Even though, there will still be pressures on the central bank to pursue an overly expansionary monetary policy by the government, who has other considerations such as budget financing or growth objective, because the central bank lacks independence in implementing monetary policy. In short, the time-inconsistency problem arises when the public believes that the central bank is unlikely to achieve all of its announced objectives because they are conflicting. Therefore, the time-inconsistency problem can lead to negative outcomes in the long run.

In summary, loss of the central bank independence leads to multiple incompatible objectives (so-called time-inconsistency problem). Thus, the public has less credibility in the central bank in achieving its announced objective, say, price stability. In such a case, the public will protect itself by setting wages and prices based on the expectation that inflation rate will be higher than that announced by the central bank. As a result, the inflation rate is pushed up and price stability objective is not achieved.

In fact, in order to reach price stability objective, there are several ways. One way to deal with the time-inconsistency problem is to negotiate an agreement between the government and the central bank, in which both will declare themselves that they will be jointly responsible for achieving monetary policy objective (Perrier and Amano, 2000). Knowing that the central bank must pursue the announced objective, the public will adjust its inflation expectations accordingly. In this case, it is necessary for the central bank to have a credible commitment to pursue its primary price-stability objective. In fact, the central bank tends to choose an appropriate target for the monetary policy to the extent that the public understands it, allowing the monetary policy to operate in an environment called by Bernanke et al. (1999) as "constrained discretion". In other words, facing high domestic inflation, if the central

bank cannot build a credible monetary policy to fight inflation, the most popular is using a "nominal anchor" to tie down price level to a specific value at a given time. According to Mishkin (1999), from a technical viewpoint, a nominal anchor provides conditions that make the price level uniquely determined, thereby being necessary for price stability. A nominal anchor, which is considered as a constraint on discretionary monetary policy, helps weaken the time-inconsistency problem so that the price stability in the long run is more likely to be achieved. The nominal anchor can be in some forms of either quantitative constraint such as monetary targeting that limits the amount of paper money that can be put into circulation, inflation targeting that contains public announcement of official quantitative targets for inflation rate over time, or price constraint such as exchange rate targeting that fixes the value of paper money in terms of foreign currency. Monetary targeting and inflation targeting are usually used under the flexible exchange rate regime. Exchange rate targeting is used as the fixed exchange rate regime. These nominal anchors, if credible, will help to ensure price stability. We will see how credibility helps to ensure price stability under the fixed and flexible exchange rate regime through a simple model in the next section.

Another way is to appoint a governor of the central bank who is recognized as having an inflation-tolerance threshold lower than that of the public, which requires the central bank independence. In such cases, inflationary pressures, for example caused by excess demand, will not affect expectations because the public is confident that the central bank will take measures to counter those pressures.

3. The model

Facing with high inflation, if the central bank has less credibility from the public, the price stability objective of the monetary policy can be achieved by a variety of nominal anchors as mentioned above. We develop the following simple model to explain the central bank credibility to ensure price stability under the fixed and flexible exchange rate regimes.

The model is for a small country. Foreign variables and output are exogenous. Money supply is determined by the central bank. Price and wage are flexible. Interest parity and purchasing power parity hold. Market participants set rational expectations.

Monetary market $m = p + y - \alpha \cdot i$ (1)

Purchasing power parity $e = p - p^*$ (2)

Interest parity $i = i^* + E\Delta e$ (3)

Exogenous variables $y = i^* = p^* = 0$ (4)

where m is the log of the domestic money supply; e is the log of the exchange rate; i is the nominal interest rate; $E\Delta e$ is the expected rate of change of the log of the exchange rate. An asterisk indicates variables referring to foreign currency.

Substituting Equation 4 into Equation 1, 2, and 3, we have:

$$m = p - \alpha \cdot E\Delta e \quad (5)$$

$$e = p \quad (6)$$

Consider different cases as follows:

(a) Under the fixed exchange rate regime, (e is exogenous, thus e is set as 0), money supply m is endogenous.

(a1) If the fixed exchange rate is credible, $E\Delta e = 0$ the result is $m = p = e = 0$ and the price level is stable.

(a2) If the fixed exchange rate is not credible, there is an expectation of depreciation, $E\Delta e > 0$. The result is $m = p - \alpha \cdot E\Delta e$.

Because there is an expected depreciation of the exchange rate, the central bank has to intervene by selling foreign exchange in the market, thereby reducing money supply. However, the problem is that foreign exchange reserves are limited. Therefore, the central bank cannot defend the fixed exchange rate for a long time because his foreign exchange reserves are likely to run out.

(b) Under the flexible exchange rate regime, $m = \overline{m}$, money supply m is exogenous but not set as zero because it can be changed by the central bank. Market participants are not sure about the fluctuating trend of the exchange rate. Thus, the expected fluctuation of the exchange rate is assumed to be zero, $E\Delta e = 0$. The result is $p = e = \overline{m}$.

Under the flexible exchange rate regime, the central bank is not impelled to defend the exchange rate and changes in foreign prices are neutralized by changes in the exchange rate. As a result, there is no inflation import. Therefore, domestic price stability is ensured if the central bank is able to control money supply, thereby controlling inflation.

To summarize, price stability objective will be achieved if credibility under the fixed and flexible exchange rate regimes is ensured. The credibility of the fixed exchange rate regime refers to the ability of the central bank to maintain the peg or the fixed exchange rate. If the central bank lacks of credibility, he imports credibility by fixing the value of the domestic currency to hard-money country with low inflation rate. A pegged exchange rate fixes the inflation rate for internationally traded goods and directly contributes to keeping inflation under control. The pegged exchange rate, which is a nominal anchor if credible, anchors inflation expectations in the targeting country to the inflation rate in the anchor country. The lower inflation expectations result in the fact that the targeting-country's inflation rate is in line with that of the low-inflation anchor country. If the public has confidence in the central bank's ability to defend the peg, the pegged exchange rate regime will help to ensure price stability.

The credibility of the flexible exchange rate regime refers to the ability of the central bank to control money supply, thereby controlling inflation. As mentioned above, adopting a nominal anchor to control inflation under the flexible exchange rate regime is necessary. Under the flexible exchange rate regime, the central bank is not impelled to prevent exchange rate fluctuations. Regardless of price stability objective of the central bank, the government can force the central bank to finance budget deficits by excessive credit extension that leads to inflation and depreciation of the domestic currency.[2] Since various objectives can be pursued under the flexible exchange rate regime, the discretion of monetary policy comes with the time-inconsistency-problem, which are likely leading to poorer outcomes. Additionally, the

[5] Overly credit creation to finance public sector spending experienced under both fixed and flexible exchange rates, but the cost under a fixed exchange rate is more where the central bank has to defend the peg to avoid currency crisis.

problem of multiple incompatible objectives can reduce the credibility of the pubic in the central bank. Once the central bank loses credibility, the flexible exchange rate can produce further rapid depreciation and inflation. Therefore, it is necessary to have a nominal anchor for monetary policy under the flexible exchange rate regime to constrain the discretion of monetary policy. Weakening the time-inconsistency problem will ensure price stability objective. The nominal anchor is understood by the public as a commitment of the central bank to pursue its price stability objective. As long as this nominal anchor is credible, inflation will be restrained. The most popular nominal anchors under the flexible exchange rate regime are monetary targeting and inflation targeting.

4. Findings

Credibility under the fixed exchange rate regime in Vietnam

Vietnam experienced hyperinflation in the 1980s. Thus, inflation has been always an obsession with regard to both the public and the authorities. Due to some external and internal factors, after the deflation episode of 1999-2001 in the aftermath of the East Asian crisis, the inflationary tendency came back at 9.5% in 2004 from 3% in 2003. It declined to 8.4% and 6.6% in 2005 and 2006, respectively. The inflation rate rose again to 12.6% in 2007. It reached at peak at 23% in 2008, and then dropped to the lowest level of 0.63% in 2015. It has slightly increased at a reasonable level since 2016 (Table 1).

Table 1. Total liquidity, Inflation and GDP: Vietnam

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Target, % change										
Total liquidity	≤32	18-20	~25	15-16	14-16	14-16	16-18	16-18	16-18	16-18
Inflation	<GDP	<15	<7	<7	<10	~8	~7	<5	<5	<4
GDP	8.5-9	6.5	6.5	7-7.5	6-6.5	5.5	5.8	6.2	6.7	6.7
Actual, % change, average annual inflation rate, GDP growth at constant 2010 prices since 2009 (previous year=100)										
Total liquidity	20.31	28.99	33.32	12.08	22.4	14.64	15.65	13.55	17.88	16
Inflation	22.97	6.88	9.19	18.58	9.21	6.6	4.09	0.63	2.66	3.53
GDP	6.31	5.40	6.42	6.24	5.25	5.42	5.98	6.68	6.21	6.81

Source: State Bank of Vietnam, General Statistics Office of Vietnam

The price levels have moved instably during the last 20 years. The actual total liquidities and inflation rates have not met their targets, which shows the less credible central bank to control money supply and inflation. Therefore, the SBV has to import credibility by adopting a fixed exchange rate regime. However, the situation is likely to be improved since the SBV has adopted a more flexible exchange rate regime in 2016.

Although the SBV announced the adoption of a managed floating exchange rate regime

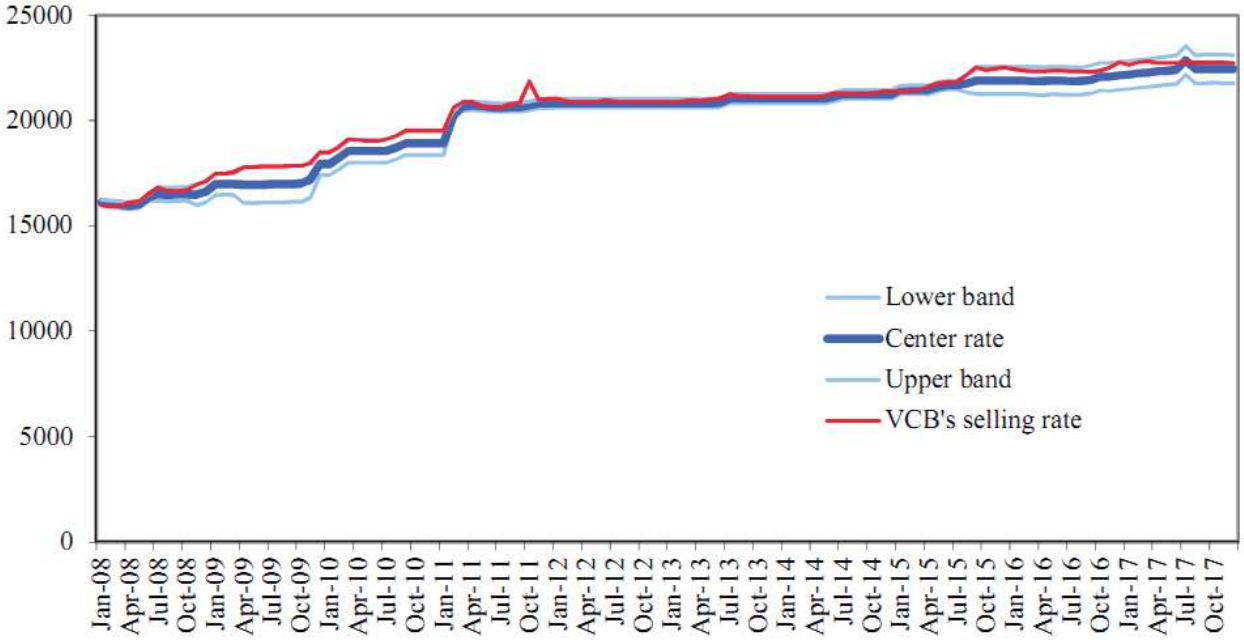
in 1999, the Vietnamese dong was de facto pegged to the U.S. dollar to control inflation. The actual annual nominal exchange rate depreciation against the U.S. dollar was gradually reduced from around 8% at the end of 1999 to 4% in 2000-01, 2% in the period of 2002-03, and around 1% in the period of 2004-07. In the period of 2008-11, the Vietnamese dong depreciated against the U.S. dollar by an average of 7% per annum, whereas the exchange rate was relatively stabilized with a depreciation of 2% in the period of 2012-14. In 2015, the Vietnames dong was devalued by 5% to cope with the Chinese yuan depreciation and proactively respond to the expected increase in the Federal Funds rate (Figure 1). The IMF has classified Vietnam exchange rate regime as a de facto conventional fixed peg in the period of 2005-02 and a stabilized arrangement in the period of 2009-16.

In Vietnam, the maintenance of the peg remains a challenge to the SBV because of imperfect credibility of the public in the SBV. As the result, there was always the U.S. dollar speculation in the foreign exchange market during the adoption of de jure managed floating (or de facto peg) in the period of 1999-2015. In addition, the progressive liberalization of capital account puts the maintenance of the fixed exchange rate regime in situations that are more difficult. Consequently, a financial crisis and a collapse of fixed exchange rate regime are more likely, which we witnessed the continuous depreciation of the Vietnamese dong by more than 28% during the period of 2008-2011 (Figure 1). Therefore, it can be said that the fixed exchange rate regime in Vietnam could not gain enough credibility in the eye of the public in control inflation. The fixed exchange rate regime also could not a long-run solution for financial stability in the event of free capital flows.

Moreover, we see the actual role of the fixed exchange rate regime in ensuring price stability in Vietnam. The prominent effect of the fixed peg in the control of inflation in Vietnam is that the pegged exchange rate fixes the inflation rate for internationally traded goods. Market participants will set their prices accordingly based on the perception that prices will not rise because prices of traded goods will not be affected by changes in the exchange rate, which directly contributes to keeping inflation under control. In such a way, the fixed exchange rate is useful in anchoring inflation expectation (IMF, 2006). Nevertheless, the fixed exchange rate is not really a strong nominal anchor to control inflation because it is very difficult to fix inflation expectations due to large inertial inflation in Vietnam (IMF, 2006). The inflation obsession in Vietnam leads to the fact that one percentage point of past inflation results in a rise of 0.79% in inflation in Vietnam in the episode of 2000-06, which was higher than other Asian countries (IMF, 2006). Moreover, the effects of a shock on inflation in Vietnam persist longer than in other Asian countries. A one-percentage increase in inflation would take 20 quarters in Vietnam to vanish, while those in selected Asian countries would be 10 quarters.

Additionally, although the SBV has a fear that an excessive volatility of the exchange rate will lead to an increase in inflation, the effect of exchange rate volatility on inflation rate is relatively small. The IMF (2006) estimated that 1-percent depreciation of Nominal Effective Exchange Rate (NEER) leads to an increase of 0.12% in inflation

Figure 1. Exchange rate movements (Vietnamese dong per U.S. dollar)



Source: Author's calculation based on data of SBV

during the period of 2000-2006, which was 0.1% higher than that in other Asian countries. For example, the depreciation of NEER of 6.7% in 2004 resulted in a rise of 0.8% in inflation in this year. Meanwhile, the inflation rate in 2004 was 9.5% in comparison with that of 3% in 2003. This result shows that the nominal exchange rate volatility is only one of determinants of inflation in Vietnam. Many other determinants that affect price stability in Vietnam are past inflation, broad money, excess demand pressures, food supply and oil price shocks, overly fiscal spending, liberalization of administered price, and natural calamity.

In conclusion, although the fixed exchange rate in Vietnam is useful in anchoring inflation expectations, the role of the fixed exchange rate regime as a nominal anchor to stabilize the price is not strong enough because the inflation in Vietnam is largely inertial and affected by a variety of other determinants. It leads to the requirement of using monetary policy in association with other policies, for example the fiscal policy, to control inflation. In addition, the maintenance of the fixed exchange rate regime faces difficulties in the event of free capital flows. Therefore, the fixed exchange rate regime is not able to be a long-run solution for price and financial stability. The fixed exchange rate as nominal anchor is not a sole solution to control inflation. Other alternatives include moving to the flexible exchange rate regime and adopting monetary targeting or inflation targeting as a nominal anchor to control inflation.

Credibility under the flexible exchange rate regime in Vietnam

The impossible trinity theory indicates that the fixed exchange rate regime will not sustain as the economy opens its capital account. The gradual opening of its capital account when Vietnam has been accelerating its deep integration into the world market and

difficulties in maintaining the fixed exchange rate as a nominal anchor to control inflation rate raise the question about the sustainability of the fixed exchange rate regime. Since the beginning of 2016, the SBV has adopted a more flexible exchange rate regime even though the IMF has still classified Vietnam's exchange rate regime as a de facto exchange rate anchor to the U.S. dollar, which is a stabilized arrangement. Since then, the adoption of inflation as a nominal anchor has preserved price stability and allowed the exchange rate to become a more effective shock absorber (Mai, 2010).

An appropriate exchange rate regime for Vietnam must meet conditions of achieving the price target and helping the economy to resist external shocks when Vietnam has been allowing a gradual capital account liberalization. The former relates to the credibility and independence of the central bank (Mai, 2009). The latter considers the role of the exchange rate in sustaining the economy' output and price with various kinds of shocks.

Under the flexible exchange rate regime, the credibility of commitment to keep inflation in control should be taken into account. As shown by the model, the credibility of monetary policy under the flexible exchange rate relates to the ability of the central bank to control money supply, thereby controlling inflation. This relates to the adoption of monetary targeting. We try to answer if the SBV cannot control money supply, what he should do to control inflation under the flexible exchange rate regime. This relates to inflation targeting.

(a) Flexible exchange rate and monetary targeting

Monetary targeting helps to control inflation as a nominal anchor in the following ways. Under the flexible exchange rate regime, the demand for domestic base money, and hence the price level, and the exchange rate depend on the expectation about money supply growth. Because the information on conducting money aggregate is announced periodically with very short time-lags, the public can compare the actual money-supply growth rate with the targeted rate, which in turn sends immediately signals to market participants about the central bank's stance and intention to control inflation, thereby mitigating inflation expectations and then producing less inflation. In short, when a central bank slows the rate of money aggregate growth, the rate of inflation will be lower.

Before 2016, in parallel with exchange rate targeting, the SBV aimed at the money supply, which is total liquidity - M2, to implement monetary policy. Nevertheless, as shown in Mai (2016b), the control of the money supply faces a variety of difficulties such as unstable relationship between money aggregates and inflation, time-inconsistency problem, policy lending and ineffective monetary policy instruments. At the same time, exchange rate targeting is not a long-run solution for price and financial stability given free capital flows. In addition, monetary targeting and exchange rate targeting are sometimes conflicting but the SBV has had not yet a rule to solve it. Therefore, the adoption of monetary targeting and exchange rate targeting at the same time is not an optimal solution. Alternatively, putting aside exchange rate targeting, monetary targeting under the flexible exchange rate regime would face inherent problems of weak ability of the central bank to control money

supply and unstable relationship between monetary aggregates and inflation. That means the necessary and sufficient conditions to adopt monetary targeting under the flexible exchange rate regime are not met. Once the conditions for the adoption of monetary targeting are not met, the success of this strategy is impossible. Then, its credibility is not ensured. Therefore, the adoption of monetary targeting to control inflation when moving to the flexible exchange rate regime is not an optimal alternative for the fixed exchange rate regime in Vietnam.

(b) Flexible exchange rate and inflation targeting

If the central bank is less able to control money supply, it can adopt inflation targeting, under which the central bank must give priority to price stability objective in implementing monetary policy even having to accept negative effects on output.

To reduce negative effects on output, the central bank needs support from the government by conducting other policies. For example, the wage policy can reduce negative effects on output under a shock in the money supply. A decrease in the money supply $M\downarrow$ means that market participants have less money in hands. They will restrict their consumption C if price is flexible, leading to an excess supply of goods $Y^d < Y^S$ and then a decline in the price of goods.

In case of a rigid nominal wage in the short-run, the nominal wage is already set in the labour contract, employers cannot cut off wage to get more profit in case that prices of goods are reduced ($W = \overline{W}$). This brings about an increase in the real wage ($\overline{W} / P\uparrow$). Enterprises, who want to maximize their profit, will react by cutting off employment $N\downarrow$ (Labour market in case of underemployment $N^d(\frac{\overline{W}}{P}) \leq N^s(\frac{\overline{W}}{P})$, thus resulting in a decrease in output ($Y\downarrow$) ($Y = Y(N, K)$). That means the rigid nominal wage does not help to reduce the negative effect on output under the impact of a money supply shock.

$$M \Rightarrow P \Rightarrow \frac{\overline{W}}{P} \Rightarrow N \Rightarrow Y$$

In case of flexible nominal wage, the employer will accordingly reduce the nominal wage ($W\downarrow$) when prices of goods are reduced ($P\downarrow$). As a result, the real wage remains constant ($W / P\ sct$). Then, employment and output do not change ($N\ cst,\ Y\ cst$). That means the flexible nominal wage helps to neutralize the impact of money supply shock on output.

$$M\downarrow \Rightarrow P\downarrow \Rightarrow W\downarrow \Rightarrow W/Pcst \Rightarrow Ncst \Rightarrow Ycst$$

In short, a flexible wage policy will help to reduce the negative impact on output when the central bank implements measures to counter inflation. The less output-inflation trade-off will increase the credibility of both the public and the government in anti-inflation program of the central bank, thereby helping to increase the credibility of inflation targeting.

While monetary or exchange rate targeting targets intermediate variables such as money supply growth or a level of the exchange rate, inflation targeting involves targeting inflation directly. Inflation targeting provides a strong nominal anchor in lieu of the exchange rate peg to control inflation. Inflation targeting is associated with a high degree of exchange rate flexibility and the central bank independence

in terms of monetary policy instrument and the link between the central bank and the financing of the government budgets. The combination between the flexible exchange rate regime and the inflation targeting framework will be a promising and leading monetary strategy in the long run. Mai (2016a) finds benefits and advantages of inflation targeting over exchange rate targeting in Vietnam. Then I come to conclude that inflation targeting is a desirable monetary strategy in lieu of the fixed exchange rate. From my point of view, the most important thing is that under exchange rate pegging, the SBV has to import credibility from abroad, whereas the inflation targeting creates a mechanism that enhances the ability of the SBV per se to control inflation and to conduct monetary policy. Furthermore, once the government accepts to give the SBV more room to manoeuvre monetary policy to control inflation, it will support the central bank through commitments to manage fiscal policy in a way that supports price stability objective, e.g. to avoid fiscal dominance and to develop strong fiscal, financial and monetary institutions. Strong commitment between the central bank and the government to control inflation will in turn help to enhance the credibility of monetary policy. The question is whether inflation targeting will bring into full play in Vietnam.

Like other emerging countries at the onset of the adoption of inflation targeting, Vietnam does not meet all prerequisites for the adoption of inflation targeting and faces a number of challenges (Mai, 2016a). Even though the literature shows that no inflation targeters meet all preconditions before the adoption of inflation targeting framework (Carare et al., 2002; IMF, 2006b), I suggest that Vietnam should undergo a transition process to inflation targeting. A good preparation for the adoption of inflation targeting will contribute to improve necessary preconditions, especially technical and institutional preconditions and providing the SBV with independence to conduct monetary policy to ensure a successful adoption of inflation targeting in Vietnam. Some proposals for the transition process to inflation targeting and for the enhancement of credibility under inflation targeting were discussed in Mai (2016a).

5. Conclusions

The country can suffer from a standard problem of the sustainability of the fixed exchange rate when the credibility of the exchange rate-based stabilization programs is not ensured. In such a case, the country can introduce a more flexible exchange rate regime. Acquiring credibility following the abandonment or collapse of an exchange rate peg requires the country to introduce and implement an alternative monetary policy operating strategy under the floating exchange rate regime. The leading candidate is inflation targeting. Inflation targeting entails an institutionalized commitment to price stability as the primary goal of monetary policy. The central bank independence is needed to give the central bank a necessary manoeuvring room to achieve price stability objective. If price stability objective is conflicted with other objectives, such as output objective, the central bank should give priority to price stability objective, and even accept the negative effects on output. The negative effects on output can be solved by other policies, for example a flexible wage policy.

References

1. Barro, Robert J. and David B. Gordon (1983), *"Rules, Discretion and Reputation in a Model of Monetary Policy",* in Sylvester C.W Eijfinger (ed.), Independent Central Banks and Economic Performance, The International Library of Critical Writing in Economics, An Elgar Reference Collection, ISBN 1-85898-447-5, p.22-42.
2. Bordo, Michael D. and Pierre L. Siklos (2015), "Central Bank Credibility: An Historical and Quantitative Exploration", *NBER Working Paper Series* No. 20824.
3. Bernanke, Ben S., Thomas Laubach, Frederic S. Mishkin, and Adam S. Posen (1999), *"Inflation Targeting: Lessons from the International Experience"*, Princeton University Press, ISBN 0-691-05955-1.
4. Carare, Alina, Andrea Schaechter, Mark Stone, and Mark Zelmer (2002), "Establishing Initial Conditions in Support of Inflation Targeting", *IMF Working Paper* WP/02/102, June.
5. Cukierman, Alex (1986), *"Central Bank Behavior and Credibility: Some Recent Theoretical Developments",* Federal Reserve Bank of St. Louis.
6. Khan, Mohsin S. (2003), "Current Issues in the Design and Conduct of Monetary Policy", *IMF Working Paper* WP/03/56, March.
7. Kydland, Finn E., and Edward C. Prescott (1977), *"Rules Rather than Discretion: The Inconsistency of Optimal Plans"*, in Sylvester C.W Eijfinger (ed.), Independent Central Banks and Economic Performance, The International Library of Critical Writing in Economics, An Elgar Reference Collection, ISBN 1-85898-447-5, p.3-21.
8. IMF (2006), "Vietnam: Selected Issues", *IMF Country Report* No.06/422, November.
9. IMF (2006b), *"Inflation Targeting and the IMF"*, March.
10. Mai, Hien Thu (2016a), "Review of monetary policy management in Vietnam from 2011 to 2015", *External Economics Review*, 88/2016.
11. Mai, Hien Thu (2016b), "Application of flexible exchange rate regime to implement inflation targeting in Vietnam", *VNU Journal of Science*, Vietnam National University, Hanoi, Vol.32, No.02, 2016.
12. Mai, Hien Thu (2010), "Exchange Rate Regime and its Ability to Absorb Shocks: The case of Vietnam", *External Economics Review*, No.44/2010.
13. Mai, Hien Thu (2009), "The Central Bank Independence in Regulating Monetary Policy at Price Stability", *External Economics Review*, No.39/2009.
14. Mishkin, Frederic S. (1999), "International experiences with different monetary policy regimes", Journal of Monetary Economics 43 (1999), pp. 579-605.
15. Perrier, Patrick and Robert Amano (2000), *"Credibility and Monetary Policy"*, Bank of Canada, Spring, p.11-17.
16. Rogoff, Kenneth S. (1985), "The Optimal Degree of Commitment to an Intermediate Monetary Target", *The Quarterly Journal of Economics,* Vol. 1000, No. 4 (Nov. 1985), 1169-1189.