POWER OF MONETARY POLICY IN FIGHTING AGAINST THE LONG-TERM HIGH INFLATION AN ANALYSIS BASED ON TAYLOR RULE FOR THE CASE OF VIETNAM

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1. Inflation in Vietnam

In recent years, Vietnam has cleverly paddled its economy through ups and downs of the world economy, especially in the context of economic recession in the US and Europe. However, this achievement also foresees latent risks if we take a glance at other macro indices such as high insolvent foreign debts, budget deficit, trade deficit, and high inflation which has not been curbed actively.

Since the 1997 crisis, the national fiscal policy has placed its focus on the sustained growth which has been exchanged by a tremendous budget deficit. The monetary policy, in addition to modifying economic growth goals, also assumes the responsibility to control inflation which has occurred under the mid-term effect of over-increase in the total demand when the government has loosened the expenditure in such a long term.

Besides, this nuisance has been exacerbated by an intermediate goal, i.e. the foreign exchange rate, when capital is flowing in and out freely in large scale yet without stability. The effort to keep a fixed nominal interest rate as a sign of stability which helps reduce risks for foreign investors seems to be out of the reach of the SBV and has recently terminated the independence of monetary policy. Once capital is pumped into capital account to backup the balance of trade, to peg an exchange rate must be accompanied by an increase in money supply and a decrease in foreign exchange reserve. However, in the context that the deficit lasts long and the capital inflow goes down (or become reverse due to the world economic recession or a less attractive investment climate), it is really a challenge for SBV to peg the exchange rate when the foreign exchange reserve is limited under the normal condition and may be more limited when expectation of the public on the depreciation of domestic currency lasts long.

To cope with these difficulties, SBV is forced to re-ponder its goals and applicable instruments of monetary policies. Theoretically speaking, a central bank may attain the goal of price stability (and even the economic growth simultaneously) in such a short- and mid-term by taking measures to control the total money supply and the interest rate respectively. The fact that SBV must annually submit the NA its goals of credit growth and

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money supply for approval shows that it has been trying to control the money supply - an intermediate goal – instead of the interest rate (Hung & Pfau, 2009). However, the monetary policy is manipulated by the policy interest rate such as the base rate and the interest rate ceiling. Yet, these two instruments are evaluated to be inappropriate (Diu & Pfau, 2010). Accordingly, it is needed to reevaluate the monetary policy and its intermediate goal with a view to achieving the price stability and sustained growth.

This study is to investigate inflation in Vietnam on the ground of the Taylor rule. We will observe changes in the interest rate and its relationship with inflation so as to interpret the feasibility of the monetary policy in its ability to achieve growth goals and control the inflation based on the basis of a consistent rule. Throughout the study, the Taylor rule will be employed, which is deemed as a well-known tool helping the central bank define its monetary policy in the hope of achieving goals of price stability and output. Then, we will use hypotheses to calculate, based on the Taylor rule, an interest rate as a target one (or policy one) that the SBV would have had to pursue to stabilize the economy. Finally, we analyze the feasibility of Vietnam's monetary policy in applying the Taylor rule, then putting forward some principles relating to the policy on inflation control in Vietnam.

2. Taylor rule

The monetary policy of a central bank may take the money supply as a target and have all instruments revolve around it. In this case, any fluctuation in the commodity market, for example shocks on consumption and investment or governmental expenditure expansion that may make the interest rate and output dance. Vice versa, if the central bank has interest rate as its target, the money supply may fluctuate to achieve it; accordingly, the upheaval in the money market is eliminated to assure the interest rate to meet the target and the output will be kind of unchangeable.

The above-stated analyses expose an exchange in choosing an intermediate goal in the monetary policy. If the central bank pursues goals of money supply, the output and interest rate will fluctuate unexpectedly. Meanwhile, if the interest rate as a target is pursued, the money supply is nearly an exogenous variable. The combination of these goals is really necessary to manipulate the monetary policy. John Taylor (1993) has mingled these two goals to form a rule that is widespread employed in central banks and prove effective. The Taylor rule allows a central bank to set an appropriate interest rate needed for attaining the target growth rate and the target inflation rate. The Taylor rule can be written as follows:

[1] $i_t = r + \pi_t + f_1(\pi_t - \pi^*) + f_2 y_t$

In this equation, i is the policy interest rate stipulated by the central bank; r is the real long-term interest rate; y is the difference between the actual and nominal output (the long-term average output or the trend output) which is also known as the output gap; and $(\pi_t - \pi^*)$ is the difference between the actual and target inflation rate. Taylor also suggests values such as 2 for r, 0.5 for f_1 & f_2. This rule points out that the policy interest rate will go up when the real inflation rate is above its target, around 2% as Taylor put it, and the growth is higher than the potential output (i.e. y bears the a positive sign).

With π^* equaling to 2, [1] may be rewritten as follows:

$i_t = 2 + 0.5(p_t\text{-}2) + 0.5y_t$ or

$i_t = 1 + 1.5p_t + 0.5y_t$

Accordingly, if the inflation rate, the potential growth rate and the actual growth rate respectively reach 5%, 2% and 3%, the Taylor-rule-based interest rate will set at 9%. However, in the event that inflation, goals and growth equal to the potential rate, the long-term actual interest rate will be 2%.

Taylor (1993) and some other economists have proven that the interest rate of the US Federal Reserve System has mostly observed this rule. Not only does the Taylor rule help central banks define an appropriate interest rate to gain goals of price stability and output but it is also to orient expectation factors, which impact profoundly on the short-term interest rate, and even the outcome of monetary policy. Therefore, if the central bank undertakes some fixed rules, expectation factors are things that a central bank may define (Taylor, 2000).

Taylor proposed his rule for the US economy with a hypothesis of a closed economy. After that,

many other economists such as Ball (1999), Svensson (1999), Batini, Harrison & Millard (2000) have developed this rule at service of small and open economies. As Ball (1999) put it, the interest rate of a small and open economy may be based on the extended Taylor rule, i.e. the variable "exchange rate" must be added to the primary Taylor equation. In this case, the equation [1] shall be rewritten as follows:

[2] $i_t = r + \pi_t + f_1(\pi_t - \pi^*) + f_2 y_t + f_3 e_t + f_4 e_{t-1}$.

Where, e_t & e_{t-1} are respectively the difference between the actual exchange rate and the square exchange rate in the current stage and that in the previous stage.

Empirically, Ball (1999), Svensson (1999), Batini, Harrison & Millard (2000) shows that the ups and downs of exchange rate neither affect the interest rate sharply nor distort the original Taylor rule very much due to the fact that f_3 is positive when f_4 is negative (Taylor, 2000).

Table 1: Estimation of the exchange rate on the basis of Taylor rule

	f_3	f_4
Ball (1999)	-0.37	0.17
Svensson (2000)	-0.45	0.45
Taylor (1999)	-0.25	0.15

Source: compiled by Cavoli & Ramkishen (2006)

The most noticeable thing drawn from the above findings is that small and open economies may also consult the Taylor rule for controlling the interest rate under the circumstance of freely-dancing exchange rate. In reality, for many of tiger economies like Vietnam, a free-floating exchange rate regime is utilized yet quite strictly controlled. Due to the fact that fluctuations in exchange rate may bring in unfavorable costs for emerging economies, their exchange rate regime may be fixed or flexibly controlled; or pegged to a basket of major currencies. As Taylor (2000) put it, for an economy with a fixed exchange rate system, rules for a monetary policy is really redundant due to the fact that instruments of the monetary policy do not work with internal goals; and it is usually construed as the impossible trinity.

3. Analyzing fluctuations in Vietnam's interest rate on the basis of Taylor rule

We applied the Taylor rule to calculate the policy interest rate that a central bank may utilize to define the market interest rate, growth rate and inflation control. To do so, we put forward two hypotheses:

- ***Firstly***, coefficients of the output elasticity of interest rate and price elasticity of interest rate are still similar to the ones suggested by Taylor.

- ***Secondly***, fluctuations in exchange rate do not affect the fluctuations in interest rate very much.

We did estimate the difference in output and market price in Vietnam over the past ten years. The Hodrick-Prescott filter was employed to evaluate the balanced value of these two variables; and results are presented in the Figure 1.

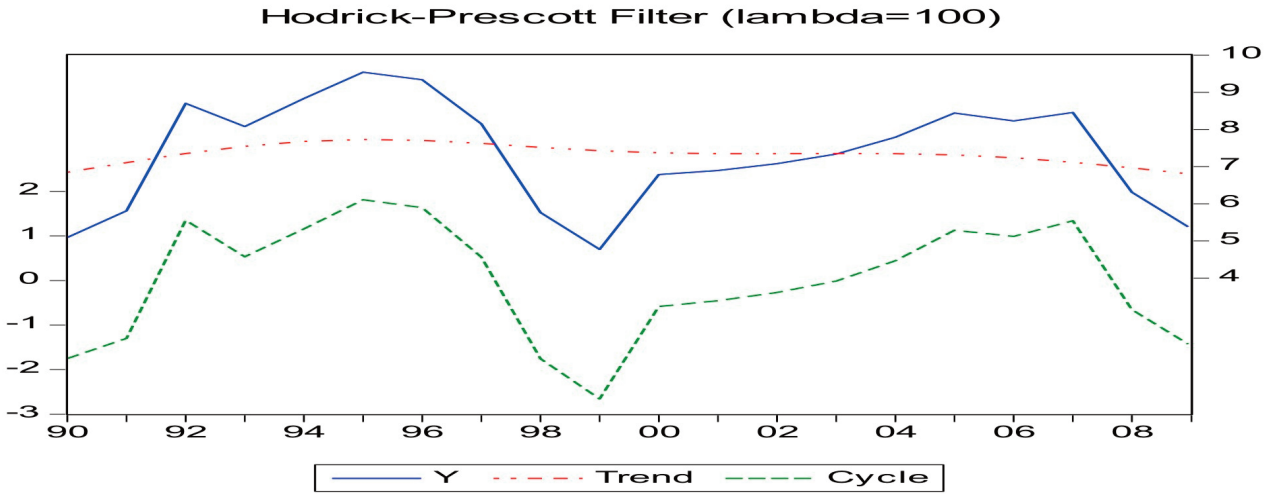


Figure 1: Difference between the actual and nominal economic growth

We assumed that the mean of estimated balanced value of output equals to the potential growth of the whole economy; and is equivalent to 7%. If the modification of Vietnam's actual long-term interest rate is 2% and the target inflation rate is 7%, the Taylor equation may be rewritten for Vietnam's case as follows:

[3] $i_t = 2 + \pi_t + 0.5(\pi_t - 5) + 0.5(y_t - 7)$

The Figure 2 below produces results calculated according to [3] and in comparison with the base rate of SBV. Primarily, this study has figured out that the policy interest rate of SBV has changed along with the Taylor-based interest rate, yet they are different in magnitude. For example, in order to reach an inflation of 7% in 2010 as required by the Vietnam's NA and an economic growth of 6.7%, the base rate must goes up. This calculation also shows that in order to deflate the economy in the period of 2004-2006, the base rate would have been adjusted much higher instead of adopting a lower base rate in a hope of relaxing the burden on manufacturing section and stimulating the economic growth. This is to say, there is a trade-off between inflation and short-term growth.

The calculation is based on too many assumptions, and thereby it is just worth reference. However, it is also a point for SBV to work out a better monetary policy that can stabilize inflation and stimulate a sustained development. Later on, we are about to dig deeper into the competence of manipulating the monetary policy according to the Taylor rule.

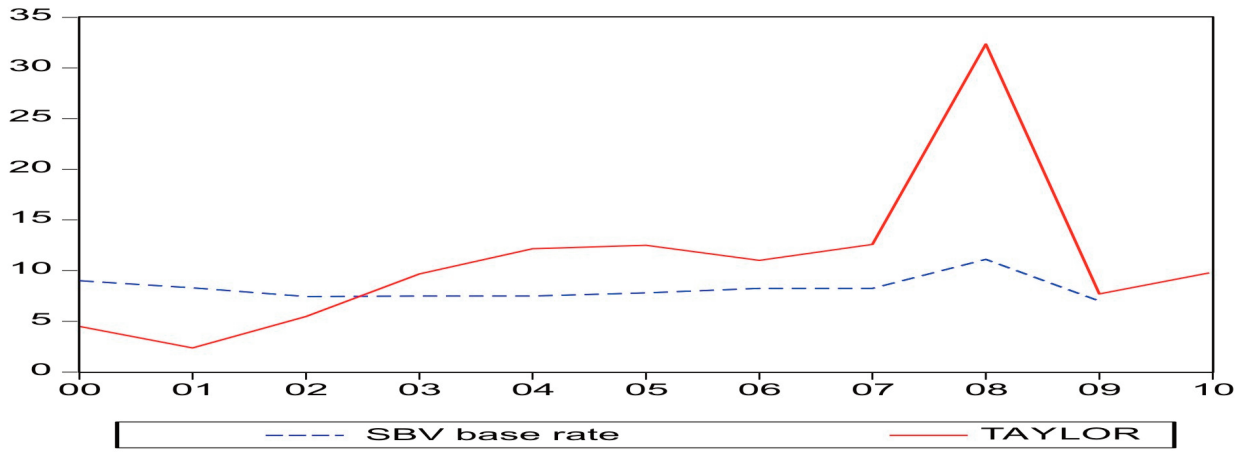
4. Applying the Taylor rule to Vietnam's monetary policy

Vietnam is a dollarized economy in transition (Goujon, 2006). This fact may impact sharply on the monetary policy and the choice of an exchange rate regime. Once the economy is dollarized, the supply and demand of monetary market will be shaky. While the money supply seems incompetent in stabilizing the market, the demand side is menaced by the currency substitution effect, that is, the nationals use a foreign currency instead of domestic one in payment; and asset substitution effect, i.e. the nationals are allowed to open foreign-currency accounts and use this foreign currency as a financial asset.

Vietnam's economic development and monetary management over the past few years may reduce the currency substitution effect; yet the high inflation may cause a psychological effect on the public and the asset substitution effect may be more profound.

Berg & Borensztein (2000) have pointed out that if the currency substitution effect is getting high, the central bank had better pursue a fixed exchange rate regime. Vice versa, a sharp effect of asset substitution does not impinge on the choice of exchange rate regime because of the fact that this phenomenon is the same as conversion of a foreign currency to the domestic one which depends much on the difference in the interest rate between the two currencies in the country.

Figure 2: The base rate of SBV and the Taylor-rule-based interest rate



Source: SBV and GSO

The point is that whether the central bank has any immediate deed on the foreign exchange market or not. In the event that the central bank would like to retain the exchange rate in the context of profound substitution effect, it cannot control the money supply due to the goal of exchange rate stability; and thus the target inflation rate seems unattainable. This is perhaps the case facing Vietnam.

According to Packard (2007), Vietnam's situation (including development of monetary instruments and independence of SBV) is unfavorable for the inflation targeting policy. Instead, he suggested that the monetary policy should aim at a real effective exchange rate which will secure long- and short-term growth goals. Nonetheless, in the current trend of free capital flows, the exchange rate regime must be much more flexible so as to enhance the role of monetary policy. This raises an idea that a too-tight control over the exchange rate which Vietnam has been pursuing so far is no more appropriate. Instead, control over intermediate goals such as interest rate should be executed so as for the exchange rate to revolve around its long-term real balanced value.

The expectation factor is really significant to the monetary policy; and to define a rule to control the monetary policy is very necessary. Over the past few years, Vietnam's monetary policy is so inconsistent that it raises doubts amongst the public and reduces efficiency of the monetary policy (Bao, 2008). Changes in the policy interest rate rarely correspond to messages from policy-makers and target of money supply growth is often out of reach.

Via what we have analyzed so far concerning factors of developing the economy and management, it is apparent that we need to redefine intermediate goals of the monetary policy based on a consistent rule with a view to consolidating expectations of the public and investors. Under the current circumstance, the Taylor rule, in our humble opinion, should be consulted by SBV. This tool may help SBV define an appropriate interest rate on the ground of identified targets (such as inflation and real exchange rate) and fluctuations in the output (difference between the actual and potential growth). In addition, via Taylor rule, SBV also shapes up expectations of the public concerning the short-term interest rate, which is always expected by a central bank in a hope of stabilizing inflation basically.

At present, SBV manipulates the monetary policy through the money supply and interest rate. These two targets count on instruments of the monetary policy, namely required reserve ratio, open market operations, recapitalization and discount interest rate. Besides, the policy interest rate (base rate and interest rate ceiling) is also employed by SBV as a both administrative and economic tool. With Taylor rule, SBV need not publicize goals of money supply and interest rate.

Like the policy on target inflation, to control the interest rate by means of Taylor rule is just the technical matter of SBV alone and need not promulgating in public. Yet, interest rate changes based on a consistent rule may be a crucial message to the public.

5. Proposals and limitations

This study shows that SBV's monetary policy has not stuck to the goal of long-term price stability. It originates from the fact that intermediate goals of the monetary policy is not clear-cut and lack of consistence in controlling the exchange rate and interest rate as well, thereby hindering the inflation control while Vietnam, a small and open economy has to suffer shocks from the world economy. Moreover, in the context of dollarization and current management mechanism (SBV is not really independent in controlling its money market), Vietnam's monetary policy is more passive and has depended on not so much long-term economic goals as ad hoc solutions. Supposing that Vietnam keeps liberating capital accounts and a more flexible exchange rate regime is much needed, this study proposes that Taylor rule is worth consulting at service of managing the macro-economy, maintaining public expectation in such a long/short run, and stabilizing inflation accordingly. Our estimates, which are based on available results of previous studies (this is also a limit of our study), show that Taylor-rule-based interest rate over the period 2000-2010 is on the same trend with the base rate – a policy interest rate that SBV has tried to implement although at times it adopted ad hoc solutions against inflation. The research results will be more significant if econometric tools and time series data are utilized to modify available values of Taylor rule for the case of Vietnam■

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